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Integrated Disease Surveillance and Response (IDSR)

–Bridging the Gaps

Workshop Summary

The Nigerian Academy of Science

Integrated Disease Surveillance and Response (IDSR)

–Bridging the Gaps

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PREFACE

Effective and timely public health responses to disease outbreaks and health emergencies depend upon the ability of health systems to provide reliable and timely information for action. This timely information is often obtained through surveillance. The value of surveillance today is also evident in the call for surveillance for early detection of human diseases caused by potential pandemic strains. There are recommendations that detail what countries need to do to prepare for pandemics and that urge countries to invest their own resources to improve their national capacities for surveillance and response. However, in many countries surveillance resources are scarce except for selected high priority diseases. Consequently, improvements in surveillance are usually limited. As a result, surveillance systems lack flexibility to respond to emerging threats. It is worthy to note that the West African sub-region is accountable for a significant number of the outbreaks of communicable diseases which have continued to increase the morbidity and mortality statistics.

The goal of the IDSR strategy is to develop sufficient surveillance and response capacities at each level of national peculiarities so that standardized disease surveillance systems will result.

This document is a summary of the presentations and discussions at a workshop entitled "Integrated Disease Surveillance and Response (IDSR) in West Africa-Bridging the Gaps" which held on the 3rd and 4th August 2010 in Abuja Nigeria; and organized by the Nigerian Academy of Science with support from the Biosecurity Engagement Program of the United States Department of States.

The workshop convened participants from West African countries, Nigerian Ministries, non- governmental organizations, international agencies, as well as academic and research institutes.

The Nigerian Academy of Science thanks all those who made presentations at the workshop; and all who provided the technical support for the successful outcome of the workshop.

The participants at this workshop were not charged to provide recommendations and conclusions for this report. All statements in this summary are those of the individual workshop participants and are not necessarily the views of the Nigerian Academy of Science.

This report has been reviewed in draft form by some workshop participants and other individuals in accordance with the approved procedures of the Nigerian Academy of Science.

ACKNOWLEDGEMENT

The Nigerian Academy of Science (NAS) acknowledges the immense contributions and efforts of numerous individuals whose support made this workshop possible, enlivened the discussions and enriched the quality of the report.

We thank Professor Oyewale Tomori FAS, who served as Adviser on this project, ensuring a successful workshop and its attendant report.

We also wish to thank the following for their review of this report:

- **Professor Ekanem I. Braide, FAS, OFR,** Zoology Department, University of Calabar, Cross Rivers State, Nigeria.
- **Dr. Lami Hanatu Lombin** The Executive Director, National Veterinary Research Institute Vom, Near Jos, Plateau State.
- **Dr. Fenella Avokey**, WHO Inter-Country Support Team, WHO -AFRO Regional Office, Ouagadougou, Burkina Faso.
- **Dr. Amadou Alpha Sall**, Arbovirus Unit, Institute Pasteur de Dakar, Dakar-Senegal.
- **Dr. Andrew M. Hebbeler,** Science and Technology Policy Fellow, US Department of States, Washington DC .

Although the reviewers provided many constructive comments and suggestions, they were not asked to endorse the final draft of the report.

Financial Support for this project was provided by grant BEP-CRDF-22006, from the Biosecurity Engagement Program of the U.S. Department of State.

Technical support was provided by the Federal Ministry of Health of Nigeria; World Health Organization; and the Center for Disease Control.

FOREWORD

This report of the Regional Workshop on Integrated Disease Surveillance and Response, held in Abuja in August 2010, is an important document in many respects. It is the first time in decades that scientists, epidemiologists, health policymakers, clinicians and other health professionals met together to discuss this crucial activity, mainly for infectious disease control in the West African sub-region. Hitherto – prior to 1998 when the WHO Regional Office for Africa (WHO AFRO) adopted an integrated approach to disease surveillance and notification – individual countries carried out disease surveillance according to their individual whims and caprices, capacities and concepts. This all-important strategy for early epidemic detection, prevention and control was therefore haphazard in the sub-region, independently by individual countries rather than the region as one inseparable entity in geographic terms.

Secondly, the report highlights the constraints which make it difficult for countries to establish the necessary mechanisms for effective and reliable surveillance of infectious diseases, particularly those with epidemic potential: measles, yellow fever, viral haemorrhagic fevers, cholera and meningococcal meningitis. The constraints include poor or lack of appropriate infrastructure and surveillance tools; inadequate and poorly trained human resources manpower; executive incapacity; paucity of, or poor laboratory support critical for diagnostic confirmation of infection; scant deployment of information and communication technology; little or no networking within and between countries and institutions in West Africa; and inability to establish and sustain even the relatively crude system of paper reporting, by filling and returning the Disease Surveillance and Notification (DSN) forms in individual countries. Information flow did not occur from wards, districts, local governments and states even one way, let alone "to-and-fro", i.e. two-way – an essential prerequisite for effective and timely intervention to prevent or mobilize response to epidemic outbreaks.

The import of disease surveillance, notification and response is perhaps best exemplified by the massive outbreak of epidemic meningococcal meningitis (cerebrospinal meningitis, CSM) that devastated Nigeria in 1996, when over 400,000 cases were reported, with 40,000 deaths – according to the WHO was the largest of such epidemic in recorded history. The first cases of meningitis were recorded in Jibia town near Niger Republic, where CSM infections reached the epidemic threshold in November 1995, but a report did not reach the Federal Ministry of Health until February 1996, by which time nothing could have been done to prevent the epidemic from running its normal course. Clearly, the epidemic preparedness and response mechanisms had failed to take off properly in Nigeria and, one suspect, in most of West Africa as well.

The fact that the 1996 Nigerian epidemic of CSM followed one that occurred in Niger Republic two years earlier, and Jibia is barely three kilometers from the Nigeria-Niger border, is a perfect pointer to the dire need for integrated disease surveillance and response in West Africa. Had there been a well established and effective IDSR at the time, the epidemic would have been averted, or the magnitude of morbidity and mortality curtailed. Furthermore, we are currently witnesses to yet another failure of surveillance in the region: the failure to eradicate poliomyelitis according to the timelines set by the polio eradication initiative (PEI). These examples and many more, provide compelling evidence for Integrated Disease Surveillance and Response (IDSR) in the West African Region.

Having identified the constraints in implementing IDSR in the region, the workshop went on to identify and propose remedial action to bring the system to fruition in a sustainable manner. The recommendations are well argued and articulated, and all stakeholders – governments, policy makers, epidemiologists, scientists, public health practitioners, primary care health workers, community leaders, the WHO, CDC, DFID, the Global Fund, MDG executives, Foundations such as the Bill and Melinda Gates Foundation, and the Biosecurity Engagement Program of the US State Department – should be interested in establishing a sustainably functional IDSR in West Africa. The workshop deliberated on novel issues such as biosecurity, zoonotic surveillance systems, legal framework and coordinating framework for IDSR, as well as surveillance monitoring. Towards implementation of IDSR in West Africa, the workshop agreed the composition of surveillance teams, disease detection and reporting, data analysis and interpretation, outbreak investigation and response, feedback, supervision and monitoring and government "buy-in" for IDSR. The crucial role of modern information and communication technology was highlighted.

The Nigerian Academy of Science is to be commended for the superlative success of this workshop that brought together the best stakeholders of disease prevention and control, not only from West Africa, but from the WHO, the US Centers for Disease Control and Prevention (CDC), and a variety of Non-Governmental Organisations (NGOs). The report itself is very well written, and it should serve as an essential reference material for all those who are interested or engaged in eliminating diseases of epidemic potential in West Africa. Health policymakers in the region no longer have any excuse for prevaricating on the urgent need for a strong and effective IDSR in the region. A strong political will, adequate funding and human resources development are essential in this regard.

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SUMMARY

This document is a summary of the output of a workshop organized by the Nigerian Academy of Science on Integrated Disease Surveillance and Response (IDSR) in the West African Sub-Region. The two-day workshop was held at the Ladi Kwali Conference Centre of the Sheraton Hotel and Towers, Abuja, Nigeria on the 3rd and 4th of August, 2010. The activity was supported by the Biosecurity Engagement Program of the US Department of State. Further support was received from the Federal Ministry of Health of Nigeria (FMOH), the World Health Organization (WHO), and the US Centres for Disease Control and Prevention (CDC).

