Additional material to article

Interagency technical consultation on improving mortality reporting in Sierra Leone: meeting report

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Notes from the Interagency Consultations on Improving Mortality Reporting in Sierra Leone

Freetown, Sierra Leone. October 2015

Summary

By the end of the Ebola epidemic, death reporting in Sierra Leone became more acceptable amongst local populations, with nearly all deaths reported to the Ebola hot line alert centers. To continue this positive momentum, the Sierra Leone Ministry of Health and Sanitation (MoHS) and the US Centers for Disease Control and Prevention (CDC) organized and conducted the two day Interagency Consultations on Improving Mortality Reporting in Sierra Leone (Consultations). In conjunction with the Consultations, participants were also offered one-day, in-person training on the major components, characteristics, and uses of a national Civil Registration and Vital Statistics (CRVS) system.

The Consultations attracted more than 80 participants from governmental, business, health, public health, and other non-governmental organizations. Over the course of 18 presentations, participants discussed the ways deaths were reported before and during the Ebola epidemic and ways in which CRVS in Sierra Leone might be improved. Many presenters and participants discussed the challenges, including lack of infrastructure and country diversity. In addition, participants generally agreed upon the need for improving understanding of the benefits of death reporting at multiple levels: from local chiefdom authorities and councils to families, communities, and the national government. Despite the many challenges identified, all participants stressed the need for modernizing and improving death registration in Sierra Leone.

During the Consultations, real-time notes were kept by CDC staff for later abstraction and summarizing. Presenters agreed to share their PowerPoint presentations and approved the summaries. Additional comments and suggestions for improving death reporting were drawn from the suggestion notes collected at the end of each of three days of the Consultations.

Proceeding of the Interagency Consultations on Improving Mortality Reporting in Sierra Leone

October 21-22, 24, 2015

Radisson Blu, Aberdeen Conference Room, Freetown, Sierra Leone

Between October 21 and 24, 2015, the Sierra Leone Ministry of Health and Sanitation (MoHS) and the US Centers for Disease Control and Prevention (CDC) conducted the Interagency Consultations on Improving Death Reporting. The event consisted of five sessions with overall 18 presentations conducted over two days. A third day was also reserved for training. The meeting was conducted to explore the state of death reporting as a step toward tracking and improving the health of the citizens of Sierra Leone. The goal of the meeting was to understand processes used by governmental and non-governmental organizations in mortality data collection before and during the Ebola epidemic and to develop recommendations on improving death reporting and registration. This report is intended to summarize the presentations conducted during the event and convey the status of Sierra Leone's health reporting processes including the significance of death reporting, existing processes for death reporting prior to and during the Ebola epidemic, and considerations on needs and ways to improve the death reporting and registration process. The material covered in each session is summarized in the paragraphs below.

Opening Remarks (Day 1)

Mr. Richard Koni of Office of Births and Deaths welcomed everyone to discuss the timely topic of death information. He thanked CDC for collaborating and convening the Consultations, and welcomed ideas for improving mortality reporting. He called for putting into action the recommendations that would come in the course of the Consultations.

Dr. John T. Redd of CDC opened with a review of the uses of mortality information in a modern public health surveillance system, such as Integrated Disease Surveillance and Response (IDSR) being developed in post-Ebola Sierra Leone. He stressed that accurate mortality data covers a country's entire population while being accurate and timely. Such data would allow Sierra Leone to follow trends, focus resources where they are most needed, and identify conditions that are most important for immediate action.

Session 1: Established mortality reporting procedures in Sierra Leone

Session 1 initiated the meeting with presentations describing the current death reporting system including the applicable laws and the process by which deaths are reported and registered in Sierra Leone.

The importance of death registration for assessing the health of the nation (D1S1P1)

Ministry of Health and Sanitation, Directorate of Primary Health Care

Dr. Joseph Ngagba Kandeh, Director

The history of birth and death registration in Sierra Leone began in 1791 with 1825 marking the start of Colonial government record-keeping for birth registration, but lacks the data management of death registrations. Birth registration receives greater attention as a child rights activity since there was an attention to maternal death and death of the children under 5 years of age. A test was conducted to compare demographic surveillance with existing data and found a great difference in the estimates. The Birth and Death Registrars in DHMT exist, but there are no complete records. Without the records, Sierra Leone is relying on the surveys.

There was a discussion of flagship programs for the accounting of births in health facilities. The review found missing elements of information, but there is no way of cross-checking this information, which raised doubts about the figures. It was noted that the data are not available in the districts.

To introduce complete registration of both births and deaths, Sierra Leone needs human resources, more than one thousand Peripheral Health Units (PHUs), 14 Maternal and Child Health Aide (MCHA) training schools, 14 hospitals, and 475 doctors. No community in the country meets minimum requirements of health staff per person. There are insufficient human resources in the country. There is one registrar per district. PHU staff are expected to do registration, but many PHUs only have one staff person who must complete 8 different forms at the end of month and the registration form is not among them.

Sierra Leone (SL) needs to revise the payment system. Financial allocations do not include the Office of Births and Deaths. SL has maternal death review but the Births and Deaths Office is not included in it. SL has civil registration but maintaining authority is uncertain.

SL partners are interested in the survival of children, and it is the children's right to be registered to ensure the right to identify them, their nationality, their parents. SL relies on the census counts, but has no other way to verify it although the same law that establishes the census also requires birth and death registration. It was noted that these Consultations is the first time SL has put death registration on the table. A person's history is never complete without records of registration. Death registration is vital activity to recognize survival of a civilization so the history of a person is not complete without registration.

The Ministry of Finance does financial work for employment; in districts, PHUs have volunteers, the hospitals have volunteers. There are two types of volunteers – trained and qualified that have not been employed and untrained/unqualified. There is a gross underemployment of doctors (more than 4,000 are required but 275 are employed). SL needs training schools for medical personnel; the process of employment is long. Also, distance inhibits patients from accessing care. Dr. Kandeh suggested stopping a blame game and accepting the facts. He pointed out that the salary is not the only indicator to pay attention to; also working environment has to be improved and human resource problem needs to be addressed. Employment and salaries are improving but there is a need to put more resources into enabling environment. We need to think of motivating health workers to stay, considering not just salary but also an environment.

Question from the audience: If Ministry of Health and Sanitation has ever challenged government on lack of resources?

Response: Definitely yes; we asked Public (Civil) Service Commission to train and qualify doctors; reviewed budgets with Ministry of Finance; we need to encourage an enabling environment.

