

**YELLOW FEVER INTRA ACTION REVIEW
WESTERN EQUATORIA STATE, SOUTH SUDAN**

4th to 6th June 2024



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ACRONYMS

BHI Boma Health Initiative

BHT Boma Health Team

CFR Case Fatality Rate

CHD County Health Department

CMMB Catholic Medical Mission Board

CSO County Surveillance Officer

EBS Event Based Surveillance

EAC East African community

EPI Expanded Program on Immunization

EWARS Early Warning Alerts and Response System

KI Key Informant

IAR Intra Action Review

ICG International Coordination Group

IDP Internally Displaced People

IDSR Integrated Disease Surveillance and Response

IPC infection Prevention and Control

MOH Ministry of Health

MSF Médecins Sans Frontières

NPHL National Public Health Laboratory

PHEOC Public Health Emergency Operation Center

POEs Points of Entry

SMOH State Ministry of Health

SOPs Standard Operating Procedures

SRL Serology Reference Laboratory

TA Technical Assistance

TAT- Turnaround Time

TRISS- The Rescue Initiative of South Sudan

TOT- Training of Trainers

TWG Technical Working Group

UNHAS United Nations Humanitarian Air Services

WASH Water, Sanitation, and Hygiene

WES- Western Equatoria State

WV World Vision

WHO World Health Organization

1. Executive Summary

The Ministry of Health (MOH), Republic of South Sudan declared a Yellow Fever (YF) outbreak on December 24, 2023, following confirmation of one case, a 24-year-old male from Kangura village in Gangura Payam, Yambio County. The case patient presented with symptoms of generalized body weakness, headache, epigastric discomfort, fever, vomiting of blood, and yellowish discoloration (jaundice) of the eyes on December 10, 2023. Laboratory confirmation of the case was made using Real Time Polymerase Chain Reaction (RT-PCR) and results were communicated to the Ministry of Health on December 24, 2023. Upon confirmation of the case, the MOH activated the Public Health Emergency Operation Center (PHEOC) to response mode to facilitate a coordinated response to the outbreak. A team of experts from the national, subnational, WHO and partners was mobilized to conduct a detailed epidemiological investigation to determine the extent of the outbreak through identification of additional cases, characterization of the cases according to place, person and time, identification of the risk/exposure factors including entomological risk assessment and putting in place control and prevention measures. The MOH with support from WHO also applied to the International Coordinating Group (ICG) that manages the global yellow fever vaccine stockpiles to access emergency vaccines to conduct reactive vaccination campaign in the affected/surrounding areas.

With over 166 days after the declaration of the outbreak and the initiation of various response interventions, the MOH conducted an intra action review to understand the best practices and challenges encountered during the response to come up with recommendations that will improve the response to the current outbreak, fast-track interventions to facilitate closure of the outbreak and provide insights/recommendations for future YF outbreaks. The IAR was conducted for 3 days from 4th to 6th June 2024.

The IAR was conducted in Yambio under the auspices of the State Ministry of Health (SMOH) with technical support from WHO, using funds from GAVI for the YF outbreak response. Partners who participated in the yellow fever response in physical attendance included representatives from CMMB, MSF, TRISS, UNICEF, WHO, and World Vision International as well as state surveillance officers and county surveillance officers from the five affected counties.

The IAR employed an interactive, structured methodology and generic materials developed by the MOH and WHO. The review covered eight (8) pillars of the incident management system (IMS), that is coordination, surveillance, case management, IPC/WASH, RCCE, vaccination, POE, and logistics). Participants were organized into five groups that discussed the pillars assigned to them in detail and later presented in plenary for further discussion and consensus building.

Coordination at the national and subnational levels was very critical to the success of the YF response. This enhanced participation of partners and mapping out of available resources to support the response. The yellow fever outbreak was detected and confirmed timely, meeting the 7-1-7 threshold set for detection, confirmation, and response to outbreaks. The major contributing factors to this milestone were the availability of case definitions and the knowledge of CHWs, mainly in identifying yellow fever. In addition, the timely collection of samples and the capacity of the NPHL to test YF within the shortest time possible were also significant contributing factors to meeting the milestone. During the outbreak, a cumulative of 124 cases and six (6) fatalities were reported (CFR-4.8%). All the deaths

were registered in the first eight weeks of the outbreak, and most of the deaths were attributed to delays in seeking health care services, which was mainly due to communities' belief that a disease presenting with yellowing of the eyes should be treated at home and not in health facilities. At the start of the outbreak, the yellow fever RCCE coordination pillar was established, and weekly meetings were held to coordinate RCCE interventions; this facilitated the development of the RCCE plan. In addition, the coordination forum facilitated the harmonization of the existing community mobilization structures at the county health department (CHD), which prioritized the dissemination of unified key messages across the ethnic and tribal divides of the communities.

One of the biggest successes in the yellow fever response was the timely request and delivery of YF vaccines from the ICG. This was mainly attributed to good coordination established between the MOH, WHO, UNICEF, AFRO, and WHO HQ. ICG approved and provided 610,000 doses of YF vaccine that were used to vaccinate 465,798(77%) persons aged 1-29 across five counties of Western Equatoria.

However, there was suboptimal resource mobilization, which caused delays in the implementation of key response activities like RCCE, among others. The surveillance pillar was marred with challenges, including delays in relaying laboratory results from subsequent testing following the confirmation, which was attributed mainly to poor communication and coordination between the national and state/county levels and lack of access to the electronic laboratory management systems (ELIMs) One of the biggest challenges faced by the case management pillar was the delays in reporting to health facilities, especially at the beginning of the outbreak, which contributed to most of the deaths reported. In addition, there was a drop out of vaccination teams due to low incentives, which affected the overall coverage of YF vaccination campaign.

The IAR recommended the renovation of the PHEOC in WES with training on incident management and the development of multi-hazard contingency plan to improve coordination of outbreaks. To strengthen surveillance and laboratory systems, there is a need to train all stakeholders (CSO, HCWs, laboratory focal persons, BHWs etc.) on various topics including active case search, eLIMS among others. The balance of over 150,000 doses of yellow fever vaccines to be used to vaccinate Payam's in counties with low coverage and as well cover other counties with suspected outbreaks (Mvolo and Maridi). In addition, there is need to strengthen cold chain capacities in counties especially Nzara, improve the development of vaccination micro plan and enhance the incentives for vaccination teams to ensure retention.

2. Background of the Yellow Fever Outbreak

On December 21, 2023, the Ministry of Health received notification of a suspected case of viral hemorrhagic fever from Yambio County, Western Equatoria State. The suspected case was a 24-year-old male from Kangura village in Gangura Payam, Yambio County who presented with symptoms of generalized body weakness, headache, epigastric discomfort, fever, vomiting of blood, and yellowish discoloration (jaundice) of the eyes. The patient was immediately isolated at the health facility, and a sample was collected and sent to the National Public Health Laboratory on December 22, 2023 to confirm the causative agent. Testing was conducted on December 24, 2023, at the NPHL and the results confirmed the diagnosis of Yellow Fever. Following confirmation, the Ministry of Health of the Republic of South Sudan immediately declared a Yellow Fever outbreak on December 24, 2023. The Public Health Emergency Operation Center (PHEOC) was immediately activated to facilitate a comprehensive, pillar-based approach to control and contain the outbreak. A multi-disciplinary team comprising representatives from the Ministry of Health, WHO, and partner organizations at both national and subnational levels was deployed to conduct an extensive epidemiological investigation, active case search, community mobilization and sensitization efforts, and an entomological assessment in Gangura Payam (the epicenter), Yambio County, Western Equatoria State, as well as in surrounding Payams and counties.

Cumulatively, **124** suspected cases were reported, including six (6) deaths (CFR – 4.8%) from week 50, 2023, to Week 20, 2024. As of week 20, of 2024, the suspected cases per county were as follows: Yambio (62 cases with 2 deaths), Tambura (25 with 1 death), Nzara (11 cases with 3 deaths), Ezo (13 cases with 0 deaths), Ibba (04 cases with 0 deaths), and Maridi (03 cases with 0 deaths), and Mvolo (03 cases with 0 deaths).

3. Introduction to Intra-Action Review (IAR)

The guidance for conducting intra action reviews (IARs) results from a shared vision of the importance of collective learning during and following a public health event. Recent epidemic- and pandemic-prone outbreaks have highlighted the critical importance of ensuring that systems for outbreak detection, notification, and response are timely and effective. Early detection and response are crucial in preventing the escalation of infectious disease outbreaks. To enhance the identification and control of these threats, ambitious and achievable targets are required to promote the evaluation and improvement of systems for early detection and response.

When a new outbreak or public health event is identified, stakeholders must coordinate efforts to control the spread of disease and reduce risks or impacts. Conducting IAR provides an agile framework for measuring the timeliness of detection, notification, and response systems to ensure that rapid and coordinated efforts are undertaken. However, IAR is not just an assessment or monitoring tool; it is a performance management process conducted as early as possible while an event is unfolding. It is used by teams responsible for responding to the event to reinforce the implementation of seven early response actions.

4. Objective (s) of the Yellow Fever IAR

The overall objective of the IAR is to improve current and future disease outbreak response based on documented lessons learned and evidence generated from the current outbreak. The specific objectives of this IAR were:

1. To share experiences and collectively analyze the current YF response by identifying challenges and best practices.
2. To build consensus and compile lessons learned to improve the current response and sustain best practices that have demonstrated success.
3. To document and apply lessons learned from the response efforts to date for health systems strengthening.
4. To validate the current response interventions and implement improvement plans.

5. Scope and Methodology

The IAR employed an interactive, structured methodology and generic materials developed by the MOH and WHO. The review process allowed stakeholders to reflect on the work done and identify areas of improvement to strengthen the response further. The intra action review workshop was conducted for three days in Yambio from 4th to 6th June 2024. The review was attended by various stakeholders including the NMOH (4 participants) SMOH (8 participants), CHD staff (10 participants), WHO (9 participants), UNICEF (2 participants), World Vision (4 participants), CMMB 4 participants), TRISS (2 participants) among others. The facilitators shared with the participants a PowerPoint presentation on the overview of the yellow fever outbreak/response and the methodology for conducting IAR. The review covered eight (8) pillars of the IMS (coordination, surveillance, case management, IPC/WASH, RCCE, vaccination, POE, and logistics). Participants were organized into five groups that discussed the pillars assigned to them in detail. During group discussions, some pillars were clustered together to have a sizeable number of participants in the respective groups, the clustered pillars were as follows.

