

## Strengthening Disease Surveillance in the Dominican Republic

### Introduction

Typically, disease surveillance systems are designed -- and system manuals and guidelines are written -- with the implicit assumption that the people in the system are both *motivated* and *able* to carry out the tasks as described. However, many people are *not* motivated to carry out their functions; in fact they may have only a limited understanding of what these functions are -- and there may be many constraints, starting with lack of time, commodities, supervision, and other support, to carrying them out. Moreover, they may not even understand the purpose of the system, or appreciate its importance, because they observe little if use of the information they collect and submit.



The behavioral approach to systems improvement involves examining systems to identify behavioral barriers to performance (as well as factors that facilitate good performance) and to develop interventions to address them. For several years the USAID-funded CHANGE Project had been working with officials and staff of the Infectious Disease Surveillance System (IDSS) in Tanzania to apply this approach in the context of larger support for the IDSS provided by the PHR Plus Project.

At the suggestion of USAID's surveillance advisor and the Pan American Health Organization (PAHO) headquarters, CHANGE initiated work with PAHO and SESPAS (the MOH) in the Dominican Republic (DR) in February 2004 to apply a behavioral approach to improving disease surveillance: to improve performance by carrying out a behavioral assessment of the country's surveillance system and then design and implement a strategy that would address the barriers and needs for motivation and practical supports. CHANGE was asked to explore working in the DR because of low standard surveillance indicators there -- particularly, the low AFP (acute flaccid paralysis) reporting ratio -- indicating the likely presence of a weak, or at least not well-functioning, system.

CHANGE and the MOH, with support from PAHO/DR, carried out a rapid assessment of the surveillance system in late February 2004, with a focus on the provincial and health-area epidemiologists' understanding of, motivation for, and ability to carry out their key surveillance functions. (The country is divided into provinces, with the city of Santo Domingo divided into health areas.) While the assessment found a complete and functional system, it also identified numerous constraints and problems, including:



- Epidemiologists with only a partial understanding of their job responsibilities
- Many provincial and health-area medical directors providing little support to the epidemiologists

- A severe lack of operating funds, constraining the efficient performance of all basic surveillance functions – detection, investigation, analysis, sending of samples and reports, etc.
- Important shortages of basic supplies and equipment, such as computers
- Minimal supervision from the national to the provincial and from the provincial to the facility levels
- Poor understanding among other health personal about the importance of surveillance and their roles in the system.

The partners' designed an activity plan with a timetable and budget to respond to the problems identified. The strategy focused on completing the behavioral analysis of surveillance functions, which would help refine the proposed activities to improve the staff's understanding of their roles and responsibilities, their motivation, and their skills. The project would provide support through training, reference and educational materials, improved supervision, a new mechanism to deliver biological samples to Santo Domingo, and other actions. Although there were also some infrastructure needs (e.g. for refrigerators, vehicles), these were not included in this initiative because of their cost and because they were partially being addressed by another USAID project, CONECTA.

## Behavior Analysis and Strategy Preparation

Based on the assessment findings and input from a few key informants, CHANGE and the MOH undertook a preliminary behavioral analysis of seven “participant groups” involved in surveillance – listing out their ideal behaviors, current behaviors, feasible behaviors, barriers to improved behaviors and supports. The key participant group was the provincial and health-area epidemiologists, who have prime responsibility for surveillance functions.



The team then designed draft behavior-change strategies for each participant group. A number of project initiatives for improving the functioning of the surveillance system were identified, including:

- Giving epidemiologists a clearer understand of their roles and responsibilities
- Providing a clear official list of the reportable diseases and a schedule for reporting them (i.e. immediately or weekly)
- Enhancing epidemiologists' appreciation of the importance of surveillance for public health
- Giving all health staff, as well as community members, a better understanding of surveillance and how they can support it
- Regular, ongoing and supportive supervision
- Some specific resources to support the delivery of laboratory samples, sufficient surveillance forms, operational funds to support local supervision, etc.

To implement this strategy, CHANGE, PAHO, DIGEPI (the MOH's epidemiology division), and EPI worked together to analyze and re-define the tasks and roles of the provincial epidemiologists and then went on the define roles and responsibilities of six other groups involved regularly or occasionally in surveillance. To obtain the participation of persons involved in the provinces and rural areas, the project organized a series of participatory workshops to

discuss and reorganize tasks and the practical steps needed to carry them out. Tasks (behaviors), barriers, motivations, and existing supports were analyzed for each group.