Existing civil registration processes, laws, and regulations (D1S1P2)

Ministry of Health and Sanitation, Directorate of Primary Health Care, Office of Births and Deaths

Simeon B.K.N. Kuyembeh, Senior Registrar

Alhaji Samuka Nallo, Principal Registrar

The process of the civil registration process was described to capture priority and complementary vital events (especially birth, stillbirth, and death events). Birth and Death Registration Act No 11, enacted in 1983, gives responsibility to MoHS to register all deaths, making registration mandatory. This Act established two registration types – Original Death Registration (death occurring and registered within 14 days) and Late Registration (death occurring and registered after 14 days but within one year), and a fee structure based on the type of registration –Le 1500 plus affidavit cost for Original Death Registration and Le 5000 plus affidavit cost for Delayed Death Registration.

Completing paper forms is also part of the registration process and includes a medical certificate of cause of death (prepared by medical practitioner), a statistical/notification form (for deaths outside of the medical center with a questionnaire given to a person who reports

death), a death record form (to be kept at Births and Deaths Office), a burial permit (taken to the council and the cemetery) and a death certificate (from the Record, signed and given to informant, to be used by the family). It was noted that deaths are classified in two ways, certified deaths (attended by medical practitioner) and uncertified deaths (not attended by medical practitioner, no medical certificate of cause of death).

The operationalization of civil registration (which is shared among Ministries), a definition of death, and the collection of vital events through devolved system were outlined. Civil registration in SL exists from the colonial administration but suffers from a weak enforcement of its compulsory aspect (as stated in the Births and Deaths Act No 11 of 1983 and Regulations of 1987), and this continues to be a setback. Traditions and absence of a national policy and by-laws serve as an impediment to death registration at community levels. It was explained that during Ebola response, MoHS' Office of Birth and Death (OBD) have not received information on deaths from the burial teams.

The benefits of death registration and certificates were emphasized, including how it is used for planning intervention measures, calculation of health indicators for use by public health managers, for disaggregation by age categories (0-11months, 5-15 years old, 18-44, 45+), preparation in inheritance proceedings, garnering assistance for victims (of war and other outbreaks), and ascertaining population dynamic between censuses.

Sierra Leone has come to rely on health services providers that are overworked, so it is difficult to ask them to give any attention to birth and death registration. SL needs to address this issue and needs a curriculum for health care service providers. Interventions by epidemiologists have saved many lives. Traditional authorities have to be involved in a process too.

Some challenges were outlined such as absent or weak policy and by-laws to enforce compulsory aspect of death registration (communities do not have awareness of need to register), traditional belief and practices (e.g. environmental hazards of community burial sites not considered), difficulties in identifying cause of death outside of medical setting, weak awareness on importance of death registration, privacy, and weak control of cemeteries and burial sites. Among the problems are insufficient size and capacity of the registration personnel (1,280 PHUs and other registration outlets but fewer than 200 birth registration staff countrywide, and cannot rely on PHU staff), absence of modern registration system, as well as challenges with the data collection, compilation, analyzing, production and dissemination, and underuse of death data by appropriate authorities.

The presentation concluded with the suggestions including: improving civic education and community sensitizations on the importance and uses of death registration, modernization of the death registration system (to include computerized records, etc.), improving and increasing capacity of registration staff, creating and enforcing national policies and by-laws on compulsory death registration, improving collaboration and harmonizing registration system, and providing equipped office accommodation for proper record management and operations. It was noted that everyone has a responsibility to support the system. Government needs to

improve political will and interest in births and deaths registration and use of data, and to engage international non-governmental organizations including CDC, African Union Commission, WHO, United Nations Population Fund (UNFPA), United Nations Development Programme (UNDP), United Nations Economic Commission for Africa (UNECA), African Development Bank, World Bank and others for technical and logistical support. Government needs to provide befitting office accommodation, particularly for the National and regional headquarter offices with modern office equipment.

Question from the audience: What laws have been passed to help enforce—such that police can assist?

Response: (not recorded)

Suggestion from the audience: Need to involve traditional leaders in the process.

Death reporting as a part of the disease surveillance process (D1S1P3)

Ministry of Health and Sanitation, Directorate of Disease Prevention and Control

Dr. Foday Dafae, Director

The definition of disease surveillance was reviewed within the frame of ongoing and systematic approach. For preventing unnecessary deaths, the knowledge of what diseases are killing people is needed; then it would be possible to correlate what is killing people in SL communities. It was stated that with cause of death information, we can identify a number of those who have died from specific conditions and identify needed preventive measures. During the Ebola outbreak, cause of death information was not available initially; if we were doing good death registration, we would have known immediately that so many people are dying in a country. It is needed to ensure that swabbing continues for all deaths so we can determine if people are still dying of Ebola and to know what is going on.

Information collected on death will be used in a number of ways – to evaluate effectiveness of control and prevention measures; to make changes; to help with planning health services; to identify high risk populations; but it cannot be done without an effective plan.

More people should be engaged on the village level so when something happened, it could be reported to higher level immediately. We need to bring all partners on board to work as a team; we should always have a "T" – transparency" and "C" - communication.

Death reporting at the district level (D1S1P4)

District Health Management Team, Western Area

Gandi Kallon, Births and Deaths Focal Point

Sierra Leone has been able to expand birth registration at PHUs. Despite the fact that midwives, data clerks, and service providers are overwhelmed, we have been able to create some impact on increasing registration of births. Currently the law states that a child cannot be registered after 5 years of age.

Registration of births and deaths was absent during the epidemic response; we are losing lots of data.

Question from the audience: How does DHMT work with the hospitals to get death registration?

Response: They call to the national office to tell us how deaths are collected. Death registration is done in the hospitals. There are urban and rural registrars in the hospitals; those registrars are to report to national office quarterly. There has been a focus on birth rather than death, as partners' support has focused on births.

Question from the audience: For cause of death, what mechanisms are put in place to investigate certain deaths that take place in communities?

Response: (not recorded)

Question from the audience: Has there been a system put in place to capture all deaths from the Ebola response?

Response: births and deaths are referred to the National Ebola Response Center (NERC).

Comment from CDC: MoHS has mandated CDC to compile a death registry for Ebola; it is a complicated process but it is ongoing.

Question from the audience: If someone has lost his loved one and needs a death certificate—what strategy has births and deaths put in place to get an information?

Response: Funds were not made available to OBD; we called on input from NERC on what has been put in place on registration of births and deaths.

Comment from Western Area Emergency Response Center (WAERC): We have figures for confirmed deaths on website; there has been a problem of coordination.

