



UPDATES FROM THE FIELD

GLOBAL HEALTH PROTECTION

PREVENT. DETECT. RESPOND. INVESTING IN PEOPLE

Dear Colleagues:

The Division of Global Health Protection is driven by our commitment to people, science, response, and systems. Of these, the most important is people. Making connections, building partnerships, and developing the global health workforce are central to everything we do. Our work in countries around the world depends on people – at CDC, in ministries of health, and in organizations across all sectors – who have the skills and the will to make a difference. We are the laboratorians, the disease detectives, the communicators, the policymakers, the leaders, the teachers, and the students.

Living in Thailand and Uganda over the course of eight years, I have witnessed what happens when we partner with our global colleagues. Today, as I travel in support of the [Global Health Security Agenda](#), I can assure you that we are getting results by focusing on people. Having supported the Ebola response in Liberia in September 2014 when we struggled to find a trained workforce, I was thrilled to see the [progress of our new Field Epidemiology Training Program \(FETP\) when I visited last month.](#)

In 2016, our division will be supporting over 70 countries. Our investments are exemplified by programs like FETP, which recently celebrated 35 years of training disease detectives in the essentials of epidemiology and investigation. FETP is modeled on CDC's world-renowned Epidemic Intelligence Service (EIS), which has been in place in the U.S. since 1951. Today, the two programs work side-by-side around the world to stop infectious diseases close to the source. There is no substitute for this kind of boots-on-the-ground effort.

In this issue of *Updates from the Field*, we hope you get a sense of what truly investing in people looks like: inspiring mentorship, innovative training programs, teamwork in the field, and accelerating the Global Health Security Agenda. Our unwavering commitment to building and sustaining a dedicated public health workforce makes the difference.

RADM JORDAN W. TAPPERO, MD, MPH

Director, Division of Global Health Protection, Center for Global Health, CDC

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IN THIS ISSUE

- 01 PREVENT. DETECT. RESPOND.
- 02 HOW CDC INVESTS IN PEOPLE
- 05 CDC DIRECTOR MENTORS
FETP RESIDENTS
- 08 MEET OUR FETP RESIDENT
ADVISORS
- 10 DISEASE DETECTIVES COME
TOGETHER IN GUINEA
- 12 FETP ON THE SCENE
 - ZIKA VIRUS IN BRAZIL
 - YELLOW FEVER IN ANGOLA
 - PLAGUE IN ZAMBIA
 - VACCINES IN PAKISTAN
- 14 MALI: A WIDER NET
CATCHES POLIO
- 15 MAKING AN IMPACT
- 16 A LEGACY OF MENTORSHIP



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<http://www.cdc.gov/globalhealth/healthprotection/fieldupdates/index.html>



HOW CDC INVESTS IN PEOPLE DEVELOPING DISEASE DETECTIVES

At CDC, people are at the heart of everything we do. Our activities are focused on improving people's daily lives and responding to health emergencies at home and across the globe. One way we accomplish this mission is through training a global workforce of field epidemiologists, or "disease detectives."

Disease detectives are critical to stopping outbreaks before they become epidemics. They increase our ability to detect and respond to events in a world where the next outbreak is only a plane ride away.

When health threats strike, disease detectives investigate and use what they've learned to prevent others from getting sick. They communicate crucial information quickly about health problems in a community, including both infectious and noncommunicable diseases. Their work prevents illness, gets to the root of health problems, and helps people cope in difficult situations.

Photo: Liberian disease detective trainees carefully cross a river on a long raft to reach remote settlements

BOOTS ON THE GROUND

Disease detectives must deal with unexpected, sometimes urgent, problems that demand immediate and innovative solutions. Both the [Epidemic Intelligence Service](#) and the [Field Epidemiology Training Program](#) are two-year fellowships that prepare experts to tackle the challenges of keeping people healthy. **Learning by doing** is the backbone of field epidemiology training programs – trainees spend over 75% of their time in the field.

