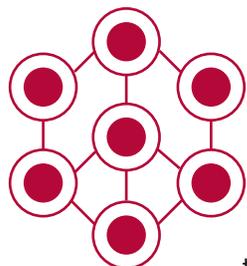




UPDATES FROM THE FIELD

ADVANCING PUBLIC HEALTH SYSTEMS AROUND THE WORLD

USING SYSTEMS TO SAVE LIVES



Keeping the world safe from diseases requires the right people, surveillance, labs, public health organizations—and a way to manage and integrate these elements into effective systems. The Division of Global Health Protection (DGHP) and host country ministries are strengthening systems to prevent, detect, and respond to emerging disease threats quickly to prevent an epidemic.

Outbreaks not only threaten lives, but also threaten a country's economic health—especially those with limited resources. Knowing that an outbreak overseas in a remote town can reach any United

States city in just over a day, our division is helping countries build better health systems. Our global work provides a critical public health platform to support the development of laboratories, surveillance systems, emergency operations centers (EOCs), and a trained workforce—all of which are part of the Global Health Security Agenda (GHSa).

This issue of *Updates from the Field* takes an up-close look at DGHP and partners' efforts to enhance and build strong systems that improve a country's capacity to respond to diseases within its borders. DGHP's work to support global health security not only protects Americans from the devastation of the next outbreak, but also makes communities worldwide safer by stopping deadly diseases and other health threats in their tracks.



SYSTEMS

- Working with countries to support a network of public health institutes across the globe
- Creating cross-cutting laboratory systems that can quickly identify diseases close to the source
- Strengthening the world's ability to prevent, detect, and respond to health threats through implementing the Global Health Security Agenda

Source: © David Snyder/CDC Foundation

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RESPONSE SYSTEMS

EARLY WARNING ALERT AND RESPONSE NETWORK PUT THE BRAKES ON DEADLY DISEASES

Fast detection of a polio outbreak in Somalia helped responders stop the disease from spreading quickly. Without Somalia's surveillance system—early warning alert and response network (EWARN)—a highly infectious disease may have taken root.

EWARN temporarily tracks health conditions during humanitarian emergencies and is often the only source for health data. It fills the gaps in existing public health surveillance systems that may have limited or no capacity during a health crisis.

EWARN has detected several major outbreaks, including polio in Syria, and measles and cholera in Somalia, evidence that the system works well.

As part of an EWARN technical working group overseen by the World Health Organization (WHO), CDC's Emergency Response and Recovery Branch (ERRB) has participated in developing global EWARN implementation guidelines and recently collaborated with the WHO Eastern Mediterranean Region Office (EMRO) to develop new standardized EWARN evaluation guidance.

With CDC support to improve EWARN guidance, the system will be much more effective in detecting infectious disease outbreaks early and responding promptly to save the lives of vulnerable people around the world.

ERRB EIS officer Andrew Boyd interviews a data manager participating in EWARN surveillance system at a clinic providing care to internally displaced persons.



Syrian woman carrying a pot on her head. (Source: Getty)



RESPONSE SYSTEMS

SIERRA LEONE: COMMITTED LEADERS BUILD ROBUST PUBLIC HEALTH EMERGENCY MANAGEMENT SYSTEMS

Without strong surveillance and response systems, deadly diseases spread quickly. Ebola overwhelmed the public health system in Sierra Leone when the 2014-2015 epidemic infected more than 14,000 people and took the lives of nearly 4,000 in the country. Since then, the country has made strides to become better prepared to fight infectious diseases. CDC, partners, and Sierra Leone's Ministry of Health and Sanitation (MoHS) are using experience and knowledge gained from the Ebola outbreak to build a strong emergency management and response system. Ultimately the strength of Emergency Operations Centers (EOC) rests with the leaders who ensure their workforce is trained and skilled.

PUBLIC HEALTH COMMUNITY CHAMPION

Sierra Leone's Public Health National Emergency Operations Center (PHNEOC) staff are the backbone of the operations center and report directly to Incident Manager, Dr. Foday Dafaë. During the Ebola outbreak, Dr. Dafaë became the Director of Disease Prevention and Control, providing technical assistance and support to the National Ebola Response Centre (NERC).

