





OUTBREAK TOOLKIT CONSULTATION MEETING IN THE WHO AFRICAN REGION

29 January – 2 February 2018 Dakar, Senegal





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ABBREVIATIONS

AFRO - WHO Regional Office for Africa

CCHF - Crimean-Congo haemorrhagic fever

CDC - Center for Disease Control

DRC - Democratic Repubilc of Congo

EWARS – Early Warning, Alert and Response System

GIS – geographic information system

HQ - WHO Head Quarter

IDSR – Integrated Disease Surveillance and Response

IHR – International Health Regulations

IPD - Institut Pasteur de Dakar

IRD - Institut de recherche pour le développement

MOH – Ministry of Health

NCDC – Nigeria Center for Disease Control

OIE – World Organization for Animal Health

PHE - Public health events

RVF – Rift Valley fever

URT – United Republic of Tanzania

WASH - Water, sanitation and hygiene

WCO - WHO Country Office

WHE – WHO Health Emergencies Programme

WHO – World Health Organization

YF - Yellow Fever



The WHO Outbreak Toolkit Consultation Meeting was organized by the WHO Regional Office for Africa (AFRO), and took place between 29 January to 2 February 2018 in Dakar, Senegal. The objective of the meeting was to provide participants with an overview of the process that led to the development of the toolkit; review and define the inputs, processes and outputs required for developing other disease outbreaks toolkits (Lassa Fever, Yellow Fever, Dengue fever and others) and get participants acquainted with the outbreak documentation checklists.

The meeting was attended by 47 participants, including representatives from Ministries of Health and WHO country offices from the African region as well as key partners in public health emergencies as well as facilitators and organizers from the WHO AFRO and WHO Headquarters.

The meeting was opened by Dr Deo Nshimirmana, WHO representative of Senegal. The methods of work included presentations, group work, plenary sessions with a focus on experience with outbreaks at country levels, and hands-on practice to consolidate knowledge and skills on the use of the tools.

Over the course of five days, participants were introduced to the outbreak toolkit, participated in practical sessions to use the tool for data entry, analysis and inter-

pretation, providing feedback to finalize the tools. Participants aided in developing tools for other key priority diseases (Lassa fever, Rift Valley fever, dengue fever, and yellow fever) by discussing minimum key variables, reviewing and defining the inputs, processes and outputs required in outbreak investigation. Participants discussed how to investigate outbreaks of unknown aetiology. Other already available tools that are used in the field during an outbreak response were presented. Participants discussed their documentation practice, were introduced to the WHO AFRO outbreak documentation checklist, and discussed solutions for document management systems.

It was highlighted that countries in the region are facing a growing number of emergencies, while lacking resources, capacity and training. Countries are dealing with many competing priorities including combat of outbreaks, analysis of the epidemiological data available and producing the reports and documents required. There are many initiatives and tools that are being used among the countries to manage data and information during outbreaks; however, existing tools and systems are often not practical to use and not harmonized.

Major meeting action points or recommendations were as follows:



- The team from WHO AFRO will review all feedback and recommendations made in the meeting and address the technical issues identified by participants for the data entry and analysis using the cholera tool.
- WHO AFRO will aid with piloting and training of the cholera tool in selected countries
- WHO AFRO will continue with development of tools for Lassa fever and other priority diseases considering all feedback from participants, discussions held about minimum key variables, definitions and existing guidelines.
- Ministries of Health and WHO Country Offices will review document management processes in the countries and use the Outbreak Documentation Checklist

- WHO AFRO will continue providing guidance on epidemiological analysis for situation reports and support countries in weekly Integrated Disease Surveillance and Response (IDSR) reporting
- WHO AFRO to procure and provide training in Early Warning, Alert and Response System (EWARS) in a box for future deployment in the region
- The AFRO Weekly Bulletin on Outbreaks and Other Emergencies will be disseminated to all IHR NFPs
- WHO AFRO and HQ will continue supporting countries by identifying gaps and organizing IDSR, geographical information system (GIS) and other epidemiological training required at the country level.





The mission of the World Health Organization's Health Emergencies programme (WHE) is to work with countries and partners to coordinate international action, to prepare for, prevent, detect, rapidly respond to and recover from all hazards that create health emergencies, including disasters, disease outbreaks and conflicts as part of the International Health Regulations 2005 (IHR) in order to protect health and save lives.

Reliable and timely health data, including surveillance data, is an indispensable pillar for strengthening public health capacity to detect and respond to emergencies, monitor the response and assess its impact. Public health decision-making in emergencies requires authoritative information. Accurate, reliable and timely information is vital to inform effective decision-making in the entire cycle of managing public health emergencies. Although progress has been made in the area of information technology with the increasing use of mobile devices to collect and transmit data, recent outbreaks have demonstrated that timely and regular sharing of information has remained a challenge in many health emergency responses and the urgent need for better systems for early detection,

enhanced data collection, improved quality of data, timely data sharing and analysis, and better interoperability with routine systems.

Effective response to acute public health events (PHE) requires following a systematic approach including proper documentation of response activities to support decision making. To assist those in the field in the collection, reporting, analysis and interpretation of data during outbreaks a suite of outbreak applications has been developed together with a standardized checklist of required outbreak documentation. This will ensure the required high standards of surveillance, investigation and response documentation during outbreaks and emergencies.

In order to accelerate the development of the outbreak toolkit including specific disease tools and the member state adoption of the proposed outbreak documentation a consultation meeting was undertaken with countries in the WHO African region. The meeting took place between 29 January – 2 February 2018 in Dakar, Senegal.



3.1. GENERAL OBJECTIVES

To improve the quality and timeliness of data and information collected, reported, analysed and interpreted during public health events in order to limit the health impact of outbreaks and other public health emergencies in the African region

3.2. SPECIFIC OBJECTIVES

The specific objectives of the consultation meeting were to:

- a. Introduce the outbreak toolkit to the participants
- b. Train the participants on the use of the cholera and Lassa fever outbreak tools to enter, analyse and interpret data during an outbreak response
- c. Consult participants on the tools developed
- d. Discuss the feasibility of adapting the current outbreak toolkit application for priority diseases of concern including Rift Valley fever, dengue fever and yellow fever
- e. Develop participants skills in undertaking epidemiological analysis for situation reports
- f. Review the data and tools used in countries to support data collection, analysis and interpretation as part of IDSR
- g. Familiarize participants with the concept of standardized outbreak documentation
- h. Enhance participants' knowledge, skills and competences in the use of GIS for outbreak response and define the key variables required
- Discuss a document management system to track outbreak documentation such as situation reports and other outputs



- a. Awareness of outbreak toolkit raised
- b. Increased ability of participants to enter, analyze, and interpret data during an outbreak response through practical sessions
- c. Adaption of the toolkit for Lassa fever, Rift Valley fever, dengue fever and yellow fever following the meeting according to discussions on minimum key variables
- d. The need for standardized outbreak documentation explained and understood
- e. HIM to gain understanding of tools required by countries to support health information management during outbreaks and emergencies





METHOD OF WORK

The consultation was conducted in a workshop setting, employing several interactive and participatory methodologies, including:

- Short presentations on specific topics
- Oroup work, discussion and experience sharing to foster better understanding
- Hands-on practice to consolidate knowledge and skills on the use of the toolkit
- Group work, review and discussion on adaption of toolkit application for Lassa fever, Rift Valley fever, dengue fever and yellow fever

PARTICIPANTS

Participants were drawn from countries that experienced specific disease outbreaks (cholera, Lassa fever, Rift Valley fever, Dengue fever, yellow fever); experts from renowned institutions and selected colleagues from the different levels of WHO.

In total, 47 individuals were present at the meeting including participants from Ministries of Health, WHO Country Offices, Institut Pasteur de Dakar, Institut de recherche pour le développement (IRD), Nigeria Center for Disease Control (NCDC), Center for Disease Control (CDC) Senegal, UNICEF, WHO AFRO Regional Office, WHO AFRO Hubs, WHO HQ). The full list of participants and facilitators who attended are available in Appendix II.





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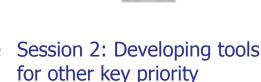


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diseases

Session 1: Introduction to the outbreak toolkit

Participants were oriented on the concept of the outbreak toolkit and the need for improved data. By the end of the session, participants were provided with an overview of process that led to the development of the outbreak toolkit; introduced to the cholera outbreak tool; participated in practical sessions on cholera outbreak tool including data entry, analysis and interpretation; and critically reviewed cholera outbreak tool outputs (including data analysis and interpretation).

Participants reviewed and defined the inputs, processes and outputs required for developing other disease outbreak tools (i.e. Lassa fever, Rift Valley fever, dengue fever, and yellow fever). By the end of the session, participants discussed tools, line listings and outbreak documentation previously used in outbreak investigations to develop outbreak tools for Lassa fever, Rift Valley fever, dengue fever, and yellow fever.





Session 3: Investigating outbreaks of unknown aetiology

Participants reviewed how to investigate outbreaks of unknown aetiology. They discussed key tools for use in investigation outbreaks of unknown aetiology. They discussed the importance of, and how to develop case definitions.



Session 4: Other key tools for outbreak response

The objective of this session was to enhance participants' knowledge, skills and competences in the use of other tools for outbreak response and define the key variables. This session comprised of presentations and practical use of GIS, EWARs, and other tools.



Session 5: Outbreak Documentation

Participants were oriented on the need for standardized outbreak documentation. They were introduced the outbreak documentation checklist and templates for outbreak documentation outputs. The objective of this session was to introduce and review proposed templates associated with the documentation checklist.