- **Epidemic Intelligence Service (EIS)** Each year, 70–80 new EIS officers are selected from among hundreds of physicians, doctoral-level scientists, veterinarians, and other health professionals. As CDC's disease detectives, EIS officers are among the agency's first-line rapid responders.
- **Field Epidemiology Training Program (FETP)** is modeled after EIS and builds a global workforce so that outbreaks can be detected locally and prevented from spreading. FETP trainees spend most of their time investigating outbreaks, conducting studies, and training other healthcare workers in their countries.



A KEY PART OF GLOBAL HEALTH SECURITY

A strong FETP helps countries stop health threats close to the source – both those we anticipate and those we don't expect. This training is a core part of meeting the targets of the [Global Health Security Agenda](#), including:

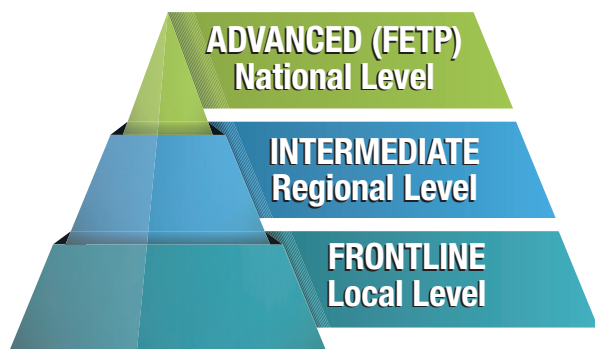
Surveillance: Countries will launch and strengthen global networks for real-time disease surveillance

Workforce Development: Countries will have one trained field epidemiologist per 200,000 population



A FASTER FETP

In 2015, CDC launched FETP-Frontline, a 3-month training program focused on detecting and responding to diseases and events of public health importance or international concern. As with other FETP trainings, Frontline residents gain hands-on experience in the field.



CONNECTED COLLEAGUES

FETP programs around the world are linked through [networks](#) that share information and support one another. The largest of these is TEPHINET, which reaches 88 countries. Across the globe, the mission is the same: **to build a global health workforce capable of using evidence to take action and save lives.**



FETP: THEN

In 1980, [FETP](#) and the [Thai Ministry of Health](#) broke new ground in improving public health throughout the world by expanding to areas outside of North America, beginning in Thailand. The Thai FETP served as a model of a strong program, tackling some of the most lethal public health threats in the region, including HIV, severe acute respiratory syndrome (SARS), botulism, malaria, and the 2009 influenza pandemic.



Photo: Van from Ministry of Public Health to transport trainees to the first investigation, 1981

FETP: NOW

Today, more than 3,100 FETP graduates from over 70 countries have responded to the world's most urgent health events, including:

- **Ebola virus** disease in West Africa
- **MERS-CoV** transmission in the Middle East, South Korea, and the Philippines
- **Polio** in Pakistan and Nigeria
- **Nipah virus** in Bangladesh
- **Acute encephalitis** in India
- **Earthquake recovery** in Haiti



Photo: FETP outbreak investigation of malaria in the Aswan Governorate, Egypt, June 2014 (Source: Mai Mohamed)



**“Disease detectives are essential to improve global health security.
They are public health heroes.”**

TOM FRIEDEN, MD, MPH

CDC DIRECTOR MENTORS FETP RESIDENTS

CDC Director Tom Frieden believes in getting guidance from mentors. “I’ve sought out people who can teach me,” he says. “The goal is to climb a mountain, and so you get all the good advice you can about the best routes to take, not to take, and what to carry with you.”

To illustrate his own commitment to mentorship, he began last year to provide direct, one-on-one mentorship to FETP fellows who are engaged in challenging projects all over the world. To date, there have been five of these monthly sessions – some in person and some conducted over the phone. Regardless of the method, the conversations always prove inspiring.



Photo: Tom Frieden, MD, MPH (CDC Director)

TANZANIA

FETP resident Witness Mchwampaka is studying malaria prevention efforts during pregnancy in two clinics in the Mwanza region of Tanzania, near Lake Victoria. Malaria rates there are at 19% — nearly double the country’s 9.9% average. In Tanzania alone, malaria causes between 60,000 and 80,000 deaths per year, mostly affecting children under five and pregnant women.

