For Immediate Release

*MCHD epidemiologist responded to Ebola outbreak in Sierra Leone*

*Dr. Diane K. Gross also worked in pandemic preparedness for WHO*

MORGANTOWN, WV (April 16, 2020) — Every morning for the past several weeks, Dr. Diane K. Gross helps kick off Monongalia County Health Department’s daily briefing by updating staff on the region’s number of COVID-19 cases and providing analysis.

She spends her day helping her health department colleagues track down and isolate those who have tested positive for the illness, as well as quarantine any contacts they might have had while sick. She arrives early and is usually the last employee to depart, seven days a week, leaving in time to take her dogs for a walk before spending her evening working from home.

This is not the first time that Dr. Gross, a Morgantown native and MCHD’s regional epidemiologist, has responded to a pandemic. As a senior epidemiologist in High Threat Pathogens for the World Health Organization (WHO), she spent nearly two months in the West African country of Sierra Leone in 2015 during the Ebola outbreak there.

Her job duties sound similar to ones she is performing now, albeit with upgraded technology and for a different type of virus.

“I did contact tracing, made sure people were adhering to quarantine and isolation and helped with the collection of samples,” said Dr. Gross, a graduate of West Virginia University.

Her background has prepared her for tackling the COVID-19 outbreak that began in Wuhan, China, in December 2019. Monongalia County had its first diagnosed case on March 19 and has 83 diagnosed cases as of April 16.
“As an epidemiologist, you learn a lot of tools that you can apply in many different situations,” she added.

However, “I’ve worked with other large outbreaks, and there’s always something new and unknown and different. There are things you have to learn with any new disease. That’s the really challenging part.”

One task that differed in Sierra Leone, compared to fighting the COVID-19 pandemic in Morgantown, was assisting with burial teams. That’s because a major method of Ebola spread can take place during funeral rituals that include family members washing and preparing highly contagious bodies.

“Then they would disperse back to their houses and spread the disease,” she said. “One of the things we had to do was set up burial teams to come up with practices set out to prevent the spread of infection while maintaining the dignity of the person and respecting religious rights.”

Also in Sierra Leone, Dr. Gross had to travel out into the field more often to conduct interviews.

“We would have to look at the situation, look at the neighbors, track down people, find out that someone had contact with a cousin, then go there and interview that person face to face,” she said.

That could be an arduous undertaking, for several reasons. “We often had to travel on poorly maintained dirt roads and it could take hours to get anywhere,” Dr. Gross said. “It was hot and dusty.”

However, in some ways it was easier to control Ebola in Sierra Leone through isolation of cases and quarantining contacts. Even though Ebola is a highly infectious hemorrhagic virus, it is spread differently than COVID-19, Dr. Gross explained.

“The big difference is, you’re not infectious with Ebola until you start being sick enough to tell something is wrong,” she said. “If you put people exposed to Ebola virus in quarantine, you can tell when they should start being contagious and really isolate them.”

She added, “The problem with influenza and COVID-19 is that you may be shedding the virus before you ever get sick. Waiting until someone gets a fever and then putting them in isolation, that doesn’t stop them from spreading the disease.”

In fact, not only can individuals who test positive feel fine before the onset of COVID-19 symptoms, it is also estimated that 1 in 4 people who have COVID-19 are asymptomatic.
After earning her Bachelor of Science degree in Animal and Veterinary Sciences at WVU, Dr. Gross received her Doctor of Veterinary Medicine degree from Ohio State University. She worked as a veterinarian for six years and then returned to Ohio State to earn a Ph.D. in Veterinary Epidemiology, studying influenza in horses. Following that, Dr. Gross performed postdoctoral work at the University of California at Davis, looking at injuries in racehorses.

Her background as a veterinarian provides additional insight into zoonotic diseases. COVID-19, for instance, is believed to have emerged when it moved from a bat or a pangolin to a human in Wuhan.

