Community Event-Based Surveillance Manual for Integrated Disease Surveillance and Response in Liberia

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Acronyms

CDC – Center for Disease Control and Prevention

CEBS – Community Event-Based Surveillance

CHA – Community Health Assistant

CHSS – Community Health Surveillance Supervisor

CHO – County Health Officer

CHT – CountyHealth Team

CHV – Community Health Volunteer

CSO – County Surveillance Officer

DSO – District Surveillance Officer

DHT – District Health Team

EOC – Emergency Operations Center

ICCM – Integrated Community Case Management

IDSR – Integrated Disease Surveillance and Reporting

MOH – Ministry of Health

NCHSP – National Community Health Services Policy

NHMIS – National Health Management Information System

OIC – Officer in charge (of a catchment health facility)

ORS –Oral Rehydration Solution

POE – Point of Entry Staff

SFP – Surveillance Focal Point

WHO – World Health Organization

I. Introduction

The recent Ebola outbreak highlighted weaknesses in Liberia's capacity for early detection and response to public health threats. While the overall incident management system improved in the course of the Ebola response, the lessons learned offer opportunities for further expanding the mechanisms for timely detection, response and management of potential public health threats.[1]Community Event-Based Surveillance (CEBS)offers a tool to facilitate timely collection information and response to events of potential public health interest. In line with the National Health Services Policy (NCHSP), the Liberia CEBS aims to engage a cadre of health workers and volunteers who are embedded within communities andtrained to provide disease surveillance services.

Community Event-Based Surveillance is an organized and rapid collection of information from community events, typically symptoms of diseases of interest in a specific local context,that could constitute potential risk to public health.[2] Event-based surveillance is a demonstrated tool that has been employed in previous infectious disease outbreaks in a variety of settings to facilitate the timely detection and response to public health threats (for example in Ghana and Sierra Leone).[3] CEBS has also been identified as a surveillance tool with the potential to improve early case identification, reduce transmission in communities and enhance response efforts in Liberia prior to, during and after epidemics. CEBS is an integral part of the Liberia Integrated Disease Surveillance and Response (IDSR)[4] which promotes the integration of surveillance and response activities for priority diseases (for example acute bloody diarrhea) and other events of public health importance. The implementation of CEBS in Liberia therefore contributes to the implementation of both the IDSR and NCHSP.

This manual serves as a guideline for development partners, NGOs, County health units and District Health units on the process of establishing a CEBS program and recruitment procedures for community health cadres. While focused specifically on CEBS, the manual draws extensively on the structures established by the NCHSP and is consistent with the monitoring, evaluation and research objectives of the National Health and Social Welfare Policy and Plan (NHSWP- 2011–2021) and the Policy for National Health Management Information System (NHMIS). It should therefore be used in tandem with these policies, which are the overarching frameworks for Liberia's health, community health practice and information management,respectively.

II. Purpose

This manual describes the structure and implementation of an effective CEBS system in Liberia. Italso provides standardized instruction and protocols for all priority diseases.

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[1]Ministry of Health, Revised Community Health Services Policy (2016-2021)
[2] WHO, 2008. A Guide to establishing Event-Based Surveillance. See also WHO, 2014. Integrated Disease surveillance and response in the Africa region: A guide for establishing community based surveillance.
[3] Maes & Zimicki, 2000. An Evaluation of Community-Based Surveillance in the Northern Region of Ghana; UK aid & ERC, 2015. Evaluation of the functionality and effectiveness of Community Event-Based Surveillance in Sierra Leone.
[4] This document is currently being developed and may be finalised by June 2016.

III. Scope

This manual has been developed to serve as a guide for the Ministry of Health (MOH) and development partners interested in the CEBS process. It will however be applied at the county, district and health facility levels while showing the flow of information from community through to national level. Specific participants in the CEBS process include: Community HealthAssistants (CHA), Community Health Volunteers (CHV),Community Health Service Supervisor (CHSS)/Officer In Charge (OIC)/Surveillance Focal Person (SFP),District Surveillance Officers (DSO) and County Surveillance Officers (CSO).

IV. Objectives

a. To establish a system for identifying priority disease transmission and events of public health importance at the earliest possible stage;
b. To feedback information both to district and county surveillance officers to adapt and intensify real-time response;
c. To empower communities to take action to stop chains of disease transmission;
d. To improve health outcomes by increasing the timeliness in which suspected cases of all priority diseases areidentified and treated;
e. To monitor morbidity and mortality trends of priority diseases;
f. To improve risk communication in communities through sensitization of public health risks and best practices;
g. To better understand and map the risks and disease burden in Liberia.