In August 2015, the NERC began transitioning management of future Ebola-related emergency response activities to the MoHS to operate out of the PHNEOC. By January 2016, the MoHS was ready to lead all public health emergencies as well as coordinate with the Office of National Security. "The focus is no longer solely on Ebola, but on other diseases—Sierra Leoneans are putting in place systems to track diseases in every corner of the country," says Dr. Dafaë. These systems share information among the local, district, and national public health levels. "Ebola created a sense of urgency in having coordinated efforts and more established information flow," adds Dr. Dafaë, who leads this effort.

Preventing infectious disease outbreaks also requires regional cooperation. With that in mind, Sierra Leone emergency managers are working with partners in the neighboring countries of Guinea,

Liberia, and Uganda to develop systems that can detect and respond to diseases promptly. Thanks to these systems and the health professionals who manage them, Sierra Leone and the region are better positioned to keep people safe and healthy.



Ebola responder conducting contact tracing in Sierra Leone.

INVESTING IN PUBLIC HEALTH LEADERS

Investing in people builds a strong public health workforce. With this in mind, the MoHS sent the Directorate of Policy, Planning, and Information's Planning Officer, Mr. Alusine Kamara, to Atlanta for a four-month Public Health Emergency Management (PHEM) Fellowship to learn the logistics, coordination, and operations of an incidence management system.

"Before Ebola, there was no EOC," says Kamara. He adds, "When Ebola struck, it was a challenge." Then, when the PHNEOC opened in January 2016, "we were tested immediately with a new case of Ebola in the (Tonkolili) district," he says. The public health national EOC managed response activities and worked with partners to control the cluster and prevent its further spread quickly. "One thing I have learned in terms of emergency management is making quick decisions and taking quick actions," because threats like Ebola do not waste time, says Mr. Kamara.

Sierra Leone's investment in the CDC PHEM Fellowship is already paying off in unexpected ways. Beyond the formal curriculum, Kamara is learning from other fellows, ten of whom are from Africa. He is working closely with three fellows (two from Guinea and one from Liberia) on ways to improve cross-border surveillance and laboratory testing. Kamara looks to a future with an improved public health system when he says, "During the Ebola crisis, we had good collaboration... I see integrating all of the Sierra Leone ministries, as well as the Ebola-affected countries' MoHs to coordinate efforts to fight diseases across borders."



Dr. Dafaë, CDC Sierra Leone, and EOC staff met with CDC Principal Deputy Director Dr. Anne Schuchat and STRIVE Team Lead Dr. Barbara Mahon during their recent visit to Sierra Leone.



Floating market in Thailand. (Source: Getty)

Through laboratory innovation, Thailand is advancing their public health system to better protect and save lives.

LABORATORY SYSTEMS BETTER TESTS, BETTER SURVEILLANCE: ON THE CUTTING EDGE OF LABORATORY INNOVATION IN THAILAND

In today's interconnected world, deadly diseases can spread swiftly, underscoring the need for innovative, accurate, real-time lab results to stop an epidemic in a moment's notice.

One hospital, Nakhon Phanom Provincial in Thailand, is leading the way in lab innovation and inspiring others to install a new lab instrument that streamlines pathogen identification and antimicrobial resistance testing. This is great news for the hospital that is home to a national surveillance lab, which detects and controls disease outbreaks to protect more than 750,000 lives in 12 districts.

Working together, CDC's Global Disease Detection (GDD) Regional Center in Thailand and the Thai Ministry of Public Health jointly manage the lab that installed the new technology in January 2016.

REVOLUTIONIZING DISEASE DETECTION IN THAILAND

Before the new equipment arrived, the lab used time-consuming, manual methods to identify pathogens and test for antimicrobial resistance—which is what happens when medications become less able to cure an infection caused by a microorganism or “superbug.”

The new, automatic system identifies a pathogen and determines if it is antimicrobial resistant. It takes minimal staff effort, provides greater accuracy, and doubles the number of tests the lab can run, while shortening the time it takes by 12 hours. The system has cut lab testing costs in half and has reduced the staff's workload by one third, showing that the investment is paying off.

The instrument has increased the lab's capacity—identifying 48 pathogens to date, and distinguishing organisms from 430 more species—neither of which was possible with the lab's previous manual testing methods.

“LEADING” TO NEW OPPORTUNITIES

The lab system can't identify some pathogens that are specific to Thailand since it was developed for use in western countries. The Nakhon Phanom lab is providing data to expand the instrument's ability to recognize more pathogens, including *Burkholderia pseudomallei*—a bacteria common in Thailand that causes a dangerous disease known as melioidosis, or Whitmore's disease, in humans and animals.

