



Henrico County Health District Investigates Tuberculosis at Local Retail Store

By: Jill Grumbine, RN and Kevin Pannell, Emergency Planner

In December 2010 the Henrico County Health Department (HCHD) was contacted by a local hospital regarding a patient with active tuberculosis (TB) disease who worked at a local retail store. Upon notification, Jill Grumbine, HCHD Public Health Nurse and Refugee Coordinator, and acting TB Program Director, informed HCHD Health Director, Dr. Susan Fischer Davis, about the patient. Jill then began the contact investigation using the concentric circle method (Figure 1). While considering high risk and close contacts in the first concentric circle, Jill discovered the patient and co-workers used the same break room at the store. With this information, Jill and Dr. Davis developed criteria to establish which co-workers needed to be screened and tested for TB. It was decided to screen and test any employee that used the break room on a regular basis (defined as at least one hour per week) between September 1, 2010 and December 16, 2010.

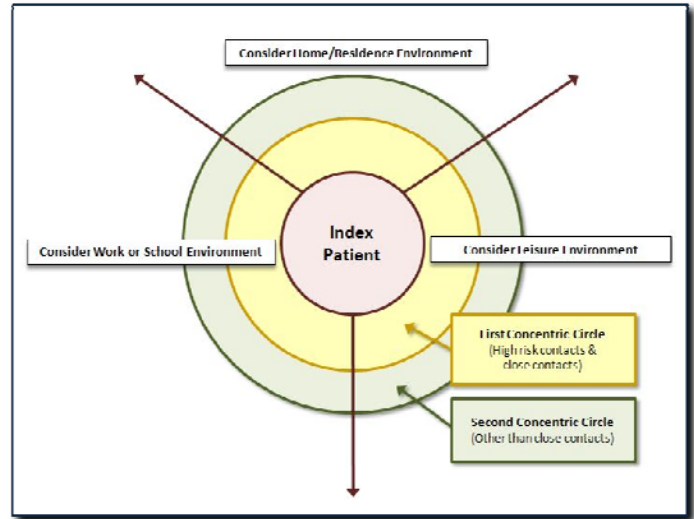


Figure 1: Concentric Circle Method for Contact Investigations

Based on the date the patient last worked, two rounds of screening and/or testing were conducted to determine whether or not exposure occurred among any of the 315 employees that regularly used the break room. Recognizing that the scope of this investigation would require significant resources, Kevin Pannell, HCHD's Emergency Planner, established an incident command structure (ICS) to help manage resources and staff. ICS was used throughout the duration of the investigation, both during screening and testing operations at the local store and during planning meetings at HCHD. Shortly after ICS was established and leadership positions were identified, a meeting at the local store was held; HCHD ICS leadership team and store management discussed the scope of the investigation and the potential impact to store operations. A walk-through of the store was conducted in order to determine how best to decrease disruption to store operations and its employees, and to optimize screening and testing of as many employees as possible; it was agreed that the receiving area in the back of the store would be setup as a screening and testing site (Figure 2).

Multiple languages were spoken among employees requiring Arabic, Bosnian, and Spanish translation services to convey information about screening and testing recommendations from the HCHD. The interferon gamma release assay (IGRA) was

used to screen for TB among employees born outside of the U.S. IGRA is a blood test and the preferred test for individuals who have received vaccination against TB (the Bacille Calmette-Guerin (BCG) vaccine). BCG is used in many countries outside the U.S. with a high prevalence of TB to help prevent childhood tuberculosis meningitis and miliary disease. For employees born in the U.S., the Purified Protein Derivative (PPD) was used to screen for exposure to TB. The PPD test is administered just under the skin and must be read within 48 to 72 hours. IGRA is a more specific test for TB disease than the PPD test and IGRA helps distinguish among people exposed to TB disease versus people who received BCG vaccine.

