

Global Surveillance Project

Centers for Disease Control and Prevention
Epidemiology Program Office
Division of International Health
Atlanta - Georgia

Field Updates

Volume 1 / Number 3

January, 2003

OUTBREAK INVESTIGATION TRAINING A Way to Build National and Local Capacity

Building capacity to detect, report, analyze, interpret and present information, and respond to outbreaks of infectious diseases at the local level has been a main focus of the Global Surveillance Project (GSP). To that end, GSP collaborated with Ministries of Health and Public Health Schools Without Walls (PHSWOW) to create and support teams that can conduct investigations of disease outbreaks and other unusual health events at both the national and local levels. Those teams have consisted of PHSWOW students and MOH personnel depending on the local circumstances.

To train the teams, the GSP, in collaboration with its partners in Africa and at CDC, undertook the task of developing and teaching an outbreak investigation workshop, which includes the use of Epi Info. Workshop participants are taught principles of outbreak investigation. They practice those principles by going through a series of case studies, which include measles, hemorrhagic fever, yellow fever, cholera, and plague. The case studies are obtained from the adapted IDSR training modules (which were created by WHO-AFRO) of the country in which the course is taught. Participants learn Epi Info using a case study based on an actual investigation of an outbreak of cholera in Uganda. The participants use Epi Info 2002 software to perform data entry and analyze activities commonly encountered in an outbreak investigation. This training is not intended to cover every function of Epi Info 2002 but rather introduce the beginning user to the features that are required of a basic outbreak investigation.

Using Epi Info 2002, a summary of an original outbreak investigation, and

a set of questions to be used in a questionnaire, the participants recreate a questionnaire form, program code to check for inaccurate data entry or to facilitate data entry, create and enter data in a questionnaire, manage the data entered, analyze the data entered, and read data from and write to other database formats.

What is Epi Info?

Epi Info 2002 is a tool that public health professionals use to create questionnaires (forms) for disease outbreak investigations or surveillance activities, enter data, manage data, and analyze data both statistically and geographically, as well as develop applications for use by others.

See last page for more on EpiInfo

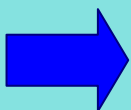
After completing the workshop and upon returning to their jobs, participants are able to receive and review reports of

outbreaks, verify the diagnosis, establish a case definition, identify cases, describe the epidemic by time, place and person, implement immediate prevention and control procedures, define hypothesis for why the outbreak occurred, and evaluate the hypothesis. The current version of the Epi Info training focuses on case control study designs; however, participants have used the knowledge and skills gained in the workshop to design questionnaires and analyze data from other epidemiologic study designs

The outbreak investigation workshop has been taught few times at the Makerere University in Uganda to the MPH students and MOH personnel. It was also taught last summer to the Regional Health Officers in Tanzania. This issue of Field Updates contains a summary of an outbreak investigation that one of the participants in Tanzania was able to perform after attending the workshop.

Training materials have recently gone through modification and were updated to reflect the lessons learned from teaching the workshop during the past year

In This Issue:



- **GSP is meeting key human resources needs in Ghana.**
- **Outbreak of Meningitis in Kasulu district, Kigoma Region, Tanzania**
- **GSP expands its team in Uganda**

GHANA

GSP is Assisting in Meeting Key Human Resources Needs

After returning from a country visit to Ghana, Dr. Peter Nsubuga, GSP team leader, reported that,

There has been considerable improvement in the implementation of IDSR in Ghana. There is a regular weekly bulletin and plans are underway to resume the monthly bulletin. The IDSR technical guidelines and handbooks are with the printers and the training modules have been adapted for Ghana. Laboratory confirmation of diseases especially measles, cholera, and yellow fever are occurring. There is a stronger linkage between the

National Surveillance Unit (NSU) and the Ghana School of Public Health. In spite of this progress, there is an urgent need to strengthen the human capacity available at the NSU to perform these tasks. There is a dire need for an epidemiologist, a trainer/supervisor, and an editor for the weekly and monthly bulletins. There is also need for at least two people to help with the laboratory. During this visit Simon Quist an applicant for the bulletin position was interviewed.

The visit took place during the last week of October 2002.

To assist the Ministry of Health in the publication and distribution of an Epidemiology Bulletin, GSP recruited and is supporting a full time editor. Mr. Simon Quist Kwadje has been appointed as editor of the bulletin.

The NSU has also requested GSP assistance in recruiting and supporting an epidemiologist to help relieve the heavy workload in the implementation of IDSR. CDC is currently in the process of adding this key element of support to NSU.

UGANDA

GSP Assists in Teaching a PHSWOW Course and Increasing Capacity

An epidemiology, surveillance, outbreak investigation, and Epi Info 2002 course was taught to the first year MPH students at the PHSWOW in November 2002. Drs. Douglas Klaucke and Peter Nsubuga, of DIH, were the principle instructors. The course was organized and coordinated by Mr. Luswa Lukwago.

Dr. Margaret Lamunu, the GSP supported epidemiologist at the Ministry of Health, has taken on a 3-month detail to WHO-Geneva to work with the Communicable Surveillance and Response group on IDSR issues. Margaret will work directly under Dr. Stella Chungong in Dr. Guenael Rodier's department.