- Coordination and logistics
- Surveillance/Lab and POEs
- Case management/IPC WASH and vector control

The discussions were documented on a note-taking template which were then presented in plenary.

Session 1 -What worked well? And why? Participants worked to identify the best practices of the response

Session 2- What worked less well? And why? Participants worked to identify the challenges of the response

Session 3 -What can we do to improve for next time? Participants worked to identify what can be done to strengthen future response

Session 4 – The way forward: discussion on the best way to implement these activities moving forward.

6. Findings

The findings of the individual pillars were as follows.

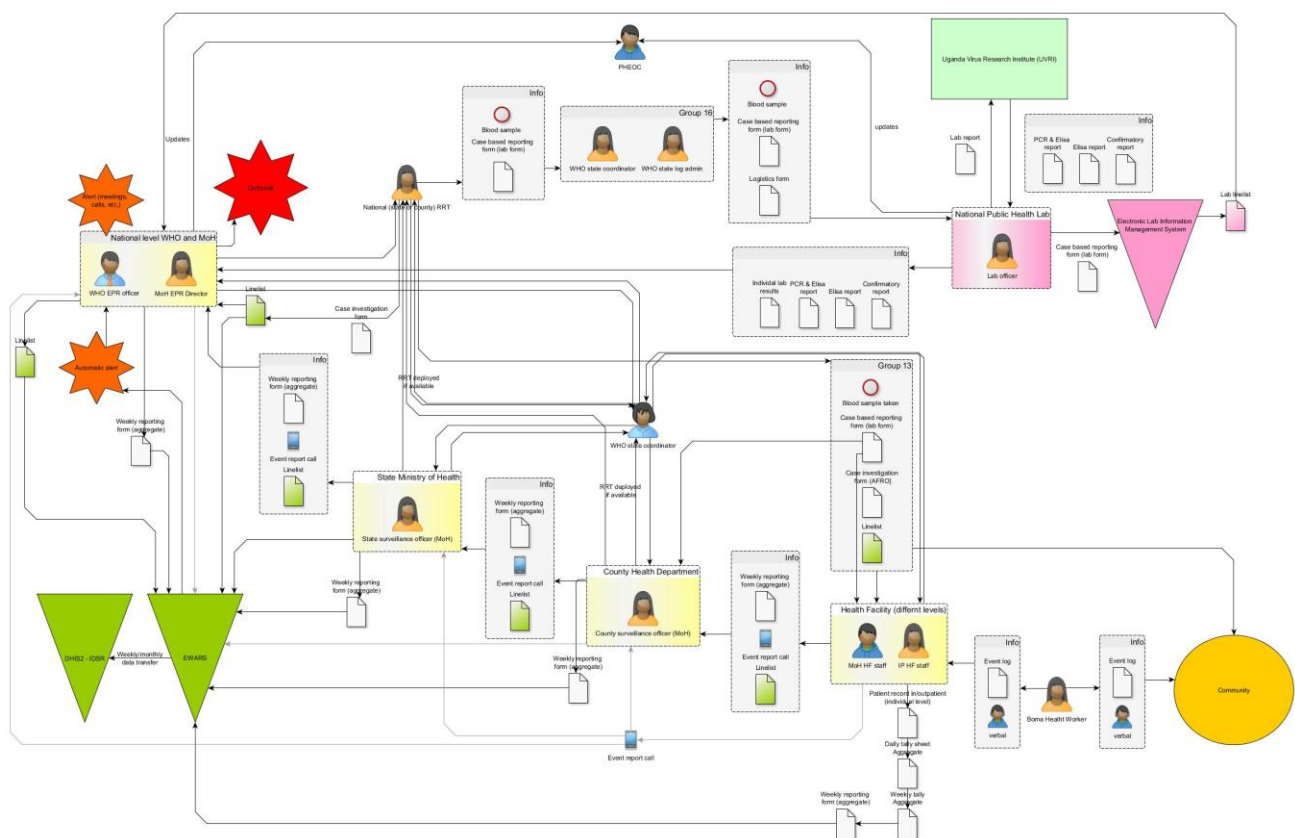
6.1 Coordination

Coordination at the national and subnational levels was critical to the YF response's success. This enhanced partner participation and mapping out of available resources. This was facilitated through timely activation of the PHEOC when the outbreak was confirmed. However, there was suboptimal resource mobilization which caused delays in the implementation of key response activities like RCCE among others. In addition, there was a delay in information sharing from pillars which was attributed to communication breakdown in the middle of the response.

6.2 Surveillance

The organization and coordination of the Yellow Fever outbreak surveillance was well integrated into the national surveillance systems. The following schema shows how this integration was done and provides insights on the complexity and multiple points that were at play in detection, confirmation, and response to YF outbreak in South Sudan.

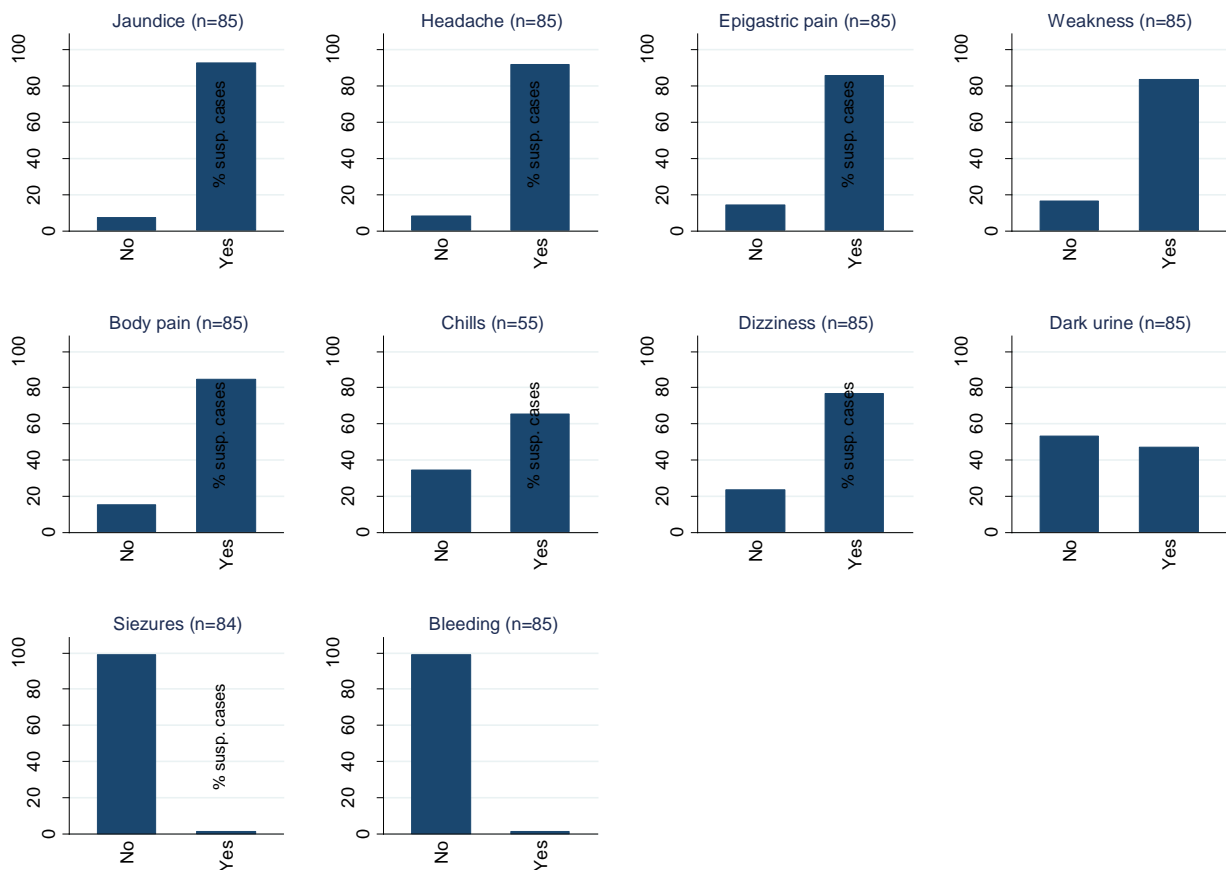
Figure 1: Yellow Fever Surveillance within the National IDSR Framework



The yellow fever outbreak was detected and confirmed timely, meeting the 7-1-7 threshold set for detection, confirmation, and response to outbreaks. The contributing factors were the availability of case definitions and the knowledge of CHWs, mainly in identifying yellow fever. In addition, there was timely sample collection, and the NPHL was able to test for YF. When the first case was confirmed on 24/Dec/2024, the national and state RRTs were deployed to conduct further investigation and support medical counter measures. This was possible owing to the availability of trained rapid response teams both at the national and sub-national levels. To reduce the turnaround time for serum samples collected for YF confirmation, the EAC mobile lab was deployed to WES which enhanced testing of suspected YF cases.