Comment from Dr. Dafae: We have seen where our deficiencies are; we need to come together to take advantage of resources that have been put in place.

Comment by Dr. Kandeh: Speaking on processes before Ebola: our Law mandates that all births and deaths should be registered but people only go for death registration when they need the inheritance documents. We need to get informants from the health system. We need a pilot program and we need to use traditional rules. We also need to improve people's awareness of the registration. Besides, we need to monitor the registration, e.g. how is to quality, verify the information, and who should register. There are so many views of death. We now have only one pathologist for the whole country. There is a question where the funding will come from. We need to expand our facilities. The information on death reporting should be a part of the health education. Even educated people are not paying attention on death. We need to come together to consider when and how we register. We need to train people for registration and to train statisticians, and to change people's attitude. Archives were destroyed during the civil war, we also need to consider a backup system.

Cultural views on death and challenges in death reporting and registration (D1S1P5)

Western Area Tribal Heads

Chief Mathew Gibao Younge, Chairman

The Chief informed that the Western Area has 16 tribes represented in the Council. He pointed out that people of Sierra Leone value their culture, and culture affects how people speak about death. For example, rather than saying that a chief 'is dead', community members will say that a 'chief is very sick'. But the Tribal leaders are open to modernization.

In the Provinces there are many challenges to the registration of births and deaths. The Chief referred to incentives for the Provinces for registration and the need to communicate the benefit to families of registering family deaths. Registration efforts must come down to the district level. The Chief further suggested having a registration office in each chiefdom (there are 149 chiefdoms across 12 districts) that will be reporting to DHMTs. The question how accurate are the figures/data on the births and deaths reported now cannot be answered, nor what resources are needed to improve the accuracy. There is the need to communicate the benefits of recording births and deaths, including any considerations of the beneficiaries and how the families would benefit by registering births and deaths, and why should those events be recorded. Education on the benefits of birth and death registration is needed.

The Chief stated, while it is important to work with the Provinces, the Tribal Heads are happy to 'start with the Western area'. The chief mentioned that the Tribal Heads are open to modernization, and supportive of the initiative to register deaths and births. They are welcome to be recognized as key stakeholders in these efforts.

Death reporting by the Sierra Leone Police and suggestions for improvement (D1S1P6)

Sierra Leone Police

ASP Salifu Conteh, Regional Traffic Officer, Western Area

Sierra Leone Police is currently tracking two types of mortality data: violent killings and fatal road traffic crashes. Violent killings include any act of death that occurs which requires investigation into the cause of death. Before Ebola, only violent deaths were reported to police.

1. Violent deaths include homicide as unlawful killing of a person by another man (murder or manslaughter) and suicides, both are investigated by the police. Information of violent death obtained through relatives, community members, radio, TV or newspapers, and mobile phone reporting.

Investigator calls Scene of Crime Officers (SOCO) to visit the crime scene, to preserve the scene of crime until the burial team is contacted to convey the corpse to the mortuary (this is after the Ebola epidemic started). Sometimes the scene is visited by pathologist to ascertain the final resting position of the victim. Statements are obtained from the witnesses. Head of the department informs the pathologist who conducts an autopsy to determine the cause of death. The Investigative Team includes scientific support, pathologist, finger print expert and cyber unit (might work with a phone company to get call history etc.)

2. Fatal road traffic crash deaths. From WHO data, there is an increase in the number of road deaths in low income countries. Death rate in Africa is 24.1 per 100,000 inhabitants (compared to 10.3 in Europe).

In Sierra Leone, all crashes are reported to police through community members, police officers present at the scene, etc. Investigator makes a crash report, prepares medical forms, and conduct a vehicle examination. Statements are obtained from the victims, from a hospital if needed. Investigator creates a rough sketch of scene of crash in front of the driver, passengers, victims, witnesses, etc. If crash is fatal, statement from the relatives of deceased is obtained as well.

Usually victims are carried in private cars to the hospital. During Ebola, 117 alert phone calls and burial teams are used instead.

All homicides or fatal crashes are reported to the police, investigation continues with help of pathologist who will conduct postmortem examination (no burial is conducted without pathologist telling exact cause of death). Police work with the court, law officers, civil registration, and medical staff. The table of road crashes in Sierra Leone from January to

September 2015 by region was presented with a list of total crashes, fatal crashes (died within one year after crash), serious (permanent injury such as amputation) and less severe crashes.

Police regions are: Freetown – West, Freetown – East, North-west, North-East, South, and East with overall 200 fatal crashes and 809 serious crashes (highest in Northwest region). Cause of crash is included in the table. Most serious crashes are caused by human error (drinking, phone use, etc).

Suggestions by Sierra Leone Police:

1. Most natural deaths are not reported in remote villages, there is a need for sensitization of elders and all members of these remote villages on the importance of death registration

2. Civil registration should have focal person responsible for death registry in localities

3. Trainings or workshops need to be provided for community on how to collect information on death

4. Legislation is needed on burial processes

5. Ambulance must be provided to the police

6. Keep burial team and expand operation areas to chiefdom level

7. Provide protective gear for police officers and traffic and homicide investigators

8. Towing vehicle for police is needed to clear roadway and prevent further accidents

Question from the audience: Is there a manifest for public vehicles?

Response: It is required by law.

Question from the audience: What is the police department doing about preventing people from using mobile phones?

Response: Stopping, testing breathalyzer after crash when able to, asking people who notice dangerous behaviors to inform the police.

Question from the audience: What are the regulations on age of vehicles imported into the country?

Response: This is not the police's jurisdiction, there is a mechanism in place for registering vehicles that are roadworthy.

Birth and death reporting in Sierra Leone (D1S1P7)

MoHS, Directorate of Policy, Planning, and Information

Dr. Samuel A. Sheikh Kargbo, Director

Wogba E.P. Kamara, Monitoring and Evaluation Specialist

Importance of birth and death registry and Directorate of Policy, Planning, and Information' work in collaboration with Statistics Sierra Leone and Surveillance Team was discussed. Sierra Leone Health Information Systems Strategic Plan 2007-2016 is an acknowledgement that an information of live births and deaths is important for policy-making and planning of human development in the country. Key strategic decisions are:

- In depth assessment of the civil registration system. This will lead to development of a long term plan of action for improving the coverage of civil registration, attribution of cause of death, and analysis, dissemination and use of resulting statistics;
- Staff at sub-national and nation levels who are responsible for births and deaths registration will receive training;
- Physicians and clinical officers will receiving training on classification of deaths based upon the system for International Classification of Disease (ICD);
- Central level processing and capacity for compilation and analysis of births and death certificates and other information on vital events to be electronic;
- National estimates of cause-specific mortality data by age and sex will be derived from syntheses of the data from multiple sources of incomplete or non-representative data (hospital mortality, civil registration, demographic surveillance);
- To bring the data in one place and to have one system is possible by engaging the partners. Integration of health information is important and the data from various programs at all levels should be managed as a whole in a well-coordinated and transparent fashion.