Session 6: Document Management System

Participants were oriented on the need for improved information management. They were consulted on a system to track the outbreak documentation. During this session, participants held an open discussion on the practicality and feasibility of a system to track outbreak documentation.



Day 1: Mon 29 Jan 2018 Opening ceremony

The meeting was opened by Dr. Deo Nshimirimana WHO Representative (WR) of Senegal, who welcomed the participants and facilitators attending the Outbreak Toolkit Consultation Meeting. Dr. Nshimirimana expressed his approval of the meeting, noting the diversity of the participants' origins to meet in Senegal to have a worthy discussion

about innovative tools that can be used to ensure health security in the region. This consultation meeting would improve preparedness of countries to respond to outbreaks. Dr Nshimirimana thanked everyone for attending and commenced the meeting after a group photo was taken with all the participants.

Presentation: Objectives of the workshop, expected outputs and methods of work

Presenter: Dr. Benido Impouma, WHO AFRO/WHE Programme

Content

Dr. Benido Impouma provided the overview, scope and objective of the meeting, and facilitated the discussion of participants' expectations. He highlighted the burden of emergencies affecting the region and the importance of information management when responding to them. He discussed information management challenges and the complexity of the information landscape when responding to emergencies.

The presentation outlined the objectives of the meeting and the expected outcomes (Figure 1). The method of work for the meeting was described to be interactive and participatory comprised of short presentations from countries and the regional office; in addition to group work, discussion and experience sharing.



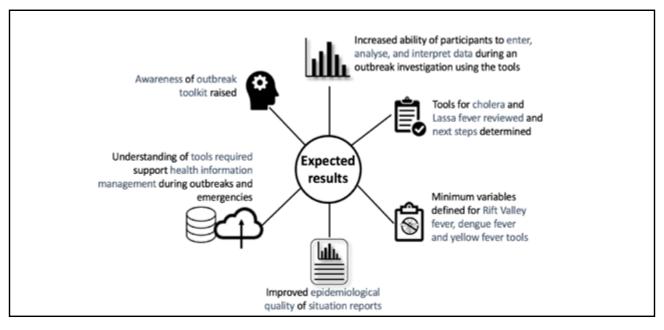


Figure 1. Summary of expected outcomes from the WHO Outbreak Toolkit Consultation Meeting, 2018

Summary of discusions

Participants expectations for what they would gain by the end of the meeting were discussed and shared. These included:

- How to gather and share information on ongoing outbreaks in a harmonized, interoperable, sound and simple way to produce quality information for decision- making and planning in response to outbreaks
- Sharing experience, contacts, and exchange of ideas between countries and how they are using investigation tools, as well as dealing with difficulties encountered in the field
- Find a global, streamlined and standardized platform to harmonize outbreak investigation efforts, and aid cross border outbreak issues





1.3 Overview of the outbreak toolkit: Rationale & objective of the outbreak toolkit; Process of developing the outbreak toolkit

Presenter: Dr. Esther Hamblion, WHO AFRO/WHE Programme

Content

Dr. Esther Hamblion provided an overview of the outbreak toolkit and introduced the rationale and objective of the toolkit. She presented the scale of challenge with regards to emergencies in Africa, as evidenced by the large number of events reported in 2017 (Figure 2).

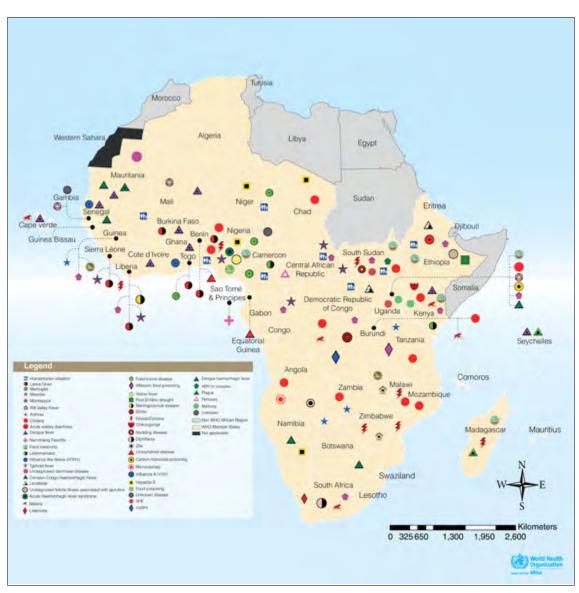


Figure 2. Scale of the challenge: Events reported in 2017 in the WHO African region



Key minimum variables

- Needed for outbreak response and monitoring
- · Vetted by subject matter experts

Standardized tool

 Standardized tool for national and peripheral levels making it easier to collate data

Improved data quality

- Automated data validation
- Conditional formatting

Automated basic descriptive data analysis

- Analyses can be updated automatically as data is entered
- Sufficient daily analyses for daily reporting

Figure 3 Current capabilities of the data entry and analysis tools

Dr. Hamblion highlighted the importance of data quality in responding to outbreaks. This session framed the challenges with data collection and needs in relation to WHO's role in the context of the Emergency Response Framework (ERF), in particular: to ensure that adapted disease surveillance, early warning and response systems are in place;

to provide up-to-date information on the health situation and health sector response; to promote and monitor the application of technical standards and best practices; and to provide relevant technical expertise to affected member states and all relevant stakeholders.





Dr. Hamblion provided an introduction to the toolkit and its capabilities (Figure 3); the work completed so far, the current initiatives taking place at AFRO, the process of developing the disease-specific outbreak tools (Figure 4) and the current stage of its development (Figure 5). This introduction provided the context by which the participants could openly provide all feedback, questions, comments, and requests for features for an outbreak toolkit.



Figure 4. Process of developing the outbreak tools

Summay of discussion

During the discussion, it was noted that the WHO AFRO weekly bulletin on outbreaks and other emergencies was a good resource and often used for weekly surveillance meetings within the countries. However, several of the governments were not aware of it.

Participants asked how existing case investigation forms will be used in conjunction with the proposed toolkit, as minimum required variables were discussed and the forms may request more information.

There were concerns about how the toolkit would integrate with the existing tools that are used by participants. Participants reiterated the need for a harmonized toolkit to reduce the number of forms that need to be filled and the time taken to do the documentation work.

Consensus was reached on the need to improve the following areas:

- Use of unique IDs and system of codification to be used for distinct disease
- Standardization of data, forms, case definitions,
- Reducing the multiplicity of forms
- Interoperability between platforms
- Integrate and harmonize surveillance data
- Ocapacity, support and training at country level Participants discussed the usefulness of having a tool that can automate epidemiological analysis and provides outputs in order to save time interpreting the data and for decision making.



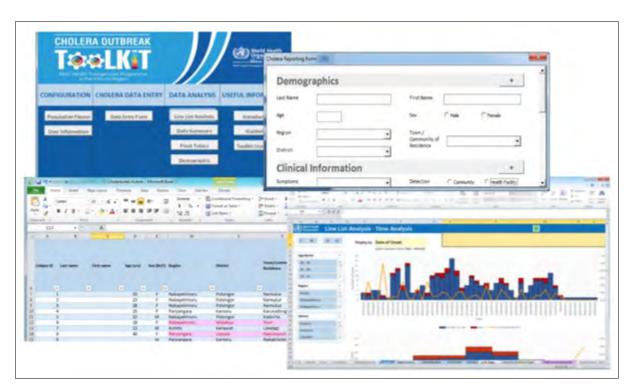


Figure 5. Data collection, collation, validation and analysis with the cholera tool

Action points/ Recommendations

- WHO AFRO should request WHO Country Offices to share information on how to subscribe to the mailing list.
- > WHO AFRO to consider and review standardiza-
- tion and harmonization of tools and reduce the multiplicity of forms required
- WHO AFRO and HQ to support capacity at country level in response activity and documentation through training.





1.4 Perspectives from the field: Panel discussion: Challenges in information management during cholera outbreaks from United Republic of Tanzania and Malawi

Presenters: Dr Grace Saguti (WHO), Dr Muhidini Mohamed from the Ministry of Health of Zanzibar, and Dr Rogath Kishimba from the Ministry of Health, Community Development, Gender, Elderly and Children, United Republic of Tanzania.

Content

Perspectives from the field: United Republic of Tanzania

Participants from the United Republic of Tanzania provided perspectives from the field on managing cholera outbreaks. They presented how surveillance is conducted and the forms used, epidemiological

data collected, case investigations undertaken, how data and documents are managed, and the recent history of cholera outbreaks in the United Republic of Tanzania (Figure 6 and Figure 7). Zanzibar is currently transitioning from a mostly paper based system to an electronic system, entering data straight from the health facility to DHIS2.



Figure 6 Spot map showing the distribution of suspected cholera cases by district as of 23 January 2018 in Tanzania Mainland

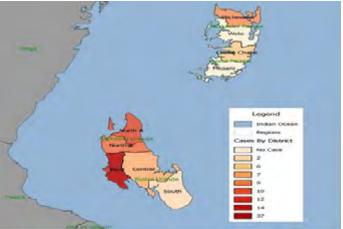


Figure 7 Distribution of cholera cases reported in Zanzibar by district, April 1 to 7, 2016



Perspectives from the field: Challenges in Information management during cholera outbreaks – Malawi

Presenter: Dr Chimwanza Wiseman (WHO) and Dr Msyamboza Kelias (MOH, Malawi)

The presenter from Malawi provided an overview of the burden of cholera in Malawi, and their current use of information management systems to collect, interpret and report data, archive and retrieve information products, use data for decision making during outbreaks and how they share data with partners (Figure 8). Cholera is a persistent major public health problem in Malawi and lack of standardized data collection, submission, analysis, report writing, dissemination and storage of data remains a challenge. Addressing information management needs can improve availability of timely, reliable, quality disease outbreak information for decision-making and resource mobilization.