To address this, Tanzania’s began recommending in 2012 that pregnant women receive as many doses of sulfadoxine-pyrimethamine (SP) as possible during their pregnancies, beginning in the second trimester. Studies have shown that women and their babies see a significant benefit from three or more doses. Mchwampaka aims to find out why some women receive the recommended number of doses while others do not.

Dr. Frieden sat with the resident and helped her discover additional ways to use her data. Throughout the mentoring session, he returned to the key concept of taking both the close view and the wide view. “It’s very important to think about the big picture,” he stressed. “That is extremely key. We don’t do it enough in public health.”



Photo: Dr. Witness Mchwampaka (center)

FETP RESIDENT PROFILE

WITNESS MCHWAMPAKA, MD

Problem: Malaria rates in the Mwanza region of Tanzania are nearly double the country’s 9.9% average, with pregnant women and children under 5 most affected.

Project: Find out why some pregnant women do not receive the recommended number of SP doses during pregnancy.

CDC DIRECTOR MENTORS FETP RESIDENTS

INDONESIA

Indonesia FETP resident Nyoman Purnawan spent six months in Bali conducting a cross-sectional study of 242 hypertension patients to determine how many stay on their medication and take it correctly, as well as what factors influence medication adherence.

During their mentoring session, Dr. Frieden praised Purnawan's efforts. "I think the topic you've taken is very important, because high blood pressure kills more people than anything else in the world. It kills 9 million people every year, and only 15% of people who have high blood pressure have it under control."

Throughout the session, Dr. Frieden asked probing questions, inquiring about methodology and getting to the root of the study's design. He pointed out some possible issues, noting specifically that the study relies on patients to be truthful, which is not always accurate. Over the course of the conversation, Dr. Frieden shared useful articles and resources with the resident and helped him frame his interest in noncommunicable diseases in a wider context, connecting it to other urgent issues like tobacco control.

UGANDA

Uganda FETP resident Lilian Bulage is investigating an outbreak of measles that occurred last July in a refugee settlement in western Uganda. She found connection during her mentorship session with Dr. Frieden: "I found out that Dr. Frieden and I both did our first investigations on measles, we both worked in TB, and both of us started our epidemiology careers as 'disease detectives,'" she said.

During their discussion, Dr. Frieden described his first EIS project, which was also a measles outbreak investigation, and mentored Bulage on ways to deal with different groups within communities. He advised her to work within the refugee settlement's established communication channels—however informal—to promote information sharing among various groups, noting that "communication is key."

He also urged her to assess current vaccination practices, including ensuring measles vaccination of all entering refugees, and working to initiate a second dose of measles vaccine for the general population. Perhaps most importantly, he urged her to remember that every outbreak scenario is different and requires different investigative approaches and public health interventions.



Photo: FETP resident Nyoman Purnawan chatting with CDC Director Tom Frieden late at night in Indonesia

FETP RESIDENT PROFILE

NYOMAN PURNAWAN

Problem: Hypertension kills 9 million people each year, but only 15% of have their disease under control.

Project: Determine how many hypertension patients stay on their medication and the factors that influence medication adherence.



Photo: Lilian Bulage, a Uganda FETP fellow

FETP RESIDENT PROFILE

LILIAN BULAGE, MHSR

Problem: Outbreaks spread easily in refugee settlements. In a settlement in western Uganda, measles was taking hold.

Project: Investigate the outbreak and find ways to stop transmission.

CDC DIRECTOR MENTORS FETP RESIDENTS

INDIA

Dr. Mohan Papaana is an officer with the India Epidemic Intelligence Service (EIS), a field epidemiology program modeled and named after the CDC's own EIS in Atlanta. Dr. Papaana is in his second year of the program and has spent the past year tracking drug-resistant TB patients in Tamil Nadu.

Dr. Frieden knows first-hand the challenges Dr. Papaana is up against: earlier in his career, he spent five years in India helping to implement the Revised National Tuberculosis Control Program, which has since treated more than 10 million patients and has saved more than three million lives. But India accounts for a quarter of TB cases across the globe, and has the highest burden of drug-resistant TB.