V. Event Triggers

The list of event triggers below is meant to be used by communities to identify and report symptoms of priority diseases that are immediately-notifiable, have epidemic potential, and/or events that pose a risk to community, including: acute flaccid paralysis, acute watery diarrhea/cholera, bloody diarrhea, human rabies, maternal death, measles, neonatal death,neonatal tetanus, meningitis, and viral hemorrhagic fevers (Ebola virus disease, Marburg, Lassa fever, and Yellow fever).[5] This list should be used for training community health assistants and volunteers to enable them torecognize when they should notify the health facility through theCHSS or OIC in their area, thereby triggering rapid response and investigation as necessary.

[5] These triggers are based on the priority diseases and conditions for Liberia, as provided in the draft Liberia IDSR

Symptom/Event Triggers[6]

Any person with weakness in the legs and arms or not able to walk	Acute Flaccid Paralysis (Poliomyelitis)	Report to CHSS/OIC/SFP and refer cases to health facility.
Running stomach. Any person passing three (3) or more water pu-pu within one day.	Acute Watery diarrhea (Cholera)	Report to the CHSS/OIC/SFP, and refer cases to health facility unless it is a child under five and the CHA has received ICCM training, in which case ORS may be administered. All other cases should be referred to the health facility.
Diarrhea with blood (pu-pu with blood) Any person passing bloody pu-pu or slimy (slippery) pu-pu with stomach pain	Acute bloody diarrhea (Shigellosis)	Report to CHSS/OIC/SFP and refer cases to health facility.
Any person who is bitten by a dog or other animal	(Human) Rabies	Report to CHSS/OIC/SFP and refer cases to health facility.
Any person with hot skin (fever) and spot-spot (rash)	Measles	Report to CHSS/OIC/SFP and request to remain at home and avoid contact with others until OIC or appropriate health professional arrives.
Any person who has fever and two or more other symptoms (headaches; vomiting; runny stomach; weak in the body, yellow eyes), or who died after serious sickness with fever and bleeding.	Viral Hemorrhagic Fevers: Ebola Marburg Lassa Fever Yellow Fever	Report to CHSS/OIC/SFP and request to remain at home and avoid contact with others until OIC or appropriate health professional arrives.
Any person with hot skin (fever) and stiff neck.	Meningitis	Report to CHSS/OIC/SFP and refer cases to health facility.
Big belly death Woman who dies with big belly or within 42 days (six weeks) after the baby is born or when the belly move.	Maternal Death	Report to CHSS/OIC/SFP
Jerking Sickness, Baby who is normal at birth, then after two days is not able to suck starts jerking	Neonatal tetanus	Report to CHSS/OIC/SFP and refer cases to health facility.
Young baby death Baby who dies at birth or within 28 days (four weeks) after birth	Neonatal Death	Report to CHSS/OIC/SFP.
Unknown health problems grouped together; Any health problem that you don't know about that is happening to many many people or animals in the same community.	Unexplained Cluster of events or disease	Report to CHSS/OIC/SFP.
Any death in human or group of animals that you don't know why it happened	Unexplained death	Report to CHSS/OIC/SFP.

[6]IDSR Reportable diseases and conditions, Liberia, 2015. See IDSR document for thresholds for alert and actions.

VI. Primary Roles and Responsibilities in CEBS system

The key actors in the CEBS process are: CHAs, CHVs, CHSS/OICs/SFP, DSOs, and CSOs. Their duties are outlined below.

Community Health Assistant (CHA)[7]

CHAs are incentivized to carry out the duties outlined in the National Community Health Services Policy in communities outside of 5 kilometers of a health facility. In communities with a CHA, the CHA is the primary responsible person for CEBS activities. Responsibilities are as follows:

1. Build relationships, communicate and coordinate with other community key informants, resource persons and existing formal and informal networks for information dissemination and reporting;
2. Participate in the Community Health Committee meetings;
3. Remain in the community and stay informed of local events and activities;
4. Community death recording with special emphasis on maternal and neonatal death;
5. Identify priority disease event triggers as they occur in the community (including early case detection through active case finding);
6. Immediately report cases meeting trigger definitions to CHSS using mobile phones or any means necessary and refer patients to health facility. If CHSS is unavailable, to report to the DSO;
7. Fill out the CEBS alert form for every case after or during immediate notification;
8. Coordinate the CHVs services working in their catchment area;
9. Be present for routine supervision visits with Community Health Service Supervisor (CHSS) to receive briefing and discuss issues;
10. Assist during investigations at the request of the DSO.