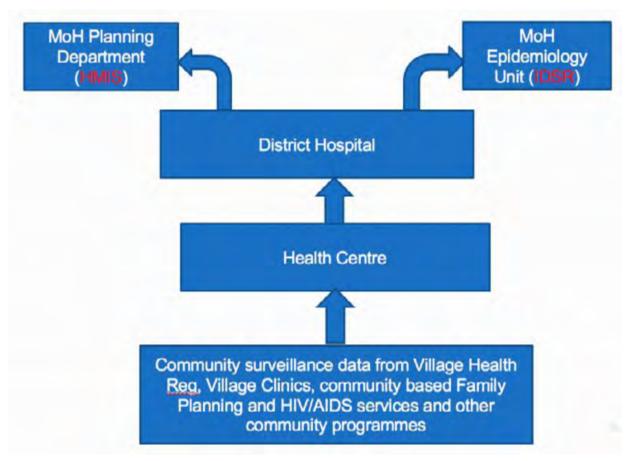


Figure 8. Data collection systems in Malawi



Discussion

Given that the United Republic of Tanzania and Malawi share a border, near which a cholera outbreak is currently occurring, and Zanzibar is a semi-autonomous region within United Republic of Tanzania, the way political boundaries and different authorities come into play during an outbreak was discussed. It is crucial to have policy and guidelines on hygiene and sanitation, e.g. Water, sanitation and hygiene (WASH) to stop the cholera outbreak, but also a national plan for cholera control. Without high-level commitment, it is hard to intervene.

Concerns were raised on the capability levels in some countries with computers and other technologies and if they may have the ability to be using some of the proposed tools. It was agreed appropriate training would be key in ensuring the success of the toolkit.

Action points/ Recommendations

WHO AFRO to provide training and support to assist countries' capacity to respond to cholera outbreak, including provision and training with tools

- 1.5 Introduction and Group work on the cholera tool
- Introduction to group work and group formation
- Line listing data entry, data analysis and interpretation

Presenter: Ms Chiedza Machingaidze, WHO AFRO/WHE Programme

Content

Ms Machingaidze highlighted the rationale for developing the cholera tool and the fact that cholera and acute watery diarrhea are the most common outbreaks in the region (Figure 9). This session was used to introduce the toolkit for a cholera outbreak (Figure 10), provide a brief overview and purpose of the group work session.

Group Work

After the introduction, the participants broke out into ten groups to participate in an exercise on data entry, validation and analysis using the cholera

data tool. Each group had a facilitator assigned to them to observe how the tools were used, note any problems encountered and provide any guidance or clarification as required.

Participants were given a task as a data manager deployed to deal with a cholera outbreak in a fictitious country of Nambutu. The participants downloaded a copy of the cholera data collection and analysis tool, data for two fictitious regions, and two completed case investigation forms to enter into the tool. They then used the data entered to conduct analysis on the epidemiological profile of the outbreak.



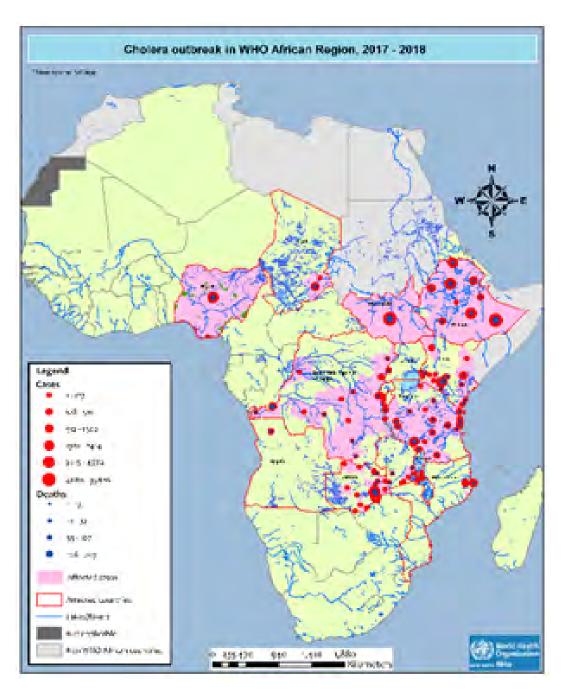


Figure 9. In 2017, AFRO monitored 21 new or ongoing cholera and acute watery diarrhea outbreaks



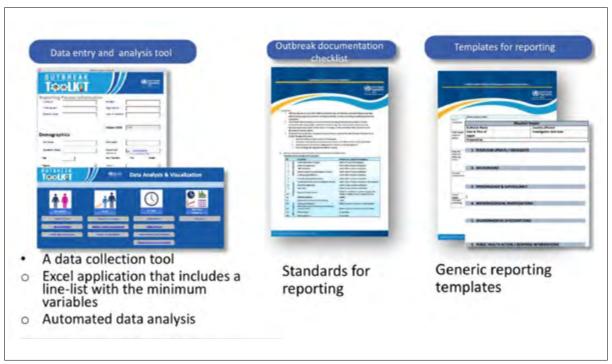


Figure 10. What the outbreak toolkit consists of: a data entry and analysis tool, Outbreak Documentation checklist and templates for reporting

1.6 Critical review of cholera data entry, analysis and interpretation from the group work

Facilitators: Ms Chiedza Machingaidze & Dr. Franck Mboussou, WHO AFRO/ WHE Programme

Content

Findings and discussion of the group work were reviewed during the feedback session. Each group had an opportunity to share their experience and provide comments on the cholera outbreak tool (Figure 11). Feedback was provided on technical issues or

challenges encountered, areas needing clarification, concerns on tool functions and outputs, variables collected in the tool, the analysis and output, additional ideas that may improve the tool and general feedback. The participants reiterated that the simplicity and ease of use is very important.





Figure 11. The excel-based cholera outbreak tool

Summary of key action points and recommendations

- WHO AFRO team to review variables discussed during the session and improve customizability of variables
- Provide clear instructions for using the tool
- Make the tool as simple to use as possible
- Address technical issues and errors identified during the group work session
- Revise issues identified for data analysis and graphs
- WHO AFRO will pilot and perform field testing of outbreak toolkit



1.7 The Role of UNICEF & IRD in Cholera Outbreaks:

"Evaluation of Vibrio directly in the environment using RDT"

Proposed process to accelerate Investment in cholera Hotspots in West Central Africa Region (WCAR)

Step 1

- Sub-regional / country level epidemiological study
- Desktop identification of cholera hot spots at district level

Step 2

 Field investigation at community for contextualized WASH/Social behaviour diagnosis

Step 3

· Develop an Investment Case for WaSH in cholera hot spots / Budget

Step 4

 Advocacy: Presentation of evidence based studies to Humanitarian and Development Partners to target and leverage funding in cholera hot spots

Step 5

- Carry out sustainable WASH intervention in cholera hotspots
- Oral Cholera Vaccination can bridge the gap between identification of needs and time to complete implementation of sustainable WASH Intervention

Step 6

- Sustainability check in cholera hot spots
- Impact study

Figure 12 Proposed process to accelerate investment in cholera hotspots in West Central Africa Region (UNICEF)



Presenters: Mr. Julien Graveleau, UNICEF & Dr. Guillaume de Magny, Institut de recherche pour le développement

Content

Mr Julien Graveleau gave a presentation on UNICEF's role in responding to cholera, especially in response to continuous cycles of cholera outbreaks which disproportionately affect young children under five. UNICEF invests in projects that target reducing cholera (Figure 12). UNICEF has developed a web-based Cholera Platform which shares information, promotes long-term solution, provides advocacy, trans-border workshops, defines hotspot areas, supports research, provides regional cholera bulletin, support national strategic plan and preparedness, coordination and emergency response and technical support.

This was followed by a presentation from Dr Guillaume de Magny of IRD, about the

outcomes of his work on Cholera, especially as it relates to findings on ecological factors influencing cholera outbreaks. He shared his work on the evaluation of a simple dipstick test for detection of Vibrio cholera in environmental water in West Africa that was possible through the funding from UNICEF.

Discussion

After the session, the participants discussed factors to consider when seeking investment for cholera management and other initiatives. Participants discussed the need for addressing more than issues of WASH and also investing in advocacy and long-term response.





Day 2: Tue 30 Jan 2018

2.1 Perspective from the field:

NCDC presentation on Lassa Fever outbreak in Nigeria: Tools we use and how we're improving Information Management;

Liberia Lassa Fever 2017: How we responded - focusing on data and information management

NCDC presentation on Lassa Fever outbreak in Nigeria: Tools we use and how we're improving Information Management

Presenters: Dr Olaolu Aderinola and Mr Rimamdeyati Yashe of Nigeria Centre for Disease Control (NCDC)

Summary

Representatives from the Nigeria Centre for Disease Control (NCDC), Dr Olaolu Aderinola and Mr Rimamdeyati Yashe, shared their experience with information management during a Lassa fever outbreak in Nigeria. They presented a background of the NCDC (Figure 13), how Lassa fever currently affects Nigeria, and the information tools being used in the country, including the Surveillance Outbreak Response, Management and Analysis System

(SORMAS); the Integrated Disease Surveillance and Response (IDSR) forms, and the Viral Haemorrhagic Fever Microsoft platform. They also use event-based surveillance through Tatafo software which searches newspapers and information online for suspected cases and rumours, Connect Centre, a dedicated toll-free line for outbreaks, and social media. NCDC also disseminates a weekly situational report on the NCDC website, providing data for national trend analysis.