The monthly reporting forms collected from the hospitals and PHU's are:

- MoHS monthly health facility summary form for reproductive health services (HF3). It includes the data on reproductive health services, antenatal care visits, deliveries attended by doctor, midwifes, method of delivery, post-natal care, etc. The information is collected for each PHU.

- MoHS PHU monthly summary of death form (HF5) which contains monthly summary of deaths, give number for each type of death (malaria, watery diarrhea, dysentery, acuter respiratory infection, anemia, meningitis, measles, tetanus…). Other diseases can be added to the list.

Question from the audience: How these District Health Information System (DHIS) tools are going to be incorporated into the IDSR?

Response: IDSR has its separate software tools, separate from DHIS. Same for HIV program, malaria program, etc. All separate. Ministry would like to have one integrated system. We are working on the integration and looking to see how community health workers can work with the system. We need to get the data in the electronic form from the Office of Birth and Death.

Question from the audience: How do the facilities obtain the cause of death information for the form HF5?

Response: Based on clinical course in the hospital.

Question from the audience: How are communities births/deaths reported?

Response: By filing a separate Form 6 for community deaths (filled in by community health workers). However if Community Health Workers don't report death to the facility the information is not captured.

Media and communications role in improving death reporting (D1S1P8)

National Emergency Response Center

Patrick Fatoma, Media Analyst

There are needs of training and awareness on death reporting for the Chiefs. Not all villages have medical personnel and even not all hospitals have birth/death registrants. There are a number of questions we should ask:

"Do birth and death registrations have media access?" There is a need to utilize media: music, radio, TV and print are need to be used to raise awareness, especially civic knowledge, on births and deaths.

"Is there anything for people to gain by reporting births and deaths?" Currently children have to have birth certificates to get into school.

"How can we guarantee that everyone who has a birth certificate from Sierra Leone is from Sierra Leone? What do we have to make sure this is happening correctly?" Birth certificates can be obtained at any time, it is easy to obtain them.

"How can we engage traditional means of reporting deaths to registries?" Would regular training among Chiefs on death reporting help?

Suggestions:

- OBD should have Media and Communications Department (can use staff from Ebola response);
- Need to ensure fraud prevention – people in a community can pay to get an affidavit to get a certificate (cases of Ghanaians getting SL certificate);
- There are specialists in the community in charge of breaking news of death. They can be engaged in death reporting;
- Media is important to convey messages for sensitization and to increase civic knowledge.
- Death is a difficult topic and we have to discuss it publicly very often.

Session 2: Burial practices and regulations

Session 2 described the existing regulations concerning burials in Sierra Leone, current burial practices, and the impact of burial regulations and practices upon death reporting.

Burial practices and regulations in Freetown (D1S2P1)

Freetown City Council

Sulaiman Parker, Environmental Officer

Local Government ACT 2004, Section 20 Subsection 2A empowers Freetown City Council as a local council to handle burial issues. The process by which deaths are reported and the body is buried was described:

- Before Ebola, the death was reported to a medical practitioner, a medical report of death was obtained, death reported to the Registrar of birth and death, which would issue a burial permit. A burial permit then was presented to the clerk in Freetown Council, and the Headquarter burial register is completed by the clerk with an information on sex and age of the deceased, the date, and a payment (Le 10,000 for

deceased of 0-5 years, Le 15,000 for those 6-18 years, and Le 25,000 for those above 18), the price of vault (Le 100,000), and the price of reserve value space (Le 80,000). The cemetery burial permit is presented with a receipt to the cemetery of choice and a burial is conducted. The cemetery management makes a record in the cemetery registry and a special code of the grave can be issued to the family if they want to;

- During the Ebola epidemic, the notification of the death was made by 117 call, burial teams picked up the corpses and conducted the burials at King Tom or Waterloo cemeteries. Registration and grave coding was competed and usually given to the family. After the swab result was obtained and police clearance was obtained, and if the swab result is negative, the corpse could be moved to the family's cemetery of choice.

Getting to 0+42 days post-Ebola last case, we plan to use 117 alert calls; report cemetery of choice; with burial fees payable at the cemetery; and burial conducted by the cemetery; while registering the grave is optional.

Recommendation by the Council:

- Would like to continue with previous normal burial procedure because we were able to obtain a lot of information, the process is more transparent and acceptable and very similar to the birth/death registry;
- Development partners to support Freetown City Council in cemetery management and capacity building.

Suggestion from the audience: Ask partners in the room etc. to help Freetown City Council to keep records, these important documents, so as not to lose them.

Comment from the audience: Concerns about the death certificate registry confidentiality –the tribe can be identified by the name of the deceased.

Question from the audience: Has any analysis been done using these records?

Response: No, not focusing on cause of death, just total number and reports by age.

Role of the funeral homes in death reporting (D1S2P2)

Virtues Funeral Homes, Sierra Leone

Mrs. Daffney Davies, Director

Funeral homes do keep records of funerals but use them for their internal purposes only and do not report an information to any agency. They are willing and want to be included in the civil registration reporting and would want to participate in death registry. No coordination between funeral homes exists. There are no protocols on how burials are to be performed. City Council is not involved in the funeral process. The information is collected on the date of birth, date of death, burial day etc.

Recommendation: Funeral homes are involved in all funerals and they will be able to get a lot of information and easily transmit it to the civil registry.

Opening Remarks (Day 2)

Use of vital statistics over the life course (D2OR1)

World Health Organization

Dr. Mauricio Calderon, International Consultant

Dr. Calderon explored the use of vital statistics over the life course and its stages. He invited to consider this approach, inclusive of key vital transitions beyond birth and death, at the stage when the Government of Sierra Leone is identifying the building blocks for its renewed policy on registration of the vital events of the population of SL. Life course promises a shift from the study of single events to the study of processes: from the study of births to the process of parenthood, from marriages and divorces to partnership, from deaths to the process of well-being, from migrations to the life-long shifts of positions and, finally, from household structures to the study of the networks of kin, friends and community. It is a way to conceptualize lives within the contexts of families, society and historical time.

