Nebraska Public Health Laboratory Newsletter

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NPHL Updates

By Peter C. Iwen, PhD, D(ABMM), Director, NPHL

Winter time in Nebraska brings out the worst in respiratory and gastrointestinal virus-caused diseases with this year providing an exceptionally high incidence of both. As always, NPHL, in collaboration with sentinel clinics in Nebraska, continues to participate in the CDC/WHO influenza surveillance program to identify circulating influenza subtypes in our region. Multiple strains of the influenza virus are circulating, adding to the severity of our respiratory season. Robin Williams, DHHS epidemiologist, provides a general overview of our current influenza outbreak in Nebraska while Karen Stiles, the state training coordinator, expands on the need for continued vigilance by providing a historical review of the 100th year after the Great Influenza Outbreak of 1918.

Norovirus-caused disease has also appeared at a higher rate than normal affecting multiple populations in our state. Dr. Rebecca Free, medical epidemiologist and Brianna Loeck, health surveillance specialist at DHHS provide a nice description on how the epidemiologists investigate norovirus outbreaks to guide state institutions on control plans to limit the spread of infection in their facilities.

Finally, NPHL continues to be available to provide laboratory consultation/testing for a variety of older re-emerging pathogens, as well as new emerging pathogens as they appear. Blake Hendrickson, vaccine-preventable disease epidemiologist at DHHS, provides information on the 2017 measles virus outbreak in Nebraska and Dr. Maureen Tierney, DHHS Healthcare Associated Infections director, describes *Candida auris*, a new yeast pathogen that has emerged as a health threat within US medical facilities.

We continue to encourage the medical community to communicate with our laboratory professionals on what they would like to see available from our public health laboratory and look forward to on-going collaborations with our partners.

INSIDE THIS ISSUE:

Influenza in Nebraska

by Robin M. Williams MPH, DHHS Epidemiology Surveillance Coordinator

The Office of Epidemiology in the Division of Public Health at the Nebraska Department of Health and Human Services (NDHHS) collects, compiles, and analyzes information on influenza activity year round in Nebraska and produces a weekly report from October through mid-May.

The Nebraska influenza surveillance system is a collaborative effort between NDHHS and its many partners in the state including, local health departments, public health and clinical laboratories, vital statistics offices, healthcare providers, clinics, schools, and emergency departments. Information is collected from different data sources that allow NDHHS to:

- Find out when and where influenza activity is occurring
- Determine what influenza viruses are circulating
- Determine severity of the influenza strains circulating
- Track influenza-related and other respiratory illness
- Detect changes in influenza viruses

Influenza is a serious viral disease that can lead to hospitalizations and sometimes death. Every year people die of influenza and although most are older or with underlying health conditions, children and healthy adults can also succumb to this disease. During the current influenza season, there have been over 20 influenza-associated deaths in adults and 1 death in a child in Nebraska. Even healthy people can get very sick and spread to others. Visits to a healthcare provider due to influenza-like illness (ILI) continue to be above regional baselines in Nebraska and persons hospitalized with ILI is highest in those over 65 years.

This year the predominant influenza A virus strain is H3N2. The H3 virus tends to cause more serious illness in all age groups. Other viral strains such as A-H1N1-2009 and influenza B virus are also circulating, adding to the severity of this influenza season.

The single best way to protect against seasonal flu and its potential severe consequences, is to receive a seasonal flu vaccine each year and to begin treatment with an antiviral drug as soon as you become ill. CDC vaccine effectiveness (VE) studies show VE of the 2016-2017 flu vaccine against both influenza A and B viruses was estimated to be 42% (95% confidence interval (CI): 35%-48%). This means the flu vaccine reduced a person's overall risk of having to seek medical care at a doctor's office for flu illness by 42%.