Figure 13. Nigeria CDC Vision, five key goals and activities



Liberia Lassa Fever 2017: How we responded - focusing on data and information management

Presenter: Mr George Sie Williams, WHO, Liberia

Mr George Sie Williams from the Liberia WHO Country Office provided a presentation on behalf of Mr Thomas Nagbe from the National Public Health Institute of Liberia on their experience with Lassa fever in Liberia in 2017. He gave an overview of how epidemiological data flows during an outbreak and

how Lassa fever affected Liberia in 2016 and 2017 (Figure 14). He provided highlights of their public health response, including the improvements made in transporting laboratory samples for testing in a timelier manner; preparedness plan and vector control; and challenges they face in the field.

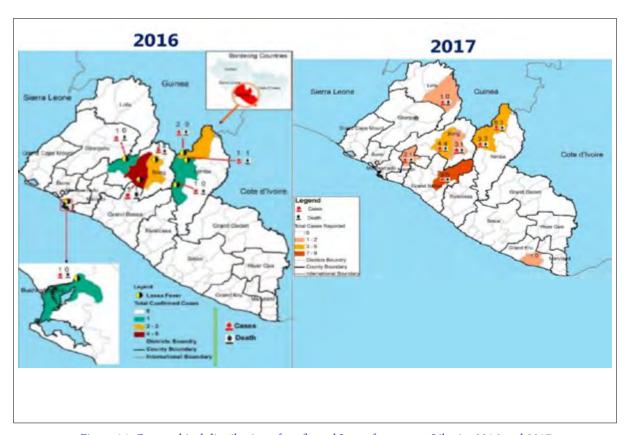


Figure 14. Geographical distribution of confirmed Lassa fever cases, Liberia, 2016 and 2017



2.3 Introduction and group work on Lasse fever tool; discussion on minimum key variables for Lassa Fever

Presenter: Dr. Silvia Funke, WHO AFRO/WHE Programme

Summary

Dr. Silvia Funke provided a brief presentation introducing the Lassa fever tool (Figure 15). The purpose of the presentation was to train the participants on the use of the Lassa fever tool to analyse and interpret data during a Lassa fever outbreak, a disease endemic in West Africa (Figure 16); facilitate the discussion on minimum key variables to enable finalization of the Lassa fever tool; and discuss how to produce a high-quality situation

report by using results and outputs of the Lassa fever tool. During the group session, the participants broke out into ten groups to familiarize themselves with and gain knowledge of the Lassa fever tool through hands-on training. All participants had the opportunity to provide feedback on suggested variables and proposed analysis. The output of the tool was then used to write a high-quality situation report.



Figure 16. Countries endemic for Lassa fever in the WHO African region



Discussion

After the group work session and task, the participants convened to discuss their findings and experience with the tool. During the discussion, participants highlighted helpful features that were missing from the tool and any technical issues they had with the program. Participants also highlighted the importance of being able to trace contacts and

the tool's potential to aid in the tracing. A general discussion was held about the limitations and rationale of choosing Microsoft Excel as the base of the toolkit. While it allows for flexibility for users who are already familiar with using Microsoft Excel and is widely accessible; it is also limited by the capabilities and functions set by Excel.

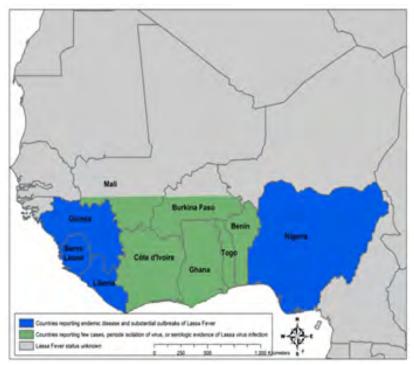


Figure 15. Countries endemic for Lassa fever in the WHO African region

Summary of Action Points/

Recommendations

- WHO AFRO will review all feedback and revise the tool to address some of the concerns identified during the group work.
 - This includes the addition of a data dictionary,

- simplifying the user interface of the tool,
- revising the variables included in the tool,
- adding additional features such as basic tables.



2.4 Reporting the information collected: Situation Reports – Why Epidemiological Analysis is Key

Group Work: Epidemiological Analysis for Situation Reports
Feedback and Discussion on Epidemiological Analysis for Situation Reports and
the Role of the Toolkit

Presenters: Dr. Charles Okot and Dr. Silvia Funke, WHO AFRO/WHE Programme

Content

Dr Charles Okot provided a presentation on how to interpret and communicate outputs of epidemiological analysis into information for action through Situational Reports (SitRep). He highlighted the core functions of a SitRep, and the importance of the 5W's, what, who, where, when, why and how of an event and how verified and factual information can give a clear picture of a situation through a report. His presentation provided some key variables that should be included in the SitRep and some of the epidemiological curves and graphs that describe the trend of the disease to inform decisions. The participants were provided with a basic template of a SitRep (Figure 17). In the second part of the group work, the participants were asked to use the information gathered from the Lassa fever tool to generate a situation report.

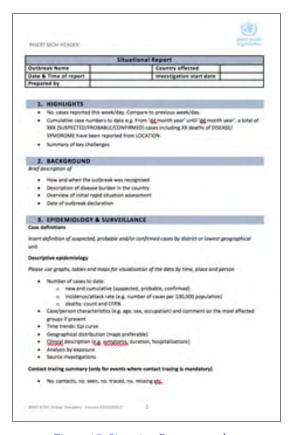


Figure 17. Situation Report template



Discussion

Participants noted and shared any issues they encountered with using the tool to generate the graphs and describing epidemiological trends for the Situational Report, including:

- Ease of use is critical, user interface requires simplification
- Lassa fever tools would be more useful with the addition of missing features, i.e. simple population tables

The feedback received from participants on the Lassa fever tool with regard to completing the Situational Report included issues around simplification of the tool, variables used and other technical issues the participants encountered. During the discussion,

the participants suggested that the tool could be more useful if a situational report could be standardized and the tool can generate graphs and tables that are already set up to meet the requirements of the Situational Report.

Key Action points and Recommendations

- WHO AFRO will review all the feedback provided by participants, and work with the development team to improve the ease of use of the tool; add simple population tables; facilitate the production of analysis outputs for situation reports.
- WHO AFRO will offer guidance on epidemiological analysis for situation reports





Day 3: Wed 31 Jan 2018

3.1 Perspective from the field

IPD: The role of laboratory data and information in outbreak

response with a focus on Dengue Fever

DRC: Managing a large Yellow Fever dataset to describe a rapidly evolving out-

break

Niger: Coordinating data from animal and human health outbreaks to respond

to RVF



Figure 18. Deployment to the field from Institut Pasteur Dakar





IPD: The role of laboratory data and information in outbreak response with a focus on Dengue Fever

Presenters Dr Gamou Fall, Dr. Ousmane Faye, and Dr Diawo Diallo, Institut Pasteur de Dakar

Content

Representatives of Institut Pasteur de Dakar (IPD) presented the work done at IPD in surveillance and management of outbreaks, in particular for arboviruses and hemorrhagic fevers. IPD also supports surveillance of yellow fever, dengue, Rift Valley fever, Chikungunya, Zika virus, West Nile virus, Crimean-Congo haemorrhagic fever (CCHF), Ebola and Marburg, and provides technical assistance to other countries in collaboration with WHO for deployment of personnel, diagnostics, and training of local personnel.

IPD described their experience with Dengue in Burkina Faso in 2016, sharing their process in collecting and testing samples for RVF testing in Niger in 2016; Zika in Cape Verde in 2016; and Dengue in Senegal 2017. They described how they manage their epidemiological data; share their data and use it for generating their Situational Reports; deploy personnel to collect specimens for the lab (Figure 18). They provided some recommendations on disease control for Dengue, as well as some of the challenges they encountered in detection and investigation.

DRC: Managing a large Yellow Fever dataset to describe a rapidly evolving outbreak

Presenters: Dr Gaston Tshapenda, Ministry of Health of the Democratic Republic of Congo and Dr Bachir Mbodi, WHO

Content

Representatives from the Democratic Republic of Congo (DRC) and presented their experience with the management of data during a Yellow fever outbreak (Figure 19). They described their experience with the Yellow fever outbreak declared on 20 June 2016, affecting four provinces. The National Coordination of the outbreak involved epidemiological surveillance, entomology, laboratory, patient management, water hygiene and sanitation, logistics, vaccination and communication.

DRC rolled out a mass vaccination program in the affected health zones. A list of tools that were used for the outbreak management were presented and shared, including the epidemiological response plan, WHO AFRO Yellow Fever surveillance manual, IDSR guidelines, case definition, notification form, investigation report, situational reports, protocols, recommendations from an external review, the final outbreak report, and the database with all variables collected.