Community Health Volunteer (CHV)

CHVs are community health volunteers operating both within and outside of the 5km radius of a facility, and may be recruited for specific tasks.[8] Responsibilities include:

1. Build relationships, communicate and coordinate with other community key informants, resource persons and existing formal and informal networks for information dissemination and reporting;
2. Remain in the community or duty station and stay informed of local events and activities;
3. Participate in the Community Health Committee meetings within a 5km radius of the health facility;
4. Identify priority disease event triggers as they occur in the community;
5. Immediately report and refer event triggers to the CHSS/OIC/SFP and transmit all relevant information to the nearest health facility;
6. Fill out the CEBS referral form for every case after or during immediate notification;
7. Assist the CHSS/SFP/OIC in community verification;

[7] REFER TO THE COMMUNITY HEALTH SERVICES POLICY AND DRAFT IDSR DOCUMENT for the criteria and process of selecting CHAs/CHV's and indicate that CHAs will need to undertake the full training package for CHA which includes: Modules 1-4.

[8] CHVs include a spectrum of community level actors. A more detailed definition of CHVs can be found in the Community Health Services Policy.

8. Introduce the DSO to the community and guide the DSO during investigations.

CHVs at Point of Entry (POE)

1. Stay informed of local events and activities at the land border crossing and surroundingcommunities;
2. Regularly meet with counterparts across border to receive priority disease and health updates;
3. Identify priority disease event triggers as they occur at the POE level using the CHV/POE referral form
4. Immediately report event triggers and all relevant information to their supervisor and the catchment health facility.

Community Health Service Supervisor (CHSS)

CHSSs are health professionals attached to a facility. A CHSS is expected to be in the field 80% of the time. Responsibilities include:

1. Supervision CHAs in communities more than 5km from the catchment health facility;
2. Organize and lead training of CHAs/CHVs with SFP or OIC;
3. Conduct routine supervision visits with CHAs and provide regular positive reinforcement and feedback;
4. Receive and verify alerts and reported potential cases of priority disease coming from CHAs;
5. Call on a weekly basis to check in with CHAs;
6. Report alerts to the DSO.

Surveillance Focal Person (SFP)[9] or Officer-In-Charge (OIC)

The SFP is a clinician who has been identified as the point person for reporting IDSR Case Alerts to the DSO. Responsibilities include:

1. Co-organize and lead training of CHAs/CHVs with the CHSS;
2. Delegate one of the health facility staff to supervise CHVs and provide regular positive reinforcement and feedback within the facility catchment area;
3. Verify information from CHSS about verified alerts outside of 5km from the health facility;
4. Conduct verification of alerts within 5km of the health facility;
5. Pass all CEBS forms to the DSO;
6. Reporting potential alerts for priority diseases/events to DSO through the IDSR Case Alert for determination on whether district-level rapid response is necessary.

District Surveillance Officer (DSO)

The DSO is a district health team staff who is responsible for the implementation of IDSR within the health district. Responsibilities include:

1. Support trainings of CHAs/CHVs organized and led by CHSS;
2. Receive alert from the health facility OICs or SFPs as they occur;
3. Discuss and screen alerts with CSO, if necessary;
4. Verify community alerts from CHA/CHV/POE if the CHSS/SFP/OIC is unavailable or if the DSO is nearby;
5. Immediately escalate alerts, if necessary;
6. Assist CSO to perform district level rapid response, if necessary;

[9] This could be the OIC who may delegate the SFP role.

7. Facilitate flow of information throughout reporting structure and complete all documentation;
8. Immediately respond to alerts with safe isolation and administration of oral rehydration solution (ORS) when required;
9. Hold regular meetings with CHSS and CSO to give briefing and discuss issues;
10. Collect CEBS forms and maintain a list of alerts and verifications for purposes of risk mapping.

County Surveillance Officers (CSOs)

The CSO is a county health team staff who is responsible for the implementation of IDSR within the county. Responsibilities include:

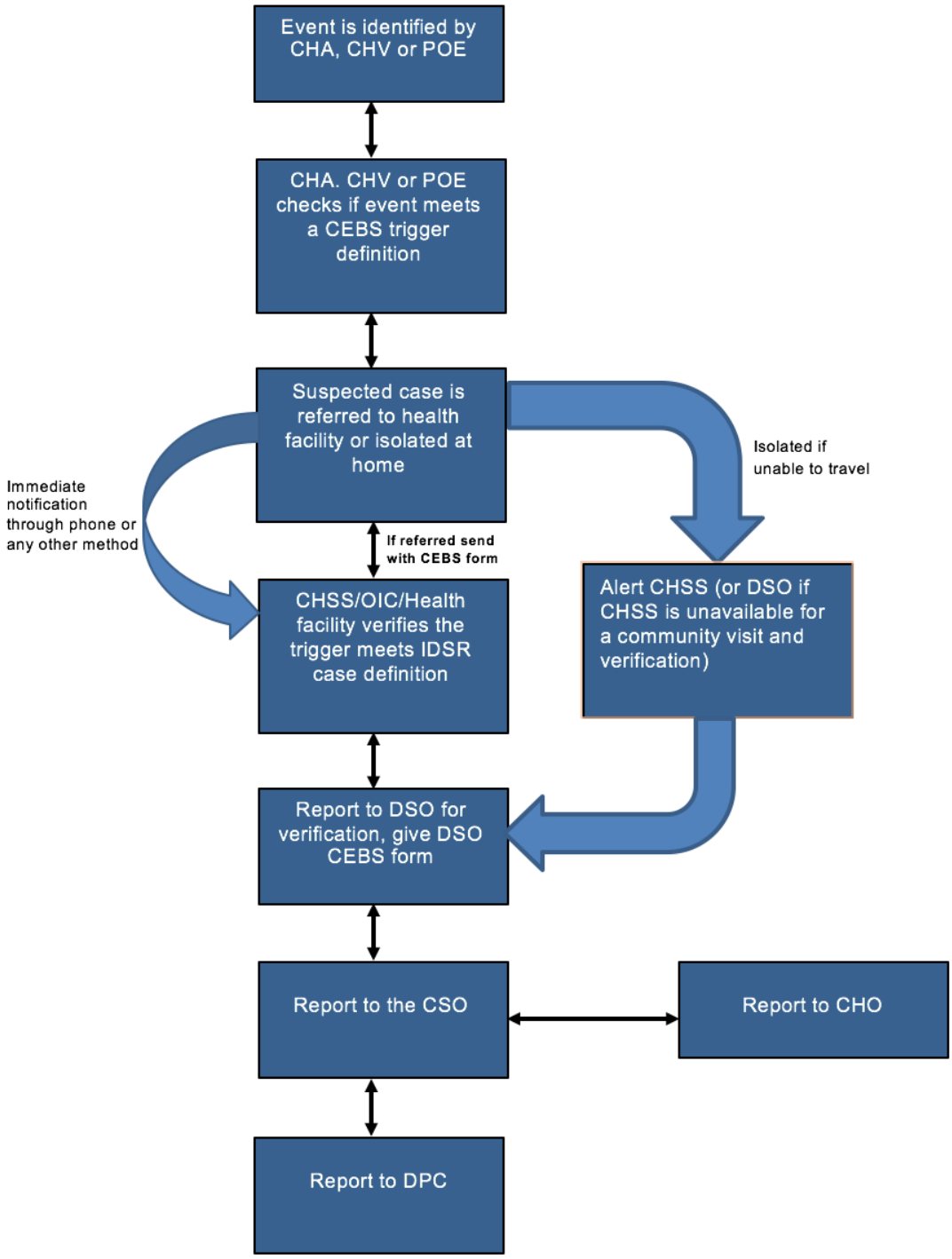
1. Support training of CHAs and CHVs with CHSS/OIC/SFP;
2. Receive alerts from DSO and investigate, if necessary;
3. Work with the DSO to screen alerts at the district level and assist in the district rapid response, if necessary;
4. Escalate alerts to the county response team, if necessary;
5. Receive hotline calls and relay the information to the district level;
6. Attend regular meetings with DSO, CHSS, OICS/SFPs, CHAs and CHVs to participate in briefing and discuss issues.

County Emergency Operations Center (EOC)/Dispatch Center

As part of the CEBS system, a hotline will be established for the purpose of receiving alerts from the CHAs/CHVs/POEs and to relay the same to the districts. The functions of the EOC include:

1. Receive calls from the community;
2. Input data in the information management system;
3. Notify the district team for initial investigation.

Reporting Structure



VII. Event Follow-up and Response

Community Health Monitoring

- If the CHA/CHV becomes aware of a suspicious situation in their community that matches one of the event triggers, they will immediately report to their CHSS via mobile phone or in person;
- If no event triggers have taken place in the community, the CHA will still report to the CHSS to keep them informed that no triggers have been identified;
- This reporting should happen once per week.

CHVs at Port of Entry

- Visually detect overt signs and symptoms of illness in travelers;
- Ensure prompt notification on the illness within their supervisory channels.
- Refer ill travellers to the nearest health facility to the border crossings;
- Report to the health facility in their notification flow and complete the POE trigger form.