The estimations for the current 2017-18 influenza vaccine is similar to the 2016-17 vaccine. Although the vac-

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Outsmarting a Perfect Pathogen: Managing Norovirus Outbreaks in Nebraska

By Rebecca Free, MD, Medical Epidemiologist, DHHS; Brianna Loeck, MPH, Health Surveillance Specialist, DHHS

Norovirus is a common and extremely contagious enteric virus. This virus is believed to be the most common cause of acute gastroenteritis (inflammation of the stomach or intestines) worldwide and of foodborne disease outbreaks in the United States. Outbreaks caused by norovirus are especially common during winter months. Globally, norovirus is estimated to cause 685 million illnesses a year. In the U.S., norovirus is responsible for an estimated 19–21 million cases of acute gastroenteritis, 56,000–71,000 hospitalizations, and 570–800 deaths each year. Norovirus also accounts for approximately 50% of foodborne outbreaks in the U.S. where the causative organism is known.

Acute gastroenteritis caused by norovirus infection is typically a self-limited, mild to moderate disease. The most common symptoms are sudden onset of vomiting, diarrhea, abdominal cramps, or nausea, but other symptoms that may be present include fever, headache, and body aches. Symptoms typically develop within 12–48 hours after infection, with a median incubation period of 33 hours. The illness usually lasts 24–72 hours, and most people recover without treatment. However, in some people, diarrhea can be so severe that it causes dehydration that might require hospitalization.

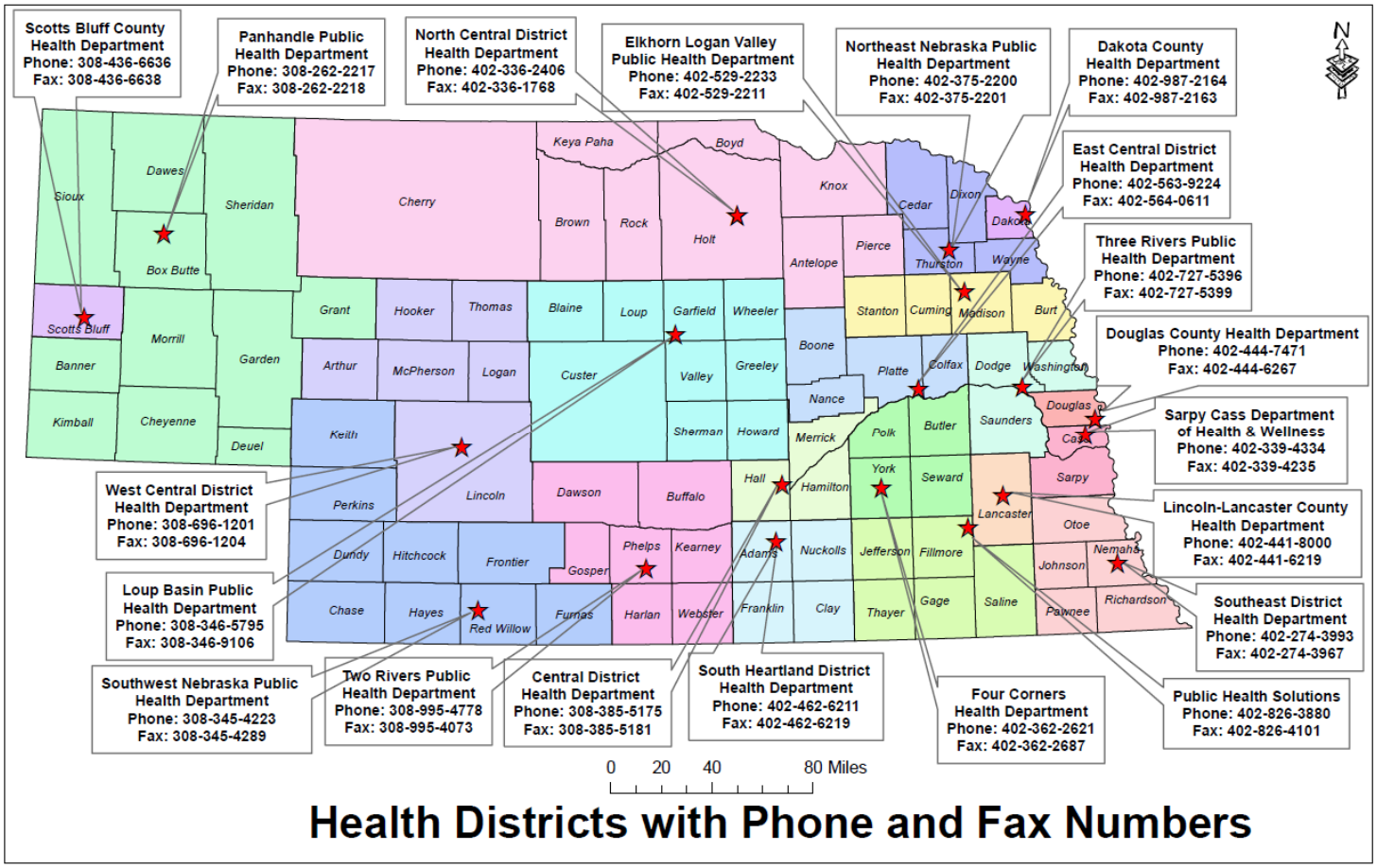
Norovirus is transmitted through contaminated food or water, by contacting contaminated surfaces, and by person-to-person contact. Several factors enable norovirus to spread easily within groups of people: a small number of virus particles can cause infection; large numbers of virus can be excreted by infected individuals; and infected people can shed the virus for several weeks, even after symptoms have resolved. According to Centers for Disease Control and Prevention (CDC), the amount of norovirus that fits on the head of a pin is enough to infect over 1,000 individuals.