The workshop was declared open by the Minister of Health of the Federal Republic of Nigeria, Professor Onyebuchi Chukwu and was attended by 139 invited guests from several different countries, drawn from government, academia, medical and veterinary practice, non-governmental organizations, and the media. Papers were presented by representatives of the Ministries of Health of Nigeria, Togo, Senegal, Mauritania, Ghana and Cote D'Ivoire, as well as by representatives from several research institutes and universities, the WHO and the Uganda National Academy of Science. The workshop schedule and list of participants are attached as Appendices 1 and 2 respectively.

The key challenges to effective IDSR implementation that were identified during the workshop included unclear IDSR implementation frameworks, low awareness and understanding of IDSR among health workers, shortages of tools, equipment and supplies, weak laboratory, communication and IT infrastructure, insufficient skilled manpower for data analysis, data interpretation, outbreak investigation and response, and low levels of political commitment to IDSR.

Several recommendations were made to address these challenges, including improving human capacity for IDSR by incorporating IDSR into pre-service training curricula of health workers, developing on-the-job training programmes, and instituting community based surveillance systems; leveraging resources for IDSR through integration, evidence-based advocacy to government, and local production of drugs and vaccines; instituting policy and legal frameworks for IDSR, and strengthening planning, monitoring and supervision.

This report documents the highlights of the presentations and discussions that arose during the two-day workshop. It is intended for officials of Ministries of Health, researchers, policy makers, and all who have an interest in the development and strengthening of Integrated Disease Surveillance and Response systems in West Africa.

TABLE OF CONTENTS

ACRONYMS

AEFI	Adverse Events Following Immunization
AFENET	African Field Epidemiology Network
AFP	Acute Flaccid Paralysis
BLL	Blood Lead Levels
CBS	Community Based Surveillance
CDC	United States Centers for Disease Control and Prevention
DSN	Disease Surveillance and Notification
EIS	Epidemic Intelligence Service
FELTP	Field Epidemiology Training Programme
FMOH	Federal Ministry of Health
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IT	Information Technology
LGA	Local Government Area
MSF	Medicins Sans Frontiers
NAS	The Nigerian Academy of Science
NGO	Non-Governmental Organization
SMOH	State Ministry of Health
TEPHINET	Training in Epidemiology and Public Health Interventions Network
WAHO	West African Health Organization
WHO	World Health Organization
WHO AFRO	World Health Organization Regional Office for Africa
STI	Sexually Transmitted Infection
US	United States

1. BACKGROUND

Disease surveillance is the ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know. Disease surveillance is an essential function of a public health system.

Infectious diseases continue to be a major challenge in West Africa. Diseases previously thought to be controlled have re-emerged in recent years, and new disease threats continue to be identified. The increased mobility of human populations brought about by lowered trans-border travel restrictions and improved transportation networks facilitate the spread of infectious diseases from one country to another. In addition, the sub-region is experiencing a growing epidemic of non-communicable diseases brought about by evolving dietary patterns, less active lifestyles, and changing environmental exposures. More than ever, there is a great need for focused, timely, and scientifically accurate information to facilitate evidence-based interventions to contain and control diseases. Surveillance information can be used to detect and predict epidemics, monitor progress towards a control objective, promote understanding of the natural history of a disease, set research priorities and facilitate healthcare planning and advocacy for increased resources.

Countries in the West African sub-region have at different times instituted surveillance systems for specific named diseases. For instance, a disease surveillance system was introduced in Nigeria in 1988, following a major outbreak of yellow fever in 1986/87 which affected ten out of the then nineteen states of the country. Forty diseases of public health importance in the country were identified and designated for routine monthly notification out of which ten epidemic-prone diseases were selected for immediate reporting. This Disease Surveillance and Notification system (DSN) was approved for adoption by the Nigerian National Council on Health in 1989. [1]

Integrated Disease Surveillance and Response: In response to the growing challenges faced by member states in the control of infectious diseases, the World Health Organization Regional Office for Africa (WHO AFRO), during its Regional Committee meeting in Harare in 1998, approved the Integrated Disease Surveillance and Response (IDSR) strategy for strengthening infectious disease surveillance and response capacity [2]. The thrust of this strategy is on strengthening surveillance functions at all levels of the healthcare system. It emphasizes the need for the surveillance system to be simple, flexible, action oriented, and focused on ensuring rational use of resources by having a single integrated system

[1] Federal Ministry of Health, Nigeria (2005). N*ational policy on integrated disease surveillance and response.* FMOH Abuja.

[2] WHO (1999) *Integrated disease surveillance strategy, a regional strategy for communicable diseases 1999–2003.* WHO-AFRO. Harare (AFR/RC48/8).

that provides surveillance information for a range of diseases of public health importance. This strategy has become a reference point for surveillance activities in African countries and has been adopted by 44 out of the 46 member states in the WHO Africa Region.

PROPOSED CONTENT OF IDSR COUNTRY GUIDELINES:

- A list of priority diseases that are to be notified.
- Case definitions and diagnostic algorithms for each disease.
- A minimum set of data to be collected at each level.
- The reporting channels to be followed.
- The frequency and timing of reports.
- The type of analysis to be carried out.
- The format for presenting reports.
- The routine dissemination and feedback channels.
- The process for taking action in an emergency.

IDSR Guidelines:

Since 1998, WHO-AFRO has constituted IDSR working groups and inter-country support teams, and has convened a number of meetings to share experiences and discuss how to move ahead with IDSR implementation [3].

WHO has also developed a framework and generic guidelines for the implementation of IDSR systems which are available for countries to adapt and adopt. The guidelines provide details of key components which must be in place for a surveillance system to function effectively. WHO recommends that each country adapt and adopt these guidelines to suit their country disease profile and health system framework (see suggested content of guidelines in sidebar). The adapted guidelines need to be shared with a wide range of stakeholders and pre-tested in one or more regions before they are finalized and printed.

International Health Regulations:

Another document which has influenced the development of surveillance systems in West Africa is the 2005 revision of the International Health Regulations (IHR). International Health & Travel Regulations are measures taken by countries to prevent the spread of diseases across international borders or according to IHR (2005) actions taken to "*prevent, protect against, control and provide a public health response to the international spread of diseases in ways that are commensurate with and restricted to public health risk, and which avoid unnecessary interference with international traffic and trade*"[4].

The revised IHR proposes a transformation of the focus of international health from the concept of a static defense against entry of sick or potentially infected persons or animals at borders and ports, to the concept of early detection, reporting and containment of diseases at source. With this revised focus, the cornerstone of international health security is a strong national public health infrastructure connected to a global alert and response system. IHR is therefore being implemented in concert with IDSR in most West African

[3] WHO (2003) *The Implementation of IDSR strategy in the African and Eastern Mediterranean Regions: Synthesis report.* WHO Geneva.

[4] WHO (2005) *International health regulations* (2nd edition) WHO Geneva.

countries. This novel approach emphasizes the need for strong regional and international cooperation and investment in routine disease control activities in individual countries.

Updated list of priority diseases and conditions in the WHO African region

Epidemic prone diseases and conditions	*Diseases targeted for eradication or elimination*	*Other major diseases and conditions of public health importance*
***Cholera*[1]**	***Dracunculiasis***	***Diarrhoea with dehydration in <5***
Meningococcal meningitis	***Leprosy***	***Severe pneumonia***
Diarrhoea with blood (Shigella)	***Neonatal tetanus***	***New HIV/AIDS***
Viral hemorrhagic fevers**[1]	***Poliomyelitis [1] (AFP)***	***STIs***
Dengue	***Onchocerciasis***	***Tuberculosis***
Typhoid fever	***Buruli ulcer***	***Malaria***
Yellow fever [1]	***Filariasis***	***Trypanosomiasis***
Measles	***Noma***	***Trachoma***
Influenza(novel type) [1]	***Rabies***	***Acute viral hepatitis***
Plague [1]		***Maternal deaths***
Anthrax		***Malnutrition***
Chikungunya[1]		***Hypertension***
Disease specified by IHR (2005) for notification.		***Diabetes mellitus***
**Ebola, Marburg, Rift Valley, Lassa, Crimean Congo, West Nile Fever.*		***Adverse events following immunization (AEFI)***
	Diseases or events of international concern in addition to those noted in other columns: *Any public health event of international concern (infectious, zoonotic, food borne, chemical, radio nuclear, or due to unknown condition).*	

2. SYSTEM AND INFRASTRUCTURE FOR EFFECTIVE IDRS IN WEST AFRICA

An effective national disease surveillance and response system is a collection of multidisciplinary, multi-level and resource intensive activities that requires careful planning, focused implementation and continuous monitoring and feedback. Although all the countries in West Africa have adopted the IDSR strategy, its successful implementation is dependent on appropriate adaptation and use of guidelines and tools, as well as on the availability of funds and human resources to support the strategy. Continuous assessment of performance is also key to identifying gaps and addressing them for improvement in quality of surveillance.