Dr. Frieden discussed methodological issues related to the study, and recommended analyzing the data in different ways as well as conducting more outbreak investigations. Dr. Papaana was impressed with how much he was covered in just 15 minutes, from disease dynamics to study design and data analysis. "This session has provided me many new ideas to plan further studies," he said.



Photo: CDC Director Dr. Frieden meeting with EIS officer Dr. Mohan Papaana

FETP RESIDENT PROFILE

MOHAN PAPAANA, MD

Problem: India has 25% of all global TB cases and the highest burden of drug-resistant TB.

Project: Track drug-resistant TB patients in Tamil Nadu to learn ways to improve medication adherence and patient outcomes.

IRAQ

In Iraq, amid security concerns and a complex political climate, FETP resident Dr. Rana Khalid is taking on a challenge Dr. Frieden calls "huge": finding and documenting cases of pertussis, also known as whooping cough.

Khalid, who previously spent time investigating a cholera outbreak in internal displacement camps in Iraq, is focused on getting doctors across the country to report suspected cases of pertussis and confirm the diagnoses with laboratory testing.

Dr. Frieden helped Dr. Khalid lay out some potential strategies, rapid-firing ideas. His main points were to prioritize quality information and to think about how she might use existing resources to her advantage.

"The challenges are substantial," he said. "Pertussis is so hard to do good surveillance on that we don't try to do intensive surveillance everywhere. Do it well enough nationally, and then find a couple of local areas to do it really well. That would be my recommendation."

Read the full versions of these stories and more at <http://www.cdc.gov/globalhealth/healthprotection/fetp/stories/index.html>



Photo: Dr. Rana Khalid in Iraq

FETP RESIDENT PROFILE

RANA KHALID, MD

Problem: Implementing routine surveillance for pertussis, or whooping cough, in a fragile political climate is difficult.

Project: Get doctors across Iraq to report suspected cases of pertussis and confirm the diagnoses with laboratory testing.

MEET OUR FETP RESIDENT ADVISORS

WHAT'S AN FETP RESIDENT ADVISOR?

In the fight against infectious diseases and other health threats, there is no substitute for boots-on-the-ground surveillance. This is why Field Epidemiology Training Programs (FETPs), which train disease detectives in core public health principles, are often cited as the most important thing CDC does overseas. The work would not be possible without Resident Advisors, who serve as expert mentors for FETP residents as they learn the fundamental skills of epidemiology.

WHY DO FETPS NEED RESIDENT ADVISORS?

New FETPs are springing up in countries around the world, and mentors are urgently needed who can train FETP residents well. However, in many cases, countries don't yet have a sufficient number of experts available to do the job. This is where CDC can help provide an expert field epidemiologist and trainer to serve in the program as a Resident Advisor. CDC-supported Resident Advisors stay in place until enough residents have graduated and the program becomes sustainable in country.

IRAQ



Photo: Faris Lami working with surveyors in the Aiziya district of Wasit Province, Iraq



Photo: Lucy Boulanger works alongside FETP residents in Ethiopia



ETHIOPIA

MEET OUR FETP RESIDENT ADVISORS

ON THE JOB WITH IRAQ'S RESIDENT ADVISOR

Meet Faris Lami, who has been Resident Advisor for Iraq's FETP program for seven years. Iraq's FETP currently has two cohorts of residents, all of whom are medical doctors.

As part of their training, residents are tackling some of the region's most pressing health concerns, including outbreaks of cholera, measles, H1N1 influenza, mumps, pertussis, and cutaneous leishmaniasis, in addition to non-communicable diseases, mental health, and injuries. They have engaged in biorisk management, mass gathering preparedness, and helping internally displaced persons both in and outside the camps. "Our projects have tackled almost all areas of public health importance in Iraq," Faris says.

Faris is there to provide guidance as residents progress toward becoming seasoned field epidemiologists. Two recent efforts make him particularly proud. One, the Iraq Mass Gathering Project, addresses public health challenges that arise when millions of people from all over the world descend on a single area. The second, the National Registry of End Stage Renal Disease, has become a model for the Iraq Ministry of Health's other chronic disease registries.