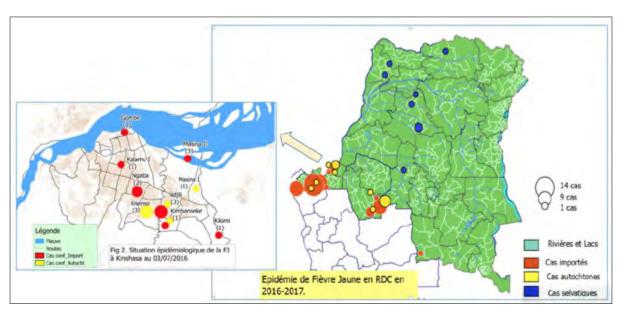


Figure 19 Geographic distribution of yellow fever in Democratic Republic of Congo

Niger: Coordinating data from animal and human health outbreaks to respond to RVF

Presenters: Dr Kadadé Goumbi from the Ministry of Public Health Niger and Dr Sama Kanembe of WHO

Content

Dr Kadadé Goumbi from the Ministry of Public Health Niger and Dr Sama Kanembe of WHO Niger presented their experience with managing data in response to Rift Valley fever (RVF) in Niger. They described their information flow in the country (Figure 20), as it flows from the Ministry of Public Health (Ministère de la Santé Publique, Direction de la surveillance et de la riposte aux épidémies) to the local districts, hospitals, specialist centres, district hospitals and other programs.

Dr Goumbi and Dr Kanembe described the outbreak's geographic distribution, and the national

coordination required to tackle the outbreak. Niger reinforced epidemiological and entomological surveillance; supporting patients with free health care; vector control and increasing awareness. Further Niger uses several different tools to collect their data, including forms for obligatory reportable diseases (fiche de notification des maladies à declaration obligatoire [MDO]); form for notification of suspect cases; form for case definition to be used by community health personnel; line lists; Excel database and form for contact tracing in the field. They also use the "Zoosanté" database which is used for data transfer to World Organization for Animal Health (OIE); an e-Surveillance tool called VOTO MOBILE.



They described their experience with the 2016 outbreak, including the chronology of the epidemic, the

coordination of their response, surveillance, laboratory, and case management

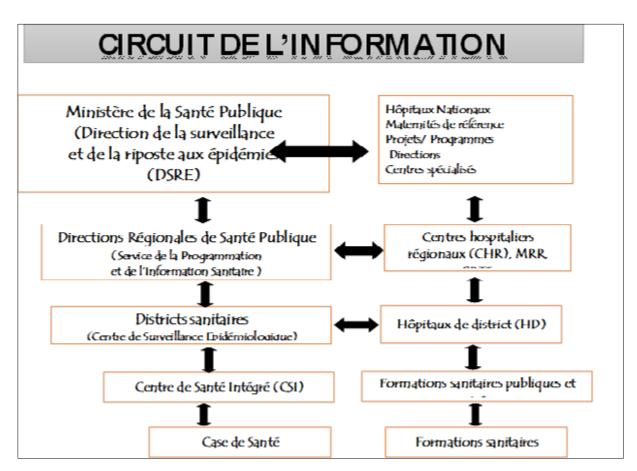


Figure 20. Outbreak data flow in Niger





3.2 Methods in Field Epidemiology: Construction of the Case Definition for outbreak investigation

Presenter: Dr. Anne Perrocheau, WHO HQ/WHE Programme

Content

Dr Perrocheau provided a presentation to define the method for case definition construction during of outbreak investigations. She discussed the essential criteria of a case definition and its characteristics of being precise, objective, operational, logical, sensitive and specific (Figure 21). Examples of case discussions were presented, including Acute Jaundice Syndrome in Ethiopia in September 2017 and Diphtheria in Bangladesh in December 2017.

Discussion

The presentation was followed by a question and answer period where participants discussed their experience with case definitions as they change in the field; the need for balance between sensitivity versus specificity when designing a case definition and the issue of how to interact with communities during case finding.

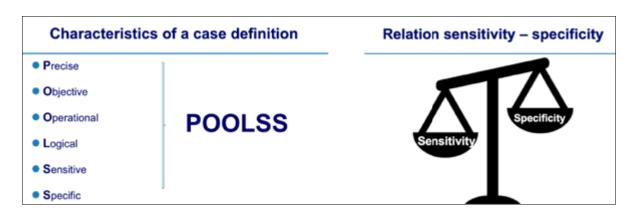


Figure 21. Acronym"POOLSS" defines characteristics of a case definition and as a reminder to consider the balance between sensitivity and specificity when designing a case definition.



Key Action points/ Recommendations

The framework presented can be used by representatives from the WHO Country offices and

Ministries of Health to create case definitions during outbreak investigations in their country.

3.3 Designing databases for outbreak data collection Group work to discuss minimum variables and outputs for tools for Yellow Fever, Rift Valley Fever, Dengue Fever

Feedback from groups on minimum variables and outputs for tools proposed and consensus reached

Presenter: Mr. Brett Archer, WHO HQ/WHE Programme

Content

Mr Brett Archer gave a presentation on how to design a database and identify the key minimum variables and outputs.

The groups were tasked to define and outline the minimum and additional variables needed to monitor and investigate outbreaks of Arboviruses in the African Region (i.e. yellow fever, Rift Valley fever and dengue fever); and to define what descriptive epidemiology outputs (e.g. tables, graphs, etc.) that should be presented in a situation report and final report. Participants defined variables methodologically to reach consensus on minimum variables for Yellow fever, Rift Valley fever and dengue fever. A data dictionary template was provided to facilitate the groupwork (Figure 22). The group shared their experience linking laboratory and epidemiological data.

Key action points/ Recommendations

- WHO AFRO and HQ will review the variables chosen during the group work and their priorities and take them into consideration in the creation of tools for investigating the outbreak of Arboviruses.
- WHO AFRO will develop outbreak tools for dengue fever, Rift Valley fever, yellow fever in line with recommendations of consultation

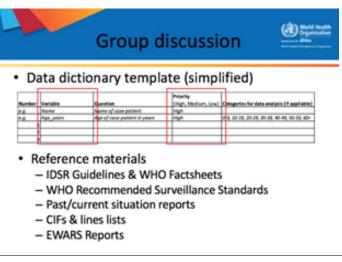


Figure 22. Excerpt from the group work task to discuss key minimum variables on Arboviruses



Day 4: Thu 1 Feb 2018

- 4.1 Perspectives from the field: Using IDSR data to detect outbreaks
- Status in Sierra Leone
- Status in Mali

Presenters: Dr David Kargbo, Ministry of Health and Sanitation & Dr. Robert Musoke, WHO Sierra Leone

Dr David Kabba Kargbo (DPC MoHS) and Dr Robert Musoke of WHO presented their experience with and steps for the revitalization of IDSR post-Ebola in Sierra Leone (Figure 23). They are meeting 2017 national targets for IDSR Health Facility Weekly Reporting which exceed the targets set by WHO. Sierra Leone is in the midst of changing from paper-based reporting to an electronic system, adopting the e-IDSR platform which has been developed and piloted in 2016; exclusively using electronic reporting (DHIS 2) as of January 2017; and using a mobile phone application of e-IDSR for haemorrhagic fever in order to improve weekly timeliness and completeness of aggregate reporting and provide reliable data for rapid response. Sierra Leone has been involving communities in surveillance and response and has rolled it out to nine out of 13 districts with 8449 community health workers trained to provide alerts for diseases and event



Figure 23. Perspectives from the field for using IDSR data in Sierra Leone



Using IDSR data to detect outbreaks - Status in Mali

Presenters: Dr. Mahamadou Maiga, Direction Natinoale de la Santé & Dr. Sacko Massambou, WHO Mali

Dr Mahamadou Farka Maiga of Direction Nationale de la Santé (DNS)/SSE and Dr Massambou Sacko of WHO Mali represented Mali and provided their experience in using IDSR data for detecting outbreaks (Figure 24). More recently, they have had outbreaks of dengue fever, hepatitis E, Lassa fever, Murray Valley Encephalitis, Rift Valley fever, and CCHF. The presentation gave an overview of the data flow between the Ministry of Health and Public Hygiene, Direction Régionale de la Santé, Local Health Districts, Community Health Centres, laboratories and other collaborators. Representatives of Mali described how they verify the data; harmonize their data to aid outbreak investigation; and lessons learned involving collaboration with partners, One Health approach; and the use of IDSR guidelines.

Discussion

Participants discussed that surveillance work has improved in the countries after the Ebola outbreak. Regular reporting has improved and innovative programs using tablets and electronic information systems have begun, but there is an overload of forms and tools at health facilities. Integration with laboratory data and programs used are ideal.

Key Action points/ Recommendations

WHO AFRO and HQ will continue supporting countries through identifying gaps and providing training to increase capacity



Figure 24. Perspectives from the field for using IDSR data in Mali



4.2 Gaps highlighted by countries in the management of and use of IDSR

Presenter: Dr. Franck Mboussou, WHO AFRO/WHE Programme

Content

Dr Franck Mboussou presented the gaps highlighted by countries in the management and use of IDSR data from a meeting on Surveillance and Health Information System held in Dakar in July 2017. This was based on the countries' presentations on IDSR and challenges and gaps on data and information management that were shared.

The key gaps (Figure 25) included coordination and partnership (multiple partners supporting IDSR implementation, insufficient coordination between Ministries of Health and Partners); data handling (absence of written standard operating procedures for IDSR data collection, collation and analysis; use of several platforms; and data platforms that are not interoperable; laboratory data not being linked with epidemiological data); data quality control (insufficient control of the consistency of data in the transmission circuit; irregular data validation meetings; periodic data quality control not being done); and communication, reports and use of data (few or no weekly bulletins are released and there is irregular feedback to lower levels; there is irregular submission to WHO and WHO does not provide feedback; there are a lack of resources for alerts verification and investigation).