Following in the steps of Nakhon Phanom, one other hospital recently installed the lab system, and four more are seeking to acquire it. All these efforts are improving Thailand's ability to prevent, detect, and respond to deadly pathogens to protect it and the world.



The Director of the Strengthening Laboratory Capacity Program at CDC's Global Disease Detection Center in Thailand, Dr. Toni Whistler (pictured above, fourth from the right, with the Thailand lab staff), gives a “hats off” to a dedicated group of locally employed laboratorians who took the initiative to make this project happen.

“ The new diagnostic tool ... makes us more knowledgeable about pathogens that cause disease and helps show trends of antibiotic resistance. Our public health officers and physicians use this information to prevent and control bacterial diseases. ”

— Possawat Jorakate, Senior Medical Technologist, Strengthening Laboratory Capacity Program, Nonthaburi Thailand



The laboratory system is a state-of-the-art, automated instrument used to classify bacteria and test their antibiotic susceptibilities at the same time, which is faster than conventional, manual methods.

LABORATORY SYSTEMS

DECENTRALIZING AND STRENGTHENING EGYPT'S SURVEILLANCE LAB SYSTEM

Egypt's population is growing faster than any other country in the Middle East, increasing the demand for skilled public health professionals and strong laboratory systems, like Egypt's national reference lab - the Central Public Health Lab (CPHL) - and its supporting subnational laboratories.

The importance of lab surveillance to protect public health cannot be overstated; when one lab is recognized as a model for other labs, it deserves a closer look.

For example, Egypt's population-based surveillance lab is part of the International Emerging Infections Program (IEIP) in Damanhur, a city in the western Nile Delta. The Ministry of Health and Population (MoHP) plans to "copy and paste" the IEIP lab model across the Delta, and to also expand lab capacity in other Egyptian governorates—a critical step in controlling diseases like influenza, pneumonia, arbovirus, hepatitis and meningitis. It's also an example for decentralized labs.

CDC and MoHP established the IEIP in 2005 to support Egypt's disease surveillance and response. It's part of the larger IEIP program that's helping 14 Middle Eastern and West African countries build capacity in surveillance, laboratory diagnostics, and data management to meet International Health Regulations.

COMPONENTS OF A SUCCESSFUL SURVEILLANCE LABORATORY

The IEIP lab success rests on carefully constructing standardized surveillance and incorporating key components of a targeted surveillance system—basic laboratory diagnostics, high-quality data, and investment in human capital, which are detailed below:

- 1. A targeted surveillance system.** The IEIP lab tracks, investigates, and identifies targeted, common diseases, serving as an early warning system to prevent outbreaks. Surveillance covers acute febrile, respiratory, and influenza-like illnesses, as well as acute infectious neurological and diarrheal diseases. The lab is working to include surveillance for tuberculosis.
- 2. Basic laboratory diagnostics.** In 2009, IEIP quickly detected the early stage of an H1N1 outbreak because it used the lab diagnosing flu cases locally, instead of using the CPHL located 160 miles away in Cairo. The lab could do this because it had expanded capacity to meet biosafety standards. It can also conduct basic bacteriology, serological, and molecular diagnoses.
- 3. High quality data.** Dealing with over 100,000 records—both paper and electronic—is a challenge for any lab. IEIP data management team's innovation created gold-standard data quality. The team developed software to streamline and improve data collection, analysis, and archiving. Their efforts helped reduce staff data management hours and produced more accurate and faster reporting and response times.
- 4. Investment in human resources.** Understanding the importance of a trained public health workforce, the IEIP is providing trainings that cover surveillance systems, lab quality management systems, scientific writing, research ethics, biosafety cabinet certification, and outbreak investigations.

This year alone the IEIP held 19 different trainings for 341 participants from Egypt and other countries; course participants included lab staff, physicians, nurses, residents in CDC's Field Epidemiology Training Program, and MoHP staff. Plans are in the works to expand these efforts through a train-the-trainer program.

A MODEL FOR EGYPT LABS

The IEIP lab has become a Center for Public Health Training and Capacity Building. In addition to developing Egypt's public health workforce, the site hosts international visitors who are working to put similar surveillance models in their own countries. IEIP's mentorship will be a great asset when Egypt becomes one of five Regional Coordinating Centers supporting the newly established Africa Center for Disease Control (CDC).



Diarrhea surveillance workshop; laboratory technicians in Damanhur IEIP microbiology lab training.



Scientist working in the Damanhur IEIP PCR laboratory unit.