Session 1: Death reporting in the time of the Ebola epidemic

Session 1 described how changes in burial regulations, recommendations and practices impacted reporting and recording of deaths during the 2014-2015 Ebola epidemic in Sierra Leone.

Organization of the burial pillars and death alert reporting (D2S1P1)

Western Area Emergency Response Center, Burial Pillar

Major Boima M. Gogra, Lead

Sierra Leone military took over the burials management from MoHS at October 17th, 2014 to date. During the Ebola emergency, the safe burial of deceased that may have died of Ebola was a very important part of the control measures that are being applied to safeguard public health. Western Area burial teams collected an information about all the corpses that were buried, 18,500 people during this time period, and can transfer this information to OBD. WAERC Burial Pillar can give the list of the plot numbers and other information in a large file so that families can find their loved ones. With military involvement in a burial process, the Western district was divided into 4 burial zones. Each zone has a burial supervisor. There are 30 burial teams in Western Area – 10 from Red Cross and 20 from MoHS supported by Concern Worldwide. Burial team consists of: Burial District Surveillance Officer, Burial Supervisor, Documentation person, Swab team and Disinfection team.

All deaths are reported through the 117 hotline and to the Command Centre for necessary action by the burial teams. There are more than 26 cemeteries in Western district and currently, family can choose the cemetery (so-called Option 3). Previously burials were allowed at King Tom and Waterloo cemeteries only. Command Centre dispatches burial and swab teams to collect the corpse. Family is informed about the time and location of the funeral, and move to the cemetery (up to 10 family members within a safe distance of 5 meters). When the teams arrive to collect the corpse, the case investigation form is completed, corpse is prepared and swabbed. Documentation person asks questions about age, sex, cause of death etc. of the deceased. DSO records information about the family of the deceased. The swab is collected and transferred to the laboratory for Ebola Virus Disease (EVD) testing. After WAERC receives the results, Family Liaison Officer communicates the results to the family, and, if EVD-positive, contact tracing begins.

Question from the audience: What will safe and dignified burial look like when routine burials end after Day 0+42 after the last EVD case?

Response: During the period November 7 –December 25, the process will continue and NERC will hand over the process to MoHS and Office of National Security (ONS). ONS and MoHS will be trained on safe burial and will decide on which cases the safe burials are needed. Swabbing will continue for a year; safe and dignified burials will stop at 42 days after the last EVD case.

Question from the audience: What information do you have regarding the burials?

Response: When we took over from MoHS from October 17th to date, we collected an information on all corpses that were buried in Western Area, 18,500 deceased during this period, and WAERC' Burial Pillar can give this information to OBD. The information contains the plot numbers and other data in a large file so the families can find their loved ones. 117 hotline service is doing business with the community: receives the death reports from the community—name, address, contact number; prints out alert as a hard copy; and all this information is recorded in the database.

Safe and dignified burial processes (D2S1P2)

National Ebola Response Center Burial Pillar

John Fleming, IFRC, Emergency Health Coordinator

The presentation is conducted on behalf of the NERC' Burial Pillar that includes multiple agencies involved in safe and dignified burial process, including technical support from CDC and WHO). Safe and Dignified Burial (SDB) processes were multidisciplinary efforts of MoHS and international partners. Overall, in Sierra Leone there were 143 teams: IFRC (60 teams), Concern Worldwide/MoHS (14 teams), International Rescue Committee (IRC, 12 teams), World Vision (31 teams), Catholic Relief Services (CRS)/MoHS (20 teams), and Catholic Agency for Overseas Development (CAFOD)/MoHS (6 teams). We performed 2,026 burials a week in Sierra Leone, overall 69,793 safe and dignified burials from May 23, 2014 to October 2, 2014. Among them, 14,000 were in Western Urban and 4,000 were in Western Rural districts.

Data on the deceased is captured at a number of key moments: when alert is received on the 117 hotline phone services (alert data), when SDB Team interviews the family of the deceased, when the swab is taken and information gathered, and when the deceased is brought to the cemetery and interred in a marked and plotted grave. Since the beginning of the SDB activities, Red Cross collected data from the families using a mobile application – Magpi/ Rapid Mobil Phone Data Collection (RAMP). This system is supplementary to the paper-based systems and

was developed to enable us to facilitate restoring of the family links. MoHS has requested that we share the data with CDC for the purposes of collection the death data which we have agreed to do. Currently, we are getting the data systematized.

On behalf of the SDB Pillar I wish to recognize the professionalism and courage of everyone involved in Safe and Dignified Burials – and especially the members of the 143 SDB teams. We also recognize the excellent technical assistance offered by partners such as CDC and WHO in the design and development of the Standard Operating Procedures and other protocols and the support given by NERC and other authorities. We greatly appreciate the support of our donor, Department for International Development, UK (DFID). It has been a 100% team effort.

Question from the audience: What is an average response time to a burial alert?

Response: The Standard Operating Procedure (SOP) says it should be 24 hours and the teams have been able to reach that. However, there were a lot of challenges and they have been addressed. Among the challenges are communication (getting a wrong address) and rainy season. For the most part the target time has been reached; all of the challenges were discussed in an open manner.

Question/Appeal from OBD: Please transfer the burial information to OBD.

Response: IFRC is interested in releasing these data but there are confidentiality issues to consider; MoHS has asked that the information be released.

Burial data in the time of the Ebola crisis (D2S1P3)

Concern Worldwide

Sheena McCann and Mustapha Kanu, Burial Team Members

On October 18th, Concern Worldwide took over the management of the dedicated cemeteries in the Western Area, King Tom and Waterloo.

The presenters described an introduction of the burial registers at the cemeteries. They are completed manually in Excel database. Grave/plot number is assigned based on the sequence of arrival. The information also includes date of burial, name of the person, address or place of death if home address is not known, age, and gender. Handwritten data are transferred into an Excel database. Information and informational system is kept as simple as possible to allow

easy access to the data. The data do not include the patient/swab ID or EVD testing results as they are not known at that time.

Benefits of using burial data include possibility to find the graves for family members of the deceased or for exhumations such as in criminal cases; confidence in the system and acceptance of safe and dignified burials; identifying trends in data such as increase in deaths of under 5 years old children or high number of stillbirths. Number of deaths and mortality trend by age group and geographically can assist in planning future cemetery space needs.