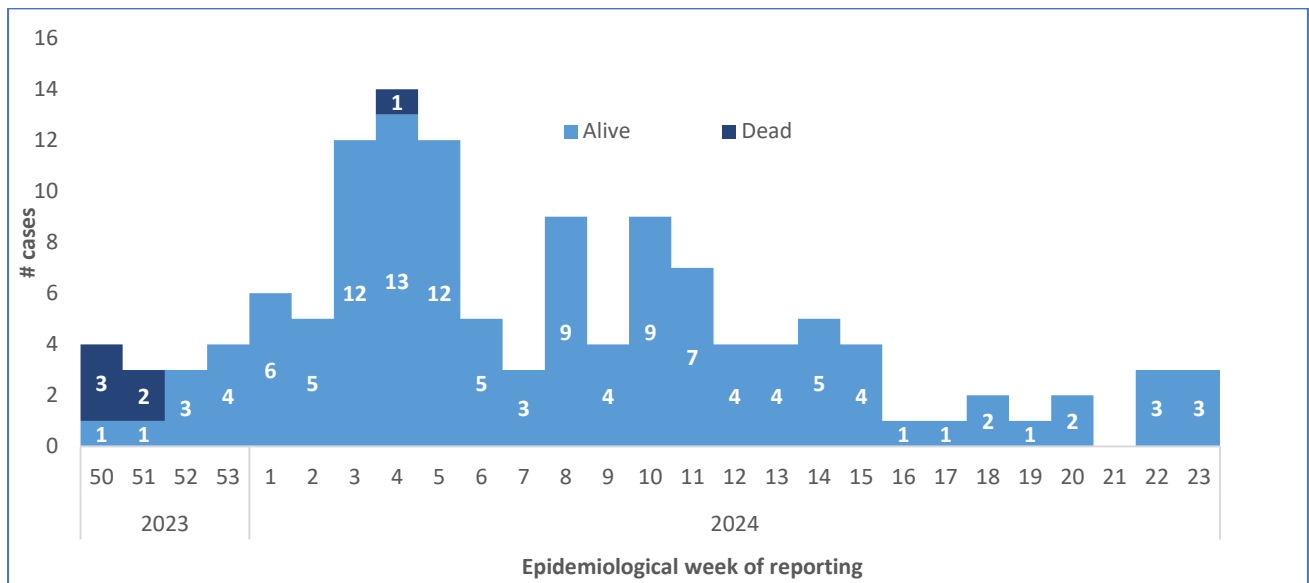
Based on the symptoms/signs obtained from the YF line-listed cases (Figure 3), the IAR documented that the IDSR case-definition would capture all the suspected cases. Most of the suspected cases (92%) presented with jaundice and headache. Epigastric pain, general body weakness and body pain also occurred in 86%, 84% and 80% of the suspected cases respectively. Other major symptoms/signs were chills, dizziness, and dark urine.

Figure 2: Symptoms and signs of YF cases (Use Suspected cases)



Over time, the IAR documented that the YF outbreak peaked in epi Weeks 3-5 and has since declined to the tail end of the normal distribution curve with an average of 2 suspected cases reported in the last 10 weeks.

Figure 3: Epi curve showing suspected Yellow Fever cases in Western Equatoria State 2023 to 2024 by epidemiological week



The surveillance pillar had challenges including delays in relaying laboratory results from subsequent testing following the confirmation. These delays in results transmission to the affected patients were attributed to poor communication and coordination between the national and state/county levels and lack of access to the e-LIMS. In addition, there were delays in sending samples to the NPHL, negative community perception of yellow fever (community believes that YF should be treated from home) which led to late reporting of cases, failure of some clinicians to detect YF cases which has largely been attributed to capacity and inadequate/incomplete filling of case investigation forms and line list which was attributed to the knowledge gaps in epidemiological investigation.

6.3 Case Management/IPC/ Vector control

During the entire outbreak, a total of six (6) fatalities were reported (CFR-4.8%), all the deaths were registered in the first 8 weeks of the outbreak, majority of the deaths were attributed to delays in seeking health care services which was largely due to communities’ beliefs that a disease presenting with yellowing of the eyes should be treated at home and not in health facilities. However, with continuous community sensitization which was conducted through the established community structures of BHWs and local radio stations, suspected yellow fever cases were admitted to isolation facilities established by MSF Spain and CMMB, this significantly reduced the mortality due to YF. Even though most of the partners did not have standby funds to support this outbreak, they resorted to using their existing resources which was later facilitated with additional funding/support. The health care workers were trained on YF case management, WASH/IPC and provided with supplies to enhance their safety while handling cases. To understand the entomological profile of the counties affected, the MOH deployed an entomologist from the national level to conduct assessment, the report of which proved the existence of mosquitoes transmitting YF.

Figure 4: Yellow Fever Morbidity and Mortality by County of Western Equatoria State; 2023-2024

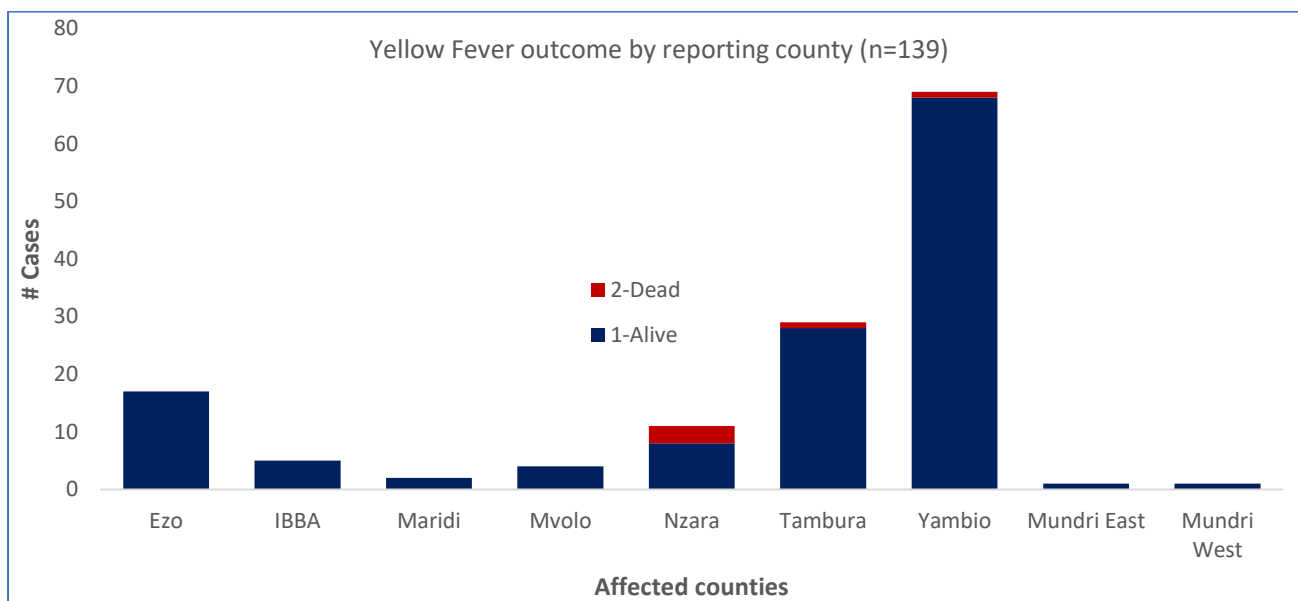
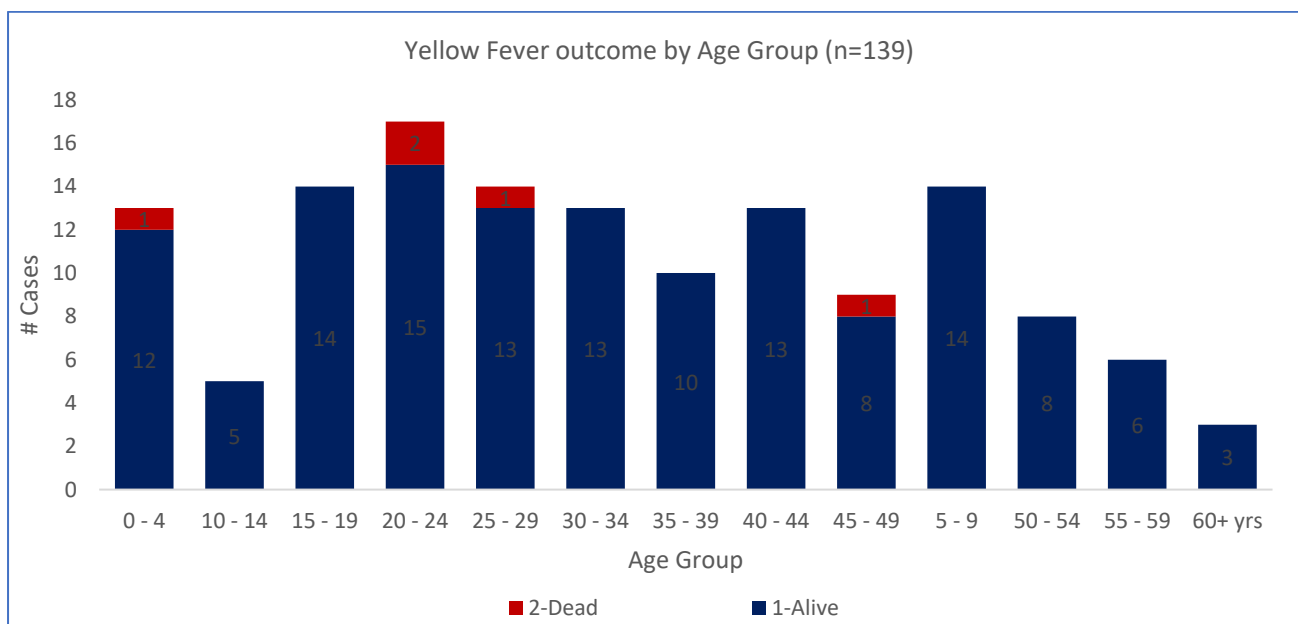


Figure 5: Yellow Fever Morbidity and Mortality by age-group in Western Equatoria State; 2023-2024



One of the biggest challenges faced by the case management pillar was the delays in reporting to health facilities, especially in the beginning of the outbreak which contributed to most of the fatalities reported. In addition to that, inadequate capacity of health care workers to manage especially severe cases which was further affected by lack of equipment. Whereas the entomological findings suggested the presence of mosquitoes transmitting YF, vector control measures were inadequate especially in remote areas.

6.4 Risk communication and community engagement

At the start of the outbreak, the yellow fever RCCE coordination pillar was established, and weekly meetings were held to coordinate RCCE interventions; this facilitated the development of the RCCE plan. Additionally, the coordination forum facilitated the harmonization of the existing community mobilization structures at the CHD, which ensured the dissemination of unified key messages across a wide range of communities. To ensure real-time sharing of information, the RCCE team set up a WHATSAPP group where participants shared information, status of implementation, and bottlenecks. The activities of the RCCE pillar were largely supported by the various communication channels available, including radio stations, public address systems, and community announcers, the functions of which were critical in the launching and mobilization of the YF vaccination.