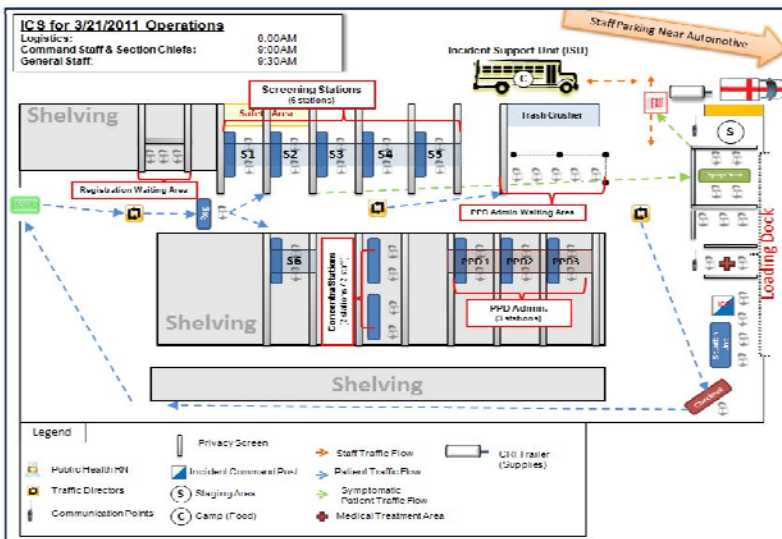


Figure 2: Screening and Testing Area

Screening and testing at the local store were performed the second week in February 2011 and the third week in March 2011. During the February operations, HCHD partnered

Did you know?

Does Your Pet Need a Rabies Shot

By: Lt. Shawn Sears, Animal Protection Police Supervisor and Kevin Pannell, Emergency Planner

Rabies vaccination for pets is important to ensure a disease transmission barrier between wild animals and people, and it's the law. In addition to services offered by Henrico veterinarians, the Henrico County Animal Protection Unit (APU) sponsors four rabies clinics each year. These clinics offer rabies vaccination for dogs or cats for a very reasonable fee. For questions about future clinics or any issue with domestic or wild animals, contact the Henrico APU at 804.727.8800.



Henrico Police Animal Shelter

Story Resources:

Henrico Animal Protection Unit - <http://www.co.henrico.va.us/departments/policy/animal-protection/>

CDC Rabies - <http://www.cdc.gov/rabies/>

There are Required School Immunizations

By: Shirley Bakka, RN, Public Health Nurse

For the 2011-2012 school year, all kindergartens and first graders are required to have received two valid doses of each of the following vaccines: *varicella, measles, and mumps*. One dose of Tdap (tetanus, diphtheria, and pertussis) vaccine is required for students in grades 6 through 11 if at least 5 years have passed since the last dose of tetanus-containing vaccine.

Virginia School and Day Care Immunization Requirements:

<http://www.vdh.virginia.gov/epidemiology/immunization/requirements.htm>

Current immunization schedules:

<http://www.cdc.gov/vaccines/>

with and/or utilized the store's management team and employees, Henrico County Emergency Management, Henrico Fire/EMS, Henrico Sheriff's Office, Virginia Department of Health's TB Control Program, Centers for Disease Control and Prevention (CDC), and public health staff from the Chesterfield, Richmond, Chickahominy, and Crater health districts. In addition to the on-site screening and testing, some employees were seen at either the West or East HCHD locations. During the month of February (at store and HCHD), 246 PPDs were administered and 48 IGRA tests were performed. During March (at store and HCHD), 198 PPDs were administered and 45 IGRA tests were performed. It should be noted that not all originally identified 315 employees were tested for various reasons, including no longer working at the store or choosing not to participate in the screening and testing provided by HCHD.

Although this investigation is still ongoing, the on-site screening and testing, as well as the follow-up work performed at HCHD offices thus far, have been a huge success for all involved. HCHD's response to this investigation closely mimics a public health response and point of dispensing (POD) operation that would be used during an influenza pandemic or in response to a biological or chemical attack where large numbers of the public need to be screened, tested, and potentially treated. For questions about how and/or when to report suspected cases of tuberculosis, please contact the HCHD at 804.501.4519.

Story Resources:

CDC Tuberculosis - <http://www.cdc.gov/tb/>

Incident Command System (ICS) - <http://training.fema.gov/EMIWeb/IS/ICSResource/index.htm>

A Day in the Life of:

Jessica Watson, MPH, HCHD District Epidemiologist



Jessica Watson, MPH

"So, what do you do?"

I'm asked this question a lot. Sometimes I wonder if I should give a simple answer, like "I work at the health department," or an exciting answer, like "I'm a disease detective." Most of the time, though, I just answer directly: "I'm an epidemiologist." The usual response: 3 second pause, followed by: "Oh...that means you study the skin, right?"

Not exactly.