“ Lab decentralization cuts the central lab’s workload, increases biosafety and biosecurity, and improves the quality and efficiency of surveillance to better protect the population from disease threats. ”

— *Dr. Adel Mansour, Medical Scientist, International Emerging Infections Program, Damanhur, Egypt.*

Busy market area in Cairo. (Source: CDC Global)



SURVEILLANCE SYSTEMS

IMPROVING NATIONAL SURVEILLANCE AND RESPONSE SYSTEMS ONE COUNTRY AT A TIME

The 2014 Ebola outbreak in West Africa, the largest Ebola outbreak in history, taught us how easily a deadly disease can spread worldwide when effective surveillance and response systems are not in place to quickly detect and control infectious diseases from spreading. CDC and World Health Organization/Regional Office for Africa (WHO/AFRO) made it a priority to improve both systems.

WHAT IS IDSR?

Integrated Disease Surveillance and Response (IDSR), a public health framework, helps nations improve their surveillance and response systems.

National disease surveillance and response systems are complex, making them tricky to evaluate.

After Ebola, CDC and WHO/AFRO worked to make IDSR easier to understand and use, from the frontline health post to the top level of national public health. To evaluate public health system implementation, identify problems, and produce actionable recommendations, CDC and WHO/AFRO developed an IDSR assessment tool to address the five key points listed below:

- List of priority diseases, conditions, and events,
- Standard or uniform case definitions for identifying priority diseases, conditions, and events,
- Critical denominators to analyze reported diseases, conditions, and events,
- Alert thresholds to trigger action for suspected outbreaks of epidemic-prone diseases, conditions, and events, and
- Quality of country's epidemiologic or public health bulletin.

TAKING OWNERSHIP IN ETHIOPIA

Working with CDC, WHO, United States Agency for International Development (USAID), and the Western Michigan Evaluation Center, Ethiopia's Public Health Institute (EPI) took the lead to assess their IDSR capacity and implementation. In May of 2016, a team of national and international disease detection experts used the tool to evaluate 13 sites across the country to do the following: (1) document key elements of disease surveillance in Ethiopia, and (2) provide up-to-date, actionable information to make improvements.

PUTTING RESULTS TO ACTION

The assessment pinpointed specific areas to improve within the Ethiopian surveillance and response system and sparked quick action by public health officials. Since then, EPI has been applying the recommendations, including upgrading data collection and feedback systems, expanding surveillance, and improving communications. EPI is now offering health workers training in data management, public health emergency management, and rapid response. Revisions will serve as the baseline for further improvements in Ethiopia's surveillance and response to health threats.

EPI plans to expand the assessment to all regions in Ethiopia.



IDSR promotes responsible allocation of resources at the community, health facility, district, and national levels by integrating and streamlining common surveillance activities: detection, reporting, analysis, interpretation, feedback, and action.



The evaluation team at the Washa Health Center, Southern Nations Nationalities and Peoples Region of Ethiopia.

NEXT STEPS

Ethiopia's successful pilot of the new IDSR assessment tool can be a guide for other countries to increase their ability to prevent, detect, and respond to health threats.

With WHO/AFRO's advocacy, the IDSR team within CDC's Division of Global Health Protection hopes to duplicate this effort in other Global Health Security Agenda (GHSA) countries to strengthen health protection efforts across the globe.



Close interaction between Ethiopian herder and camels, captured in 2011. (Source: Hardeep Sandhu)

“ Public health surveillance has helped Ethiopia to detect outbreaks early, respond promptly and minimize the health, economic, social, and political impact of public health emergencies. ”

— Zewdu Assefa Edea, MPH-EFETP Resident, Ethiopian Public Health Institute



Rice field in Colombia's Tolima Department (Source: Neil Palmer, CAIT)

HEALTH SYSTEMS STRENGTHENING

NPHI INVESTMENTS HELPED COLOMBIA PREPARE FOR ZIKA

Preparing a country's public health system to respond to an emergency means getting the right structure and people in place to take action against imminent health threats. This is the ongoing work of Colombia's national public health institute, Instituto Nacional de Salud (INS), which is helping it respond to the threat of Zika with its strengthened public health system.

CDC and the International Association of National Public Health Institutes (IANPHI) have worked to strengthen INS since 2013. IANPHI is a network of public health agencies similar to CDC around the globe, which acts as a "hive mind" - they share their experiences and expertise to bring fresh ideas for public health program improvements, says CDC medical epidemiologist and Colombia Project Lead Ezra Barzilay.