Functional national surveillance systems are the building blocks upon which an effective regional surveillance and response depends, therefore all countries in West Africa must adopt a collaborative approach towards the development of IDSR in the region. As with any other public health intervention, a range of resources and enabling frameworks are required to implement IDSR effectively. These include the following:

A good surveillance system should be simple, flexible, cost-effective, oriented towards action, fully integrated into the healthcare system, and effective in identifying disease outbreaks and disease control priorities.

Human Capacity:
In order for surveillance to be effective, all persons who have a role to play in reporting or in responding to outbreaks must be aware of the system in place and understand what their responsibilities are. The burden of routine reporting falls mainly on healthcare and laboratory workers, who must therefore be trained extensively on the case definitions and diagnostic algorithms for notifiable diseases, the surveillance pathways and response mechanisms and the use of the reporting forms. Training curricula, training materials and reference manuals and handbooks for various cadres of health workers must be developed as the surveillance and response system is being put in place.

At higher levels, surveillance requires the involvement of and collaboration between specialists in several disciplines including human medicine, veterinary medicine, laboratory sciences, epidemiology, health information technology, agriculture and environmental sciences, and the country's educational system must be able to produce these scientists in sufficient numbers to support the system. Technical manpower in information and communication technology must also be built to meet the hardware and software development and maintenance requirements of the system.

Surveillance Tools:
A range of tools are needed to support the surveillance system. These include standard case definitions for priority diseases, data reporting forms, summary sheets and data-entry templates, standard operating procedure documents (SOPs) for laboratory

confirmation of notifiable diseases, and communication tools such as fact sheets and bulletins for disseminating information and storing it for future reference. The tools need to be kept as simple as possible and should be restricted to the key data that is essential for action. Each country must develop its own tools to suit the surveillance system in place.

Information Technology:
An important consideration for countries in West Africa in the development of surveillance systems is the level of technological infrastructure available. Large volumes of data are generated through surveillance and these are best managed electronically. The surveillance system must therefore give consideration to the computer hardware and software that will be used for this purpose, as well as to the availability of electricity and other communication equipment and infrastructure such as PDAs, telephone networks, two-way radio-systems, and email or instant messaging facilities. The availability of technical expertise to procure, install, operate and maintain these systems also requires due consideration.

Laboratory Support:
A strong laboratory network is an important component of a disease surveillance system. Trained laboratory workers in well equipped primary level laboratories can carry out simple diagnostic tests for many suspected disease conditions. Primary level laboratories also serve as collection points from which samples are transported to regional or national reference laboratories for isolation and identification of pathogens. A strong laboratory network will include a cold-chain transportation system for samples as well as an effective supply chain for reagents and supplies.

Drugs, Supplies and Vaccines:
The primary purpose of any surveillance system is to detect and respond to outbreaks of disease. Depending on the disease condition and the magnitude of the outbreak, the response could involve the mobilization of large quantities of drugs, vaccines and other medical supplies to the areas affected by the epidemic. A key component of an Integrated Disease Surveillance and Response system is an emergency preparedness mechanism for ensuring that these supplies are available or can be quickly obtained when they are required, and that adequate means of transportation, cold chain equipment and warehousing facilities are in place to maintain the integrity of the drugs and vaccines from the point of purchase or production to the location where they are required. This emergency supply chain system involves continuous planning and close coordination and collaboration between national and regional/state ministries of health, pharmaceutical concerns, supply chain logistics personnel and emergency response teams.

Zoonotic Surveillance Systems:
Zoonotic surveillance is a critical but often overlooked component of a national and regional surveillance system. About 61% of all known infectious pathogens are zoonotic, capable of infecting humans and one or more animal species [1]. Zoonotic diseases outbreaks are increasing in number and emerging zoonotic diseases are increasingly being recognized as being of global and regional importance with potentially serious human health and economic impacts. Animals can also be used in sentinel surveillance systems since

[5] Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. Philos Trans R Soc Lond B Biol Sci. 2001;356:9839.

they share environments with humans and respond to many toxic or infectious agents in analogous ways. Clinical signs may manifest in animals prior to humans and provide early warning of an impending outbreak or an ongoing exposure risk. In Nigeria during the lead poisoning epidemic of 2010, animals were reported to have died in the affected areas before humans started to fall ill and die[2]. Integrated zoonotic disease surveillance requires that professionals in both human and animal health come together to monitor, analyze and respond collaboratively to animal and human disease threats and events.

Biosecurity:
There are risks to the health or life of humans, plants, animals, and the environment associated with working with certain pathogens in medical and scientific laboratories. Biosecurity is a strategic and integrated approach that encompasses the policy and regulatory frameworks that analyze and manage these risks. Biosecurity also covers the introduction into the environment of plant pests, animal pests and diseases, genetically modified organisms (GMOs) and their products, and the management of invasive alien species and genotypes. Biosecurity is of direct relevance to human health and is therefore inextricably linked with surveillance, as well as with the sustainability of agriculture, food safety, and the protection of the environment, including biodiversity. As with zoonotic surveillance, biosecurity requires close collaboration between a wide range of different scientific disciplines including public health, epidemiology, veterinary medicine, microbiology, botany, zoology, environmental science and agriculture.

Legal Framework for IDSR:
The revised International Health Regulations of 2005 entered into effect on June 15, 2007. This legally binding agreement contributes significantly to international public health security by providing a new framework for coordinating the management of a public health emergency of international concern. At country level, the international health regulations are to be domesticated by putting in place and enforcing appropriate policies, laws and regulations addressing disease notification and control as well as trans-border surveillance. The need for a legal framework goes beyond disease surveillance and response to issues of biosafety and biosecurity. Protocols and regulations are required to prevent accidental work-related exposures or wilful malicious dissemination of harmful biological agents, and these regulations should be backed up by appropriate legislation.

Coordinating framework for IDSR:
Surveillance and response activities cut across political and disciplinary boundaries. This creates an imperative need for a strong coordinating framework within which the different components of the system mesh into a functional whole. Caution must at the same time be taken to ensure that IDSR does not become a program in itself, but functions as an integrated health system tool for monitoring and responding to potential and actual disease outbreaks. At a national level, the coordinating framework should specify the roles of each agency and organization at the different health system levels, the channels of communication and funding flow, and the responsibility for

[6] Lombin L. B*iosecurity/zoonotic disease surveillance: implications for plants, humans and animals.* Paper presentation at the Nigeria Academy of Science Workshop on IDSR in West Africa, August 3-4 2010 , Abuja, Nigeria.

supervising and monitoring the system. Cross-disciplinary and cross-agency coordinating teams are essential and should meet with a predefined frequency to review the performance of the surveillance system. At a regional level, inter-country coordinating teams must be established and joint action plans developed which specify the roles and resource responsibilities of each participating country for the implementation of collaborative cross-border surveillance activities.

Monitoring Surveillance:

Monitoring indicators are important tools for identifying problems in IDSR systems and planning interventions to improve the quality of surveillance information. They do not describe the entire surveillance and response system but can provide useful information on its status and flag areas that need improvement. Generally, there are two types of indicators: monitoring indicators which are used to track implementation of surveillance activities and to detect changes in the surveillance system over time, and evaluating indicators which are used to assess effectiveness of the system by assessing processes, outputs, outcomes and impacts. The indicator results should be interpreted alongside other sources of information such as surveillance data, supervisory reports and special studies.