Common settings for norovirus outbreaks include health care facilities, such as long-term care facilities and hospitals; food service settings like restaurants and other gatherings where food is served, such as catered events; cruise ships; and schools, daycare centers, and other institutional settings.

When a norovirus outbreak is suspected in Nebraska, public health officials at NDHHS work closely with local health department (LHD) officials to find and document illnesses. Generally, the LHD is the primary contact for the facility involved in the outbreak. The LHD will provide the facility with a norovirus report form and line list, to be completed for reporting purposes. The LHD will also provide the facility with a "norovirus toolkit," which consists of essential information and guidance on preventing and managing norovirus outbreaks. To determine if an outbreak is occurring, NDHHS, the LHD, and the local laboratory work together to ensure that outbreak-related stool specimens that tested positive for norovirus are submitted to NPHL Client Services for further genetic testing. Under certain circumstances, NDHHS might request additional outbreak-related specimens be collected and sent directly to NPHL Client Services for specific testing.

To confirm an outbreak, CDC requires at least **two** individuals who share an epidemiologic link to test positive for the same strain of norovirus. Decisions regarding

(Norovirus, Continued on page 3)



(Norovirus, Continued from page 2)
testing conducted as part of a norovirus outbreak investigation are typically made by epidemiologists and public health officials at the state and local level. Based on the epidemiology, NDHHS and LHDs, working collaboratively with laboratorians to determine if testing is indicated and recommend which tests to order. Clinical laboratories can contact the LHD overseeing their jurisdiction with questions about specimens and testing specifics (see map of LHD jurisdictions and contact information).

Depending on the situation and risk of on-going spread, officials at NDHHS and the LHD might conduct a formal outbreak investigation, which typically involves distributing surveys to infected individuals to capture their symptom history and possible exposures. Responses are then analyzed to define the epidemiology of the outbreak and determine if a cause (e.g., specific food item) can be identified.

Outbreaks caused by norovirus can be challenging to control — the virus is often difficult to trace back to a specific exposure and can be difficult to eradicate from environments once contaminated. Norovirus can survive on environmental surfaces for up to several weeks.

There are steps you can take to protect yourself and decrease the chances of transmission. The following recommendations can help prevent the spread of norovirus and other infectious gastrointestinal illnesses:

- Practice appropriate hand hygiene — wash your hands carefully with soap and water, especially after using the bathroom or changing diapers, and before eating, preparing, handling, or serving food.
- Wash fruits and vegetables before preparing and eating them and cook seafood thoroughly. Food that might be contaminated with norovirus should be discarded.
- Disinfect environmental surfaces and food preparation areas with a chlorine bleach solution with a concentration of 5000–6000 ppm or other disinfectant approved by the U.S. Environmental Protection Agency (EPA) as effective against norovirus.
- Clean up immediately and thoroughly after someone vomits or has diarrhea in a public area, using a chlorine bleach solution (as above). Wash all soiled laundry with hot water and soap. Avoid vacuuming soiled carpet as this can aerosolize virus particles.
- Exclude all food handlers who are ill while they have symptoms and for at least 48 hours after their symptoms have resolved.