The following activities were identified and subsequently carried out:

- A. Participatory workshops with epidemiologists and persons involved in disease surveillance at the local level to define and explore their roles
- B. Preparation of a Practical Manual that clearly explains everyone's roles and the steps needed to carry them out
- C. Workshops to train and motivate people to know and effectively carry out their responsibilities
- D. Orientation meetings with the Provincial Medical Directors to gain their support
- E. Educational materials on disease surveillance for health workers and community leaders and groups
- F. Organization of a system of supportive supervision from the central to the provincial levels and from the provincial to the local levels, with clearly established norms and responsibilities for supervisory teams giving ongoing individual support
- G. An experiment with the MOH contracting bus companies to deliver laboratory samples to the national laboratory in Santo Domingo
- H. Funding to enable provincial epidemiologists to train health personal with surveillance responsibilities in their provinces
- I. Funding for supervisory visits from the central to the provincial levels and from the provincial to the local levels.



## Implementation of Key Activities

### Participatory workshops

Experience indicates that members of an organization are much more likely to embrace change in their jobs if they feel they have been given a fair opportunity to have a say in what those changes will be. In this project, this was achieved through participatory workshops with provincial epidemiologists to analyze their tasks. These workshops utilized the format of a



matrix on job responsibilities developed in CHANGE's work on surveillance in Tanzania to take advantage of experience there.

The main point of these workshops was to take advantages of participants' experiences and knowledge to describe in great detail all of the many sub-tasks they need to carry out in order to performance their surveillance tasks effectively. The workshops definitely were *not* designed in the usual manner of transferring knowledge from the "experts" to the "participants."



Although this activity began in September 2004, it was suspended for several months due to delays in completing the grant agreement between CHANGE and PAHO. This agreement was signed at the end of 2004, and the workshops were completed in January 2005.

### The Practical Manual

It seemed imperative to support persons responsible for surveillance with a material that explained the roles and responsibilities of all groups, so that everyone was clear about their responsibilities, the limits of their responsibilities, and where and how they should interface with others. This can help everyone feel confident, in control, and supported, and deflect doubts about what they should be doing and how.



Preparing the Practical Manual was a long and detailed task that was finalized in mid-March 2005. The draft was then pretested in workshops with supervisors and provincial epidemiologists. This small, handy reference contains a new definition of disease surveillance and a brief history of surveillance in the Dominican Republic, emphasizing its importance to public health. It then presents the roles at the three levels (national, provincial, local), organized by major tasks, activities, and steps. In the case of provincial epidemiologists, there are 10 tasks, 40 activities, and 208 steps. For the local level, there are 9 tasks, 26 activities, and 137 steps.

The Practical Manual was explained and discussed in workshops and supervision visits, not simply be handed out to people. Both the format (small size, nicely designed) and the well-organized and clear content have been very well received by users.

### Training

Training was designed to facilitate participants at each level achieving an understanding and motivation to carry out their respective tasks. It was organized in sequence from the national to the local level.

**SUPERVISORS:** DIGEPI chose a team of 15 experienced epidemiologists to receive two days' training, not only to assimilate the manual and its use but also to learn how to take maximum advantage of the educational materials, and most importantly, how to prepare for and provide supportive supervision to provincial epidemiologists.

**PROVINCIAL EPIDEMIOLOGISTS:** They received three days of training on the manual and its use, the educational materials and their use, and how to prepare for and provide supportive supervision on surveillance to local personnel. In addition, they learned and practiced how to facilitate the surveillance workshops they would offer to personnel at the local level.



**ORIENTATION OF THE PROVINCIAL HEALTH DIRECTORS:** During the same period meetings were held with provincial and health-area directors, who were accompanied by their provincial and EPI epidemiologists. These five-hour meetings offered information, motivated participants, and promoted the importance of strong surveillance. Participants carried out a self-evaluation of strengths and weaknesses of surveillance in their areas, based on the 40 activities of the provincial epidemiologists. At the end, the directors individually made public commitments to support surveillance in their areas.

### Supportive Supervision

An effective strategy for behavior change is to negotiate small improvements in behavior over time, taking as a starting point the individual's current behaviors. This technique has been adapted to supportive supervision in this project, with the aid of a self-supervision form that enables epidemiologists and their supervisors to identify specific steps not being done or only partially done. The two can then negotiate a reasonable number of specific improvements that the epidemiologist will try to carry out and specifically how. On the subsequent visit, the two can review and discuss what happened and then proceed to negotiate a few new, specific improvements. If it can be maintained over time and carried out in a spirit of working together, such a system can have a major impact on the epidemiologists' performance of their surveillance functions.

On a personal level, this approach offers the opportunity to share and solve problems together, to analyze obstacles, as well as to motivate and praise improvements.

To support this strategy, two instruments were prepared and tested: a self-evaluation questionnaire that permits users to assess current performance of and detect obstacles to the 208 steps that the provincial epidemiologist should be carrying out; and a parallel instrument on which the supervisor notes those steps that have not yet been adequately carried out and the joint agreements reached in each supervision visit that can be specifically followed up in the next visit. These instruments were pretested and adjusted in the workshops and completed by participants. It took 40 to 50 minutes to fill out the instruments, which were well received and filled out with confidence.