While dogs seem immune to the illness, a tiger at the Bronx Zoo has tested positive. Although COVID-19 has only been found in a few cats, domestic felines also could be affected. “If you have an outdoor cat, you should keep it inside for now to be extra safe,” Dr. Gross said.

And while you don’t necessarily have to socially distance yourself from Jennyanydots or Mr. Mistoffelees by six feet, “Don’t kiss your cat,” she advises.

In 2004, Dr. Gross took a job with the Centers for Disease Control and Prevention in Atlanta as an Epidemic Intelligence Service Officer in the Meningitis and Special Pathogens Branch. From 2006 to 2018, she served as a senior epidemiologist in CDC’s Influenza Division. While at CDC, she traveled internationally, including to South Sudan in 2006 during an avian flu outbreak and to Beijing in 2008 to help that country develop its pandemic preparedness plan.

In 2012, CDC sent Dr. Gross to Copenhagen to work as a senior epidemiologist with the WHO. “I was on loan from the CDC,” she said.

She arrived at MCHD in the spring of 2018 with the title of regional epidemiologist, covering not only Monongalia County but also Preston, Marion, Harrison, Doddridge, Taylor and Barbour counties.

During the COVID-19 pandemic, she has worked closely with other MCHD staff, including director of nursing Jennifer Goldcamp, Threat Preparedness program manager Jamie Moore and Threat Prep specialist Joe Klass, and Dr. Lee B. Smith, executive director and county health officer.

MCHD also has just hired another epidemiologist, Stacy Tressler, who just earned her Ph.D. from WVU’s School of Public Health. Tressler has spent the past year as
Monongalia County Health Department’s Quick Response Team’s data analyst. That will help take some work pressure off Dr. Gross.

“During this, or any crisis, MCHD seeks to enlist the best personnel in order to mount the best response,” Dr. Smith said. “We are extremely pleased to have someone with Dr. Gross’s credentials and experience. This has allowed us to keep up with the large number not only of positive cases and disease investigation but also contact tracing.”

Also, he added, “Hiring another Ph.D. epidemiologist will add depth to our bench and be a great asset in our COVID-19 response.”

In addition to tackling the Ebola outbreak in Sierra Leone, Dr. Gross actually spent more of her time at the WHO helping countries develop their capacity for influenza and pandemic preparedness.

“The WHO leads global surveillance for influenza for countries to maintain a strong surveillance system to respond to influenza,” she said. “It also allows us to have surveillance for pandemic influenza, and that is helping them develop laboratory ability to detect a case and respond to disease.”

She also helped in capacity building to respond to diseases, including highly pathogenic avian flu and Middle Eastern respiratory syndrome (MERS). MERS, as well as severe acute respiratory syndrome (SARS), are types of coronavirus, just as COVID-19 is.

“For example, one of the things we would do is we would be invited to come into a country to help evaluate their surveillance for influenza and other respiratory illnesses,” she said.

Dr. Gross was also on a team that traveled to Qatar to assess their surveillance of influenza and MERS.

“That involved evaluating their hospital emergency departments to see how they identify people with influenza or MERS, how they respond to it, what kind of infection control measures they have in place to prevent the spread of infection and what kind of laboratory is set up.”

Most of what Dr. Gross knows about respiratory viruses, she noted, comes from her previous work with influenza and MERS.

“Viruses mainly spread through droplets,” she added. “Transmission, the way you diagnose it and how you respond to them is similar. Except, with influenza, you have a vaccine. There is no vaccine for MERS.”
Of course, there is no COVID-19 vaccine yet either. As the expected COVID-19 peak approaches in West Virginia and other areas, scientists and researchers are now working to fast-track a vaccine for the illness.

“The basic principles for surveillance and control between a pandemic flu and COVID-19 are the same in a pandemic,” she said. “For influenza, it usually takes at least six months currently to develop and implement and mass produce a flu vaccine.

“So the actions that are now being taken are things that have always been considered and discussed. We’ve been working with countries to develop their pandemic plans. Now we’re seeing those plans play out in real life.”

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