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## Looking Ahead...

- Call for topics: We are inviting you to submit suggestions for topics for our newsletter.
- We are now looking for kid and parent perspectives for those who have participated in the art competition.
- In May's newsletter, Get Smart Kids' Art Competition and Volunteer Award Ceremony and views on "watchful waiting" by parents and physicians.

## 2016 Get Smart Kids' Art Competition Kick-Off!

The 2016 Art Competition Kick-off was March 23 during the inaugural Get Smart Kids' Art Competition Award Ceremony. Dr. Rachel Levine, Physician General, announced the start of the fourth annual art competition for Pennsylvania's Get Smart program. The art competition is now accepting entries until Oct. 31, and we will announce the winners during Get Smart Week, Nov. 14-20, 2016. Our goal for the competition is to emphasize the importance of primary prevention, hand hygiene, adherence to recommended vaccinations, and appropriate antibiotic use.



## "Stop that Germ!" How Disease Detectives Keep Us Safe

By: CAPT. Douglas Hamilton, MD, PhD -- Centers for Disease Control and Prevention



CAPT. Hamilton completed his PhD in microbiology and his MD degrees at Vanderbilt University. He has served in the U.S. Public Health Service for 29 years, including 15 years as Director of the Epidemic Intelligence Service, CDC's "disease detectives."

The main responsibility of public health departments is to protect the health of the public. One of the important ways they do this is by investigating disease outbreaks. These public health disease detectives, just like police detectives, try to answer the questions of who, what, where and when. That is, they ask, "Who is getting sick?" "What is making them sick?" "Where are they

located?" and "When are they getting sick?" After they gather these clues, they try to answer the question, "Why did this happen?" Then comes the most important question of them all, "How can I make the illnesses stop?"

Disease detectives have plans that they follow when they investigate disease to make sure they don't miss any important steps. Let's look at the steps in a typical plan.

1. **Prepare for Fieldwork:** The detectives do everything they need to do before they leave their office. This can include getting permission to go, packing the right equipment and finding people to help them.
2. **Verify the Diagnosis:** They make sure there are no mistakes about what they think is making people sick. Sometimes reports of diseases are wrong. It might be that the doctors didn't make the right diagnosis, or perhaps there was a problem with the laboratory test.
3. **Confirm the Outbreak:** What is an outbreak? To these detectives, it means more cases of a specific disease than we expect to see in a certain place at a particular time. So, what is "more than expected"? This depends on the disease, and is sometimes a hard question. For very rare diseases, like Ebola, having one case here in the U.S. is more than we would expect. However, for common diseases, like flu in the winter, we might normally expect to see many cases. The disease detectives ask a lot of questions to find out what normally happens. Then they compare past information to what is happening now to decide if there is an outbreak.
4. **Identify and Count Cases:** After they decide there is a problem, the detectives spread out to find as many people with the disease as possible. They might look in hospitals, doctors' offices or laboratories. They might go to schools or large workplaces to see if anyone there has been sick. They will also ask people who are sick with the disease if they know anyone else who has the same symptoms. The people who are sick are called

“cases.” Every time they find a person who is a case, they ask a lot of questions about the symptoms, including the time everything happened, anything that might have exposed them to the disease, and who else might have been exposed. The detectives might also ask the same questions of people who are under the same condition as the cases, except they didn’t get sick. These people are called “controls.”

5. **Do the Math:** After the disease detectives gather all of the information from the cases and controls, they put the information into a computer. They then use math to compare the cases and controls to see what things are more common among cases than among the controls. This might be something like eating a certain food, getting bitten by mosquitos, visiting a particular place or even just being around other sick people.
6. **Start Control Measures:** After the detectives have an idea of what is making people sick, they decide what should be done to stop it. Actions taken to stop the spread of a disease are called “control measures.” It might mean closing a restaurant, telling people not to eat a certain food or telling people to use bottled water instead of tap water. If a person is sick and infecting other people, doctors will treat the person who is spreading the disease and keep that person away from others until he or she is no longer contagious. Doctors might also do things to protect people who are not sick by giving them medicine to protect them or giving them shots that will help their bodies to fight off the disease if they get exposed. However, after starting a control measure, it’s important to watch the situation carefully to make sure the control measure works. For example, do fewer people get sick after the control measure is started?
7. **Do More Studies:** Sometimes the information from the first round of questions is not enough to answer all of the important questions. The detectives might gather more information to answer these questions. For instance, if the first questions hint that buying food at a certain supermarket might be a problem, the detectives might do another study that looks very carefully at the supermarket to see what the problem is (maybe it’s one brand of food or fresh food from the deli).
8. **Long-Term Surveillance:** Surveillance means keeping a look out for different diseases. After the detectives have started a control measure to stop the outbreak, they have to continue to watch for new cases so that if the disease comes back, they can act quickly to stop it.
9. **Write Reports:** After finishing their investigation, they have to make a record of what they did. This is important to let other people in the public health field know what worked and what to look out for. Sometimes they talk about their work at big meetings; sometimes they write papers for scientific magazines and, most of the time, they write reports for their bosses.