Sample Yellow Fever Surveillance Monitoring Indicators:

- ***% of suspected cases investigated with blood specimens***
- ***% of blood specimens taken within 14 days of onset of illness***
- ***% of specimens arriving in the laboratory within 3 days of collection***
- ***Timeliness of reporting from district to national level and then to WHO***
- ***Completeness of reports submitted to national ministries of health and WHO***

Composition of IDSR Teams and Committees in Togo

1. Membership of the IDSR Monitoring Unit at district and regional levels

- Regional or District Director of Health
- Focal persons for communicable diseases (malaria, tuberculosis, HIV / AIDS , dracunculiasis, etc)
- Focal persons for non-communicable diseases (hypertension, diabetes, sickle cell disease, etc)
- Chief Laboratory Scientist
- Chief Statistics Officer

2. Composition of the Rapid Response Team

- Epidemiologist or public health worker
- Pathologists and microbiologists
- Clinical infectious disease specialist
- Communication specialist
- Other specialists depending on the area of investigation (eg veterinarians, environment specialists, soil scientists, etc)

3. Composition of the Epidemic Management Committee

A. Local Administrative and Law Enforcement Authorities

- District Governor
- Commissioner of Police
- Commander of the Guards Brigade
- Traditional and religious leaders

B. Health Authorities and Health Specialists

- Regional or District Director of Health
- Director of Hospital Services
- Pharmacists
- Laboratory technicians
- Field epidemiologists

C. Other Authorities

- Inspectors of Schools and Colleges
- Director of Animal Health
- Social and Community Affairs Director

D. Representatives of NGOs in the field of health (eg Red Cross, Plan Togo, GTZ)

3. THE CHALLENGES OF IMPLEMENTING IDRS IN WEST AFRICA

Twelve years after the introduction of the Integrated Disease Surveillance and Response Strategy, countries in the West African sub-region continue to experience a high frequency of infectious disease outbreaks and minimal progress in disease containment and control. IDSR is being implemented in all the countries in the sub-region, but the surveillance systems are generally weak and there is poor collaboration and coordination at the regional level.

A number of strategy documents, guidelines and tools have been developed by the World Health Organization to assist countries in establishing IDSR systems, however their implementation continues to be hampered by insufficient funding, manpower shortages and a lack of political will. The specific challenges to effective IDSR implementation are best examined by looking at the core functions of a disease surveillance and response system.

Disease Detection:

Disease detection requires that health workers at the primary care level maintain a high index of suspicion for notifiable diseases that are prevalent in their areas. The reality in many countries is that health workers have a very low awareness of IDSR and notifiable diseases. This is especially true in rural areas where health facilities are typically staffed with lower cadres of health workers. An assessment of IDSR implementation in Nigeria carried out in 2009 revealed that 68% of the health facilities surveyed had no case definitions for any of five selected notifiable diseases and health workers had not been trained on the clinical presentations of these diseases. In the case of in-patients, discharge summaries are often not provided in patient case notes, therefore health information technology officers who compile routine notification reports have no means of determining the diagnostic category to which each patient belongs. There is an additional challenge in the case of diseases whose definitions require laboratory confirmation, as laboratory services are non-existent in some facilities while in others there are chronic shortages of staff, equipment and reagents.

> *"Those of us who work at the district level have a myriad of reporting forms to fill out. We need more easy-to-use tools; tools that we can also analyze ourselves to meet our own planning needs rather than just filling them out for the ministry of health"*
>
> ***-Participant***

Disease Reporting:

As already mentioned, many health workers including physicians, nurses and laboratory scientists are not aware of IDSR. Some who are aware that the system does exist do not know the details of which diseases to report, which reporting forms to use or how to fill them out, and what the reporting channels are. Pre-service training for health workers in many countries does not include IDSR, therefore they must either be trained on the

job or attend training courses on IDSR. Another challenge with IDSR reporting is that health workers are often overloaded with other primary responsibilities such as patient care and facility management and do not consider involvement in IDSR as their primary assignment. There is a multiplicity of reporting forms to be completed by the same staff and the forms are often tedious to fill out. In many cases, the forms are not even available in the health facility.

After the reporting forms have been filled out, poor communication networks including bad roads and limited access to internet or telephone facilities may hamper onward transmission of reports. In some countries there are challenges created by health system structures. For instance, when secondary and tertiary hospitals are administratively under the national or regional governments and therefore do not feel obligated to send surveillance data to the local health authorities in their vicinity.

Data Analysis and Interpretation:
Surveillance data is only useful when it is used to generate information for action. In most countries in West Africa, significant quantities of surveillance data are collected, but in many cases, these are not analyzed. The reasons for this failure include shortages of basic equipment such as calculators, computers and software; lack of skilled manpower to carry out the analysis; and poor understanding of the relevance of the data in planning of health service provision. Another challenge is the lack of reliable population data and vital statistics to use as denominators in computing health indicators. These gaps are especially pronounced at the lower levels of the health system. Staff at the health facility, district and state/regional levels rarely analyze surveillance data, but merely act as a conduit for the data from the district to the national level. This results in a failure to anticipate outbreaks and

Challenges to Effective Implementation of IDSR in West Africa:

- **Unclear IDSR implementation framework**
- **Low awareness of IDSR among health workers**
- **Unfriendly reporting templates**
- **Shortages of IDSR tools and guidelines**
- **Lack of laboratory infrastructure and expertise**
- **Poor transportation and communication networks**
- **Lack of IT equipment for data analysis**
- **Insufficient skilled manpower (for data analysis/interpretation; outbreak investigation/ response)**
- **Poor feedback mechanisms to lower levels**
- **Weak IDSR supervisory structures**
- **Absence of legal and policy frameworks for IDSR**
- **Low levels of political commitment to fund IDSR**

delays in detecting and responding when they do occur.

Outbreak Response and Investigation:
A key performance indicator for a surveillance system is the response time after notification of a suspected outbreak to the authorities. An outbreak investigation and response requires a lot of coordination and supervision and this role is usually that of Epidemic Preparedness and Response (EPR) committees which should be in place within the health system at all levels. In many of the countries in West Africa, the EPR committees are in place at the National level but do not exist or are non-functional at the district and state levels. There is also limited or no budgetary provision for responding to outbreaks. A lot of time is lost mobilizing a team to mount a response when an outbreak is reported, during which time the disease can spread over a wider area and cause more suffering and death. Other challenges include poor technical quality of outbreak investigations and reports due to a lack of trained field epidemiologists, and non-availability of reliable laboratory data because there are no functional laboratories and no mechanism to collect and transport specimens to the nearest reference laboratory.

Provision of Feedback:
Non-existent or irregular provision of feedback on surveillance data is a weakness that is common to IDSR systems and many other vertical programmes. Funding for feedback mechanisms is often overlooked during the budgetary process, with the result that bulletins and reports are sometimes produced which never get to be seen by those who are supposed to use them. In particular, feedback to lower levels is rarely provided. This promotes the notion among healthcare workers at lower levels that surveillance reporting is a burdensome activity that is done to satisfy the higher authorities, rather than a useful planning and evaluation tool.

Supervision and Monitoring:
Many of the challenges being faced by surveillance systems in West Africa are a direct result of the absence of a strong monitoring system. There are no regional and district level surveillance officers in many parts of the country, and where these positions do exist and are filled, they may not be empowered with required resources to carry out their duties. Most health facilities have no designated focal persons for IDSR who can provide mentoring and supervision to other staff in detection of cases and completion of disease reporting forms.

> *"Why can we not have hands-on IDSR trainings done directly in the health facilities rather than carrying out higher level training of trainers? These TOTs are expensive and most of them have not yielded the desired results because some of those that are trained do not have the skills to cascade the trainings down to the lower levels of the health system."*
>
> ***-Participant***

Government "Buy-In" for IDSR:
Many of the challenges already enumerated can be addressed at least partially with additional funding. However, in many countries in West Africa there are severe shortages of funds to meet the demands of the healthcare system, and governments in general have low levels of commitment to providing funds for surveillance activities. At regional or inter-country level, there are also challenges with securing political commitment from

neighboring countries to fund joint border surveillance activities.

The low level of political will to support IDSR may to some extent be due to the preemptive nature of surveillance activities. An analogy can be drawn between disease surveillance and response and an insurance policy. IDSR involves setting up systems and processes at a population level to prevent or mitigate against disease outbreaks whose potential for occurrence is an unknown probability. These systems are resource intensive and require funding both for capital costs such as laboratory and communication infrastructure and manpower development, as well as for recurrent expenses that are required for the day to day operations. This presents a real challenge for public health authorities in resource-constrained environments where routine surveillance activities have to compete for funding with ongoing health service provision. Clear cost-benefit data is needed to show the government authorities at the highest level that surveillance is a worthwhile investment of scarce resources.

Champions are also needed in the relevant ministries who can present and defend a strong case for IDSR funding during budgetary planning sessions.