Iraq's FETP has created a strong tradition of giving back. Of the program's 34 graduates, 33 are still inside the country working with the ministry. Over the past seven years, Faris has seen the results. "We have graduates in almost all of the Iraqi provinces now," he says. "In the end, there is real improvement and change in the public health system in Iraq."

"Mentoring residents has exposed me to many different aspects of public health. It has widened my horizons."

FARIS LAMI
(Resident Advisor, Iraq)

ETHIOPIA'S RESIDENT ADVISOR HELPS GROW AN IDEA

Meet Lucy Boulanger. Lucy has been Resident Advisor for Ethiopia's FETP since 2011, and she can't say enough about what residents are accomplishing in the country. Ethiopia is facing its worst drought situation in 50 years, and the program is stepping up to head off the crisis.

When Lucy came to Ethiopia, her main goal as Resident Advisor was to grow the program. And grow, it has. The Ethiopia Ministry of Health has "vigorously embraced" the FETP model, taking a single program with 18 residents in Addis Ababa and replicating it in seven other universities all across the country. CDC is assisting with shaping this expansion into a full FETP pyramid model. They now have 180 first- and second-year trainees in the field. The sheer number of residents and trainees is allowing them to address problems of malnutrition in ways they never could before.

"The residents feel like they're changing Ethiopia. For the first time, Ethiopia has the expertise to identify and respond to public health emergencies. This makes the residents and trainees so proud."

LUCY BOULANGER
(Resident Advisor, Ethiopia)

All 180 trainees are currently deployed throughout the country to "hot spots" – communities with the highest levels of malnutrition. Surveillance for malnutrition was added to the Ethiopian system through FETP six years ago. Residents are doing active surveillance, then matching their data to logistics to get food where it is most urgently needed.

Lucy says Ethiopia has come a long way in the past decade, becoming more interconnected with the global health community. FETP has been integral to this process. "We're not just training people," says Lucy. "We're watching whole systems evolve."

DISEASE DETECTIVES COME TOGETHER IN GUINEA

Alaine Knipes arrived in Guinea just days after the country was declared Ebola free. She immediately boarded a UN flight from Conakry to join Dr. Gauthier Mubenga in the far-flung town of N'Zérékore. As the only two CDC staff in the Forest Region, they quickly forged a close relationship. It would take their combined expertise to tackle the job ahead.

The two were providing technical assistance to the Guinea Ministry of Health, with a focus on piloting a rapid, point-of-care diagnostic test for Ebola. A reliable test that can be done quickly and with few resources could be a game changer, although barriers remain.

EIS MEETS FETP

Alaine is an officer with CDC's Epidemic Intelligence Service (EIS) who is training with the Emergency Response and Recovery Branch. EIS has trained and deployed disease detectives to address the world's most urgent health crises since 1951. The global counterpart to EIS is the Field Epidemiology Training Program (FETP). During her deployment to Guinea, Alaine worked alongside two graduates from the Democratic Republic of the Congo's FETP: Gauthier and, later, his colleague Jacques Likofata.

Alaine focused on providing refresher trainings for laboratorians on properly using the new test, drawing from her experiences with other point-of-care tests in Haiti and India. Gauthier and Jacques also worked closely with WHO field teams and other partners on community outreach.

Both Gauthier and Jacques had previously deployed from DRC for the Ebola response in Guinea. Their background gave them insight into the culture as they worked on challenges surrounding burial practices, risk, and the need for continued surveillance at a time when the country had been declared free of the virus.

COMMITTED COLLEAGUES

This third phase of the pilot program included one hospital in each of the five prefectures that border Liberia. Alaine and her FETP colleagues traveled together every day, sometimes six hours to a single hospital, and she prizes the close connection they made. Alaine keeps in regular touch with Jacques, whose deployment has been extended due to new cases being discovered.

She tells him to get some rest.

"I'm sad that Guinea has new cases now," Alaine says of the situation, "but confident they can stop it. Our colleagues in the Forest Region are a very capable and committed group."

When asked what valuable lessons she took from her deployment to Guinea, Alaine responds thoughtfully: "Patience and flexibility." She laughs, then adds, "And how to wash clothes in a bucket."