A list of EPA-approved products effective against norovirus is available at https://www.epa.gov/sites/production/files/2018-01/documents/2018.05.01.listg_.pdf. Additional information on norovirus can be found on CDC's website, at the following link: https://www.cdc.gov/norovirus/index.html.

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Candida auris: An Emerging Pathogen

By Maureen Tierney MD, MSc. DHHS Healthcare Associated Infections Director; Peter C. Iwen, PhD, D(ABMM), Director, NPHL

Candida auris was first isolated from an ear wound in a patient in China in 2009. This organisms has since spread to other countries, first isolated in the US about 5 years ago. It has now been identified in over 300 cases of illness, usually in patients with prolonged hospitalization and indwelling catheters or devices. This yeast can cause bloodstream infections and even death, particularly in hospital and nursing home patients with serious medical problems.

This organism also is often resistant to the antifungal medicines used to treat candidiasis to include the azoles and amphotericin B. The most likely class of drugs to which it is sensitive is the echinocandin class i.e. caspofungin, anidulafungin, and micafungin. Internationally, about 7% of isolates are resistant to all antifungals. *C. auris* is also noted for causing outbreaks in healthcare facilities where the organism can spread through contact with affected patients and contaminated surfaces or equipment. This opportunistic pathogen can live on surfaces for several weeks and may be resistant to the usual environmental cleaning agents. At this time, the CDC recommends use of an EPA-registered disinfectant effective against *Clostridium difficile* spores.

For laboratory diagnostics, the CDC recommends that all *Candida* isolates obtained from a normally sterile site (e.g. blood, cerebrospinal fluid) be identified to the species level so that appropriate initial treatment can be administered based on the typical, species-specific susceptibility patterns[1]. The CDC also provides recommendations on when to test non-sterile sites.

The ability to differentiate *C. auris* from other *Candida* species is also recognized as a challenge for the laboratory. Traditional biochemical methods for yeast identification such as Vitek 2 YST, API 20C, BD Phoenix yeast identification, and MicroScan yeast identification can lead to a misidentification. The CDC has provided a list of organisms in which *C. auris* can be misidentified when using one of these phenotypic methods[1]. In addition to one of these uncommon misidentified species, some general characteristics that might be considered as "suspicious" for *C. auris* are growth at 40-42°C, lack of pseudohyphae formation, germ tube negative, and resistance to 2 or more classes of antifungal agents. Methods to identify *C. auris* include use of the matrix-assisted laser desorption/ ionization time-of-flight (MALDI-TOF) method using the appropriate databases for Bruker Biotyper and the VITEK MALDI-TOF instrumentation and utilization of molecular methods based on sequencing the D1-D2 region of the 28SrDNA or the Internal Transcribed Region of rDNA.

All confirmed isolates of C. *auris* should be reported to the local or state public health officials with isolates sent to the NPHL for follow up epidemiological testing. Laboratories with a suspect C. *auris* isolates can send these isolates to the NPHL who will collaborate with the CDC for confirmation testing. Questions concerning *C. auris* detection and identification can be directed to Dr. Peter Iwen at the NPHL, piwen@unmc.edu.

References

1. Centers for Disease Control and Prevention (CDC) Recommendations for Identification of *Candida auris*, 24 Oct 2017.

Measles Outbreak Response in Nebraska – 2017

By Blake Hendrickson, MPH, Vaccine-preventable Disease Epidemiologist at DHHS

In the prevaccine era, infection with measles was nearly universal. The virus is extremely contagious and is still common in many countries. The United States eradicated measles after achieving widespread vaccination coverage, however, cases and outbreaks still occur and are often associated with international travelers and undervaccinated communities.

In March 2017, an undervaccinated adult flew from Canada to Omaha, NE. He developed symptoms the following day while travelling to multiple locations around Omaha and a measles diagnosis was later confirmed by immunoglobulin M (IgM) serology and polymerase chain reaction (PCR) testing. Persons with measles are infectious from 4 days prior to 4 days after rash onset[1]. Therefore, many people had been exposed when this individual traveled from Canada to Nebraska and around various locations in Douglas and Sarpy Counties.