### Educational materials

The content and text of these materials were prepared by the technical teams. Communication specialists then proposed format adjustments based on their objectives and specific target audiences, and finally they were designed by graphic designers. They were pretested with the various target audiences: health staff, community leaders, and local epidemiologists. Comments from DIGEPI and EPI were considered before final production. (The Practical Manual went through a similar process.)

These materials are:

- a poster 24x34 inches with lists of diseases and syndromes subject to obligatory reporting by public and private health staff, as well as the required schedule of reporting (immediate or weekly)
- a pocket-size version
- a pamphlet for health workers that has the definition of disease surveillance, underscores its importance, and includes the same disease list as on the poster, and requests health workers' support in notifications and
- a pamphlet for community leaders that asks their collaboration in identifying diseases of concern in their communities and requests and explains how they can organize the



community in case of an investigation or outbreak control activities. It also lists common disease symptoms, in simple language, that they should report to health personnel.



#### Sending laboratory samples

In this experimental activity, the MOH contract two bus companies that together cover almost the entire country. Epidemiologists can make two deliveries per week of samples in cold boxes given to them. Every day a DIGEPI staff member should verify receipt of the deliveries, and for their part the provincial epidemiologists should transmit information on the incoming delivery by phone or fax.

#### Workshops for local disease surveillance personnel

Once the training of provincial epidemiologists was completed and the educational materials were ready, the provincial epidemiologists began training local personnel.

#### Supervision visits

After the training and orientation workshops, the national supervisors carried out their first supervision visits to the provincial epidemiologists under the new system and discussed with self-evaluations of their performance. On average, provincial epidemiologists were adequately performing 55% of their tasks, varying from 30% of evaluation tasks to 72% of tasks in responding to information. If they are able to make improvements of less than 10% per quarter, they will be forming all key actions by September 2006.

### **The Project in Numbers**

#### The Practical Manual:

- Describes 10 tasks and 28 activities for the central level.
- The provincial level has 10 tasks, 40 activities, and 208 steps.
- The local level has 9 tasks, 36 activities, and 137 steps.
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#### There were 6 workshops:

- 2 for provincial epidemiologists
- 3 for provincial directors
- 1 for supervisors

177 MOH staff attended (not including workshops to design the strategy and instruments, such as the participatory workshops, nor meetings to consolidate findings and plan) :

- 38 provincial epidemiologists
- 38 provincial health directors
- 38 EPI epidemiologists
- 38 provincial epidemiologists (again in the directors' workshops)
- 15 national supervisors
- 10 technical support staff

#### Support materials:

- 5000 large posters
- 200 Practical Manuals
- 4000 pamphlets for health personnel
- 5000 pamphlets for community leaders
- 8000 posters and pocket-size versions
- 200 self-evaluation forms

- 200 supervision forms

The materials were pretested in 8 provinces with health workers and community residents. The self-evaluation and supervision forms, as well as the Practical Manual, were pretested with the 38 provincial epidemiologists and 15 supervisors.

## Lessons Learned for Other Projects that Want to Improve Disease Surveillance

This is one of few projects that has examined and tried to improve surveillance using a behavioral focus. While the success of this effort in the Dominican Republic is not yet guaranteed or proven, the individuals and organizations involved remain optimistic. This has truly been an excellent collaboration among numerous organizations and individuals, who have maintained their enthusiasm throughout the process.



### Taking a behavioral approach has great potential for improving performance.

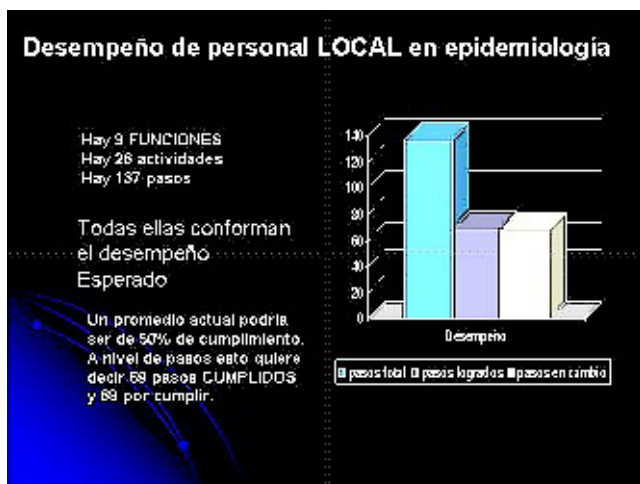
Applying an effective behavior change approach for surveillance begins with having a clear list and description of the desired tasks to be carried out by the epidemiologists and other persons involved. Such a list does not produce change by itself, but it is an essential step towards the persons involved understanding and internalizing expectations and then being able, with support, to work towards achieving them through a repeated process of assessment, negotiation, commitment and support. Many people would panic at the thought of 208 steps in total, but such detail is necessary for improving performance through behavior change because it enables people to know precisely what they are and are not doing at the moment, but with absolutely no expectations that they will have to make improvements at an unreasonable pace. Moreover, some of the steps are repeated under various tasks and activities, so that the total of distinct steps is actually fewer than 208.