Community Health Monitoring Supervision

- The CHSS/OIC will answer alert calls from the CHA/CHV;
- The CHSS will also establish a day and time (once a week) when the CHA is expected to report to confirm that there are no alerts;
- If a CHA fails to check-in by the established time, the CHSS will attempt to contact that CHA;
- The CHSS will also keep track of reports (including zero reporting) that they will submit weekly to the CEBS data analysis team;
- The CHSS will refer to the CEBS data analysis team any issues raised by the CHA or experienced themselves;
- Once an alert is received by the CHSS, they will determine if that alert should be dismissed (doesn't fit an alert trigger, not a concern) or if they should notify the DSO;
- If the DSO brings an alert to the CSO, they will work together to triage the alert and enact a district level rapid response.

District Level Rapid Response

- Using their discretion and knowledge of the situation, the CSO and the DSO will work together to determine if the alert should be dismissed, further assessed or escalated;
- If the alert needs to be escalated, the DSO will immediately activate the district health team via the alert hotline. They will give any relevant information as well as communicate that the alert was notified through the CEBS reporting structure described in this section;
- While awaiting the county response team to arrive, the DSO (with support from the CSO) will issue a district level rapid response to further address the situation, including administering oral rehydration solution (ORS) or temporary safe isolation if necessary;
- The district level rapid response team is important as the county response team may sometimes take a long time to arrive due to geographical, logistical and other challenges. By rapidly isolating suspect cases and administering ORS while awaiting the district response

team, this district level rapid response can prevent further transmission and contribute to improve health outcomes for cases;

- Upon arrival the district/county response team will assess the situation and determine if the individual needs to be transported to a district or county health care center/hospital for treatment and coordinate specimen collection;
- Specimens will be transported by the district response team or appropriate other means if the specimen is collected in a health center to the nearest specimen collection network pick up point for prompt delivery at the nearest laboratory for testing;
- The DSO and CSO will also use their discretion to determine if additional community sensitization or education is necessary for that community. If so, they may notify the appropriate local leaders (chiefs, elders, ward supervisors, etc.) as well as CHAs/CHVs that are operating in that area.

VIII. CEBS ImplementationProcess

Step 1: Introduction at the County Level

The objectives of the discussion at the county level are to:

- Introduce the CEBS standard operational manual;
- Initiate the establishment of a system for routine data collection and analysis relevant to the CEBS;
- Discuss steps for introducing CEBS to the district level;
- Establish the emergency operations centre for each County;
- Appoint a data analysis team for each county.

Step 2: Introduction at the District Level

The objectives of this discussion at the district level are to introduce the CEBS model, determine the number and distribution of CHAs in communities, assign task of CHA identification and ensure endorsement of the CEBS system from district leadership. There are four main objectives for this discussion.

- Introduce the model for CEBS;
- Work with CHT, DHT and partners to determine the distribution and density of CHAs and CHVs already active in communities;
- Indicate the training level of the CHAs and CHVs in the communities;[10]
- Identify any gaps in coverage of CHA or CHV relative to guidelines from the NCHSP;
- Assign task of CHA identification to district leadership;
- Ensure awareness of the CEBS model by district leadership.

Step 3: Formation of CEBS Implementation Team at district level

The formation of the CEBS system in each district shall be preceded by the establishment of a CEBS implementation team. The implementation team shall be comprised of at least one representative

[10] If additional CHAs are to be identified in communities by development partners, this must be aligned with the national CHA selection and training process and curriculum.

from the county health team, district health team, district commissioner, and representatives of the partners that will be supporting the district health team with implementation of CEBS. The CEBS implementation team is responsible for:

- The planning, implementation and ongoing maintenance of CEBS in each district;
- Once formed, the CEBS implementation team will activate the process of establishing CHCs in communities where none exist;
- Where one exists, the team will work with the community health committee (CHC) to select CHA;
- Where both CHC and CHA exist, the team will work with the CHC to link the CHA to the CHSS for the purpose of reporting CEBS related information.

Step 4: Training of CHSS and District Surveillance Officer (DSO)

- As needed, the CEBS implementation team will work with the District Health Team and other partners operating in that district to train the CHSS and DSO.

Step 5: Identification and Training of CHA[11]

- As outlined in the NCHSP, the CHC under the guidance of the CHSS will select CHAs where non exist;
- The process of selecting CHA's is outlined below:

- The CHC will seek and receive nominations of potential candidates for the CHA role from community members and leaders at a gathering;
- The nominated candidates will be provided detailed information regarding the role and clarifications will be provided where necessary;
  Nominated candidates will then take a written literacy test, following which they will be interviewed;

- The selected candidates will receive CHA training according to the CHA training curriculum following which they shall receive a certificate enabling them to perform the role of CHA.

[11] The selection and training of CHAs should be undertaken within the wider context of the IDSR and NCHSP and all selected CHAs must undergo the full CHA training package.