Photo: FETP resident Gauthier Mubenga reviewing data collection forms with laboratorians at the Yomou prefectural hospital in N'Zérékoré region of Guinea



Ebola is a slippery nemesis – it takes dedicated people working together to keep it at bay. There is no better example of this than the recent partnership between disease detectives keeping watch for the virus in the remote Forest Region of Guinea.

FETP ON THE SCENE

FETP takes learning by doing seriously. Residents spend at least 75% of their time in the field gaining hands-on experience. From participating in outbreak investigations to establishing surveillance systems to conducting studies on public health problems of national concern, FETP is on the scene.

PAIRING UP AGAINST ZIKA

As the largest Zika outbreak in history rages in the Americas, teams of two wind their way through Brazil's narrow streets, knocking on doors in search of answers.

The Brazilian FETP (known as EPISUS) are working in pairs with CDC staff on case control studies. They want to know more about the association between Zika virus and Guillain-Barré, and Zika virus and microcephaly. The only way to learn more is to collect data.

The teams go house-to-house. FETP residents interview household members, and CDC staff provide support and technical expertise. "The most important part of the collaboration was talking with our Brazilian counterparts about what the data actually means in the cultural context. The FETPs provided invaluable assistance in interpreting the data," said Elisabeth Krow-Lucal, a CDC EIS officer who was deployed to Brazil.



Photo: A baby born with microcephaly in Brazil
(Source: Mario Tama/Getty)

ANGOLA BATTLES YELLOW FEVER OUTBREAK

As the clock ticks and the case count rises, graduates from the Mozambique FETP have joined the Angola Ministry of Health and other partners to track down suspected cases of yellow fever in homes and hospitals. For months, Angola has been battling the deadliest urban outbreak of yellow fever in Africa in 30 years.

This particular outbreak is concentrated around Angola's capital city, Luanda, paving the way for the disease to spread easily. Identifying cases quickly is crucial. The longer a person is infected, the more dangerous yellow fever becomes.

The team on the ground is using community-based surveillance to locate people with symptoms of this deadly but vaccine-preventable disease. Usually symptoms start mild with a fever and chills, but about 15% progress to a more severe form of illness. Among severe cases, as many as 50% may die.

Contact tracing starts promptly at 8am with a trip to a local health facility. Disease detectives find out which patients have confirmed yellow fever, and they start digging. They need to know where and with whom the sick patients live. They call the patients' families, and search for more cases nearby. Anyone living within 100 meters (less than the length of a football field) of the confirmed case is educated about vaccination and avoiding mosquito bites. They encourage people to report possible cases and seek care early.

Going through this process for each case is arduous. But when you're on the frontlines in the battle against disease, it's all in a day's work.



Photo: Mozambique FELTP and WHO using GPS for disease detection

FETP ON THE SCENE

A GLIMPSE INTO ZAMBIA'S GROWING FETP

Zambia knows that investing in people pays off. The FETP in Zambia is very new, having started in August 2014. Already residents count among their accomplishments an investigation into a plague outbreak that identified a tendency to under-diagnose bacterial diseases like plague in settings of high malaria prevalence. CDC's Julie Harris, who worked in country, observed a thirst for knowledge among the residents.



Photo: Advanced FETP resident Dr. Nyambe Sinyange and Resident Advisor Kip Baggett examine a possible case of plague in an affected village

"They really want to absorb the lectures. In Zambia, we taught problem analysis, something I was unsure about whether or not it would go over well. We never learned it when I was in school and I couldn't immediately understand the application. But the students picked it up right away; they had lots of problems they wanted to analyze and address at their field sites. After they went back to the field, we got photos of their problem analysis diagrams hanging in their district offices. I'm really excited to see what they present at the next workshop, which will be about how they implemented changes to address the problems they identified and analyzed."