Epidemiology is the scientific investigation of the distribution, causes, and frequency of certain conditions and diseases. Epidemiologists gather all this information, determine how to best prevent and control those conditions and diseases, and relay recommendations to patients and health care providers. Some of the questions epidemiologists ask during an investigation include what factors play a part in why someone becomes infected with hepatitis, influenza, or measles (and how can we prevent these infections from happening in the first place)? Are you more likely to experience an infant death if you live in a certain state? What puts someone at risk for developing active tuberculosis (TB)? Studies about cancer risks, consequences of long-term toxic substance exposures, and vaccine preventable infections in developing countries all have foundations in epidemiology. As a branch of public health, the scope of epidemiology focuses on ensuring the health of communities through disease prevention and control efforts.

Typically, epidemiologists (or "Epi") have advanced degrees in public health (e.g., a Master of Public Health) with a focus in epidemiology. Epi work in a variety of settings. Many, like myself, work "in the field" (i.e., in the community). Some Epi work for universities, non-profit organizations, hospitals, or state and federal

government agencies such as the Centers for Disease Control and Prevention or the World Health Organization. Epis may also work in the private sector doing research or consulting.

My daily activities include following up on certain communicable diseases that are required by state law to be reported to the HCHD, conducting surveillance of diseases to determine prevalence trends, ensuring cases of disease and outbreaks are appropriately investigated and the results are documented, partnering with healthcare providers to ensure the correct reporting procedures are being followed, and fielding questions from infection control practitioners, clinicians, and the general public. I also lead HCHD's Epidemiology Response Team (ERT), which consists of public health nurses with many different areas of expertise (e.g., TB, sexually transmitted diseases, vaccine-preventable diseases, etc.). The ERT frequently collaborates with the HCHD Environmental Health team to evaluate potential rabies exposures and investigate foodborne and long-term care facility outbreaks. The ERT also participates in terrorism response exercises and addresses the epidemiology preparedness and response needs for Henrico County. The ERT frequently consults with the Virginia Department of Health (VDH) Office of Epidemiology to determine how to best evaluate, control, and make recommendations about reportable diseases and conditions.

Sample Epi Investigation:

A report of *Salmonella* infection in an adult male is faxed in from a physician's office. ERT staff contact the physician's office to verify that the patient has been notified about his infection and ask about any risk factors and treatment prescribed. We call the patient and let him know that we are following up on the report in order to identify potential sources of infection (if possible) and if others are at risk of becoming ill. We ask the patient about foods eaten, activities, travel history, and any contacts of the patient who are ill. ERT staff ensures that the patient does not work in a setting that could easily facilitate the transmission of infection (e.g., a health care facility, daycare, or restaurant) and educates him about characteristics of *Salmonella* infections and prevention methods, including one of the most important control methods - hand hygiene. ERT staff reports information gathered to VDH so that any clusters of illness are identified and further investigated to look for common sources of infection. HCHD maintains detailed records of all investigations. The state public health lab will receive a stool specimen from the patient to help determine whether the *Salmonella* isolated from that individual matches isolates from other patients across the U.S., which might indicate an outbreak. If so, the ERT team completes supplemental surveys with the patient. In outbreak situations, HCHD may also conduct restaurant investigations, food tracebacks, etc.

Provisional Cases of Selected Reportable Diseases (April – June 2011), Henrico County

	Investigations	Confirmed/Probable Cases	Suspect Cases	Ruled Out/Unknown Cases
*Rapidly Reportables				
Hepatitis A	2	1	0	1
Pertussis	5	1	0	4
Measles	1	0	0	1
Tuberculosis	19	2	16	1
GI Illnesses				
Campylobacteriosis	5	5	0	0
Giardiasis	2	1	0	1
Salmonellosis	14	14	0	0
Vectorborne				
Lyme Disease	7	2	0	5
Rocky Mt. Spotted Fever	5	0	0	5
Selected Other				
Rabies exposure	48	---	---	---

*Rapidly reportable diseases must be reported to Henrico County Health Department within 24 hours of suspected or confirmed diagnosis. Call 804.501.5216 to report any of these suspected or confirmed cases. The full Virginia Reportable Disease List can be found at http://www.vdh.state.va.us/epidemiology/documents/pdf/Reportable_Disease_List.pdf

Main Office: 804.501.4522 / Fax: 804.501.4232 / Website: www.HenricoHealth.org

After Hours Emergency Number: 1.866.531.3068

Do you have questions or comments about this issue? Contact us at health@co.henrico.va.us