IX. Coordination

Community Event-Based Surveillance (CEBS) Implementation Team at County level

The CEBS implementation team consists of representatives from the county health team (CHT), district health team (DHT), partner organizations, HFDC and CHC. The roles and responsibilities of this team are as follows.

1. Sensitize and introduce the program to the health districts and health facilities concerned;
2. Implementation and rollout of CEBS in their respective areas in accordance with the national standardized CEBS guidelines and PoE guidelines approved by the MoH;
3. Identify CHAs/CHVs following standards for selection determined by the MoH in the National Community Health Services Policy, with a ratio of 1:40/50 (CHA/CHV:Households) up to 350 Population;
4. Ensure periodic in-service/refresher trainings are conducted to appropriately address identified gaps and reinforce evidence-based best practices;
5. Ensure that district health teams are actively participating to the monitoring and assessment in the communities and ports of entry on a weekly basis;
6. Ensure CHSS/OICs effective supportive supervision of CHAs/CHVs using standardized supervisory checklists and tools created by CHSD;
7. Actively participate to a monthly joint monitoring in the communities and in the ports of entry which is organised at the county level;
8. Actively participate in the collection, management and analysis of data related to CEBS and PoE and avail technical staff for their capacity reinforcement in data management;
9. Determine needs for district surveillance officer, port health and data management, and prioritize needs required in order to facilitate adequate response;
10. Organize monthly coordination meeting that will enhance coordination on surveillance, official reporting and rapid response of disease outbreaks, including HFDC monthly meetings' recommendations;
11. Meet regularly to inform county and national IDSR review meetings;
12. Report and present CEBS issues at county health coordination team meetings.

Establish system for data collection, analysis and reporting at district level

- The CEBS implementation team will establish a small (2-3 member) team to be responsible for the ongoing data analysis and reporting;
- Receive information collected by the CSO and the EOC/dispatch center, perform appropriate data analysis and report findings back to the CEBS implementation team;
- Identify any steps that need to be taken and any other parties that should be informed as they create a plan for ongoing data collection, analysis and reporting;
- All data collection, analysis and reporting should take place according to the *Strategy for Data Collection and M&E System* document in the CEBS toolkit (Annex 5).

Monitoring and Evaluation

- The EOC/Dispatch centre, based at the County level, will analyze and report the data received from CHAs/CHVs, CHSS, OIC and district levels;
- The team will report the proportion of CHAs/CHVs reporting each week (including zero reports) and any issues that the DSO has raised that concern the analysis team;

- For CEBS outputs, the analysis team will report the proportion of alerts that are escalated to the district level and the proportion of those escalated alerts that result in more timely case identification.

X. List of annexes

The following annexes have been created to assist in the establishment and implementation of CEBS and will serve as additional resource to all partners and key participants with the planning, implementation, conduct and analysis of CEBS in each distract.

- Annex 1: Discussion Guideline for Introduction at the County/ District Level;
- Annex 2: Strategy for Data Collection, Monitoring, and Evaluation System;
- Annex 3. Simplified Suspect Case Definitions;
- Annex 4: CEBS Reporting Form for CHAs;
- Annex 5: CEBS Reporting Form for CHVs and POEs.

Annex 1: Discussion Guideline for Introduction at the County and District Levels

Introduction
The purpose of this document is to outline the discussion that should take place when the CEBS implementation team meets with leadership at the county level to introduce the surveillance system and make appropriate modifications according to county characteristics.

Key Individuals
In addition to the representatives of the CEBS implementation team, county leadership and supporting partners should participate in the discussion. This includes:

- CHO, CSO, key members of county health team;
- National MOH surveillance officer;
- Other supporting partners in the county;
- Representatives of district commissioners and paramount chiefs.

Objectives

1. Introduce the model for CEBS;
2. Establish system for routine data collection and analysis;
3. Ensure endorsement for CEBS system from county leadership.

Action Points

1. Analysis team will be designated and create plan for routine data collection and analysis;
2. CEBS implementation team will make modifications to the model (if necessary) according to the discussion and prepare the system for county roll out.

Recommended Procedure for Discussion

1. Welcome and Introduction
    a. Introduce CEBS implementation team and purpose of the discussion;
    b. Discuss need for CEBS and gaps in current surveillance system;
    c. Review outline for CEBS according to CEBS Manual.

2. Establish system for routine data collection and reporting
    a. Determine the following:
        i. Who at the EOC/dispatch center will record if an alert comes through CEBS?
        ii. What recording documents do we need to modify/create?
        iii. Who reports data to the analyzing party?
        iv. Who will be responsible for data analysis?