Key action points/ Recommendations

- WHO Country Offices and Ministries of Health will maintain weekly IDSR reporting
- WHO AFRO will provide feedback to countries' submission of weekly reports and data.
- WHO AFRO will hold in-country workshops on IDSR data and information management



Figure 25. Summary of key gaps highlighted by countries in the management and use of IDSR





4.3 Use of IDSR data at the regional office

Presenter: Dr. Benido Impouma, WHO AFRO/WHE Programme

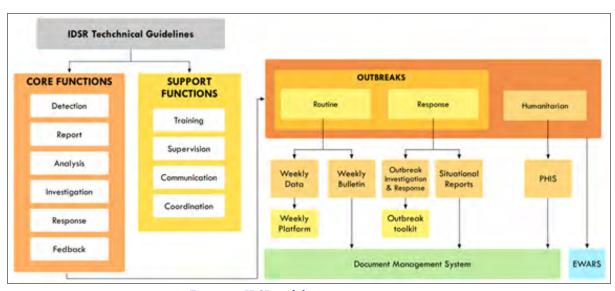


Figure 26. IDSR and data management

Content

Dr Benido Impouma facilitated a discussion of how IDSR data is used at the regional office (Figure 26) and its challenges and opportunities. Some of the challenges relate to having multiple data formats make aggregation difficult; especially with inconsistency across administrative levels, complicating trends analysis.

If there is no reporting to the region, it has implications on cross-border transmission of outbreaks; regional trend monitoring; countries/regional comparison; and status of implementation of IDSR. Dr Impouma briefly demonstrated the interactive IDSR dashboard showing performance across the region. Data quality and management are critical for knowing the current spread of disease and informing decisions through statistical modelling.

Discussion

Participants discussed the importance of early surveillance and funding opportunities that exist for this purpose. Data to analyse the situation is critical for prevention and control.

Resource insecurity and internet connectivity were identified as persistent barriers to electronic data collection, data completeness, integration with databases and transition from paper-based reporting.

Key action points/ Recommendations:

- WHO AFRO will develop an IDSR data portal and disseminate link to participants
- WHO AFRO will hold in-country workshops on IDSR data and information management



4.4 E-tools and outbreak investigation

Presenter: Dr. Anne Perrocheau, WHO HQ/WHE Programme

Content

Dr Anne Perrocheau reviewed her findings from the survey she took of the participants the previous day on the e-tools and outbreak investigation tools currently used in the countries. This includes what is being used to do field data capture; line listing and presentation of data such as epi curves, tables and graphs.

There were 18 responses in total representing 10 countries. In more than half of these countries, there were more than 10 outbreaks in the last year. The survey found that the countries refer to the IDSR guidelines and MOH for case definitions, reporting forms, disease information, response plans and laboratory methods.

Dr Perrocheau reviewed the tools that were identified as being used during outbreaks in the participants' countries (Figure 27), which included Commcare Ebola contact tracing app (CCECT) from Dimagi; Ebola Sense Follow-up (eHealth Africa Global Health Informatics); SORMAS (Helmholtz Zentrum fur Infektionsforschung); GoData v1.0 (GOARN); Esri Survey 123 for ArcGIS; EWARS; Magpi; Open Data Kit; Kobo Toolbox; Excel; ODK/Kobo/Epi Info.

Discussion

Participants discussed the importance of data and efforts and barriers to adopt more mobile data collection and analysis. It identified the main problems during an outbreak investigation to be financial resources; tools for investigation; and limited HR in number and the level of training. There are also laboratory issues; access to sites and problems with coordination.

Key action points / Recommendations

WHO country offices and Ministries of Health will identify training needs in countries



Figure 27. E-tools landscaping for outbreak investigations



4.5 EWARS: EWARS in a box and link with toolkit; Summary of EWARS meeting; Review of existing tools for surveillance and response functions

Presenter: Dr. Anne Perrocheau, WHO HQ/WHE Programme

Content

Dr Anne Perrocheau presented the Early Warning, Alert and Response System (EWARS) in a box (Figure 28), which is designed with the needs of frontline users in mind during emergencies and for rapid deployment where systems cannot support the emergency. Dr Perrocheau highlighted some of the features of the EWARS in a box, and examples of where it has been deployed for use.

A large number of participants were interested in more information about accessing and using EWARS in a box. The WHO Regional Office for Africa would be acquiring a number of EWARS in box and providing training on its use for rapid deployment when it is needed in the future in the region.

Participants from Nigeria shared their experience from using the tool in Borno State, where a paper-based system was not enough to support disease surveillance. However, issues of connectivity can impact complete and timely data.

It was emphasized that EWARS in a box is not meant to replace an existing system as a permanent solution, but rather as a tool to be used in case of emergency where there is a system break-down due to an extreme emergency.

Key action points / Recommendations

- WHO AFRO to purchase EWARS in a box kits to enable rapid deployment in region if required
- WHO AFRO to provide training for focal points for EWARS in a box



Figure 28. Early Warning, Alert and Response System (EWARS) in a box



4.6 Investigating outbreaks of unknown aetiology

Presenter: Dr. Anne Perrocheau, WHO HQ/WHE Programme

Content

Dr. Anne Perrocheau delivered a presentation on events of unknown aetiology (Figure 29), specifically their consequences, the questions they raise and frameworks which can be used to investigate their origins. The framework consists of phases of preparation, description, analysis, and hypothesis formation. She presented a case study of Acute Yellow Fever in Ethiopia and how field epidemiologists applied the framework systematically during the outbreak.

Discussion

Countries shared their experience in dealing with diseases of unknown aetiology and other facets of an outbreak they found to be important, such as post-mortem analysis, collaboration with nutritionists, communication with local authorities in case of an incomplete investigation, making modifications to paper-based surveys in the field as required to gather the necessary and relevant information; getting consent to collect information and listening to the local communities.

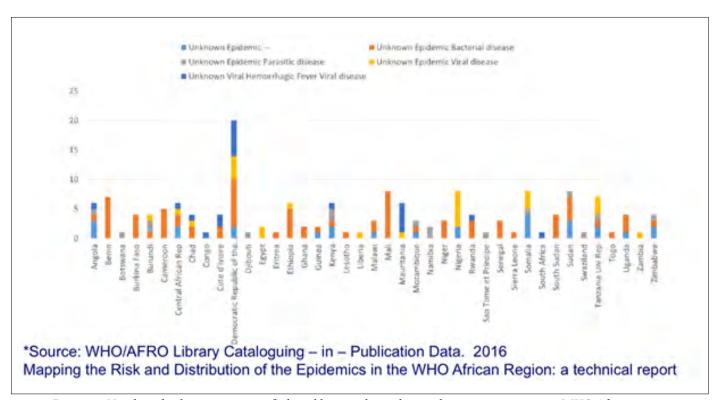


Figure 29. Number of unknown or unspecified viral haemorrhagic diseases by country, 1970-2016, WHO African region



Day 5: 2 Feb 2018

5.1 Introduction to the outbreak documentation checklist

Presenter: Dr Esther Hamblion, WHO AFRO/WHE Programme

Content

Dr Esther Hamblion gave a presentation on Key Health Emergency Information collected during an outbreak and presented the Outbreak Documentation Checklist (Figure 30). The purpose of the checklist is to improve the coordination of outbreak documentation. It is developed to improve timeliness and accessibility of information, streamline communication and management, better document the decision-making process involved in event management and ensure findings ae integrated into decision making.

The outbreak documentation checklist consists of documents in the areas of 1) Detecting an outbreak; 2) Response; and 3) Recovery and prevention after an outbreak.

Discussion

Participants were asked what documents they produced during an outbreak. The participants listed the following products:

- situation report
- outbreak evaluation report
- preparedness assessment
- after action review
- case investigation report
- outbreak investigation report
- information products for the public
- response plan

Participants were provided with the outbreak documentation checklist and invited to provide feedback and suggestions on any documentation that were not on the list and should be added, are on the list and should be removed, and to highlight any challenges to producing and sharing any of the information in their country.

Key action points/ Recommendations

- Ministries of Health and WHO country offices to utilize the Outbreak Document Checklist
- WHO AFRO to review and update Outbreak Documentation Checklist and associated templates in line with recommendations of consultation meeting



Figure 30. The outbreak documentation checklist



5.2 Information management tools to support operational response

Presenter: Dr Innocent Nzeyimana, WHO AFRO/ WHE Programme

Dr. Nzeyimana of the WHO Health Emergencies Emergency Management and Operations Programme Area presented the tools used to support response (Figure 31), including:

- Incident Management System (IMS)
- The Public Health Information Services (PHIS)
- Health Resources Availability Monitoring System (HeRAMS)
- The Emergency Management software (vSHOC)
- Partnership and Health Humanitarian Coordination
- Toolkit for Funding and managing humanitarian operations in Countries



Figure 30. Presentation on information management tools to support operational response

5.3 Overview of the document management system:

Presenter: Mr. Tamayi Mlanda, WHO AFRO/WHE Programme

Mr Tamayi Mlanda gave a presentation and led a discussion on Document Management of Key Health Emergency Information to aid and improve business processes. He described that document management systems can be at varying levels of development from primitive to advanced systems (Figure 32). Given that management of an outbreak is a document driven process, improved document management can help with collaboration, compliance, discovery, storage, workflow and process optimization, disaster recovery and business continuity.