Due to having only two dedicated cemeteries during the height of the outbreak (from mid-October, 2014 to mid-August, 2015), the data collected in the burial registers can be considered a complete set of deaths recorded for the Western Area during this period. For King Tom cemetery, the data collection started on 14th September, 2014 and was completed on 18th of October, 2015. From 14th September 2014 to April 3rd, 6,395 persons were buried in King Tom cemetery. In Waterloo cemetery, the data collection started on the 20th of October, 2014 with about 9,000 plots. From October 20th, 2014 to October 19th, 2015, 9,718 persons were buried in Waterloo cemetery.

Challenges in the data include spelling of the names (misspellings, presumption of spelling, informal names), misclassifications between stillbirths and neonates, and uncertain age, especially for older deceased (ages such as 135, 128, and 125 and higher numbers of deaths at ages 50, 55, 60, and 65). About 3% of deceased (496 persons) did not have any information and are marked as "unknown": at the height of the outbreak there was a need to bury people quickly, corpses were abandoned on the street with no personal details, even a name, bodies were not being claimed at the hospitals by the family members and therefore no personal details were given. Also stillbirths often were not being registered.

Due to the Ebola outbreak many families were not able to attend the burial of their loved ones. It was therefore important to be able to locate graves after the burials. A map of the cemetery and a plotting system was developed.

With a return of the burials at the cemeteries of the family's choice, there is no one entity responsible for the collating of all the burial data from each cemetery. Who will hold the data after safe and dignified burials have finished? How will family members have access to the data to find the graves of their loved ones? Who will maintain the cemeteries in order for the families to find the graves? Who will manage the Waterloo cemetery?

Question from the audience: Are other cemeteries in the districts using similar practices as you established, e.g. slabs /headstones?

Response: (not recorded)

Question from the audience: Who will take care of the cemeteries?

Response: Sierra Leone has an organization that takes care of cemeteries. OBD will take care of the data.

Systems for reporting deaths in children under five years old in Sierra Leone (D2S1P4)

UNICEF Sierra Leone

Dr. Nuzhat Rafique, Health Manager

The presentation described community and facility reporting death among children under 5 years of age prior to and during the EVD epidemic.

Community reporting: Prior to EVD, 14 districts reported deaths among children under 5 years old to PHUs on an inconsistent basis. During the EVD epidemic, these data were obtained from the swabbing records. UNICEF calls for optimizing community death reporting to make it sustainable in the future and strengthen community based programs for reporting. The process should be to record all deaths among children under 5 years old (U5) at community level and submit to PHUs monthly. CHWs should also be capacitated to conduct verbal autopsy for home-based deaths. UNICEF is doing geographic mapping of PHUs.

Hospital/Facility Level Reporting: As part of the Health Management Information System (HMIS), Health Facility Survey' six forms do not include information from the secondary and tertiary hospitals and are not systematic. To move forward, the following measures are needed: strengthening hospital death recording process and incorporating second and tertiary level hospital data into HMIS for under 5 years of age deaths by developing national guidelines and SOPs. MoHS through UNICEF supports and continues to provide training to the hospital staff in using the data collection forms, and trains district officers. More support to the CHW programme is needed.

Birth registration rate in Sierra Leone increased from 46.4% in 2000 to 78% in 2010. The number of births is needed as denominator to calculate mortality statistics. The country is 4th highest in birth registration in West Africa.

UNICEF supports capacity of OBD, strengthening decentralized PHU system and district monitoring and requests government to take a strong lead on birth and death registration, as all planning is based on good quality data.

Suggestion from the audience: For community deaths, use Death Statistics form which is more exhaustive than Medical Certificate of cause of death; person coming to register must probe on cause of death from an informant. The process exists, but it has not been aggressively enforced. We want to include a message of encouragement of the deaths registration in a message of encouragement of the birth registration.

Comment from OBD: Good to know that UNICEF is interested in U5 deaths—very happy to hear about that, as prior support has been focused on births. We need a political intervention and support from all partners to begin an advocacy for death registration.

Panel Discussion

Facilitators: Dr. Foday Dafae (MoHS), Yelena Gorina (CDC)

Question: Will you be training Sierra Leoneans to manage the data and cemeteries in the organized fashion?

Response by Concern Worldwide: King Tom cemetery is run by the Council. Concern has trained the Council, and the Council is replicating Concern's system in their other cemeteries. The issues/problem is that the community cemeteries are not run properly and so Concern is trying to figure out a way to train them and sustain the practices (e.g. they only have one burial a week, not a high volume).

Recommendations to OBD: To perform regular assessment and training of offices/departments that are charged with civil registration.

Question: During Ebola era, deaths were not reported and so death certificates were not issued, so what system has been put in place for those affected to get death certificate?

Response (Sierra Leone Army): OBD should know that the person is someone who was buried by the burial team. Prepare Ebola positive/negative result signed by the Command Center which they can take to OBD to get a certificate. There is a work underway to come up with a death certificate specific for Ebola. NERC is going to approve it. Then this death certificate will be forwarded to OBD for their awareness.

Question: How will you maintain swabbing capacity after SBD is completed in early 2016?
Response: MoHS and WHO are developing a procedure to initiate after December 25, 2015. Burial team will not assist with the burials, but they are still working on the procedure. Swabs will be continued until December 25th. After December 25th, Ebola Virus Disease Rapid Diagnostic Test (RDT) will be used and the family will be responsible for the burial.

Question: Would like to know from UNICEF about their experience using CHWs to conduct verbal autopsy in other countries.

Response (UNICEF): CHW verbal autopsy programs exist in Pakistan, India, Sri Lanka, Bangladesh, and Nepal. It is a mixed experience, but it is always the capacity of CHWs that defines it. Capacity is not very different in Sierra Leone, but there are different training packages. Some differences include if they are volunteer or not, and a culture of volunteerism. Training needs have to be fulfilled—the level of education in SL is relatively low (5-8 primary years). Conducting a verbal autopsy requires basic literacy level. CHWs capacity is built within 12-18 months of training. There are 3 areas of consideration: education criteria, training package, and payment structure. In some areas, person from the nearest health post is tasked with going to home of a deceased to conduct a verbal autopsy.

Question: Is there interest in extending Kenema burial work to Kailahun?

Response (IFRC): IFRC has hired someone to maintain the cemeteries in Kenema/Kailahun and to create an environment for the families to visit facility to find a moment of peace and reflection. Kono is well catered for by the current Ebola Treatment Unit (ETU). Kailahun cemetery was part of the MSF ETU.

Question: Do families pay for swab test of loved ones?

Response by Dr. Dafae: Nobody will pay for the swab test—that will help it to continue death reporting.