Figure 6: An example of IEC Materials used for YF outbreak in Western Equatoria State



The RCCE pillar activities were hampered by the lack of social mobilization focal persons in some counties (only Maridi had a focal person) which led to poor mobilization of the community especially for the YF campaign. In addition to that, there was a change of key messages regarding the vaccination of pregnant mothers in the middle of the campaign which required changing of already developed and printed materials and radio jingles amidst budget deficits.

6.5 Vaccination

One of the biggest successes of the yellow fever response was the timely request and delivery of YF vaccines from the ICG. The Yellow Fever Vaccination Request was submitted on 8/1/2024, and the ICG approved 610,000 doses for South Sudan on 12/1/2024. The 610,000 doses of YF vaccines were received at the national cold store and dispatched to Yambio on 31/1/2024. This timely receipt of the YF outbreak response vaccines was mainly attributed to good coordination between the MOH, WHO, UNICEF, AFRO, and WHO HQ.

Vaccine distribution was completed after WES provided the vaccination response operations plan and budget. The YF outbreak response vaccination plan targeted 608,268 people aged one (1) to 60 years in 25 Payams of 5 affected counties (Ezo, Ibba, Nzara, Tambura and Yambio). The campaigns were conducted in two phases (Yambio, Nzara, and Tambura, first phase). Best practices from the first phase were carried over to the second phase, and the challenges and gaps from the first phase were addressed, with better coverage observed. The strategy for the YF reactive vaccination campaign was fixed and temporarily fixed sites.

Vaccine distribution was done directly to counties with vaccine stores (Ezo, Tambura, and Ibba), with Yambio County and Nzara serving directly from the state vaccine store. WHO provided the technical support, and Gavi provided operations funding for the campaign, while UNICEF provided technical and operations support to communications and mobilization of communities to use the opportunity provided. During the campaign, the campaign supervisors conducted evening review meetings where issues affecting the campaigns were discussed. In addition, the availability of cold chains in Yambio, Ezo, Tambura, and Ibba ensured that vaccines were prepositioned in the respective counties. The availability of AEFI kits to address any reported serious events was vital in ensuring vaccine safety.

The IAR documented that the YF vaccination response reached 465,798 of the targeted 608,268 people, translating into 77% administrative coverage. Notably, administrative coverage was highest in Ibba County, followed by Ezo (87%) and lowest in Nzara County (65%). A post-campaign coverage survey is planned as part of the evaluation.

Table 1: YF Vaccinations by County of Western Equatoria State

County	# of Payams	Target Population	Vaccinated by Gender		Total Vaccinated	Coverage
			Male	Female		
Yambio	6	226,864	76,545	89,245	165,790	73%
Nzara	5	97,755	29,617	33,834	63,451	65%
Tambura	3	82,080	26,845	31,982	58,827	72%
Ezo	6	138,859	58,174	63,167	121,341	87%
Ibba	5	62,711	27,334	29,055	56,389	90%
Total	25	608,268	218,515	247,283	465,798	77%

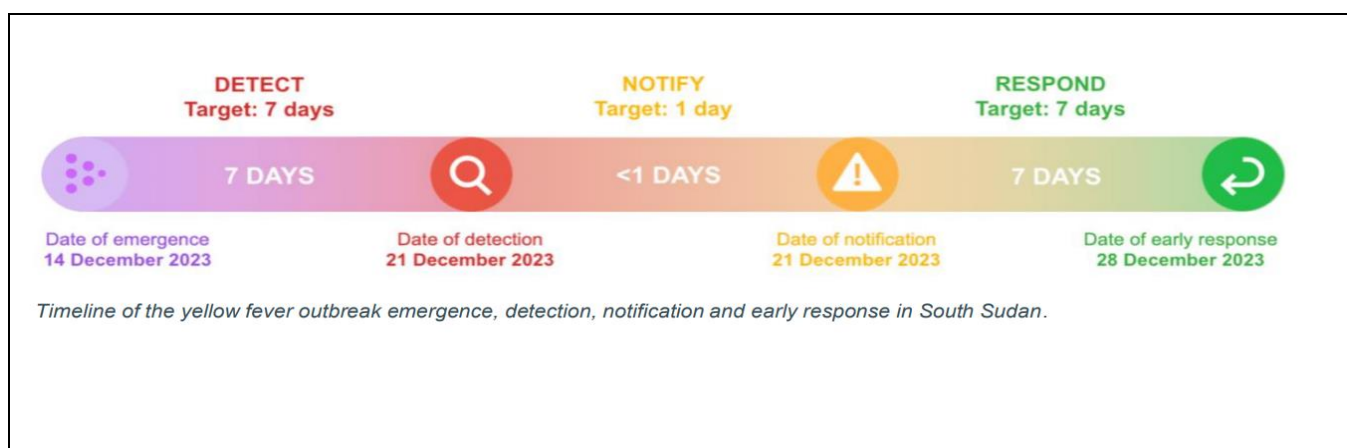
A successful vaccination campaign is guided by a well-developed bottom-up micro plan. However, the intra-action review identified gaps during microplanning, including a) frequent amendments of the micro plan due to difficulty in agreeing on the target population database to be used b) inadequate number of vaccination teams as the number of health workers needed for the TP was not adequate, however this was mitigated by extending the number of days for the campaign, c) inadequate cold chain capacity especially in the counties of Nzara, Ezo and Ibba, d) vaccine shortage in Tambura, due to poor vaccine distribution plan e) Inadequate investigation of suspected AEFI, f) delays in daily data flow which hampered decision making, g) double vaccination of some school going children.

Whereas there could be various reasons for the shortfalls in the YF vaccination campaign, one notable cause was the lack of TOT training for the state level supervisors which had downward effect in the respective counties and payams. In addition to that, there was drop out of vaccination teams due to low incentives. The number of vaccination team dropouts before the campaign were Nzara (25), Tambura (10), Ezo (15). Ibba (9) and Yambio (15).

6.6 Timeline of outbreak (if applicable)

The outbreak investigation and response were within the 7-1-7 timelines required to investigate and initiate initial response for all outbreaks.

Fig 7: Timelines of initial outbreak response



6.7 Best practice and challenges during the response

The detailed findings of the best practices and the enabling factors vis-a-vis the challenges and the limiting factors are listed in the table below. The table also highlights key interventions proposed to build on success and improve challenges during future outbreaks.

Coordination and Operations Support and Logistics (OSL)

PLANS/POLICIES	RESOURCES	OTHER
Validated 5-year National Multi-hazard plan all hazards(2023-2027)	Funds and supplies	
COORDINATION MECHANISMS	PREPAREDNESS ACTIVITIES	
State coordination mechanism : Bi-weekly vaccination coordination meeting Health cluster meeting.		

Instructions:

List all best practices and for each, identify the impact/s and enabling factors that led to its success.

Please include all best practice, even those that are not prioritized and included on the flipcharts.
Where possible please include a narrative or background information relevant to the best practice

Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 1. Partners and mechanism of coordination at state level	<ul style="list-style-type: none"> • Coordinated response and activities • Partners rapidly mapped, resources mobilized • Political support • Synchronized response framework and operational activities 	Enabling factor 1: Regular coordination meetings being held at the state and county levels Enabling factor 2: Willingness & readiness of the Government (national and health authorities) and partners Enabling factor 3: WHO’s No regret policy

	<ul style="list-style-type: none"> Partners were promptly identified and engaged, facilitating expedited resource allocation Garnered requisite political endorsement 	
Narrative/background Best Practice 1. During Covid-19 outbreak all the structures were established, and these were leveraged for other outbreaks including the YF outbreak in WES		
Best Practice 2: Rapid formation of the taskforce and response teams	<ul style="list-style-type: none"> Timely provision of situation updates to facilitate the decision-making process Swift deployment of supplies and commodities 	<p>Enabling factor 1: Strong and effective leadership exhibited by the SMOH and WHO</p> <p>Enabling factor 2: Partner commitment</p> <p>Enabling factor 3: Rapid and expedited deployment of the investigation teams</p>
Narrative/background Best Practice 2. Before there was other task force establish for other diseases outbreaks and state and national rapid response team, so it was easy to rapidly form to coordinate the response.		
Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 3: Timely declaration of the Yellow Fever outbreak	<p>Timely activation of the national PHEOC</p> <p>Adequate mobilization of resources</p> <p>Community awareness regarding the outbreak and its prevention modalities were initiated early</p>	<p>Enabling factor 1: Strong exercising of political will and display of interest by partners</p> <p>Enabling factor 2: Existing supporting structures on ground e.g. surveillance systems, RCCE mechanisms, laboratory capacity and networks etc.</p>
Existing supporting structures on ground e.g., surveillance systems and community awareness regarding the outbreak facilitated early detection of cases		
Best Practice 4 Learnt from the 2019 Yellow fever outbreak in Nzara and Ebola	<p>Early detection of the outbreak</p> <p>Improvement on 7-1-7 alliance matrix</p>	<p>Enabling factor 1: Community willingness to report cases and deaths</p> <p>Enabling factor 2: Presence of partners such as UNICEF, WHO, WVI-core group in Yambio, Nzara, Ibba, Tambura respectively</p>

outbreak in DRC/Uganda		
During 2019 yellow fever outbreak, the communities learnt about signs and symptoms of yellow fever, and this facilitated detection of cases		
Best Practice 5. Established and functional sub national Mini EOC (Yambio, capital of WES)	Easy coordination of response activities Timely situation updates Activation of various TWGs	Enabling factor 1: Leadership and willingness of national and sub-national government and health partners Enabling factor 2: Existing of structures e.g. Community awareness regarding the outbreak
Narrative/Background Best Practice 5. The existence of a mini PHEOC in Yambio coupled with stablished structures such as the BHI and CSOs allowed for an easy coordination of response activities		
Best practice 6. Availability of trained human resource capacity at the state level	Increased case detection in the state Staff and team members are prepared and accessible for deployment as needed across technical areas.	Enabling factor 1: FETP training for surveillance officers at the state and the counties during the deployment and investigation Enabling factor 2: Motivation surveillance officers both at the national and counties. Enabling factor 3: Willingness of Government & partners
Narrative/Background Best Practice 6. Availability of trained human resource capacity through programs such as the FETP facilitated prompt detection and investigation of cases		

Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible please include a narrative or background information relevant to the best practice

Please include all challenges, even those that are not prioritized and included on the flipcharts.