JULIE HARRIS, Epidemiologist. FETP

FELTP PAKISTAN: WORKING TO PROTECT THE LIVES OF CHILDREN

Measles, diphtheria, and pertussis are serious diseases easily preventable by vaccines. In Pakistan, safe access to vaccines for eligible children is inconsistent, and vaccine-preventable diseases often circulate undetected. Outbreaks can signal gaps in immunization. When that happens, the Field Epidemiology and Lab Training Program (FELTP) is often on the scene making a difference. Recently, residents used outbreak response as an opportunity to improve surveillance and vaccination efforts across the country. They:

- Responded to a diphtheria outbreak that sickened six children, killing two. They vaccinated 35 previously unimmunized children.
- Investigated two measles outbreaks and one pertussis outbreak, identifying cases, contacts, immunization status, and conducting responsive vaccination campaigns and community education about child immunizations. All outbreaks were stopped. Many people attribute this success to the new network of Provincial Disease Surveillance & Reporting Units that FELTP supports.
- Engaged various national stakeholders in a thoughtful and data-driven discussion to prioritize diseases for surveillance. By the end, participants had scored and ranked 32 diseases using standardized criteria. Measles, diphtheria, and pertussis all made the top part of the list.

With outbreaks of vaccine-preventable diseases like these popping up all over the map, especially in children, the work of disease detectives remains more critical than ever.



Photo: FELTP residents check children for vaccination status in Pakistan

MALI: A WIDER NET CATCHES POLIO

Sometimes, the stars align and you manage to have exactly what you need, just when you need it.

This is what happened in Mali in September 2015, when a program put in place to address the Ebola outbreak turned out to also be key in thwarting a potentially devastating outbreak of polio.

The wheels were set in motion a year earlier. When Ebola reared its head in West Africa in 2014, public health experts in Mali began pushing for more field epidemiologists to identify and track the disease. At first, they tried to address this need through sending health professionals to Field Epidemiology Training Programs (FETPs) in neighboring countries. But the logistics proved difficult and caused delays. With Ebola at its doorstep, Mali needed its own local training program, fast.

SCRAMBLING FOR SOLUTIONS

The calls began. How do we get our own program? How fast can we get it? Who should enroll? How many?

But with Ebola straining resources, starting up a full-fledged FETP in Mali was impossible. Fortunately, an option came to light: CDC had begun conducting a pared-down, rapid version of the full FETP training – called FETP STEP – in countries at risk for Ebola. The program would come to Mali in July 2015. And, like similar efforts in other countries, Mali's program would emphasize “hands-on” training over classroom work.

AN UNEXPECTED ARRIVAL

Then in early September, just one month after 27 graduates completed the training, came the real test.

A 19-month-old child from Guinea crossed the border into Mali with a case of polio. He had traveled to a hospital in Bamako – Mali's capital and largest city – after consulting a traditional healer in Guinea.

Drawing on his training, an FETP STEP graduate led surveillance and investigation in the affected district. Through contact tracing, he found that seven other children had been in contact with the child and would need close monitoring. CDC-trained personnel also worked with the Ministry of Health to launch an emergency vaccination campaign in Bamako and surrounding areas, and helped increase monitoring at the border.

Acting CDC Country Director N'Dir Adama noted that Mali's response to polio was “rapid and decisive” in preventing additional cases.

CONTINUING TO WATCH

Stationing trained disease detectives along Mali's porous and well-traveled border remains critical. Neighboring Guinea's polio vaccination program has suffered as a result of the devastation wrought by Ebola, posing a constant threat. Suspected cases need to be identified quickly and referred for appropriate support services. Mali is also watching for the potential introduction of Lassa fever from Nigeria, as well as other diseases.

The foundation, however, is set.

FETP STEP graduates are now considered in-country subject matter experts on surveillance by WHO and the Ministry of Health — not only Ebola and other viral hemorrhagic fevers, but also for polio and yellow fever.

Acting CDC Country Director N'Dir Adama noted that Mali's response to polio was “rapid and decisive” in preventing additional cases.

Read more stories about FETP and the Global Health Security Agenda in action at <http://www.cdc.gov/globalhealth/security/stories/default.htm>



Photo: A child with polio and his mother in Mali

MAKING AN IMPACT

INVESTING IN EFFECTIVE MANAGEMENT

Managers are critical to keeping the public health engine running smoothly. However, many low-to-middle income countries lack strong programs to train managers who know how to translate data into action.