Session 2: Lessons learned: need for improvement of mortality reporting

Session 2 discussed the challenges presented by limited death reporting and the importance of improving the mortality reporting system, and how the data on death can be used to improve clinical management of the disease. The National Social Security Insurance Trust policies of using the death data were discussed.

Patient outcomes in 3 OCA MSF Ebola management centres, Sierra Leone (D2S2P1)

Médecins Sans Frontières (Doctors Without Borders, MSF), Operational Centre Amsterdam (MSF-OCA)

Dr. Sam Hoare

During the EVD outbreak, access to available mortality data informed clinical practice as well as the interventions targeted toward geographic areas. MSF-OCA operated three ETUs in Sierra Leone (in Tonkolli, Kailahun, and Bo), and, toward the end of the outbreak, implemented a tablet-based data collection system to gather an information on patient admissions, clinical courses, and outcomes. Excel databases were used as a data collection tools. Challenges include limited time inside the Ebola Management Center high risk area and high turnover of staff. In addition, tablets for the data recording became available later on in the outbreak.

MSF analyzed outcome data on confirmed EVD cases who were alive upon admission to MSF ETUs to determine risk factors for mortality. Factors influencing mortality included patient age, Ct Value on admission, wet symptoms at admission (diarrhea, vomiting, bleeding), and being pregnant. MSF developed clinical management guidelines to support pregnant women.

Question from the audience: Is the case fatality rate only for those who made it to OCA MSF ETU?

Response: Yes, it includes only those patients that tested positive for Ebola and made it to the ETU alive.

Question from the audience: At the time of the outbreak when patients were transferred to Kailahun, many people were dying on the way and their families were not notified. Where you aware of this?

Response: We had several patients who were dead on arrival, these people mainly came from the distant districts. All families and/or DHMT in the district of the patients' origin were informed about patient outcomes according to identity information available at the time of admission. All survivors were transferred back to their village of origin.

Question from the audience: Do you have plans to hand over copies of collected data to the MoHS/Case Management Pillar?

Response: All original hard copies of investigation data were handed over to MoHS along with the electronic line list.

The need for improved mortality reporting and the role of population estimates as part of the upcoming census (D2S2P2)

Statistics Sierra Leone (SSL)

Sonnia-Magba Bu-Buakei Jabbi, Head of Demographic Statistics

Isata Pamela Kamara

The presentation reviewed mortality statistics in Sierra Leone. Maternal, infant, and child mortality in Sierra Leone are very high. According to Sierra Leone Demographic and Health Survey (SLDHS 2013), the adult mortality rate was slightly higher among women (5.6 deaths per 1,000 population) than among men (5.0 deaths per 1,000 population). The maternal mortality ratio was 1,165 maternal deaths per 100,000 live births. There is a direct relationship between under-five (U5) mortality rates and maternal mortality ratios (MMR) in Sierra Leone, as most of the U5 deaths and maternal deaths in Sierra Leone occur during or around childbirth.

The presentation showed the series of mortality rate among children under 5 years old (U5MR) 2015 estimates based on the surveys and censuses between 1955 (U5MR around 400 per 100,000) and 2015 (U5MR around 125 per 100,000). Taken together, these data suggest that the U5MR in Sierra Leone rose gradually until the late 1990s (coinciding with the height of the internal conflict) and have gradually declined since then.

The latest estimates came from the surveys: MICS4 2010 (supported by UNICEF), SLDHS 2013 (supported by UNFPA/USAID), and EVDI 2015. Censuses and surveys are the main source of collecting data related to mortality.

Statistics Sierra Leone provides annual reports. Underreporting of deaths is mostly due to illiteracy, traditional practices, geographic remoteness, and lack of appropriate administrative structures.

Major actions that can help in improving reporting are: sensitization of local chiefdom authorities, local councils, and central government on need for robust CRVS systems; training; creating and maintaining relational databases of birth and deaths fed into the central national data warehouse from which national information on birth and deaths could be extracted. This

would enhance the estimation process and measure advancement towards United Nations Millennium Development Goals.

Question from the audience: It is difficult to access an information from the Statistics SL. Can you assure us that we will have access to your information without delay?

Response: There are protocols that need to be followed. SSL has a library in the office that people can use to access SSL reports. SSL is working on the websites for easier access to their reports.

Question from the audience: What is the relationship between the Statistics Sierra Leone and OBD? Is the information released by the Statistics Sierra Leone similar to the OBD data?

Response: SSL has cordial relationships with OBD. Collaboration between the demographic and social statistics department and OBD is ongoing effort. The information released by SSL is usually corroborated by the Office of Births and Deaths before it is published.

Response from OBD: Counter on the collaboration on data collection; calling for more collaboration. It is there, but we need to improve it.

Death reporting and civil registration in the frame of a present and future social security system (D2S2P3)

The National Social Security Insurance Trust (NASSIT)

Lamin Allan Conteh and Mabinty Kargbo, Research, Planning and Actuarial Division

The presentations described NASSIT functions and operations.

NASSIT is a statutory public Trust charged with the responsibility of administering Sierra Leone's Pension Scheme, the retirement age in Sierra Leone is 60 years. The Scheme was established to provide retirement and other benefits to meet the contingency needs of workers and their dependents. The Scheme is mandatory for all formal employment and voluntary for the self-employed. It covers three contingencies: Old age retirement (180 months contributions), invalidity and survivor benefits (60 months contributions), or grant if the minimum contributions are not met.

Despite the expectations, NASSIT initially did not receive a high volume of claims related to Ebola. This is because most of the victims who died were not NASSIT members. However, for

NASSIT members, their relatives were not initially issued with death certificate. Now that NERC has started issuing death certificates the number of claims is gradually increasing.

Recommendations: automate civil registration; centralized database under the control of one organization; improve data quality; synchronize the process; design an effective system that enhances privacy, integrity and accessibility of data; decentralize civil registration system; and treat health data as an essential component of civil registration.

Question: Is NASSIT generous enough to trace survivors to give them the benefits, if the family members cannot trace their deceased loved ones who died from Ebola?

Response: Unfortunately, NASSIT has no responsibility to initiate survivors' benefits claims for Ebola victims. Rather, the process should be initiated by relatives or dependants of the deceased as stipulated in the Act.

Question: if a deceased member of NASSIT did not provide information to the relatives, what does NASSIT do?

Response: NASSIT has the responsibility of paying benefits to the right people. However, if the dependents of the deceased submit applications that are not consistent with the member's record then an investigation will be conducted to ascertain the right beneficiaries.