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 1: No Multi-hazard response plan at the state level	Sub optimal resource mobilization Delay with response activities	Limiting factor 1: Draft for Yellow fever response plan was not completed due to competing priorities Limiting factor 2: National mapping of the hazards Limiting factor 3: Duplication of the services e.g. partners that were supporting RCCEs and CBS

Narrative/Background Challenge 1. With no finalized national yellow fever preparedness and response plan and no mapping and prioritization of hazards of national importance, it was not possible to have a multi-hazard preparedness and response at the state level		
Challenge 2: No private sector engagement	Closed windows of resource mobilization and amplification of response efforts	Limiting factor 1: Lack of Corporate Social Responsibility (CSR) practices Limiting factor 2: Private partnership in health not explored or developed (public-private partnership) Limiting factor 3: Lack of representation of private sector at State level
No input		
No previous coordination established at state level		
Challenge 3: Inadequate financial and logistic support	Intervention is not timely implemented; this leads to a protracted outbreak	Limiting factor 1: Lack of ready allocated emergency response funds for all partners and government at the state and county levels Limiting factor 2: Disrupted access due to poor road networks, fixed flights schedules which are not daily and communication networks Limiting factor 3: Bureaucracy: during the response most, partners could still follow their procedure of approval which delay the timely re response, other partners need 72hrs for their clearance.
Narrative/Background Challenge 3. Lack of readily available emergency response fund, disrupted access to outbreak locations due to factors such as poor roads and bureaucracy affect timely response to outbreaks		

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 4: Inadequate coordination between line ministries and state taskforces and counties	Delays information sharing and status implementation	Limiting factor 1 Communication breakdown Limiting factor 2: No established One Health approached Limiting factor 3: No established system of communication between state and counties
Challenge 5: Minimum engagement of Yambio municipality during the YF outbreak: - Yambio is the capital of WES	Insufficient enforcement of laws, regulations, and by-laws	Limiting factor 1; Competing priorities Limiting factor 2: No established coordination structure between the health authorities and the city municipality Limiting factor 3: Lack of SOP for coordination with local city municipalities
Challenge 6: Bureaucracy by government, partners, organizations, institutions	Hindering the response	Limiting factor 1 Approval process with different stakeholders Limiting factor 2; Many actors

ACTIVITIES:

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Update the state yellow fever response plan (immediate)	3 weeks 28/6/2024	DG WES MOH & WHO Field Coordinator	National response plan for guidance	Approved yellow fever response plan for the state	Mark either +, ++ or +++	Mark either +, ++ or +++	# dots allocated
			Facilitators				
			Funding		+++	+++	+++
Conduct sensitization of stakeholders on One Health concept (municipal council, line ministry, county authority) (immediate)	Next week 11/6/2024	DG	Logistics support (refreshment)	Number of members sensitized (attended)	Mark either +, ++ or +++	Mark either +, ++ or +++	# dots allocated +++
Conduct joint coordination meeting (Mid-term)	6/8/2024	SMOH DG & WHO	Circulation of Invitation	Meeting minutes and signed attendance sheet	++	++	++
Conduct an (IMS) training (mid-term)	17/8/2024	MOH, DG & WHO Coordinator	Development of concept note for the training	Number of people trained (signed attendance sheet)	+++	+++	+++
			National facilitators/state facilitators	Training report			

			Invitation letters from the state, venue, logistics support				
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ACTIVITIES

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Conduct a mapping all the relevant private sector actors (Long term)	5/7/2024	DG, WHO Coordinator and State surveillance officer	Airtime for communication	Database/list of private sectors	++	++	++
Advocacy with private sector to participate/contribute to outbreak preparedness and response (Long term)	4/10/2024	DG, Chamber of commerce and town mayor	Refreshment, airtime	Report/minutes of the meeting, attendance,	++	++	++
			Develop concept note	Representative of private sectors as part of the taskforce			
Rehabilitate/renovate/refurbish WES EOC (Long term)	22/11/2024	MOH, DG, WHO	Concept note to be develop/funding	Fully equipped and functional EOC	+++	+++	+++
Revise the Logistics TOR to facilitate emergency response in all the disease outbreak	Long term				Mark either +, ++ or +++	Mark either +, ++ or +++	# dots allocated

Surveillance, Laboratory, and Points of Entry

Instructions:

Note down all those things that were in place prior to response to support a health emergency response

PLANS/POLICIES	RESOURCES	OTHER
<ul style="list-style-type: none"> • Presence of standard case definitions • Presence of case investigation forms • Presence of IDSR guidelines • Presence of MOH registers at the health facilities • Presence of laboratory SOPs 	<ul style="list-style-type: none"> • Human resource (the trained CSOs, Clinicians, national/state/county RRTs, HHPs) • Infrastructure; presence of health facilities in the counties • Community vigilance • Presence of transportation means • Presence of sample collection tools e.g., blood collection supplies including triple packaging and vaccine carrier (cool boxes) • Presence of a sample referral network through UNHAS and other commercial flights • Presence of local transportation of samples from collection sites to the State 	<ul style="list-style-type: none"> • Partners support
COORDINATION MECHANISMS	PREPAREDNESS ACTIVITIES	

Instructions:

List all best practices and for each, identify the impact/s and enabling factors that led to its success.

Please include all best practice, even those that are not prioritized and included on the flipcharts.

Where possible please include a narrative or background information relevant to the best practice

Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 1. Use of standard case definitions	Early/timely detection of outbreak	Enabling factor 1: Presence of supporting partners (WVI, WHO, CMMB) Enabling factor 2: Prepositioning of standard case definitions and IDSR guidelines at the county CHDs and the health facilities
Narrative/background Best Practice 1. Utilization of standard case definitions at the health facility and community level facilitated the identification of suspected cases of yellow fever by community health workers and other key informants.		
Best Practice 2: Early detection and reporting of suspected cases	<ul style="list-style-type: none"> • Early sample collection and laboratory confirmation • Early deployment of National RRTs for outbreak investigation and response which strengthened the state and 	Enabling factor 1: Presence of HHPs, BHWs, and community members Enabling factor 2: Presence of IDSR reporting forms at health facilities and county CHD Enabling factor 3: Presence of trained RRTs Enabling factor 4: Good surveillance collaboration between MOH and partners at state and national level for both community and facility base Enabling factor 5: Willingness of the community to accept the RRT during surveillance

	county RRTs in Western Equatoria state <ul style="list-style-type: none"> • Activation of other pillars 	
Narrative/background Best Practice 2. The presence of trained health workers, Health and Hygiene Promoters (HHPs), Boma Health Workers (BHWs), and Community Key Informants (CKIs) played a crucial role in enabling early detection of these suspected cases within the communities. Their specialized training and proactive engagement allowed for prompt identification and reporting of potential yellow fever cases, ensuring timely intervention and control measures could be implemented effectively. This collaborative effort significantly bolstered community-level surveillance and response capabilities against the disease.		
Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 3: Training of community key informants (CKIs, BHWs, and HHPs)	Early detection and reporting	Enabling factor 1: presence of supporting partners Enabling factor 2: motivation of community key informants to report
Narrative/Background Best Practice 3. Training sessions were conducted by World Vision through the Core Group for community health workers to enhance their understanding of disease case definitions, including those for diseases such as yellow fever, AFP, and polio.		
Best Practice 4: Case definitions were translated into local dialects	The community and Community Key Informants (CKIs) gained a clear understanding of the case definitions, enabling them to	Enabling factor 1: Presence of trained health workers who were able to translate the case definition to local language Enabling factor 2: Support from National MOH in collaboration with UNICEF and WHO (printing, transportation, and dissemination of the case definitions from national level to the state and county levels)

	promptly detect and report cases	
Narrative/Background Best Practice 4. Translating the case definition into the local languages played a significant role, as it enabled communities to understand the definition of yellow fever in their own language. This understanding facilitated early detection and reporting of cases within the community.		
Best Practice 5: Collection of samples and transportation to the NPHL using the standard operating procedures	Early laboratory confirmation and response to outbreak	Enabling factor 1: Presence of trained RRT on outbreak investigation, respond and sample collection, packing and transportation Enabling factor 2: Presence of a sample transportation network at the county/state level Enabling factor 3: Accessibility of the area (geographical access) by the RRT to investigate the case and collect the samples
Narrative/Background Best Practice 5. Collection, packaging, and prompt transportation of samples as per the approved and current SOPs ensured that samples were in good condition on arrival to the NPHL/testing facilities for early lab confirmation of suspected cases		
Best practice 6: In-Country testing within 72 hours	Early confirmation and rapid and timely deployment of response	Enabling factor 1: Presence of in-country testing capacity at the National Public Health Laboratory (NPHL) Enabling factor 2: Support from partners more especially in shipment of samples, provision of the reagents for testing and supporting the laboratory staff with incentives
Narrative/Background Best Practice 6. South Sudan has the capacity to conduct yellow fever testing and confirmation at the National Public Health Laboratory. The laboratory possesses trained staff and necessary reagents, although it faces challenges due to limited funding to support comprehensive lab operations related to yellow fever		
Best practice 7: Deployment of EAC Mobile La to Yambio	Reduced turn-around time (TAT) Reduction of testing samples in NPHL Reduced burden of sample transportation, and delay of results as short turnaround time achieved	Enabling factor 1: Presence of EAC Mobile Lab in the Country Enabling factor 2: Partners support from EAC during deployment in terms of incentives and Equipped Mobile lab Enabling factor 3: Presence of trained laboratory technologists that were able to operate the Mobile Lab during development to western Equatoria
Narrative/Background Best Practice 7		

Best practice 7: Active case search	Early detection and reporting of cases Containment of the outbreak through reducing transmission	Presence of trained HHPs, CHWs, RRT and CSO that support in community base surveillance and active case search
Narrative/Background Best Practice 8		

Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible please include a narrative or background information relevant to the best practice

Please include all challenges, even those that are not prioritized and included on the flipcharts.