CDC has developed a new initiative called Improving Public Health Management for Action (IMPACT), which will work with ministries of health in partner countries to strengthen public health management across eight core competencies.

IMPACT aims to develop skilled public health advisors. Graduates will work alongside scientists to implement public health programs and prepare for and respond to public health threats.

The program builds on the successes of CDC's Epidemic Intelligence Service, Field Epidemiology Training Program (FETP), Sustainable Management Development Program, and Public Health Associate Program. Much like FETP, IMPACT is a two-year, competency-based, hands-on learning program. Fellows learn by doing, spending a quarter of their time in classroom training and the remainder in field-based assignments.

IMPACT provides structured mentorship and supervision to assist fellows as they prepare to advance the future of public health in their countries.

WHERE IS IMPACT NOW?

In 2016, IMPACT will launch pilot programs in Bangladesh and Kenya.

In Bangladesh, the Institute of Epidemiology, Disease Control and Research (IEDCR) will host the program under the Ministry of Health. The program's in-country champion, Professor Dr. Mahmud Rahman (Director of IEDCR), emphasized IMPACT's importance in providing a clearly defined career path in the Ministry. He believes this will lead to more efficient public health programs.

Rahman says, "We need to teach them to take initiative in all activities and to always push for innovative ideas to improve our country's health. At the Ministry, we must provide incentives, make opportunities for them to improve their performance, and place candidates in appropriate leadership positions where they can make an impact."

EIGHT CORE COMPETENCIES



Program Planning and Management



Communication



Community Partnership Development



Analysis and Assessment



Organizational Leadership and Systems Awareness



Basic Public Health Sciences and Practices



Budget and Financial Planning



Emergency Planning, Preparedness, and Response

"CDC can't be everywhere. That's why we focus on helping countries develop their own cadres of public health workers who can find the disease, isolate patients, trace and monitor any contacts, and stop the exposures."

*TOM FRIEDEN, MD, MPH
(CDC Director)*

A LEGACY OF MENTORSHIP

REMEMBERING MIKE SCHULTZ

Myron “Mike” Schultz, DVM, MD, DCMT, FACP (EIS 1963) was a true public health legend. He was, above all, the quintessential disease detective. He spent his life tracking infectious diseases both across the world and through history. From helping identify the AIDS crisis to sleuthing the ailments of Charles Darwin and Robert Louis Stevenson, Mike loved a good medical mystery. It was a passion he actively shared with others.

Mike was always quick to assign credit for his successes to his own mentors, citing a list of distinguished professors and colleagues from all over the world. But Mike himself was both mentor and catalyst for the careers of countless people around him. He relished the company of students, whether in the classroom or in conversation. Mike provided an example of lifelong learning and dedication to the field of public health, while inspiring in others that same commitment.

In addition to founding CDC’s parasitic diseases unit, his long list of accomplishments includes directing 130 field epidemiologic investigations in collaboration with state and local health departments, training 30 Epidemic Intelligence Service (EIS) Officers in applied field epidemiology, helping to establish FETPs in developing countries, and designing and implementing a program to protect the health of CDC international travelers.

Mike once said, “CDC has blessed me with a precious gift—the opportunity to be useful and productive over a sustained period of time. For this, I am profoundly grateful.” But in the end, it is the rest of us who are grateful for Mike, for the work he did, and for the ways in which he touched our lives.

The *New York Times* remembers Mike Schultz: <http://www.nytimes.com/2016/03/06/health/dr-myron-g-schultz-who-helped-identify-aids-crisis-dies-at-81.html>



“When he found out I was new to CDC, he pulled a stack of biographies from his desk. He told me, ‘To know CDC, start with its people.’”

JESSIE BLOUNT
(ORISE Fellow)

“Before starting my assignment to Peru in 1993, Mike briefed me on its rich history from the pre-Inca period to modern times and gave me an autographed copy of his article on Carrion’s Disease, found only in Peru.”

DAVID H. SNIADACK, MD, MPH
(Former FETP Resident Advisor)

“As a new EIS officer in 1989, Mike welcomed me. He kept track of my career and provided guidance and positive energy at every turn.”

JAMES ZINGESER, DVM, MPH
(EIS Alumnus)