Using this level of detail is essential to identify the points of change and how they may be changed. At the same time, people's ability to make between one and five changes every quarter year gives them confidence and motivation, and allows the Provincial Health Directorates to see progress in the quality of surveillance via tangible and concrete data. Moreover, this approach structures a positive, supportive dialogue between supervisors and persons supervised and focuses the areas in which the supervisor can help. Improvements in some steps will transfer to improvements in others, and further improvement should occur via more regular and supportive supervision. The most difficult changes are expected to be those that require overcoming barriers produced by lack of materials, transport, or supplies.

### It is possible to have a good impact at low cost through an integrated approach.

The project to strengthen disease surveillance in the Dominican Republic was based on findings of a situational assessment. What was proposed was a strategy that confronted the many problems identified that could be addressed in the short term at relatively low cost, through actions potentially sustainable and integrated into national systems. The common solutions of providing expensive equipment (such as computers and vehicles) or more personnel were rejected. The emphasis was on clarifying work objectives, motivation through self-evaluation





and feedback, and simple follow-up tools (supervision), and substantial participatory training of the stable cadre of provincial epidemiologists and a new cadre of national supervisors. At the same time, the initiative is reactivating the support of local leaders, via orientations and materials, to recognize disease symptoms and report them to an MOH health facility.

Inter-institutional harmony can contribute greatly to project effectiveness.

Although both DIGEPI and EPI have surveillance responsibilities, there was no formal coordinating mechanism between

them. Although within the MOH, interest in this project emanated first from EPI, DIGEPI quickly and decidedly became engaged. The two divisions joined forces to provide technical input and resources for supervision. This alliance gave more strength to the convocations to meetings and workshops, for example in achieving a good response from the provincial directors, in pretesting, and in ongoing logistical support to the MOH project coordinator, Dr. Yira Tavarez. This was an excellent example of how the smooth collaboration of two MOH directors enabled the project to plan and carry out far many activities and achieve (or have the potential for achieving) excellent results in a short period.

Both directors found the time to support their technical staff and even participate in technical discussions. The EPI director in particular supported the meeting to consolidate findings and plan project activities, and the Epidemiology director the joint orientation workshops among provincial epidemiologists and provincial directors.

Efficient coordination can produce much in a short time.

The presence of an effective project coordinator was key to activities moving at a rapid and efficient pace, despite participants' many other responsibilities and priorities. She worked hard to provide opportunities for input from persons within and beyond the MOH and was well-supported by EPI and Epidemiology. The best example of coordinated institutional support was the consolidation workshop, at which five committees defined five sub-strategies that the project implemented – regarding the manual, IEC, training, supervision, and transport of samples. Nonetheless, this initiative had to deal with some of the same constraints that confront most MOH programs: a lack of secretarial, transport, and communication (Internet and telephone) support.

External agencies can play appropriate and important roles.

PAHO/DR played essential roles in providing technical input and in facilitating the smooth dispersal of funds for in-country expenses. Although finalizing a grant agreement between the USAID-funded CHANGE agreement and PAHO took longer than expected, this agreement was essential for the project to take place. PAHO has a relatively agile administrative system that facilitated local





contracts and other dispersals efficiently. PAHO also provided venues for various meetings and workshops. And PAHO's EPI Advisor, Dr. Cristina Pedreira, played a very valuable role in providing technical advice and feedback to the Project, for example, making detailed comments on the drafts of the materials. Finally, the CHANGE Project provided experienced staff and consultants who assisted with the initial situational assessment, training, and the development, testing, and finalization of reference and support materials.

## **Conclusion**

Persons at all levels had strongly positive responses to having clear understandings of their job expectations, strategies to carry out these functions, a systematic process for assessing how they were doing and specific areas needing improvement, and the ability to negotiate feasible change, with support from their supervisors. This behavior-centered approach has changed the image of supervision from policing to mutual problem solving. This approach has tremendous potential in other programs and settings.

Although external funding ended in June 2005, project activities have continued. The director of the DIGEPI has made a commitment to continue the system of supervision and other project activities.

*This summary was prepared by Marco Polo Torres and Michael Favin from the CHANGE Project/Manoff Group. Please see the full project report in Spanish for more detail.*