Discussion

Participants were invited to provide feedback on whether a DMS exists in their organization and country and on setting up a document management structure and provided with an activity guide that poses questions on document types, document management structure and file retrieval.

Key action points/ Recommendations

WHO country offices and Ministries of Health to review document management processes



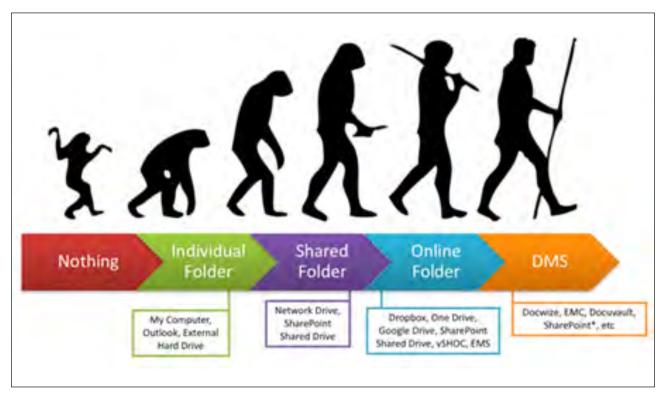


Figure 32. Document management maturity





5.4 Effective use of GIS in outbreak response

What data needs to be collected for effective use

Presenter: Ms Yurie Izawa, WHO HQ/WHE Programme

Content

Ms Yurie Izawa led the group in demonstrating effective use of GIS in outbreak response and required indicators for mapping. She provided a brief presentation on GIS mapping during an outbreak response, with a brief introduction on GIS and its data components (Figure 34) and its use at WHO, the type of indicators to be collected and type of maps to be prepared during a disease outbreak, and how participants can be prepared in GIS before a disease outbreak. She shared her experience in North East Nigeria during the Cholera outbreak in 2017 (Figure 35). She explained the process undertaken to be able to map the geographical movement of the cholera cases during the outbreak. Ms. Izawa also presented the mapping work done in several other outbreaks, including the Plague outbreak in Madagascar in 2017; Cholera outbreak in Yemen in 2017, and the food insecurity In the Horn of Africa in 2017.

The presentation was followed by a hands-on GIS mapping exercise to understand the types of maps one can produce before and during a disease outbreak; and to define key variables required for effective use of GIS before and during a disease outbreak

The hands-on GIS mapping exercise covered

- Basic map layout and components
- Data manipulation for mapping
- Designing of the map
- Interpretation of the results

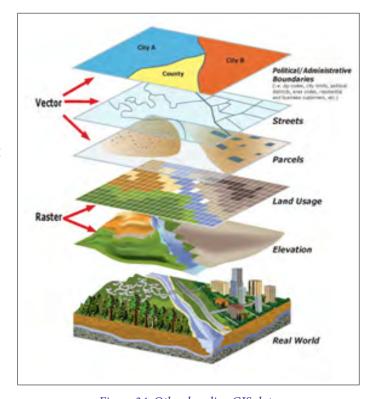


Figure 34. Other baseline GIS data



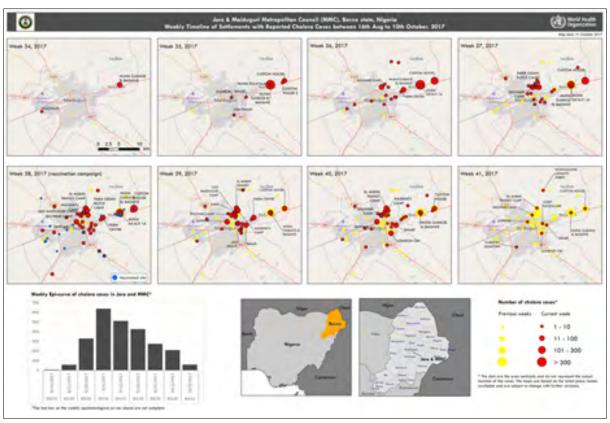


Figure 35. North-East Nigeria Cholera 2017 Settlement-level time-series map (Source: cholera line-list; Indicators: Settlement (camp) name, date of onset)

Discussion

The participants requested further training on GIS and mapping to increase local capacities and noted that dedicated staff for GIS mapping is critical to be able to allocate time to do the mapping. Participants also used the mobile application Survey123 to retrieve GIS coordinates. If the application does not work, there are other applications that can be used built into most smart phones.

Key action points/ Recommendations
Ministries of Health and WHO Country offices to identify GIS training requirements in countries.





Figure 36. Ms Yurie Izawa leads the participants on how to use ArcGIS during an outbreak response





5.5 Way forward and recommendations

Presenter: Dr. Benido Impouma, WHO AFRO/WHE Programme

Content

Dr. Benido Impouma closed off the session with a summary of the main discussion points throughout

the week and the key action points for participants. The key action points and the most responsible are listed in the table below.

No.	Key Action	Responsible
	CHOLERA TOOL	
	Cholera Toolkit - Update following recommendations of the meeting:	
1	 Review the technical/programming issues identified for data entry and analysis 	WHO/AFRO
	 Review variables and consider recommendations made 	
2	Assist with training and piloting of the cholera tool in selected countries. E.g. Malawi	WHO AFRO
	LASSA FEVER TOOL	
	Lassa fever tool – update following recommendations of the	
3	meeting:	WHO/AFRO
	Data dictionaryAdditional features, variables and specifications	
	OTHER TOOLS	
	Arbovirus tools – review collective feedback against current	
4	guidelines, determine whether necessary to develop tools	WHO/AFRO
5	Review document management processes in countries	MOH/WCOs
6	Utilize the Outbreak Document Checklist in countries	MOH/WCOs
	OVERALL	
7	Develop report from meeting with key action points and disseminate	WHO/AFRO
8	Produce guidance on epidemiological analysis for situation reports	WHO/AFRO



9	Develop IDSR data portal and disseminate link to all WCOs/MOH	WHO/AFRO
10	MOH/WCOs to maintain weekly IDSR reporting	MOH/WCOs
11	MOH/WCOs to review IDSR data and information management requirements	MOH/WCOs
12	Hold in-country workshops on IDSR Data and information management	WHO/AFRO
	EWARS	
13	AFRO to purchase and provide training for EWARs in a box kits to enable rapid deployment in region if required WHO/A	
	Weekly Bulletin	
14	Send AFRO weekly bulletin to all IHR NFPs - AFRO	WHO/AFRO
	Training	
15	Identify epidemiological training needs in countries	MOH/WCOs
16	Plan IDSR training of HCW facility and district staff required	MOH/WCOs
17	Identify GIS training requirements in countries	MOH/WCOs





An online survey was sent out at the end of each day of the meeting to gather feedback from the participants about the presentations, facilitation, quality of related materials and resources distributed, allocation of time per session, and other overall feedback about logistics, provision of meals, and the programme of the day. Participants were asked to rate each aspect of a session as 1 —

weak; 2 – average; 3 – satisfactory; 4 – very satisfactory; or 5 - excellent. Out of the 27 participants who received an invitation to the survey, an overall response rate of 50.4% was received, with the number of respondents being 18 on Day 1 (67%), 16 on Day 2 (59%), 14 on Day 3 (52%), 12 on Day 4 (44%), and 8 on Day 5 (30%).

Overall, participants responded positively in their feedback, and the majority of the sessions were rated on average as 'Very Satisfactory' (4 out of scale of 5) on all criteria of the sessions. In general, participants were satisfied with the presentations, facilitation of the sessions, and group work. The participants were least satisfied with the time allocated to the sessions.

Time management was raised most frequently as an issue. Multiple participants reported that the amount of time allocated to the group work session could be increased to improve the meeting and allow for ample discussion as a group. Participants suggested increasing the time allotted to group work to facilitate more discussion on their experience to contribute to the development of the tool.

Participants found the resources helpful and made a request for the soft copy of the presentations which were distributed at the end of the week. It was suggested that the concept note, agenda and other materials such as that required for the group work could be shared prior to the event to facilitate preparation and review ahead of the meeting. Additionally files that need downloading could be provided prior to the event in order to save time for download and installation.

The venue was rated to be sufficient for the type of meeting and the meals and breaks were also well rated. Participants were less satisfied with the venue in the later part of the week, thus in future meetings a request could be made to increase variety and decrease monotony in the food catered at the venue.

Several participants commented that they were very satisfied with the consultation meeting quality, and others requested more hands-on sessions to improve the quality of the meeting.



A step-by-step presentation of the toolkit was requested in the survey feedback, suggesting that more job-aides or training on use of the toolkit may be required, or that the pace at which the session reviewing the toolkit was too fast. There was a request for a review of what is already used in countries and how to harmonize the reporting that already occurs, as there are several other integrated applications already available for the purpose of monitoring diseases with security and backup measures.

One participant commented that 'the workshop has been an eye opener' and noted that WHO assistance is needed in most countries to improve the situation in outbreak management and IDSR. Translation of the event was helpful for participants who spoke one of English or French. Some participants commented that the translation was at times difficult to follow. In future sessions, materials provided sooner ahead of time and reviewed with the translators could potentially reduce some of the barriers experienced with live-translation.