What disease detectives do is an important part of keeping us safe and healthy. But for the detectives, it’s interesting work, and, best of all, it’s fun to solve a mystery!

### **Get Smart Pharmacy Initiative—Collaboration with the University of Pittsburgh School of Pharmacy**

By Bonnie A. Falcione, PharmD, BCPS AQ-ID, and Nkuchia M’ikanatha, DrPH, MPH



Josh Krise and Melanie Beers: Class of 2018 and Christine Murphy, DOH

On Feb. 26, 2016, more than 100 pharmacy students participated in the third annual Get Smart Public Health Workshop at the University of Pittsburgh School of Pharmacy. The purpose of the annual workshop is to prepare students for practical experience in assessing public knowledge and attitude towards appropriate use of antibiotics. The preparation includes two presentations on the national and state Get Smart Programs, in addition to readiness assessment, small group

case discussions, and an online home study module, “Weighing in on Antibiotic Resistance: Community Pharmacists Tip the Scales” available on the Centers for Disease Control and Prevention (CDC) website. This year, Guillermo V. Sanchez, MSHS, MPH, PA-C, provided an overview of the CDC Get Smart Program via Skype, which works beautifully. “Memo,” as he likes to be called, was able to have a virtual interaction — he waved at the audience, invited them to ask questions and advanced his own slides as he offered compelling rationale for a team approach in antibiotic stewardship. He summarized the role of pharmacists as:

- ❑ **Educate and counsel patients (and providers) on:**
  - ❑ Antibiotic resistance
  - ❑ Proper use of antibiotics
  - ❑ Adverse drug events
  - ❑ Symptom relief

Nkuchia M’ikanatha, DrPH, MPH, highlighted tracking of enteric bacteria from retail food and patients as one of the two pillars of Pennsylvania’s antibiotics response. The tracking system is part of a collaboration with the National Antimicrobial Resistance Monitoring Programs, which is coordinated by the Food and Drug Administration and the CDC. Dr. M’ikanatha provided more details on the Get Smart Program, a second pillar in the state response to the threat of antibiotics resistance. The Get Smart Program has four main initiatives:

- ❑ Pharmacy
- ❑ Pediatrics
- ❑ Child care settings
- ❑ Communication

Christine Murphy, RN, MSN, Community Health from the Southwest District, concluded with a lively Glo-Germ hand hygiene demonstration. “The Glo-Germ is the real attraction to children and adults,” she said, adding, “senior citizens in nursing homes always appreciate the visit.” Several students eagerly volunteered for the demonstration that involved putting powder on their hands, washing them and showing where bacteria can hide under a “black light.” Although they received guidance from Bonnie A. Falcione, PharmD, BCPS AQ-ID, lead collaborator and Lucas Berenbrok, PharmD, course co-coordinator, the workshop was led by student Class of 2018 volunteers Connor Deri, Alyssa Faipler, Mary Grace Fitzmaurice, Kimberly Goehring, Allyson Kraft and Abigail Kraus.

### **Meet the Team: Tabitha Reefer, Tabitha Reefer Get Smart Communication Initiative**

By Nkuchia M. M’ikanatha, DrPH, MPH

In this column, we are introducing Tabitha Reefer, MBA, MPH, our lead for the Get Smart Newsletter. Tabitha’s responsibilities include content development with input from an advisory team, coordination of review by an editorial team and evaluation. While serving as a Get Smart Intern from 2014-2015, Tabitha contributed to community outreach in collaboration with the University of Pittsburgh School of Pharmacy and Allegheny County Health Department. She graduated from the University of Pittsburgh Graduate School of Public Health in April 2015. Afterwards, she relocated to Oahu to join her husband at his duty station at Marine Corps Base Hawaii. Tabitha recently moved back to Pennsylvania to begin employment as the project facilitator for UPMC’s Interconception Care Project. Her husband will join her in the summer after the completion of his service with the military. “I am thrilled to be back in the Pittsburgh area and delighted by the opportunity to contribute to antimicrobial resistance efforts,” Tabitha noted recently. She will continue to work on the newsletter as a contractor.



If you have any ideas for future newsletters or would like more information, please feel free to contact us.

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