After the first laboratory report was received by public health officials, state and local health officials quickly investigated the case and the risk of further spread. Initial priorities were to identify where the patient had travelled and to contact persons who had been exposed. Healthcare providers, public health officials, and laboratories were informed of the situation using the Nebraska Health Alert Network (NeHAN) system and additional updates were sent as more information was obtained.

After the NeHAN messages were delivered and the situation was reported in the media, community awareness of measles was heightened and many cases of febrile rash illness were reported to health departments across the state. It was important that laboratory testing was done for all suspected cases so that public health control measures could be appropriately implemented. Both IgM serology and PCR testing were used to screen suspected cases, with PCR being the preferred diagnostic method. Most people have previously received at least one measles vaccine, which can influence serology test results. On the other hand, measles PCR testing can only identify the virus for the first 7-10 days after symptom onset. The NPHL arranged for exposed individuals to be tested at the CDC reference laboratory during this response.

While screening the suspected cases, multiple false positive results occurred. Two positive IgM serology tests reported were believed to be false positives. The symptoms of the first exposed patient were more consistent with Parvovirus B19 (fifth disease), which is known to cause cross-reactivity with measles serology testing[2], and one of their household members later tested positive for fifth disease. The second case later tested negative for measles PCR, had no known exposures or recent travel, and also had a close contact who tested positive for fifth disease. Therefore, there was no evidence of measles beyond the one isolated case with international travel. This was the first case of measles reported in Nebraska since 2015, the fifth case since 2010.

This incident demonstrates the ongoing risk of importing measles from outside the state and the importance of maintaining high vaccination (Measles, Mumps, Rubella [MMR] vaccine) coverage rates so that isolated cases do not expand into outbreaks. Minnesota experienced a large outbreak that also began in March, 2017 and by July, at least 79 cases were identified among a mostly undervaccinated Somali population[3]. Many children in the affected community were undervaccinated out of parental concerns that the vaccine causes autism. This theory has been discredited but is still propagated by groups opposed to vaccines. It is believed that such misinformation has led to lower vaccination rates in many regions and also contributed to a recent outbreak in Europe, which was the likely source of this incident. The confirmed case in Nebraska had traveled to Germany one incubation period prior to symptom onset and only had 1 dose of MMR vaccine in the distant past.

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1. CDC. Prevention of measles, rubella, congenital rubella syndrome, and mumps, 2013: summary recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep 2013; 62(No. RR-4).
2. Woods, C. (2013). False-Positive Results for Immunoglobulin M Serologic Results: Explanations and Examples. *J Pediatric Infect Dis Soc*; 2(1): 87-90.
3. Minnesota Dept. of Health. "Measles (Rubeola)." Updated 13 July 2017. Web. 27 July 2017. http://www.health.state.mn.us/divs/idepc/diseases/measles/.

Save the Date
NPHL 2018 Events

National Ebola Training and Education Center
Tuesday/Wednesday, Mar 27-28 Omaha
NETEC Emerging Infectious Disease Preparedness Workshop including Laboratory and Clinical Lab Skills
https://netec.org/training/

Nebraska ASCLS Spring Laboratory Meeting
April 4-6 Beardmore Event Center, Bellevue

Quarterly Statewide Partner Conference Call
Monday, May 7@ Noon (11am MT)
Monday, Aug 6 @ Noon (11am MT)
Monday, Nov 5 @ Noon (11am MT)

BT Proficiency Test
Nebraska Challenge Set - October
LPX - CDC Shipping - April/September

BT Training - Full Day Workshop
Southeast NE -TBA
Omaha @NPHL– TBA
Onsite Training - Call to schedule
Gram Stain Training - Call to schedule

APHL Packaging & Shipping Workshop
Tuesday, Sept 18 - Lincoln
Thursday, Sept 20 - TBA

STATPack Drills - Quarterly

One Hundred Years after the Great Influenza of 1918

by Karen Stiles MT(ASCP)SM℠, State Training Coordinator NPHL

The influenza season is particularly harsh this year. The death of a 5 year-old in Nebraska, brought home the reality of the severity. The "Flu" is on everyone's mind, whether having experienced it personally or have known family or friends that contracted the dreaded disease, possibly requiring hospitalization or have died. It seems to come too close for comfort this year.