The WHO Outbreak Toolkit Consultation Meeting held in Dakar, Senegal between 29 January and 2 February 2018 aimed to ensure the required high standards of surveillance, investigation and response documentation during outbreaks and emergencies by introducing a suite of tools and applications to aid countries in data and information management during outbreaks. Participants provided useful feedback and had fruitful discussions related to current gaps in data, information and document management. This meeting enabled WHO to gather the necessary information to update the outbreak toolkit for specific diseases in line with recommendations of the participants in order to better support the countries in the African region during outbreaks and emergencies. During the meeting, gaps in resource and capacity in matters of information management and a need for epidemiological training were identified. The five-day meeting was closed by Dr. Benido Impouma, Programme Area Manager of the Health Information Management in the WHO African Region. He expressed his gratitude to the participants and re-iterated WHO's commitment to closely work in partnership and collaboration with Ministries of Health of Member states, WHO Country Offices, key partners, the staff of the WHO Regional Office and Headquarters to address some of the gaps in order to improve timely and efficient response to health emergencies in the African region.



11. APPENDIX I. ORIGINAL AGENDA

Time	Day 1: Mon 29 Jan 2018 Chair - B. Impouma				
8:30-8:45	Registration of participants				
8:45-9:00	Administrative briefing; Introduction of participants E. Hamblion				
9:00-9:15	Welcome Remarks	D. Nshimirimana			
9:15-9:30	Objectives of the workshop, expected outputs and methods of work	B. Impouma			
9:30-9:45	Group Photo				
9:45-10:00	Tea Break				
10:00-10:30	Overview of the outbreak toolkit: Rationale & objective of the outbreak toolkit; Process of developing the outbreak toolkit	E. Hamblion			
10:30-11:45	Perspectives from the field: Panel discussion: Challenges in information management during cholera outbreaks Malawi, Tanzania and Zambia	C. Wisseman, M. Kelias (Malawi); M. Moham- med, R. Kishimba, G. Saguti (Tanzania); M. Kanyanga (Zambia)			
11:45-12:00	Introduction to the cholera tool	C. Machingaidze			
12:00-13:00	Group work on the cholera tool - Introduction to group work and group formation - Line listing data entry, data analysis and interpretation	C. Machingaidze / F. Mboussou			
13:00-14:00	Lunch break				
14:00-15:00	:00 Continuation of group work C. Machingaic F. Mboussou				
15:00-15:15	Tea Break				
15:15-16:00	Critical review of cholera data entry, analysis and interpretation from the group work C. Machingaidze / F. Mboussou				



Time	Time Day 1: Mon 29 Jan 2018 Chair - B. Impouma				
16:00-16:45	The Role of UNICEF & IDR in Cholera Outbreaks: "Evaluation of Vibrio directly in the environment using RDT" - Group discussion	J. Graveleau / G. de Magny			
16:45-17:00	Wrap up and closing session				

Time	Day 2: Tue 30 Jan 2018 Chair - B. Archer			
8:30-9:00	Recap of Day 1			
9:00-10:15	Perspective from the field: NCDC presentation on Lassa Fever outbreak in Nigeria: Tools we use and how we're improving Information Management; Liberia Lassa Fever 2017: How we responded - focusing on data and information management	O. Aderinola & R. Yashe (NCDC); T. Nagbe & G. Williams (Liberia)		
10:15-10:30	Tea Break			
	Introduction and group work on Lassa Fever scenario - Data Analysis - Discussion on key variables	S. Funke / T. Mlanda		
10:30-12:30	Group work and open discussion on minimum key variables for Lassa Fever	S. Funke		
12:30-13:00	Reporting the information collected: Situation Reports - Why Epidemiological Analysis is Key	C. Okot		
13:00-14:00 Lunch Break				
14:00-15:00	14:00-15:00 Group Work: Epidemiological Analysis for Situation Reports			
15:00-15:15 Tea Break				
15:15-15:45	Continuation of group work			
15:45-16:45	Feedback and Discussion on Epidemiological Analysis for Situation Reports and the Role of the Toolkit S. Funke			
16:45-17:00	Wrap up and closing session			



Time	Day 3: Wed 31 Jan 2018 Chair - F. Mboussou			
8:30-9:00	Recap of Day 2			
9:00-10:30	Perspective from the field IPD: The role of laboratory data and information in outbreak response with a focus on Dengue Fever DRC: Managing a large Yellow Fever dataset to describe a rapidly evolving outbreak Niger: Coordinating data from animal and human health outbreaks to respond to RVF	O. Faye & D. Diallo (IPD); G. Tshapenda & B. Mbodj (DRC); K. Goumbi, B. Bienvenu, S. Rosine (Niger)		
10:30-10:45	Tea Break			
10:45-11:00	Designing databases for outbreak data collection	B. Archer		
11:00-13:00	Group work to discuss minimum variables and outputs for tools: - Group A: Yellow Fever - Group B: Rift Valley Fever - Group C: Dengue Fever	B. Archer / V. Sodjinou		
13:00-14:00	Lunch Break			
14:00-15:00	Group work preparation for feedback session	B. Archer		
15:00-15:15	Tea Break			
15:15-16:45	Feedback from groups on minimum variables and outputs for tools proposed and consensus reached - 30 minutes per disease area B. Archer / V. Sodjinou			
16:45-17:00	Wrap up and closing session			

Time	Day 4: Thu 1 Feb 2018 Chairs - O. Faye & D. Diallo
8:30-9:00	Recap of Day 3



Time	Day 4: Thu 1 Feb 2018 Chairs - O. Faye & D. Diallo			
9:00-10:30	Perspectives from the field: Using IDSR data to detect outbreaks - Status in Sierra Leone - Status in Mali - Group discussion	D. Kargbo & R. Mu- soke (Sierra Leone); M. Maiga & S. Mas- sambou (Mali)		
10:30-10:45	Tea Break			
10:45-11:15	Use of IDSR data at the regional office	T. Mlanda / C. Massidi		
11:15-13:00	Discussion on improving IDSR to detect outbreaks in a timely manner	C. Okot		
13:00-14:00	Lunch Break			
14:00-15:00	EWARS: -EWARS in a box and link with toolkit; Summary of EWARS meeting; Review of existing tools for surveillance and response functions	A. Perrocheau		
15:00-15:15	:00-15:15 Tea Break			
15:15-16:15	Investigating outbreaks of unknown aetiology - SOP on PH events of unknown aetiology - What do we need to know? - Work in progress	A. Perrocheau		
16:15-16:45	Case definitions A. Perrocheau			
16:45-17:00	Wrap up and closing session	1		

Time	Day 5: Fri 2 Feb 2018 Chairs - E. Hamblion			
8:30-9:00	Recap of Day 4			
9:00-9:30	Introduction to the outbreak documentation checklist E. Hamblion			
9:30-10:00	Information management tools to support operational response			
10:00-10:30	Discussion on information management tools used at country level to support operational response	Facilitated by I. Nzeyimana		



Time	Day 5: Fri 2 Feb 2018 Chairs - E. Hamblion				
10:30-10:45	Tea Break				
10:45-11:15	Overview of the document management system: - Rationale / objective				
11:15-11:45	Group work discussions: How are documents managed at country level? How should they be managed?	T. Mlanda			
11:45-12:15	Feedback and discussion on system to track outbreak documentation - Management of sitreps and other documents	T. Mlanda			
12:15-13:00	Effective use of GIS in outbreak response - What data needs to be collected for effective use	Y. Izawa			
13:00-14:00	Lunch Break				
14:00-15:00	O-15:00 GIS Group work Y.				
15:00-15:15	Tea Break				
15:15-16:15	5 Continuation of GIS Group work Y. Izawa				
16:15-16:45	Way forward and recommendations B. Impouma				
16:45-17:00	Closing ceremony				



12. Appendix II. List of participantss

N°	ORGANIZATION	COUNTRY	NAMES	FUNCTION
1		DRC	Dr Mbodj Mohamadou Bachir	Oficier Sécurité Sanitaire
2		Mali	Dr Sacko Massambou	NPO/IHR
3		Niger	Dr Sama Kanembe Rosine	HEO
4		Senegal	Dr Ibrahim Oumar Ba	
5	•	Senegal	Dr Ba Mady	DPC
6	WHO	Liberia	Mr. George Sie Williams	Epidemiologist
7		Sierra Leone	Dr Robert Musoke	EPR Team lead
8		Nigeria	Dr Samuel Kitgakka Mutbam	NPO/Infectious Health Manage- ment
9		Malawi	Dr Msyamboza Kelias	NPO/DPC
10		Tanzania	Dr Grace Saguti	DPC
11	IPD	Senegal	Dr Diawo Diallo	
12	H	Senegal	Dr Ousmane Faye	
13	IRD	France	Guillaume Constantin De Ma- gny	Chercheur
14		Senegal	Dr Jerlie Loko Roka	Surveillance Advisor
15	CDC	Nigeria	Dr Olaolu Aderinola	Health Emergency Prepadness and Response
16		Nigeria	Mr Rimamdeyati Yashe	Data Management- Disease Surveillance/Epidemiology
17	UNICEF	Senegal	Mr Julien Graveleau	Spécialiste WASH





N°	ORGANIZATION	COUNTRY	NAMES	FUNCTION
39		Senegal	Dr Franck Mboussou	Surveillance Technical Officer
40	S	Senegal	Dr Vincent Sodjinou	
41	HUBS	Senegal	Christian Massidi	Data Manager
42	=	Senegal	Rodrigue Barry	
43		Senegal	Dr Innocent Nzeyimana	EHO/EMO/DAKAR HUB
44	' 0	Senegal	Mr Vincent Dan Rengou	Interpreter
45	ER S		Mr Momar Khary Diagne	Interpreter
46			Mr Jane Mamsait	Interpreter
47	INTERPRETERS		Mrs Diop Wane	Interpreter







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