For development partners, the effects of IDSR funding may be more complex to demonstrate when compared to vertical disease programs. Many partners therefore prefer to support a specific disease program which has directly measurable outputs in terms of numbers of persons reached with services. They still require timely and accurate data to monitor the progress and impact of their programs, but the huge investment required to put in place a comprehensive information system to capture the incidence of several priority diseases is difficult for any single partner to justify. As a result many partners prefer to set up smaller, parallel vertical information systems for specific diseases. This is extremely cost-ineffective for the country as a whole, as the funds expended on the parallel programs could be more effectively channeled towards an integrated surveillance system which meets most of the needs of the healthcare provision network. It is the responsibility of the host governments to provide the policy framework for an integrated surveillance system, fund some of its core elements, and exert political will on the donor-partner community to support the initiative.

Policy and Legal instrument:
Although comprehensive guidelines and international regulations exist for implementing IDSR, most countries in the West African sub-region have not domesticated these guidelines. As a result there is no legal charter for enforcing disease control activities in these countries. In countries where policies and regulations exist they are often poorly disseminated and enforced, and awareness of them among health workers is low.

The absence of a policy framework can also create difficulties with mobilizing funds from the government to support surveillance. The promulgation of a charter or legal act mandating surveillance as a statutory activity is a first and necessary step towards securing budgetary allocations for IDSR activities. In many countries this will require a focused advocacy campaign and lobby effort to the national house of assembly or parliament.

"The problem is that surveillance is an orphan. No-one wants to fund something that does not yield indicators that can be reported as numbers of people served or clinics equipped. They prefer to fund malaria, tuberculosis and immunization programmes. Those are also important, but how do you plan without accurate health data?"

-Participant

"It is expensive to run surveillance and response systems. When there are reports of outbreaks, people have to move out into the field and they need transportation and equipment; they need to take samples which must be transported in special media to the laboratory for analysis. Someone has to pay for all this."

-Participant

"I understand that IDSR is not a program, but those who are expected to fill out the forms and ensure that they get to the next level also have their hands full with other responsibilities in the hospital. If there is additional funding, the larger hospitals can hire health information technologists who will gather the required information and report it. "

-Participant

"We need legal backing if we are to make progress with disease surveillance and notification systems. Governments come and go and the level of political will of whoever is in office is what determines whether surveillance activities are funded or not. This has to change"

-Participant

INVESTIGATION AND CONTROL OF AN OUTBREAK OF LEAD POISONING IN ZAMFARA STATE OF NIGERIA

Zamfara State is a predominantly rural state located in the northwestern part of Nigeria. In March 2010, suspected cases of lead poisoning were reported to the Zamfara State Ministry of Health. Most of the cases were children under five, who presented with vomiting and convulsions. In April, the State Ministry of Health in collaboration with Medicins Sans Frontiers (MSF) conducted an investigation which confirmed more than 100 deaths in six villages. Initial tests revealed blood lead levels (BLL) among infected children of 100 400 ug/dl. The Federal Ministry of Health was notified in May, and immediately constituted a response team comprising WHO, CDC, FELTP and other partners, which mobilized to Zamfara State to investigate the epidemic. Experts from CDC Atlanta joined the team with equipment for environmental lead monitoring, and it was quickly discovered that the environment in the affected villages was heavily contaminated with lead to levels of up to 100 000 PPM. Household BLL results showed that out of 204 venous blood samples taken, 100% indicated lead poisoning (>10 ug/dL) and 97% met the criteria for chelation therapy (>45 ug/dL). The lead poisoning was found to be a consequence of local gold mining activities which involve crushing, sluicing and drying lead-containing ore, resulting in soil contamination in compounds and houses in the affected villages.

On May 26th 2010, the Federal Government instituted a task force on lead poisoning with a mandate to control the epidemic. Lead chelating drugs were quickly procured and treatment centres set up in two of the worst affected areas. Environmental experts were invited in to assist with decontamination of the villages. The task force in collaboration with the Zamfara State authorities developed and disseminated public health messages and conducted health education campaigns on lead poisoning in villages throughout the state. A temporary ban was placed on mining activities in Zamfara state by the Federal Ministry of Mines and Steel. Trainings were conducted for state and local government health staff on case definitions for suspected lead poisoning and the actions to be taken when a suspected case is identified. About 355 cases of acute lead poisoning with 163 deaths had been reported as at the end of July 2010, and intensive efforts were still focused on environmental clean-up and household screening of children in other villages identified as contaminated.

The response to the 2010 lead poisoning outbreak in Zamfara State of Nigeria typifies both the challenges and the opportunities of disease surveillance and response in West African countries. The first suspected cases occurred in early January 2010, but the outbreak did not come to the notice of the Federal Ministry of Health until May, four months later. Between May and August however, swift actions were taken to control the epidemic. Strong leadership from the Federal Ministry of Health was a critical component of this response, which involved collaboration between authorities of federal and state ministries of health, environment, mines and steel, information, law enforcement agencies, community heads, specialists in epidemiology, environmental sciences, and medicine, and international and local non-governmental partners.

4. OPPORTUNITIES FOR STRENGTHENING IDRS SYSTEMS IN WEST AFRICA

Strengthening IDSR throughout West Africa would create an effective early warning system capable of detecting outbreaks and epidemics and facilitate the timely implementation of containment measures, with consequent reductions in human morbidity and mortality. Many of the challenges being faced by IDSR are symptoms of generalized health system weaknesses which can only be addressed through radically increased investments in the health sector. However, there still exist opportunities to strengthen and scale-up surveillance activities in the West African sub-region with minimal additional human and material resources.

Manpower Capacity Building for IDSR in the West African Sub-Region:

Integrated Disease Surveillance and Response is a key public health concept which all health workers should be aware of. Disease surveillance is currently not included in the curriculum of medical schools, nursing schools, and schools of medical laboratory technology. Addressing this gap will go a long way towards increasing awareness, understanding, and implementation of IDSR and will also reduce the expenses that are associated with carrying out in-service training for health workers in the basics of disease surveillance and response. Ministries of health, education, agriculture and environment can come together to develop basic disease surveillance curricula that can be incorporated into existing training curricula.

Where in-service trainings are required, the focus should be on coaching and on-the-job trainings rather than hotel-based training courses which are more expensive and provide less of practical experience. Exchange programs can also be arranged so that staff from weaker regions or countries can visit and learn from their stronger counterparts. As adjuncts to training, simplified case definitions and reference materials should be produced and circulated to all health facilities to guide workers in performing surveillance tasks.

In order to have functional and robust public health surveillance systems, there is also a need for a cadre of public health workers with more specialized training in surveillance, outbreak investigation and response who can provide mentoring and supervision to other health workers in the field. Field Epidemiology Training Programs (FETPs) exist in some countries in West Africa including Nigeria, Ghana, Burkina Faso, Togo, Niger and Mali. They were developed in response to country requests for programmes like the U.S. Epidemic Intelligence Service (EIS) and are supported financially and technically by WHO and the US Centers for Disease Control and Prevention (CDC).

The flagship FETP program is a two-year, full time training program for laboratory scientists, veterinarians and physicians, with approximately 25% of the time spent on classroom instruction and 75% in field assignments. The courses are implemented in collaboration with recognized African universities and are largely competency-based. Trainees take courses in epidemiology, communications, economics and management. They also learn about quantitative and behavior-based strategies. In addition, FETP

trainees work in the field, where they conduct epidemiologic investigations and field surveys; evaluate surveillance systems, perform disease control and prevention measures; report their findings to decision and policy makers, and train other health workers in disease surveillance and response. Graduates receive a certificate or, in some programs, a degree. There are also short courses lasting from a few weeks to a few months. The training courses are backed up by international networks like the Training in Epidemiology and Public Health Interventions Network (TEPHINET)[1] and the African Field Epidemiology Network (AFENET)[2]. Ministries of health are already taking advantage of these programs to train their staff, and should be looking ahead to institutionalize these programs within local universities.