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 1: Means of transport for RRT and CSOs	<ul style="list-style-type: none"> • Delayed verification of alerts and sample collection • Delay of sending samples from the County to the State 	Limiting factor 1: Inadequate number of motorbikes (and bicycles) for CSOs and Field Supervisors (FS) Limiting factor 2: Lack of motivation and incentives for personnel transporting samples to the state level Limiting factor 3: Poor road networks especially after rains
Narrative/Background Challenge 1. Inadequate transportation means including road infrastructure meant that some alerts couldn't be verified, investigated, and confirmed within the 7-1-7 timeline		

Challenge 2: Delayed laboratory results issuance and dissemination with the state, county, and community	Mistrust from the community and resistance for further sample collection	Limiting factor 1: Poor communication and coordination between the national and state/county levels Limiting factor 2: Lack of access to ELIMS for easy accessibility of results by state and county counterparts
Narrative/Background Challenge 2		
Challenge 3: Reported insecurity in some counties	Failure to conduct investigation of alerts	Limiting factor 1: Presence of communal conflicts in some areas, for example Tambura, Ezo and Yambio
Narrative/Background Challenge 3.		

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 4: Inadequate number of trained and skilled human resources	Missed opportunities in surveillance (case detection)	Limiting factor 1: Lack of support and motivation in terms of staff/HR incentives Limiting factor 2: High staff turnover

Challenge 5: Delay in transportation of samples to NPHL	High sample testing and results turnaround time	Limiting factor 1: Presence of UNHAS flight thrice a week between Juba and Yambio which limited shipment of samples to only three years Limiting factor 2: Poor network coverage in some parts of the state
Challenge 6: Inadequate funding at State and County level for surveillance, laboratory, and PoE operations	Delay in launching adequate response to outbreaks	Limiting factor 1: Inadequate resource mobilization at the state level Limiting factor 2: Donor fatigue due to multiple outbreaks and competing priorities
Challenge 7: Negative community perception on yellow fever (negative perception that yellow fever can be treated locally at home).	Late case detection and reporting	Limiting factor 1: Inadequate community awareness on yellow fever disease which delayed reporting of cases and their referral to health facilities for medical management
Challenge 8: Failure of the clinicians to detect and report cases	Delayed outbreak investigation and response	Limiting factor 1: Inadequate use of case definition at health facilities at state and county level Limiting factor 2: Clinicians were not trained on Integrated Disease Surveillance and Response Third edition. Those who received training were presented with additional opportunities and subsequently left their positions at facilities for other organizations offering better prospects, contributing to a high staff attrition rate.
Challenge 9: Inadequate/incomplete filling of case investigation forms, and line lists	Poor data quality which affects analysis and hence affecting decision making	Limiting factor 1: Knowledge gap on how to fill the case investigation form Limiting factor 2: Ignorance on the use and epidemiological and operational benefits of CIFs and line lists

ACTIVITIES

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Procure 6 motorcycles for 5 counties and the state surveillance officers to facilitate transportation during outbreak investigation and sample shipment to the county level	September 2024	MOH and partners	Funding for procurement of motorbikes	Number of motorbikes procured and distributed	+++	+++	7
Train state and county lab and surveillance focal persons on ELIMS	August 2024	MOH and WHO	Funding for training	Number of the people trained	+++	+	3
			Computers and internet connectivity	Number of internet bundles provided			
			Facilitators	Number of the facilitators who conducted the training			
Incentivize 7 RRT members in each of the counties of WES	July 2024	MOH and WHO	Funding	Number of the RRT recruited			6
			Refresher training	Number of the RRT trained			

ACTIVITIES

ACTIVITY	DATE OF DESIRE D ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Engage commercial flights as an alternative to transport samples to NPHL	June 2024	MOH and partners	Leadership support	MOU	+++	++	5
Advocate for emergency funds for surveillance, laboratory, and point of entry to be available at country office	June 2024	MOH and WHO	Decentralization of emergency funds to the states		+++	+	4
Preposition case definitions in the health facilities	June 2024	SMOH, MOH, WHO	Means of transportation Logistics plan including a distribution list Printing of the case definitions		++	+++	1
Establish cross border meetings with DRC, and CAR. In additional, re-established POEs	July	MOH, SMOH, MOH	Funding	Number of POEs established	+++	+++	4
			Leadership coordination	Number of cross border meetings conducted			

Case Management

Instructions:

Note down all those things that were in place prior to response to support a health emergency response

PLANS/POLICIES	RESOURCES	OTHER
<ul style="list-style-type: none"> No existing plans and policies for yellow fever case management, infection prevention and control, WASH, and vector control prior to the emergency 	<ul style="list-style-type: none"> No existing resources (funds, human resources, isolation facilities, emergency kits) set aside for emergency response. 	<ul style="list-style-type: none"> Existing health facilities providing services with some supplies and staff.
COORDINATION MECHANISMS	PREPAREDNESS ACTIVITIES	
<ul style="list-style-type: none"> Coordination was in place at the state level supported by the national level, WHO and IPs. A team from PHEOC visited to support the state level coordination team. SMOH, CHDs, and partners coordinated effectively during the response. 	<ul style="list-style-type: none"> No preparedness plan/activities existed. 	

Instructions:

List all best practices and for each, identify the impact/s and enabling factors that led to its success.

Please include all best practice, even those that are not prioritized and included on the flipcharts.

Where possible please include a narrative or background information relevant to the best practice

Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
<p>Best Practice 1.</p> <ul style="list-style-type: none"> The community structure that included BHI, home health promoters, community leaders, religious leaders, and additional health workers and community mobilisers were used to improve the surveillance and early detection and referral of cases of treatment 	<ul style="list-style-type: none"> Boosted the surveillance system, case detection at community level and referral for early treatment and management. Strengthened referral system. 	<ul style="list-style-type: none"> Existing community health system Linkage to the health facilities. Community leaders were supportive. Presence IPs
Narrative/background Best Practice 1.		
Narrative/background Best Practice 2.		
Best practices		

BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
<p>Best Practice 3:</p> <ul style="list-style-type: none"> Partners lobbied for additional resources to support the state and national ministry of health efforts. 	<ul style="list-style-type: none"> Training of staff on case management, risk communication and community engagement, IPC, surveillance etc. Establishment of case management/isolation sites. Recruitment of additional staff. Procurement of additional supplies e.g. equipment, IPC supplies etc. 	<p>Enabling factor 1: Supportive country offices. Enabling factor 2: Evidence based information e.g. confirmed yellow fever case and confirmation of the outbreak. Enabling factor 3: Emergency preparedness and response plan by organizations.</p>
Narrative/Background Best Practice 3.		
<p>Best Practice 4</p> <ul style="list-style-type: none"> Using existing resources to support the emergency e.g. staff, existing facilities, ambulances, IPC supplies etc. 	<ul style="list-style-type: none"> Timely response to outbreaks. Case containment. Cost effectiveness. 	<p>Enabling factor 1: Existing health partners. Enabling factor 2: Availability of pipeline supplies.</p>
Narrative/Background Best Practice 4. Case management facilities were established in Sakure PHCC, Yambio PHCC and Gangura PHCC, and Nzara PHCC. Case management was supported by MSF in Sakure, Gangura PHCC, and Yambio PHCC, and by CMMB in Nzara PHCC.		
<p>Best practice 6</p> <ul style="list-style-type: none"> Deployment of entomologists to the state and on site to conduct fieeld 	<ul style="list-style-type: none"> Presence of the vector that transmits yellow fever virus was confirmed. 	<p>Enabling factor 1:</p> <ul style="list-style-type: none"> Mosquito nets distributed at health facilities Support and willingness from IPs.

assessment of vector breeding grounds		
<ul style="list-style-type: none"> • Training done on IPC (Provision of IPC/WASH items) 	<ul style="list-style-type: none"> • Reduction of risk among health workers and patients 	<ul style="list-style-type: none"> • Availability of IPC/WASH IPs • Government support
<ul style="list-style-type: none"> • Availability of trained health workers and entomologists 	<ul style="list-style-type: none"> • Identification of vector breeding sites. 	<ul style="list-style-type: none"> • Support from MOH and SMOH • Mosquito nets distributed at health facilities
<ul style="list-style-type: none"> • Presence of SOPs for IPC/WASH 	<ul style="list-style-type: none"> • Adherence to IPC/WASH protocol standards. • Improved IPC measures at the health facilities. 	<ul style="list-style-type: none"> • Training conducted to health workers and community health structures.

Narrative/Background Best Practice 6

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
<p>Challenge 1:</p> <ul style="list-style-type: none"> • Lack of existing policies (for YF) and preparedness plans. • The case management protocol (guideline) came in late. 	<ul style="list-style-type: none"> • Delay in responding to emergency • Inadequate provision of case management to admitted cases • 	<p>Limiting factor 1: Limited resources. Limiting factor 2: Limited capacity for case management</p>

Narrative/Background Challenge 1.		
Challenge 2: Inadequate resources	<ul style="list-style-type: none"> • Compromised quality of the intervention. • Difficulty to contain the outbreak. • Increased magnitude of the disaster. 	<p>Limiting factor 1: The country is largely donor dependent.</p> <p>Limiting factor 2: Weak education system and few training schools/universities.</p> <p>Limiting factor 3: Inadequate allocation of resources at the national level.</p>
Narrative/Background Challenge 2		
Challenge 3: Knowledge gap of the staff in the health facilities and community.	<ul style="list-style-type: none"> • Poor quality of services, delays in detection etc. 	<p>Limiting factor 1: Weak education system/few training schools and institutions.</p> <p>Limiting factor 2: Inadequate allocation of budget.</p> <p>Limiting factor 3: Inadequate guidelines in the health facilities.</p>
Narrative/Background Challenge 3.		
Challenge 4: Traditional beliefs. The local population believe yellow fever cannot be treated in health facilities.	<ul style="list-style-type: none"> • Poor demand for services. • Mismanagement of cases leading 	<p>Limiting Factor 1: Traditional beliefs are deep rooted and not easy to eliminate.</p> <p>Limiting Factor 2: Illiteracy levels are still high.</p>

	<p>to increased fatality.</p> <ul style="list-style-type: none"> • Hindered surveillance and reporting. • Increase in the number of cases due to increased spread. 	
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Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible for

Despite being identified as challenges, list positive aspects that were identified during discussion

Please include all best practice, even those that are not prioritized and included on the flipcharts.