According to Dr. Maritza Adegis Gonzalez, technical advisor to the INS director, CDC and IANPHI support played a critical role in INS' preparation and response to Zika. "CDC and IANPHI experts assisted INS in refining its public health strategies and provided funding to purchase supplies and mobilize staff," says CDC Public Health Analyst Dennis Jarvis.

CDC's Central American Global Disease Detection regional office, located in Guatemala, has provided extensive support toward NPHI development, including laboratory capacity building. For one and one-half years, Drs. Andres Espinosa-Bode and Leonard F. (Len) Peruski guided lab improvement activities. When the Zika response began, labs were able to deal with the numerous specimens, says IANPHI Senior Advisor for Public Health Practice Dr. Sue Binder. Other lab improvements, such as quality controls and biosafety cabinets, created a safer environment for lab workers who potentially could be exposed to the infectious disease.

During CDC's first phase of work with INS, the investment focused on building overall health system capacity. The following areas listed below are the selected priority improvement targets:

- Strengthening INS surveillance capacity—using data more effectively to identify risk factors,
- Developing a public health observatory,
- Enhancing laboratory safety—setting quality control standards and investing in biosafety cabinets and lab supplies,
- Building capacity to control vector-borne disease,
- Training staff in risk communications, and
- Improving the INS website.

INS met its targeted goals in time to manage the Zika response, especially in the areas of research and surveillance. As Colombia continues to fight against the threat of Zika, INS is providing innovative research and following cases of pregnant women with Zika.

Another priority for CDC and IANPHI is to develop a strong organizational culture and leadership within NPHIs, which is an approach INS leadership values. According to Dr. Barzilay, INS Director Dr. Marta Lucia Ospina cares for people and puts them first by ensuring that staff are trained and have the resources they need to succeed. She also guarantees scientists have the intellectual autonomy, or the freedom, to do their work as they see fit.

With the first phase of the CDC and IANPHI investment in INS complete, the team can look back to see huge improvements. As the second phase begins, INS envisions continuing to build on these public health improvements, while maintaining transparency, good communication, and customer service.



Work group in Colombia planning for years two and three of the project.

HEALTH SYSTEMS STRENGTHENING

HYPERTENSION CONTROL IN BARBADOS: BUILDING A SYSTEM TO FIGHT THE “SILENT KILLER”



SHTP project staff analyzing patient data.

Barbados is known for its beautiful turquoise waters and fine soft sand. Against this tropical backdrop, Barbadians share some of the same health concerns as other people from around the world, such as high rates of hypertension—more commonly known as high blood pressure. Hypertension is responsible for 10.4 million preventable deaths worldwide, and is the leading risk factor for heart disease and stroke.

As in many countries, barriers to overcoming heart disease and stroke in Barbados are quite familiar—lack of exercise and an unhealthy diet. To tackle this challenge, the Ministry of Health (MoH) brought together a group of stakeholders—including the University of the West Indies and the Healthy Caribbean Coalition—to discuss effective disease prevention approaches. The stakeholders chose to pilot the Standardized Hypertension Treatment and Prevention Project (SHTP) at two of the island’s polyclinics within the MoH.

SHTP’s comprehensive and aggressive approach resulted in improved hypertension control among clinic patients; an increased number of patients receiving treatment; and the launch of the island’s first electronic registry to track patients’ progress in hypertension control. With an emphasis on coordinated patient care, clinic staff attended classes to learn standardized protocols for treating patients, including how to use automated blood pressure measurement devices.

Establishing an electronic registry presented quite a challenge. The transition from patient-based patient records to electronic medical records (EMR) was more difficult than anticipated. To prevent these issues for future EMR transitions, the team will seek stakeholder input for improved record entry and patient metrics design and presentation. The team also recommended a system overlap from paper to electronic records.

Like many countries, the Barbados Ministry of Health is faced with limited resources and competing priorities, such as responding to the Ebola and Zika outbreaks. An unexpected challenge was the behavior change required by seasoned healthcare providers who were accustomed to the patient treatment plans they had previously used. Despite the challenges, the healthcare providers remained vigilant and found creative ways to rethink their existing treatment recommendations and align with the newly established SHTP treatment protocols.

Even with hurdles, healthcare staff screened more than 30,000 people at the two clinics and captured improved hypertension control rates of 14.5% within 18 months. The SHTP project successfully brought together healthcare team members to coordinate patient care and work toward a common goal.