3. Confirm/review assigned roles and action points.

4. Ensure endorsement by present parties.

Annex 2: Strategy for Data Collection, Monitoring, and Evaluation System

Introduction

The systemic collection and analysis of data generated by the CEBS system is critical in order to evaluate both the process and the outputs of the system. Evaluating the process will provide insight into how well the system is functioning and will flag any issues as they come up. Evaluating the outputs will determine whether or not the system is effective at eliciting important alerts and identifying cases in the community. These assessments are necessary for evaluating the success of the system as well as identifying opportunities for enhancement. This document outlines some recommended strategies for the collection and analysis of data produced by CEBS.

Key Participants

In addition to the CEBS implementation team, the key participants for data collection and analysis for CEBS are as follows:

- The CSO;
- Alert EOC/Dispatch center phone operator;
- The CEBS data analysis partner(s);
    - This is an individual or small team consisting of technical support partners and/or surveillance pillar representatives. The CEBS data analysis partner(s) will be determined by and report findings to the CEBS implementation team.

Data Collection

1. Data CollectionProcess

    a. Measure the proportion of CHAs/CHVs reporting each week:
        i. It is the responsibility of the CHSS/OIC/SFP to keep a weekly log consisting of a roster of CHAs/CHVs indicating which day they reported. This data will be forwarded to the analysing party at the end of each week.

    b. Determine the acceptability of the experience of the CHA/CHV:
        i. The DSO will hold meetings at regular intervals during which issues (if any) will be brought forth by CHSS/OIC/SFP and CHA/CHV
        ii. The DSO will forward these issues in addition to any of his/her own issues to the analysing party.

2. Outputs Data Collection

    a. Measure the total number of alerts from CHSS/OIC/SFP and proportion that are escalated from the district level;
        i. The DSO will be responsible to keep a tally of the total number of alerts in that district as well as the number of those alerts that are escalated to the county response center.

    b. Determine the case identification status (suspect, probable, confirmed) of alerts that have been escalated from the district level:
        i. The Alert EOC/Dispatch center phone operator will record whether or not the alert was received through the CEBS system for each call received. Then, the analysing party will follow up through the appropriate channels to record the case identification status for each alert that was escalated from the district level to the county response team through the CEBS system.

Data Analysis

1. Analysis of Process

    a. Determine the frequency of weekly reporting by CHA/CHV

The analysing partner will use the following equation:

Percent of CHAs/CHVs reporting = (Number of CHAs/CHVs reporting once in that week / Total number of CHAs/CHVs) * 100

b. Determine the system acceptability according to the experience of the CHA/CHV
c. Determine the percentage of communities reporting on a weekly basis by CHA/CHV

Based on the list of issues received from the CSO, the analysing partner will determine the severity of such issues. With discretion, the analysing partner will identify important issues (if any) that should be brought to the attention of the CEBS implementation team.

2. Analysis of Outputs

a. Determine the proportion of alerts that are escalated

The analysing partner will use the following equation:

Percent of alerts that are escalated = (Number of alerts escalated/ Total number of alerts) * 100

b. Determine the proportion of escalated alerts that result in case identification (suspect, probable, and confirmed cases)

The analysing partner will use the following equation:

Percent of escalated alerts that result in case identification = (Number of alerts that result in case identification / Total number of escalated alerts) * 100

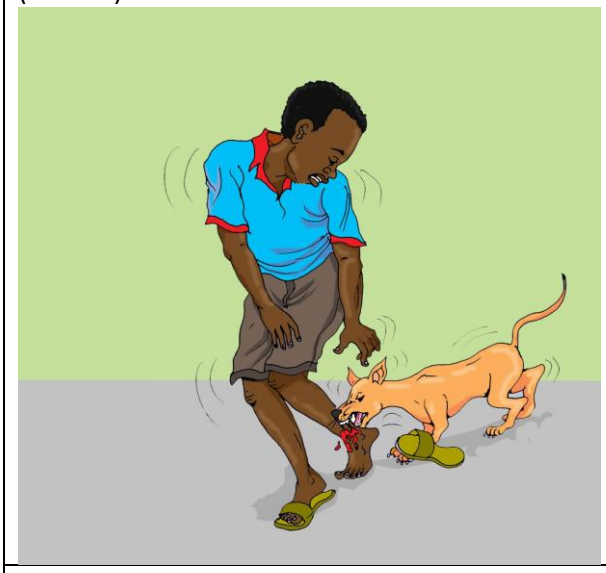
Reporting
It is the responsibility of the analysing partner to report findings to the CEBS implementation team at regular intervals to be determined by the implementation team. The CEBS implementation team will use the reported data to evaluate the CEBS system and, if necessary, make modifications. The analysing partner will report the following:

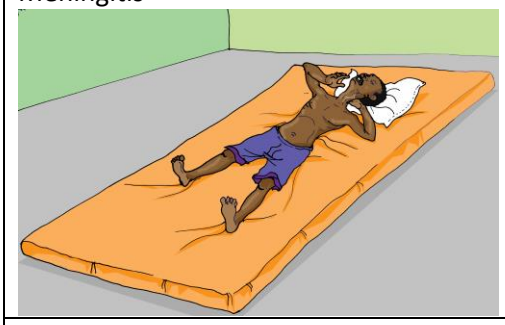
For System Process:
1. Percent of CHAs/CHVs reporting each week in relation to total number of communities covered in this report
2. Relative acceptability of the CEBS system and any pressing issues that arise
3. Percent of alerts received at the health facility level to the total number of alerts reported by CHAs/CHVs

For System Outputs:
4. Percent of alerts verified at the health facility level from the overall reported alerts,
5. Percent of CEBS alerts that are escalated to the county response team
6. Percent of CEBS escalated alerts that result in case identification,

Annex 3: Simplified Suspect Case Definitions

Name of IDSR Event or disease	CEBS Community Trigger
Acute Flaccid Paralysis (Cripple sickness/Poliomyelitis) 	Any person with weakness in the legs and arms or not able to walk
Acute Watery diarrhea (Cholera) 	Running stomach. Any person passing three (3) or more water pu-pu within one day.
Acute bloody diarrhea (Shigellosis) 	Diarrhea with blood (pu-pu with blood) Any person passing bloody pu-pu or slimy (slippery) pu-pu with stomach pain

(Human) Rabies 	Any person who is bitten by a dog or other animal
Measles 	Any person with hot skin (fever) and spot-spot (rash) and/or red eyes
Viral Hemorrhagic Fevers: Ebola Marburg Lassa Fever Yellow Fever 	Any person who has fever and two or more other symptoms (headaches; vomiting; runny stomach; weak in the body, yellow eyes), or who died after serious sickness with fever and bleeding.

Meningitis 	Any person with hot skin (fever) and stiff neck.
Maternal Death 	Big belly death Woman who dies with big belly or within 42 days (six weeks) after the baby is born or when the belly move.
Neonatal tetanus 	Jerking Sickness, Baby who is normal at birth, then after two days is not able to suck starts jerking
Neonatal Death 	Young baby death Baby who dies at birth or within 28 days (four weeks) after birth
Unexplained Cluster of events or disease	Unknown health problems grouped together; Any health problem that you don't know about that is happening to many many people or animals in the same community.
Unexplained death	Any death in human or group of animals that you don't know why it happened

Community Trigger & Referral Form

v.0.4
7/16

Section A Referral [Community → Facility] *to be triaged immediately*

The CHA/CHV fills this out, and submit to the Health facility (CHSS, OIC, SFP)

Patient Name:

Sex: ◯ Male ◯ Female

Date (DD/MM/YYYY):

Patient Age: ◯ Years ◯ Months

Crossed Int. Border in last 1 month (Y) (N)

Community:

Facility or POE:

CHA/CHV Name:

CHA/CHV Phone Number:

IDSR-ID:
(Filled by health facility)

Immediately Notifiable Triggers

1. Acute flaccid paralysis (Polio)
2. Acute watery diarrhea / Cholera (Runny stomach)
3. Bloody Diarrhea (pu-pu with blood)
4. Human Rabies (Dog/any other animal bite)
5. Measles
6. Viral Hemorrhagic Fever (Ebola, Lassa Fever, & Yellow Fever)
7. Meningitis (Stiff neck)
8. Maternal Death (Big belly death)
9. Neonatal Tetanus (Jerking sickness)
10. Neonatal Death (Young baby death)
11. Unknown health problems grouped together
12. Any death in human or group of animals that you don't know why it happened

◯ Other (write in):

Core Referral

◯ Family Planning ◯ Child Health ◯ Maternal & Infant Health
◯ Child Vaccination ◯ Tuberculosis ◯ Leprosy
◯ Mental Health ◯ HIV ◯ Other

Case description & any danger sign observed

Describe any investigation or treatment

Facility Health Worker - Tear Here

Section B Counter-Referral [Facility → Community]

For the Facility Health Worker: He/she should tear at the dotted line above and return to the CHSS to take to the CHA/CHV

Patient Name:

Date (DD/MM/YYYY):

Facility Worker Name:

Facility Worker Phone #:

Case Definition Met (Y) (N)

CHA/CHV Name:

Community:

Health Facility:

Facility Worker Position:

IDSR-ID:

Follow up plan & instructions to CHA/CHV:

Actions Taken (tick all that

◯ Treated and sent home
◯ Placed in isolation unit
◯ Admitted ◯ Referred
◯ Sample collected
◯ Other (write in):