Question: There are situations when the couples don't have marriage certificate and in 2009, according to the Customary Laws if they co-habit for a period of 5 years they are considered as married. What happens if the couple does not have a marriage certificate?

Response: If they don't have a married certificate and their union occurred before 2009, NASSIT will accept affidavit in lieu of marriage especially for traditional marriages. However, for any marriage after 2009 a marriage certificate would have to be presented.

Question: How does NASSIT give pension when the deceased has a will?

Response: NASSIT has nothing to do with a will left by a deceased member. Rather, it deals with information provided during registration. For anything other than that, an investigation will be carried out to determine the right beneficiaries.

Session 3: Projecting post-Ebola mortality data reporting and improvement in civil registration

Session 3 discussed the proposed role of IDSR and CEBS in the future deaths reporting, and importance of community-based surveillance in strengthening mortality reporting.

Community Event-Based Surveillance (CEBS): Mortality Reporting and the Road to Resilient Zero (D2S3P1)

International Rescue Committee on behalf of Ebola Response Consortium

Joseph Jasperse, Surveillance Coordinator

This presentation was conducted on behalf of Ebola Response Consortium of 15 NGOs and initiated by IRC.

CEBS was conducted in 9 districts and has a three-level approach. Community Health Monitors (1-2 per village) report to the Community Surveillance Supervisor (CSS, with a motorbike to travel) who, in turn, reports to the Community Health Officers (CHO). Community Health Monitor (CHM) detects and reports 7 trigger events, including "others". There were about 12,500 alerts reported, mostly community deaths. CHM is looking at triggers by types, although most were not used (probably due to the specificity and community challenges around sickness or death); 86% of alerts were for deaths; 14% were for sickness. Chiefdom Surveillance Supervisors work with the Community Health officers to screen the reported events, and CHO reports them to DERC.

IFRC supported CEBS in 3 districts and ERC supported CEBS in 9 districts. CEBS was not implemented in Western Area. CEBS alerts were reported from February to September of 2015.

During the Phase 3 (41days+1 year since the last EVD case), it can serve as a safety net as the case definition for live alerts is becoming more specific. In Phase 4, this surveillance will be conducted through IDSR. CEBS needs to be integrated into MoHS and IDSR.

Recommendations are:

- Routine collection of death is important;
- CHWs are vital but to avoid overburdening them a uniform reporting package is needed;
- Strong community surveillance requires more than training e.g. incentives, supervision, data management support;
- Sensitivity analysis to identify the proportion of community deaths currently being reported.

Question: Has the Consortium spoken to MoHS about CEBS?

Response: Everything done with CEBS has been discussed and approved by MoHS. Roll out to other districts will be through request of DPC; aligned partners in CEBS with CHW program.

Evolution of Mortality Data Analysis in Port Loko District (D2S3P2)

GOAL Sierra Leone

Alex Tran, Epidemiology and Surveillance Coordinator

The 117 system has been robust in collecting mortality data in Sierra Leone at the district/chiefdom level. The alerts were stratified by live and dead alerts and by chiefdom.

GOAL team divided Port Loko by sections, calculated the expected number of deaths and compared it to the actual reported number of deaths, and plotted it. It has been noticed that the number of sections with low reporting increased over time, so GOAL was able to target their interventions to these particular section. Even though the areas with high mortality were identified, it did not provide information about cause of death.

There is need for stronger community based mortality surveillance, population data, and post-Ebola baselines. There is an overall need for more area-specific data. “Silent section” strategy can be used to assess quality of death reporting.

Improving death reporting in the IDSR system (D2S3P3)

WHO, IDSR Team

Dr. Charles Njuguna

Dr. Yonas Asfaw

Dr. Shikanga O-Tipo

This presentation analyzed mortality at a section level which allowed a comparison of the reported deaths vs expected deaths and analysis of underreporting deaths using 117 hotline alerts data. Expected deaths were calculated per section by extrapolating population section data and previous death rates. This is referred to as Standardize Mortality Ratio and is calculated as a ratio of reported deaths to expected deaths.

This data was then visualized using GIS mapping software to provide Ebola response workers with a better picture of underreporting, or 'silent sections'.

Suggestions:

- Developing national coordination mechanism;
- Establishing / strengthening legislative /policy framework;
- Mapping mortality data sources;
- Data source integration with clear data flow mechanisms;
- Establishing electronic medical records (EMR);
- Digitalizing mortality data;
- Linking death reporting with IDSR.

Questions from the audience: How to integrate CEBS into the IDSR system?

Response: MoHS is working with the national taskforce to discuss with partners how to move from/with CEBS to a systematic reporting system in the community.

Panel Discussion. Facilitators: Dr. Foday Dafae (MoHS), Yelena Gorina (CDC)

Question: During the post-Ebola period, is there an intention of strengthening the health system overall and addressing the gaps?

Response: Challenge is how to transit the structures and systems created because of the Ebola outbreak and how to make it sustainable. CEBS has to be integrated into the MoHS program. Lessons from CEBS to be integrated into the training package of CHWs. Need to be realistic of what CHW can take on.

Question: Based on the information from the outbreak, how this can be used to improve information on the cause of death?

Response: Challenge is to develop a key transitional plan. The knowledge from Ebola is being used to develop the plans for the health of Sierra Leoneans for days to come, including the transitional plans.

Question: How does NASSIT give pension when the deceased has a will?

Response: NASSIT is a defined benefit scheme and it is an act of parliament. So they honor the instructions of their members.

Question: Is there a role for verbal autopsy in the verification of the death alerts in CEBS?

Response: Death alert is investigated by CHO and then the information goes to the surveillance officer and safe and dignified burial is conducted. So far there has not been an investigation of the cause of death. Verbal autopsy definitely has a role and CHWs may be able to do this, however the key is not to overburden them. In some communities, deceased are not allowed to be buried until a verbal autopsy is done by the chiefs etc. There is a role for verbal autopsy.

Question: What are the next steps for the civil registration?

Response: The process to strengthen civil registration has started but need to have multidisciplinary technical working group to look at mortality reporting, such as

- Ensuring that reporting is given to all levels, so it will provide more demand for people to report an information and to communicate their needs;
- Share the data with among organization;
- Transparency: discuss challenges/what is not working;
- Needs for pilot(s) before roll-out: cannot predict in advance what is going to work;
- Find other venues to ensure that people are not disadvantaged if they do not have an appropriate paperwork;
- Appeal for strengthening of civil registration;
- Automate civil registration.