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
<p>Challenge 1: Lack of vector control measures in place.</p>	<ul style="list-style-type: none"> • Increased population of the vectors and spread of the disease. 	<p>Limiting factor 1: Limited vector control methods/techniques. Limiting factor 2: Inadequate funds. Limiting factor 3: Knowledge gap.</p>
<p>Challenge 2:</p>	<ul style="list-style-type: none"> • Increased disease spread leading to increased fatality. 	<p>Limiting factor 1: Funds. Limiting factor 2: Prioritization Limiting factor 3</p>

Inadequate funds to support WASH activities		
Challenge 3: Inadequate IPC supplies in the health facilities	<ul style="list-style-type: none"> Increased disease spread. 	Limiting factor 1: Funds Limiting factor 2 Limiting factor 3

ACTIVITIES

ACTIVITY	DATE OF DESIRE D ACHIE VEMENT	RESPONSIB LE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPAC T	DIFFIC ULTY	PRIORI TY
1. Conduct disaster/outbreak risk assessment	September 2024	MOH, WHO & SMOH including partners.	1. Logistics	Assessment reports.	Mark either +, ++ or +++	Mark either +, ++ or +++	# dots allocated
			2. Training	Training reports			
			3. SOP/guidelines/funds.	Availability of SOP/Guidelines/funds.	++	++	
2. Develop enabling policies, guidelines, and response plans.	July 2024	MOH, WHO & SMOH	1. Financial support.	Availability of policies, guidelines, and response plans.	+++	++	+++

			2. TA (technical assistance)	Guidelines and policies are developed			
3. Train staff on disaster preparedness and response.	July 2024	WHO/SMOH/ Partners	Training guidelines	Availability of training guidelines.	+++	+	+++
			Funds	Training reports			
			Trainers				
4. Establish a well-structured task force at state and county levels.	July 2024	SMOH and CHD	Refreshment	Task force is established			
			Stationery				
5. Solicit funds for emergency preparedness and response.	Immediate	MOH and IPs	TA	Availability of funds			

ACTIVITIES

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
6. Strengthen referral system/pathway.	Immediate	CHD and IPs	Logistics	Referral map/pathway established	+++	++	+++
				Availability of ambulance			
7. Establish permanent isolation/case management centres at state and county levels	December 2025	MOH and IPs	Funds	Isolation centres are established	Mark either +, ++ or +++ +++	Mark either +, ++ or +++ ++	# dots allocated +++
8. Strengthen IPC/WASH at community and health facility levels	December 2024	CHD and IPs	Funds	IPC/WASH facilities are established at community and health facility levels	+++	+	+++
9. Strengthen community sensitization and mobilization	Immediate	CHD and IPs	Logistic	Logistics are provided	+++	++	+++
			Capacity building	# of personnel capacitated			
			Support supervision	# of support supervision provided			

Risk Communication and Community Engagement- RCCE

Instructions:

Note down all those things that were in place prior to response to support a health emergency response

PLANS/POLICIES	RESOURCES	OTHER
<ul style="list-style-type: none"> • Communication plan: <ul style="list-style-type: none"> ▪ Orientation on the preventive measures to community mobilizers/ influencers ▪ Existing plan of translating IEC materials to local language (English to Zande) ▪ Reviewing, correcting, and giving necessary recommendations on radio jingles especially in local languages ▪ Plan for annually long-lasting insecticide mosquito net distribution ▪ RCCE structure existed at state level 	<ul style="list-style-type: none"> ▪ State SBC staff/team ▪ County SBC staff/team ▪ Community mobilizers (BHWs, ICMN, HHP, SSRC volunteers) that exist in the community ▪ IPs supporting SBC activities (SSRC, CGPP, TRI-SS,) ▪ Functional Megaphones in the counties / communities ▪ IPs supporting SBC activities ▪ Local radio stations (FMs) 	<ul style="list-style-type: none"> ▪ At least all staff might have used their personal phones and airtime for coordination activities.

Instructions:

List all best practices and for each, identify the impact/s and enabling factors that led to its success.

Please include all best practice, even those that are not prioritized and included on the flipcharts.

Where possible please include a narrative or background information relevant to the best practice

Best practices RCCE		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 1: Established Yellow Fever RCCE Coordination Pillar	<ul style="list-style-type: none"> ▪ RCCE team reached the communities with right information at the right time ▪ Improve proper coordination to foster teamwork in respond to YF outbreak ▪ It contributes for easy state communication plan development ▪ Cost effectiveness 	I: Able leadership from the State and county to the grass root level II: Diverse and technical expertise III: Availability of resources
Narrative/background Best Practice 1.		
Best Practice 2: Harmonization of the existing community mobilization structures at CHDs	<ul style="list-style-type: none"> ▪ Wide range mobilization coverage ▪ Dissemination of unified key messages ▪ Cost effective 	I: Able CHD administration in running coordination activities II: Willingness of the partners III: Availability of resources
Narrative/background Best Practice 2.		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 3:	<ul style="list-style-type: none"> ▪ Timely / easy communication ▪ Platform for updates 	I: Availability of mobile networks II: Availability of smart phones

Establishment of the YF RCCE platform (WHATSAP group) for coordination and giving updates	<ul style="list-style-type: none"> ▪ Improve coordination 	III: Staff technical knowledge
Narrative/Background Best Practice 3.		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 4 Media engagement (radio jingles and talk shows) on the state local radios)	<ul style="list-style-type: none"> ▪ Address communities' concerns ▪ Increased community reach ▪ It changes wrong community perception towards the vaccine uptake ▪ It debunked wrong information in the communities 	I: Availability of Radio stations II: Availability of radios in the communities III: Active contract with the media houses
Narrative/Background Best Practice 4.		
Best Practice 5 State and county launching	<ul style="list-style-type: none"> ▪ Increased acceptance by the community ▪ It increased the knowledge of the stakeholders on YF ▪ Ownership and leadership 	I: Resources II: Planned II: Political will
Narrative/Background Best Practice 5		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)

Best practice 6 Strong community engagement meeting / county advocacy meeting	<ul style="list-style-type: none"> ▪ To reduce hesitance during the vaccination uptake ▪ To debunk wrong information circulating in the community ▪ To increase community acceptance ▪ It improves the coverage of the campaign 	I: Resources II: Community existing structure III: Plan in place
Narrative/Background Best Practice 6		

Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible please include a narrative or background information relevant to the best practice

Please include all challenges, even those that are not prioritized and included on the flipcharts.

Challenges RCCE		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 1: Lack of county focal person for social mobilization in some counties	<ul style="list-style-type: none"> • Poor social mobilization planning and coordination • Weak mobilization • Low awareness coverage 	I. The county mobilization coordinators are not in the CHD structure II. Limited resources III. Not being prioritized mostly by the CHD administration, only when there is a campaign
Narrative/Background Challenge 1.		
Challenge 2:	<ul style="list-style-type: none"> • Low awareness • Poor turn up for vaccination 	I. No network coverage in some areas II. Unavailability of radios in some households

Limited media coverage to reach the entire population	<ul style="list-style-type: none"> Poor access to information 	III. Some communities are mostly found listening to music than for health programs
Narrative/Background Challenge 2		
Challenge 3: Changes on the YF key messages	<ul style="list-style-type: none"> Poor uptake of the vaccine by the pregnant women Resources wasted on printing key messages Duplication in reconducting radio jingles, awareness 	I. YF was not the usual common virus in the country

Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible for

Despite being identified as challenges, list positive aspects that were identified during discussion

Please include all best practice, even those that are not prioritized and included on the flipcharts.

Challenges RCCE		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)
Challenge 4. Untimely funding of social mobilization activities	<ul style="list-style-type: none"> It delays the social mobilization activities It contributes to poor quality social mobilization 	I. Late receipt of SBC funding

	<ul style="list-style-type: none"> Community leaders do not have adequate time to mobilize their people 	
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ACTIVITIES RCCE

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Establish the county mobilization structure in the 9 counties, excluding Maridi	30 th Dec 2024	CHD/SMOH	Budget	Effective social mobilization	+++	++	4
			Training	Improved health services to the communities			
			Means of transport	Bridging proper coordination			
Conduct community engagement on creating awareness on the YF key messages	July 2024	SMOH/ CHD department	Transport refund	Wide range of information coverage in the community	+++	++	3
			Logistics for moderators	To reach the unreached communities			

			Refreshment (water, soda, food,)	Reduction of community hesitant and the spread of rumours			
Conduct community mobilization training	August 2024	SMOH/CHD/Partners	Financial support, human resources, venue, and stationery	Increase demand generation knowledge	+++	++	2
			Human resources	Improve health service			
			Venue and stationery				

ACTIVITIES

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
Integrate of all community mobilization networks (Harmonize)	July 2024	NMOH /SMOH/Partners	Finance	Mass awareness at all levels	++++	+++	1
			Human resource	Facilitate coordination			
			Logistics	Uniform information / messages			

Provide more megaphones in the community	August 2024	NMOH/Partners	Financial	Wider coverage by CM in short time	+++	++	5
			Logistics	CMs will be motivated do their work			
			Coordination				

Vaccination Team

Best practices		
BEST PRACTICES	IMPACT/S	ENABLING FACTORS (What were the enabling factors which led to this good practice)
Best Practice 1: Regular coordinating meetings with county-level stakeholders were conducted.	Promising engagement of all stakeholders during the implementation of the campaign	Enabling factor 1: Functional EPI-TWG Enabling factor 2: Timely message delivery all stakeholders
Best Practice 2: Regular daily evening monitoring meetings were conducted.	Mitigated the observed gaps of the day and served as a learning platform.	Enabling factor 1: Involvement of the DG, CHD... Enabling factor 2: Participation of the WHO, Implementing partners in the counties

Best practice 3: Cold chains were monitored daily.	A good-potency vaccine with an acceptable VVM stage and temperature were observed.	Enabling factor 1: Assigned, dedicating personnel to oversee the cold chain Enabling factor 2: availability of cold chain monitoring tools (fridge tags, temperature monitoring tools) Enabling factor 3: Availability fuel/backup solar.
Narrative/background Best Practice 1.		
Best practice 4: A state-level of YF campaign launch was held.	Enables all principled stakeholders to put collective action into the implementation of the campaign.	Enabling factor 1: Availability of funding Enabling factor 2: Political commitment from all levels (national, state, and county levels)
Narrative/Background Best Practice 3.		
Best Practice 5: Good practices were observed in AEFI surveillance and early referral to manage cases.	Prompt and appropriate management of observed AEFI cases.	Enabling factor 1: Availability of AEFI Kits Enabling factor 2: Trained AEFI focal point Enabling factor 3: Availability of AEFI data tools including AEFI line listing Enabling factor 4: Availability of standby vehicles for transportation cases for immediate management
Narrative/Background Best Practice 5		

Instructions:

List all challenges and for each, identify the impact/s and limiting factors that led to that challenge

Where possible please include a narrative or background information relevant to the best practice

Please include all challenges, even those that are not prioritized and included on the flipcharts.