The pilot project has been completed, but Barbados will continue to implement the standardized hypertension treatment protocol as part of the Global Hearts Initiative to prevent heart attacks and stroke.

This initiative led by World Health Organization, US CDC, and other partners, aims to improve both prevention and treatment of cardiovascular health. The successful launch and implementation of the SHTP in Barbados serves as a model for other clinics in Barbados and around the world. Its success shows that through a coordinated team effort, adherence to evidence-based tools, systems and practices, countries can improve hypertension control and save lives.



Blood pressure screening at a local clinic.



Elderly woman seeking treatment at local clinic. (Source: © David Snyder/CDC Foundation)

HEALTH SYSTEMS STRENGTHENING

SYSTEM STRENGTHENING – A ONE HEALTH APPROACH

Today's global society links communities both physically and economically. It also increases the risk of major economic losses and numerous deaths from zoonotic diseases that spread between animals and people, like rabies, avian influenza, and Rift Valley fever. One way to prevent such devastation and protect the public is with One Health—a collaborative approach that connects health professionals across human, animal, and environmental health sectors at the local, national, regional, and global levels.

CDC's One Health Office (OHO) provides countries with the technical assistance necessary to adopt this approach.

PRIORITIZING ZOOONOTIC DISEASES

In 2013, CDC's OHO, with the aid of the Global Disease Detection (GDD) Kenya Center and in-country partners, developed the One Health Zoonotic Disease Prioritization (OHZDP) tool – conducting a small-scale pilot with country staff. After refining the tool, the CDC OHO and the GDD Thailand Center carried out a larger pilot in 2014.

CDC's OHO leads the OHZDP workshops that bring together multiple health sectors to develop a priority list of zoonotic diseases. The Global Health Security Agenda (GHSA)—a framework for countries to reach the International Health Regulation goals to prevent, detect, and respond to disease threats effectively—identifies zoonotic diseases as a priority target area and encourages countries to use this tool to focus their One Health efforts.

Developing a list of priority zoonotic diseases helps public health sectors strategically use financial and human resources to:

- Strengthen and expand laboratory capacity,
- Develop/enhance disease surveillance programs in human and animal populations,
- Develop multi-sectoral outbreak response plans, and
- Create joint prevention and control strategies for human and animal health.

THE KENYA EXPERIENCE

In September 2015, the Kenya Zoonotic Disease Unit, a collaboration between various Kenyan ministries, CDC's GDD Kenya Center, and the Department of Defense's Defense Threat Reduction Agency, conducted an OHZDP workshop to determine its priority zoonotic diseases. CDC's headquarters staff provided technical support and GDD Kenya's One Health staff led the effort for Kenyan public health professionals, scientists, researchers, and partners to set the priority for 36 endemic and emerging zoonotic diseases.

TOP 5

Zoonotic Disease Threats in Kenya

- 1 Anthrax
- 2 Human African trypanosomiasis
- 3 Rabies
- 4 Brucellosis
- 5 Rift Valley fever

Participants ranked diseases based on severity of illness in humans, epidemic potential, and socioeconomic impact on livestock, disease prevalence in humans and livestock, and possible availability of effective intervention. Kenya determined its top five disease threats as: 1) anthrax, 2) human African trypanosomiasis, 3) rabies, 4) brucellosis, and 5) Rift Valley fever. This interdisciplinary approach required that all health sectors participate and identify common priorities to better lead management of zoonotic diseases. For more information on this collaborative work, please visit: <https://www.ncbi.nlm.nih.gov/pubmed/27557120>.

CDC has held additional workshops in Ethiopia, South Africa, Democratic Republic of Congo, Cameroon, and Azerbaijan, and will continue working with countries to implement a One Health approach. The collaboration of all health sectors strengthens systems to better protect the world from zoonotic disease threats in people and animals and to meet GHSA goals.

For more information on the OHZDP tool and planning future workshops, please contact the One Health Office: onehealth@cdc.gov.

Participants conducting group work during the zoonotic disease prioritization workshop, Kenya September 2015





Because diseases from bugs and animals cause about 3 out of 5 new human illnesses, CDC is always tracking and reporting them. The One Health approach seeks to attain optimal health for people, animals, and our environment. (Source: Getty)

ACKNOWLEDGMENTS

Thank you to our partners, collaborators, and staff for your contributions and support in advancing health systems around the world and improving global health security.

Kenyan children at play near their homes. (Source: © David Snyder/CDC Foundation)