> *"Even doctors are not taught about disease surveillance and response systems in medical school. It is only taught in schools of public health. IDSR is something that should be in the training curriculum for all health professions"*
>
> ***-Participant***

Another approach to building human capacity for IDSR is to exploit the strengths of community networks. Community members can facilitate early notification by reporting to health authorities when anyone in the community has signs or symptoms of any of the priority diseases. This is called community-based surveillance (CBS). Simple case definitions accompanied by visual illustrations can be translated into local languages and community volunteers trained to identify and report suspected cases. Communities must be educated that prompt reporting through CBS is in their best interest because this will limit the spread of the disease to other members of the community. The reporting pathway and contact person must also be made clear. Examples from the Acute Flaccid Paralysis surveillance for the eradication of polio show that CBS works. In Niger, trained village health workers identified and promptly reported cases of polio to health facility thus improving case detection using syndromic methods. This prompt reporting (within 20-30 days of incidence of polio) increased the chance of the polio virus isolation and containment. In addition, trained volunteers disseminated messages to debunk misconceptions about the causes and treatment for common communicable diseases through house visits and community meetings[3]. This approach is appropriate in medically under-served communities where health facilities are not available, but there are strong social networks. It promotes partnership between communities and health care systems and is a cost-effective and culturally appropriate mechanism for case detection and containment.

Funding for IDSR in West Africa :

IDSR systems in the West African sub-region are heavily dependent on external funding. This approach is not sustainable in the long term. Deliberate and sustainable funding from

[7] www.tephinet.org

[8] www.afenet.net

[9] Ndiaye S.M, Quick L, Sanda O, Niandou S. (2000) *The value of community participation in disease surveillance: a case study from Niger.* Online journal http://heapro.oxfordjournals.org/cgi/content/full/18/2/89 retrieved on 30/07/2010.

governments at all levels is essential to meet the costs of running the system. Donor funding for IDSR should be seen as an adjunct rather than a substitute for government support and should be focused on capital investments such as laboratory infrastructure, manpower capacity building, and support for the development of tools and guidelines. Strong advocacy programmes, backed up with evidence-based information, are required to secure adequate budgetary allocation for IDSR and to ensure that these funds are not diverted to seemingly more pressing health system needs. One commendable model is the use of health insurance funds to finance disease surveillance and other public health activities in Ghana. Other countries may explore the possibilities of using this or other taxation mechanisms to fund healthcare in general, including IDSR.

The West African Health Organization (WAHO) has recently developed advocacy tools for mobilizing funds for IDSR activities that can be adapted and used by countries in the region. Injection of additional funding has the potential to take care of many of the challenges faced by the IDSR system such as shortages of reporting forms, communication and computer equipment, laboratory supplies, drugs and vaccines. Additional funds would also enable Ministries of Health engage full time staff to undertake analysis of surveillance data and circulate monthly reports to relevant parties and organizations.

Although the core funding for IDSR should ideally come from the government, there are substantial investments by donor countries in partnerships for health manpower capacity building, medical infrastructure and supply chain logistics in all the countries in West Africa. IDSR promotes sharing and coordination of resources across these programmes. This strategy was effectively employed in Nigeria during the Avian Influenza outbreak in 2006 to health system. This disconnect can be addressed by engaging all levels of health system staff in a bottom-up approach to development of surveillance work plans and targets. These work plans should specify the indicators to be used to monitor the system and the persons who are responsible for monitoring and supervision, as well as the resource implications of operating the system. IDSR coordination and review meetings should be held periodically between Ministry of Health officials in the districts and the heads of health institutions to ensure that the indicator targets are being met, and the output of such meetings transmitted upwards to the state/region and national levels. This bottom-up approach will more effectively reveal the gaps in the system and enable the development of practical solutions. For instance, it may be more realistic for countries with severe resource challenges to leverage funds for scaling up surveillance activities (see page 17). Countries should also begin to look inward at local production of drugs, laboratory reagents, medical supplies and vaccines.

Leveraging Donor Funds for Surveillance in Nigeria

In the true spirit of implementing IDSR, Nigeria took advantage of the window of opportunity occasioned by donor investments in health between 2004 and 2010 to scale-up surveillance and response systems and make them functional. This effort was triggered by an outbreak of Avian Influenza A/H5N1 HPAI (Highly Pathogenic Avian Influenza) in Sambawa Farms at the outskirts of Kaduna in North Central Nigeria in January 2006. The donors and programmes that contributed to this initiative include:

- The Acute Flaccid Paralysis surveillance mechanism of the Poliomyelitis Eradication Programme, funded by the World Health Organization;
- The Avian Influenza Control Project (2006-2010), funded by the World Bank;
- Rounds 9 and 10 Grants from the Global Fund to fight HIVS /AIDS ,Tuberculosis and Malaria;
- The Millennium Development Goal-Debt Relief Grant (MDG-DRG) awarded to the National Primary Health Care Development Agency (NPHCDA) for a Midwives Service Scheme to address infant and maternal mortality.

Actions taken included:

- Development of IDSR Clinical Guidelines and distribution to the States and Local Government Area (LGA) health authorities;
- Training of national, State and LGA health care providers and surveillance officers on IDSR;
- Funding of surveillance activities at national, State and LGA levels for all disease outbreaks;
- Procurement of vehicles to support surveillance activities at national and State levels;
- Procurement and pre-positioning of pharmaceutical and non-pharmaceutical public health preventive and bio-security supplies at National, State, and LGA levels;
- Training and establishment of standing Rapid Response Teams(RRT) at national, State, and LGAs , to respond to all public health events;
- Establishment and equipping of Bio-Safety Level 2-RT-PCR Laboratories in eight centers across Nigeria;
- Trainings to build RT-PCR capabilities for about 2500 medical laboratory personnel.

This represents a true example of the vision of the IDSR initiative - to build strong capacity for surveillance at national level with a focus at the district level that is sensitive to the needs of different disease control and prevention. Political will and continuous advocacy is required to sustain the gains of this initiative.

Implementing IDSR in Cote d'Ivoire

Implementation of IDSR in Cote d'Ivoire commenced in 2002 with an awareness campaign to sensitize the health authorities on the new initiative. An evaluation of the existing surveillance systems was conducted in 2003 which revealed the existence of several parallel surveillance systems and the absence of a national policy document to guide epidemiological surveillance in the country. In 2008 the country rolled out adapted national technical guidelines for IDSR and a Five Year Strategic Plan for Implementing IDSR in Cote d'Ivoire. Implementation of these documents has commenced with the following actions:

1. Training of 1200 health workers spread across the 83 health districts of the country;
2. Constitution of epidemic preparedness and response committees at national, district and community levels;
3. Provision of tools, case definitions and guidelines for reporting cases, and dissemination of these to the districts;
4. Institution of quarterly meetings of health authorities for monitoring of the surveillance system and harmonization of data collected;
5. Participation in a series of meetings on cross-border activities which have resulted in the development with the neighboring countries of a joint action plan for cross-border activities.

Between 2008 and 2010 the country has successfully responded to epidemics of:

- cerebrospinal meningitis (2008)
- measles (2009 - 2010)
- yellow fever (2008, 2009 and 2010)
- poliomyelitis (2008-2009)
- dengue (2009 - 2010)
- influenza A/H1N1 (2009)

Intended next steps include establishing a network of laboratories, pre-positioning of vaccines, medicines and other consumables for responding to epidemics, establishing a national response fund, and strengthening the operations and supervision of the district epidemic preparedness and response teams.