Challenges		
CHALLENGES	IMPACT	LIMITING FACTORS (What were the limiting factors which led to this challenging)

<p>Challenge 1: In the campaigns, it was observed that the number of vaccination teams (VTs) and days of vaccination were insufficient, along with a shortage of qualified vaccinators for the campaign.</p>	<p>Low vaccination coverage in some of the hard-to-reach settlements.</p>	<p>Limiting factor 1: The scatteredness of the settlements and villages Limiting factor 2: Inadequate number of VTs assigned for the campaigns. Limiting factor 3: Limited consideration of the special population in the micro plan</p>
<p>Challenge 2: Frequent amendments and changes to the micro plan resulted in a reduced number of vaccination teams compared to the initial county-level micro plan.</p>	<p>Low vaccination coverage in some of the hard-to-reach settlements resulted from the fact that the YF vaccination campaigns were covering nearly 96% of the total population and from the nature of injectable vaccination.</p>	<p>Limiting factor 1: Issues related with the population estimate Limiting factor 2: Inconsistent daily targets</p>
<p>Narrative/Background Challenge 1.</p>		
<p>Challenge 3: Some of the hired vehicles were not good enough to support the field activities.</p>	<p>It affected the supervisory movement plan in the counties.</p>	<p>Limiting factor 1: Poor Road conditions Limiting factor 2: The scatteredness of the settlements and villages</p>
<p>Narrative/Background Challenge 2</p>		
<p>Challenge 4: A vaccine shortage was experienced in some of the counties (Tambura).</p>	<p>It affected the vaccination coverage in some settlements.</p>	<p>Limiting factor 1: Frequent changes of the plan and targets Limiting factor 2: issue related to the population estimates of the county, and state in general Limiting factor 3: Maldistribution of vaccines to payam</p>
<p>Challenge 5: Limited operational cold chain capacity in some of the counties, including Nzara, Ezo, and Ibba.</p>	<p>It affects the smooth operation of the vaccination campaign.</p>	<p>Limiting factor 1: infrastructure challenges Limiting factor 2: Back-up power limitation Limiting factor 3: Lack of ice-liner and deep freezer There was no early inventory conducted on CCE and SME (vaccine carriers and megaphones), this resulted to insufficiency</p>

<p>Challenge 6: Limited vaccination activities in the cross-border areas at the point of entry (POE).</p>	<p>Frequent travellers in and out would result in an ongoing transmission of cases from unvaccinated travellers.</p>	<p>Limiting factor 1: There is no established network for communication with cross-border areas. Limiting factor 2: Funding issues to conduct a cross-border meeting</p>
<p>Challenge 7: Low incentive for vaccination teams</p>	<p>High dropout of vaccinators, and it also affected the commitment of the VTs, which can result in low coverage.</p> <ul style="list-style-type: none"> - This was evidenced by significant number of dropped of vaccinators before the kick-off of the campaigns, Nzara (25), Tambura (10), Ezo (15). Ibba (9), Yambio (15). 	<p>Limiting factor 1: The high inflation of commodities in the markets. Limiting factor 2: Delayed payments to the vaccination team</p>
<p>Challenge 8: There were inconsistencies and confusion on the YF data tool about whether to use doses or vials.</p>	<p>Affected the data quality and daily data flow.</p>	<p>Limiting factor 1: Communication gaps. Limiting factor 2: Tools, including the daily tally sheets, summary sheets, and ODK, do not specify whether to use doses or vials.</p>
<p>Challenge 8: Delay in the daily data flow from the Payam to the county, then to the state.</p>	<p>It affected the decision-making process by identifying the uncovered areas, the vaccine inventories, and taking timely decisions.</p>	<p>Limiting factor 1: The scatteredness of the settlements /villages and hard-to-reach areas. Limiting factor 2: Limited network for timely communication and sharing of reports. Limiting factor 3: Poor Road conditions.</p>
<p>Challenge 9: There were observed AEFI among pregnant women.</p>	<p>This resulted in few serious cases among pregnant women.</p>	<p>Limiting factor 1: Communication gaps concerning whom to vaccinate and whom not to vaccinate.</p>

<p>Challenge 10: Double vaccination was experienced in the school-bases vaccination.</p>	<p>This resulted unnecessary double vaccination of children at home, and school</p>	<p>Limiting factor 1: Missed identifier of vaccination status at the schooling</p>
<p>Challenge 11: The TOT to state team/facilitators were not provided</p>	<p>Knowledge gaps that can attribute to the quality of training</p>	<p>Limiting factor 1: Limiting factor 2:</p>

ACTIVITIES

ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	IMPACT	DIFFICULTY	PRIORITY
1. Strengthen cross-border activities in terms of surveillance and vaccination.	Starting from mid of July 2024	All level	Budget	# Activities implemented at cross-borders (POE)	++	+++	4
			Communication support				
2. Conduct regular supervisory visits to all counties and vaccination teams and focusing on providing one-on-one support to mitigate non-conformities.	Starting from mid of June ,2024 (In every campaign)	All team (National-states-county -TS....)	Standard supervisor checklist	# Teams conducted supervision	+++	+	1
			Capacity building of supervisors				
3. Strengthen and ensure daily monitoring of the data flow along with the vaccine inventory.	Starting from mid of June ,2024 (In every campaign)	M & E	Training on data management and triangulation to M & E	# Counties reported on daily basis.	+++	+	1

4. Estimate operational daily targets s in all counties, and consideration should be given to accommodate special populations, including those in hard-to-reach areas.	Starting from mid of June ,2024 (In every campaign)	All the team	Flexibility in accommodating the specific situation in terms of resources (budgets).	# Counties with revised operational targets.	+++	++	3
5. Review the components of the micro plan and operationalize it to accommodate all relevant areas.	Starting from mid of June ,2024 (In every campaign)	NMoH, SMoH, WHO, UNICEF, IPs	Training (capacity building) and development of an operational microplan	# Trained	+++	+	3
				# Of counties with operationalized micro-plan			
6. Revise the incentive allocated for the vaccination team.	ASAP	NMoH, SMoH, WHO	Flexibility	Revised made	++	++	5
			Consideration of the inflations				
7. Expand the cold chain in the state and counties should be considered to maximize the storage capacities that can accommodate the storage of vaccines during campaigns.	ASAP	NMoH, SMoH, UNICEF	Budget	# Counties with good cold chain capacity	+++	+++	6
			Equipment				
8. Institutionalize YF vaccine into routine immunization (in WES).	ASAP	NMoH, SMoH, WHO, UNICEF, IPs	Budget	# Counties institutionalize YF in the RI	+++	+++	7
			Training				

Key recommendation

The key recommendations from the YF IAR included,

1. Development of multi hazard contingency plan to improve coordination of outbreaks.
2. The renovation of the EOC in WES with training of state and county leaders on incident management
3. Strengthen surveillance and laboratory systems, the IAR recommended training of critical staff (CSO, Health Facility Surveillance focal persons, laboratory focal persons and BHWs) on various topics including active case search, ELIMS among others.
4. The balances of over 150000 doses of yellow fever vaccines to be used to vaccinate Payams in counties with low coverage and as well cover other counties with suspected outbreaks (Mvolo and Maridi),.
5. Improve the development of vaccination micro plan through active involvement of respective counties
6. Pay USD equivalent of 5 dollars as incentives for vaccination teams to ensure that the South Sudan currency devaluations are catered for in YF vaccinations and all future SIAs.
7. Conduct TOT trainings at the state and county level during reactive campaigns.
8. Conduct comprehensive cold-chain assessment in WES and develop a cold chain improvement plan. Emphasis should be placed on getting the newly constructed cold-room at Nzara operational.
9. Recruit RCCE for persons for the remaining 9 counties except Maridi.
10. Integrate community mobilisers and other community structures into BHI.
11. Health facilities should identify isolation areas for the admission of outbreaks.
12. Conduct entomological studies to determine if there are Savannah and sylvatic cycles of YF transmission in the State.
13. Include YF vaccine into routine vaccination in WES and other high-risk counties in South Sudan.

7. Next steps

The Yellow response has been ongoing for over 166 days with various key countermeasures implemented across the affected counties. This has resulted in a significant drop in the number of reported suspected YF cases. In addition, no confirmed case has been confirmed by the NPHL for over 6 months, there is need to gather evidence that will support closure of the outbreak. The review team agreed that for this to happen, surveillance should be enhanced in all affected counties to capture all suspected YF cases and collect samples for two incubation cycles. All samples collected should be sent to NPHL for testing to confirm lack of ongoing transmission. In addition, a framework to monitor the implementation of recommendations and activities in the review should be developed.

8. Conclusions

The review was very critical in identifying key best practices which are critical in yellow fever outbreak response. Particularly more poignant was the speed at which the index case was identified and confirmed which facilitated early declaration of the outbreak and implementation of medical countermeasures. The collaboration between the NMOH/SMOH and the implementing partners bridged the gap in resource mobilization that was critical for the response. However, the response also faced challenges in critical pillars including the implementation of reactive vaccination campaign, case management, surveillance and efforts have been prescribed by this review to improve this outbreak and future outbreaks.

The review team would like to thank all stakeholders who actively supported the NMOH and SMOH from the start of the outbreak to the level attained currently. The findings of this IAR once implemented will improve preparedness, timely response, and adaptability in managing infectious disease outbreaks. In addition to that systems for continuous monitoring, regular training exercises, updating response plans and fostering culture of continuous improvement.

9. Annexes

Annex 1: List of participants and AAR team

Annex 2: Trigger questions for functional area



Trigger question
database extended



IAR AAR
PRESENTATION for \ fever



Agenda_Yellow



Updated List of YF
review meeting part