Mr. Lali Ziras, a laboratory technologist, was added to the GSP team to provide support for the laboratory work for IDSR in Uganda. Mr. Lali has a lot of experience in bench microbiology and is expected to assist in efforts to train laboratory workers at the lower levels.

ZIMBABWE

Training Activities Intensifies with GSP Participation

Dr. Eugen Manyora has been quite busy with the district course, including grading the field assignments and exams that the trainees completed at the end of November. She will participate

in the training of the new districts, which was planned to start on Dec 2, 2002. She will be giving lectures covering many topics, particularly data interpretation. Dr. Manyora has worked on harmonizing the

various training courses that are targeted to the district level with special focus on surveillance and response; Dr. Manyora also facilitated the training of trainers for IDSR in Zimbabwe in December 2002.

TANZANIA

Outbreak of Meningitis in Kasulu district, Kigoma Region: Outbreak report by RHO Kigoma

Executive summary: The disease outbreak started on 30 June 2002. The district was made aware on 2 July 2002 when the index case from Nkundutsi village reported at the district hospital for treatment. The patient presented with the following conditions: fever, diarrhoea, and neck rigidity

Background: At the time of the report (2 August, 2002) 43 cases had been reported with 10 deaths.

Reasons for investigation: To confirm the disease diagnosis, find index case, find risk factors for the outbreak, communicate with the public, and put control measures in place.

Investigation and Outbreak

preparedness: Investigation teams; treatment teams, health education teams, and public address teams were formed and worked effectively. Isolation wards in Kasulu and Kabanga hospitals were set aside. Ambulance services in both hospitals were road-worthy. Supportive laboratory services and pharmacy worked well. District hospital and Regional hospital were reinforced.

Methods: All households where cases came from were visited by public health workers for an environmental assessment and health education to families regarding

the importance of avoiding overcrowding in houses, gatherings, and the installation of window openings, and opening of windows in order to improve air circulation. The investigation continued from 2nd –31st July 2002. The communities were very understanding and supportive.

Results: Date and location of first known (index) case: 2nd July 2002—Kasulu District hospital from Nkundutsi village.

Results of additional case finding: The last cases to report the health care system came from Heru Juu, Murufuti, Msambara villages, all of them had their onset of disease on 26 July 2002.

Lab analysis and results: These were done in 3 levels (i) District Hospital where the results were revealed gram negative diplococci (ii) Regional Hospital—results revealed gram positive diplococci and culture revealed Streptococcus pneumoniae organism sensitive to Ciprofloxacin, Penicillin G and Erythromycin. (iii) National level: No organisms grow.



Note: The RHO Kigoma was one of the participants in the Outbreak Investigation workshop that was held in Arusha in May 2002. The above is a part of the outbreak investigation report to the Ministry of Health. Dr. Mohammed Amri of the WHO Country Office in Tanzania performed a further investigation of this outbreak, which had also spread to a nearby Refugee Camp.

The Global Surveillance Project Team

CDC Project Team:

Medical Epidemiologist:

Dr. Peter Nsubuga

Public Health Advisor:

Mr. B. J. Jarrar

Program Analyst:

Ms. Brenda Thomas

Training Specialist:

Ms. Nadine Sunderland

Uganda:

Epidemiologist/Trainer:

Mr. Luswa Lukwago

Laboratory Technologist:

Mr. Ziras Lali

Senior Resident Mentor (PHSWOW)

Mr. Mukanga Odaka

Zimbabwe:

Medical Epidemiologist:

Dr. Eugen Manyora

Ghana:

Information Officer:

Mr. Simon Yaw Kwadje

ATLANTA TEAM

The GSP team has completed and submitted to USAID the FY 03 workplan. The workplan continues to emphasize the project's commitment to building local capacity and the strengthening of the countries' surveillance and response system.

Dr. Peter Nsubuga is the first author of the "Polio Eradication Initiative in Africa: Influence on Other Infectious Disease Surveillance Development" article that was published in the December issue of BMC Public Health. The article examined the utilization of the polio-eradication initiative in the surveillance and response to other infectious disease in

the African continent. The article concludes that those resources have begun to be integrated into countries' priority infectious diseases. The article is available at <http://www.biomedcentral.com/1471-2458/2/27>

UPCOMING EVENTS

- GSP represented by Dr. Peter Nsubuga and Ms. Nadine Sunderland will be helping to teach the introductory course to the new class of MPH students at the school of public health in Zimbabwe. The course will be offered this January.
- An Outbreak Investigation and Epi Info 2002 workshop is planned for the Regional Medical Officers and MPH student supervisors this May in Ghana.

[What is EpiInfo? - Continues from page 1](#)

Epi Info was first developed in 1985 as a DOS program. The current version works on computers equipped with Windows 95, 98, NT, 2000, and XP. Data is stored in the Microsoft Access file format (.mdb), but Epi Info 2002 can analyze, import and export data from a number of other file format types (e.g., Epi 6, MS Excel, and dBase IV files).

For comments and further information, you may contact:

Dr. Peter Nsubuga
770- 488 – 8334
pcn0@cdc.gov

or
Telephone
e-mail

Mr. B. J. Jarrar
770- 488 – 8330
bmj0@cdc.gov