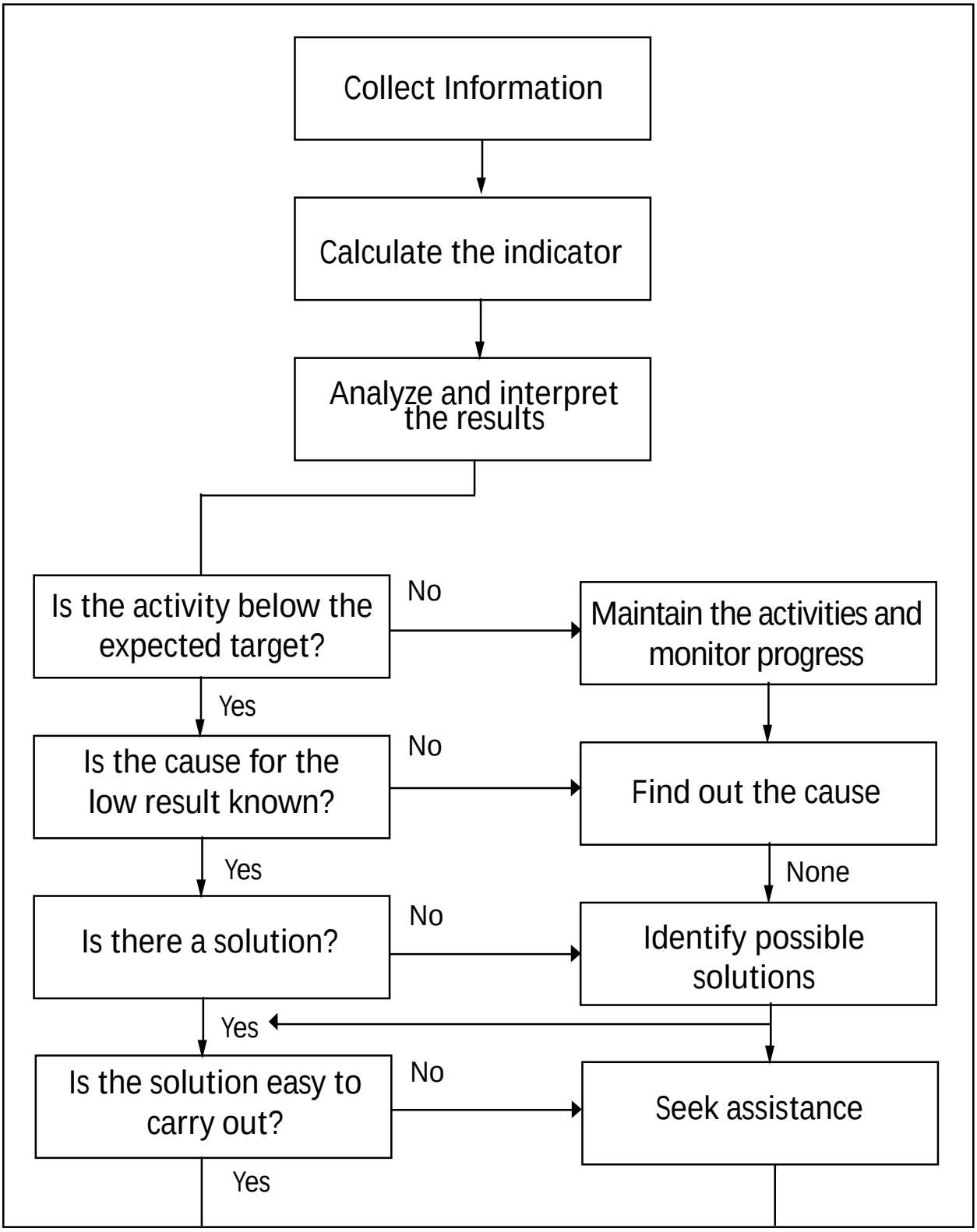
Strengthening the Planning, Implementation and Evaluation of IDSR:

Weak planning and monitoring systems are a major challenge to effective IDSR implementation in West Africa. Currently, much of the planning takes place at the national Ministries of Health with the resultant poor buy-in of the lower levels of the healthcare system. Another disadvantage of planning at the national level is that the officials at the Ministry of Health may not be fully aware of the challenges faced at the lower levels of the health system. This disconnect can be addressed by engaging all levels of health system staff in a bottom-up approach to development of surveillance work plans and targets. These work plans should specify the indicators to be used to monitor the system and the persons who are responsible for monitoring and supervision, as well as the resource implications of operating the system.

IDSR coordination and review meetings should be held periodically between Ministry of Health officials in the districts and the heads of health institutions to ensure that the indicator targets are being met, and the output of such meetings transmitted upwards to the state/region and national levels. This bottom-up approach will more effectively reveal the gaps in the system and enable the development of practical solutions. For instance, it may be more realistic for countries with severe resource challenges to implement a simpler system with a smaller number of priority diseases and build up the system as their capacity grows. Simple adjustments such as simplifying the reporting forms could have a significant effect on the frequency and completeness of reporting in areas where health manpower is scarce and the health facility staff overworked.

IDSR cuts across many disciplines, yet its implementation is sometimes delegated to Ministries of Health with the exclusion of other relevant disciplines. The role of the private sector is also often overlooked. Each country in West Africa must identify the organization that has the overall responsibility for disease surveillance and response activities, and define the roles and responsibilities of all other stakeholders. Donor partners must also be engaged by the coordinating body to identify their specific roles in IDSR.

Using Indicators to Monitor Surveillance Activities:



The Role of Policymakers in IDSR in West Africa: Policies and regulations are essential for effective implementation of IDSR. The International Health Regulations (2005) were adopted by consensus at the Fifty-eighth World Health Assembly on 23 May 2005 and entered into force on June 15, 2007. In June 2010, the West African Health Organization (WAHO) validated the West African Regional Plan for Disease Control and Management of Epidemics for 2010 to 2013. This document represents an opportunity for improved collaboration and cooperation between all countries in the region in the planning and implementation of IDSR systems. Within countries, the key roles of policy makers are to domesticate these international treaties and guidelines. In order to secure a budget line for IDSR activities, there must be a policy and strategic plan for IDSR in place. These documents will serve as framework for all IDSR activities in the country and can be used as advocacy tools to canvass for budgetary allocations.

It is also important to establish legal mechanisms for enforcement of surveillance activities by all health sector programmes. A key priority of the Ministries of Health in all countries should be to lobby the national parliaments to enact the required laws and edicts to back up surveillance and response systems. Respected scientific organizations such as Academies of Science and coalitions of research institutions can support the Ministries of health in this regard by providing an evidence-base and participating in these advocacy activities.

Policy framework for IDSR in Nigeria

The Nigerian National IDSR Policy was adopted by the National Council on Health in February 2006, and approved for use at all tiers of government by the Federal Executive Council in April 2006. The goal of the policy is to ensure good health of all Nigerians, through the provision of the necessary framework and guidance for improving the skills of the health workers, provision of resources and the prevention, early detection and timely response to diseases and conditions.

The IDSR Policy is set within the framework of the National Health policy, which is subject to the provisions in the National Health Act. The Policy prescribes the necessary framework for the planning, monitoring and evaluation of an integrated disease surveillance and response system by all tiers of government, in collaboration with the private health sector, NGOs and partners, and sets out specific targets with roles and responsibilities for all stakeholders in the implementation of the IDSR strategy.

This Policy has facilitated the setting up of IDSR units within the Federal and State Ministries of Health as well as within the LGA health offices. There is now a budget line for IDSR at the national level which has facilitated the timely release of funds for outbreak investigation and control.

SUMMARY OF KEY RECOMMENDATIONS FOR STRENGTHENING IDSR IN WEST AFRICA:

Manpower Development

- Include IDSR in pre-service training curricula
- Focus on 'hands-on' 'on-the-job' trainings
- Introduce exchange programs between countries and regions
- Produce simplified training materials
- Institutionalize specialized trainings as certificate/degree programs
- Develop community-based surveillance systems
- Encourage the multidisciplinary FELTP program

Resource Mobilization

- Leverage existing resources through integration
- Encourage local production of drugs and vaccines
- Use evidence to advocate for additional funding
- Explore innovative options such as taxes and health insurance

Planning, Monitoring and Supervision

- Involve all tiers in planning
- Simplify the surveillance system
- Identify all stakeholders including disciplines with plant, animal, human and environmental focus, and define their roles clearly
- Institute regular review meetings

Policy and Advocacy

- Domesticate international regulations and guidelines
- Develop country strategic plans for IDSR
- Lobby for enactment of legal framework
- Involve the legislative arm of government in future science and technology workshops organized by the Academy of Science
- Use evidence to advocate to the legislative arm of the government for additional resources

5. CONCLUSION

The West African region is gradually evolving a disease surveillance framework based on the Integrated Disease Surveillance and Response Strategy proposed by WHO. This is being implemented alongside the International Health Regulations, which have been adopted by all the countries in the sub-region. IDSR implementation in West Africa is largely driven by external sources of funding, and major funding gaps exist. There are numerous other challenges facing the system, which include manpower challenges, unclear or non-existent guidelines and policy frameworks, shortages of required tools, equipment and supplies, poor coordination and supervision, and insufficient regional collaboration.

In spite of the challenges there have been a number of success stories, such as scaling-up of IDSR implementation by leveraging resources from other programs, the development of field epidemiology training programmes, and the use of community-based surveillance systems. Several countries have successfully adapted IDSR guidelines and developed policies and strategic plans for the implementation of integrated disease surveillance systems. Countries in West Africa should continue to collaborate with one another in the exploration of innovative ways of mobilizing human and material resources for effective implementation of Integrated Disease Surveillance and Response systems in the sub-region.

Appendix 1:

OBJECTIVES OF THE WORKSHOP

1. To exchange information on the current disease surveillance capacities and disease burdens in West Africa;
2. To identify the main challenges militating against the successful implementation of the IDSR in West Africa;
3. To illuminate concrete actions and priorities to address the identified challenges.

Workshop Agenda

Arrival Day 1 : Monday 2nd August, 2010		
Day 2: Tuesday 3rd August, 2010		
Time	***Activity***	***Presenter***
08:00- 09:00	*Arrival & registration of participants*	
OPENING SESSION ***Chairman: Prof. Oye Ibidapo-Obe FAS,OFR***		
9:00 –9:05	Welcome remarks	Prof. O. Ibidapo Obe FAS, OFR President, *NAS*
9:05 –9:10	Workshop objectives	Prof. O. Tomori FAS – Chairman, Workshop Planning Committee
	Goodwill messages from:	
9: 10 -09:20	US Dept. of State (Biosecurity Engagement Program)	Dr. Andrew Hebbeler
09.20-09.25	Cote D'Ivoire MOH	Prof Ehile Etienne – Head of Cabinet
09.25-09.30	Liberian Inst. of Biomedical Research	Dr. Fatorma Bolay
09.30.09.35	Senegal MOH	Dr. Ibrahim Oumar
09.35-09.40	Togo MOH	Dr. Tsidi Tamekloe
09.40-09.50	Director-General, West African Health Organization (WAHO)	Dr. Felicite Chokki (representing DG)
09.50-10.05	Country Representative WHO, Nigeria	Dr. Peter Eriki

10.05-10.25	Honourable Minister of Health, Nigeria – *Special Guest of Honour and will declare workshop open*	Prof. Onyebuchi C. Chukwu
10.25-10.30	Vote of thanks	Dr. Oladoyin Odubanjo – Ag. ES,NAS
10.30-11.00	***Group photograph and tea break***	
THE BASICS OF INTEGRATED DISEASE SURVEILLANCE AND RESPONSE **Session Chairman: Prof. Idris Mohammed FAS, OON**		
Time	***Presentation***	***Presenter***
11.00 -11.20	Integrated Disease Surveillance Response - Understanding and applying the basics for disease containment in West Africa	Dr. Emmanuel Musa
11.20-11.40	Systems and structures for effective IDSR in WA	Dr. Berthe Adanma
11. 40-11.55	***Discussion***	
11.55-12.15	IDSR indicators/guidelines/tools - WHO prototype for effective surveillance	Dr. Fenella Avokey or **Dr. Alex Gasasira**
12.15-12.35	IDSR data collection and its usefulness in health care planning and delivery for the WA nations	Dr. Fatorma Bolay
12:35-12.50	***Discussion***	
IDSR AND TRANS-BORDER HEALTHCARE PLANNING ***Session Chair: Prof. Ehile Etienne***		
12:50-13:10	Surveillance and the health insurance — promoting quality access to health care in emergency situations	Dr. Henry Akpan
13:10-13:30	Bio-Security /zoonosis and disease surveillance- The emerging plant and animal threats.	Dr. Lami Lombin
13:30-13.45	***Discussion***	
13.45-14.45	***Lunch***	
14.45-15:05	Surveillance and international health /travel regulation- Ensuring disease-free borders	Mr. Moses Aniefiok

15.05-15.25	IDSR and tourism — What economical benefits for the WA sub region?	Dr. Mike Ochoga
15.25-15.40	***Discussion***	
CHALLENGES OF IMPLEMENTING IDSR IN WEST AFRICA **Session Chair: Dr. Fenella Avokey**		
15:40-16:00	Effective IDSR in West Africa- What challenges and how best to achieve?	Prof. Ekanem Ekanem
16:00-16:20	Scaling up of IDSR activities in West Africa-How and by whom?	Dr. Felicite Chokki-Laleye
16:20-16:35	***Discussion***	
16.35-16.45	***Tea Break***	
16.45-17:00	Health promotion and effective IDSR	Dr. Ademola Ajuwon
17:00-17:15	UNAS report on 'Scope of Biosafety & Biosecurity in the Context of Uganda'	Dr. Maxwell Otim Onapa
17.15-17.25	***Discussions/Questions***	
17:25-17.30	***Announcement***	
	Day 3- Wednesday 4th August, 2010	
8.30-08.45	*Recap of day 2 - Dr (Mrs) Joanna Nwosu*	
MANPOWER/CAPACITY BUILDING FOR IDSR- WHAT CAPACITIES EXIST IN THE WEST AFRICAN SUB-REGION? **Session Chair: Prof. Ekanem Braide FAS, OFR**		
	Presentation	**Presenter**
8.45-09:05	Manpower/capacity building for IDSR- The role of laboratories and research institutes	Dr. Patrick Nguku
9.05-09.25	Vaccine development and safety - Achieving effective IDSR through vaccine availability	Dr. Abdul Nasidi
9:25-09.40	***Discussion/Questions***	
9.40-10.00	Networking mechanisms and opportunities - What benefits for coordination of IDSR activities?	Dr. Oumou Sangare Loko
10:00-10.20	Data management in IDSR	Mr. Tunji Ajiboye
10:20-10:35	*Discussion*	
10.35-10:50	*Tea break*	

ROUNDTABLE: ACHIEVING EFFECTIVE IDSR IN W. AFRICA- THE ROLE OF POLICYMAKERS ***Session Chair - Dr Lami Lombin***		
10.50-11:10	*Representative of Senegal*	Dr. Ibrahim Oumar BA
11.10-11:30	*Representative of Togo*	Dr. Tsidi Tamekloe
11.30-11:50	*Representative of Cote D'Ivoire*	Prof. Ehile Ehouan Etienne
11.50-12:10	*Representative of Nigeria*	Dr. Michael Anibueze
12:10-12:30	*Discussion*	
12.30-13.:0	*Lunch Break*	
BEST PRACTICES/SUCCESS STORIES/FIELD EXPERIENCES		
13.30-13:50	*Lead poisoning in Zamfara State, Nigeria*	Dr. Henry Akpan
13.50- 14:10	*Ondo State Corona Virus study*	*Dr. Albert Ogunkoya*
14.10-14:45	*Discussion:*	
14.45 15:15	*General discussion: Next steps, way forward and conclusions*	Prof. Ekanem Braide FAS, OFR
15:15-15:30	*Closing*	

Appendix 2:

IDSR PLANING COMMITTEE MEMBERS

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Appendix 4:

ABOUT THE NIGERIAN ACADEMY OF SCIENCE

The Nigerian Academy of Science was inaugurated on 8th January 1977 at a solemn and impressive ceremony in the Conference Centre, University of Ibadan. Its inauguration marked the climax of five years of renewed effort by concerned scientists under the auspices of the Scientists Association of Nigeria (SAN) to overcome the obstacles that had plagued previous efforts of about twenty years to found an Academy of Science. The main antecedent to the founding of the Academy was the formation of a committee of fellows of SAN, to prepare a paper on the formation of the Nigeria Academy of Science. On 22 March 1975, the committee adopted the draft statutes and also approved the list of forty-five Foundation fellows for the Academy. The committee also appointed a Steering committee to prepare for the inauguration of the Academy which took place on January 8 1977. Today, the initial group of forty-five Foundation Fellows has grown to one hundred and twenty five, covering all areas of science, biological and physical.

Aims and objectives

The aims and objectives of the Academy are to promote growth, acquisition and dissemination of scientific knowledge and to facilitate its use in the solution of major problems of national interests. The Academy strives to do this by:

- Providing advice on specific problems of a scientific or technological nature presented to it by the government and its agencies, as well as private organizations;
- Bringing to the attention of the government and its agencies problems of national interest that science and technology can help to solve; and
- Establishing and maintaining the highest standards of scientific endeavour and achievement in Nigeria, through:

  i. publication of journal

  ii. Organization of conferences, seminars, workshops and symposia

  iii. Recognition of outstanding contributions to science in Nigeria

  iv. Development of a working relationship with other national and international scientific bodies and academies.

Appendix 5:

SUPPORTING ORGANIZATIONS

WHO

United States
Department of State

FEDERAL MINISTRY OF HEALTH, NIGERIA

CDC
Department of Health and Human Services
Centers for Disease Control and Prevention