Why? What is it about this year compared to other years with a milder presentation? Is the particular strain of influenza a concern? Is the weather to blame? The word "influenza" is derived from the Italian language meaning "influence," referring to the cause of the disease. This disease was first thought to be caused by astrological influences[1], but was modified in the 1700s to be the "influence of the cold." Modern scientist believe there is truth to that line of thought. They postulate that cold temperature leads to drier air, dehydrating aerosolized mucus particles that can remain in the environment for a longer period of time. The virus can also survive on surfaces at colder temperatures for a longer amount of time and transmission is highest in cold environments with low relative humidity. Others propose that seasonality is an effect of vitamin D levels on immunity, which is produced in the skin under the effect of solar UV radiation. Such theories, however, only shed a dim light on a very complex disease, not to mention the science of evolving mutations and reassortment by different strains.

Historically, influenza pandemics occur roughly three times a century, infecting the global population. Even Hippocrates described the symptoms of human influenza nearly 2,400 years ago. Also, an entire population of the Antilles were wiped out in 1493, after the arrival of Christopher Columbus[2]. More convincing documentation was seen in the 1580 when an outbreak spread from Russia to Europe and Africa. Influenza continued throughout the 17-18th centuries.

The most legendary of all pandemics, was the Great Influenza of 1918, estimated to have killed 50-100 million people[3]. It has been described as the "greatest medical holocaust in history." Symptoms in the 1918 influenza were uncharacteristic, with a high infection rate of 50% and extreme severity of symptoms caused by a cytokine storm[4] in young adult 20-40 years of age. Striking symptoms included hemorrhaging of the mucous membranes and petechial of the skin.

Stories of the influenza are recounted in numerous sources. The *Great Influenza* by John M. Barry describes at great length, the story of the pandemic beyond just the numbers, detailing the maturity of the medical society in a young United States and the scientists who brought us into the modern era of medicine. He describes how, despite being known as the Spanish Flu, was first discovered in Haskell Co, Kansas and spread like wildfire throughout the world. The global spread was expedited by the deployment of military troops during World War I, with the Spanish being the first to publicly recount the numbers of deaths and documenting in local newspapers. In Philadelphia, Barry describes how the flu spilled over to the civilian population during a parade in Philadelphia.

Karen Brudney, M.D. with Columbia University, New York, NY, give an account in a book review published in the New England Journal of Medicine. "The horror is most vivid in the dilemma surrounding the disposal of bodies. The city morgue had hundreds of bodies stacked up, which produced an unbearable stench, and undertakers rapidly ran out of coffins. Hundreds of bodies lay in homes exactly where they had been at the time of death; burial quickly became impossible, since there were not enough people to dig graves[5]".

Are we prepared for another massive pandemic such as 1918? After 100 years, todays' anti-viral medicine provides relief, vaccines attempt to prevent the severity, but is this sufficient? Hospitals upgrade their influenza preparedness plans, coalitions and communities discuss regional plans, but is this sufficient? Many question whether public health is truly prepared for a future pandemic and why 40 year old "egg" technology is currently used to develop and produce the influenza vaccine. Can technology advance the science combating the constantly evolving mutations and reassortment which occur in the influenza virus? Is city and state government truly prepared, even to quarantine if necessary?

History can be a great teacher. There are many resources on the topic, but John Barry's *The Great Influenza*[6] will especially connect with the laboratorian as the story is told from inside the laboratory. Those who have studied microbiology will recognize the great names of laboratory history. To be prepared, one must understand what happened in the past.

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1. *Influenza*, The Oxford English Dictionary, second edition.
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(Influenza in Nebraska, Continued from page 1)

cine may not be fully protective, vaccination also reduces symptoms in infected individuals. Healthcare providers and the people of Nebraska need to emphasize the use of proper hand washing and cough etiquette (cough/sneeze in your sleeve) to reduce influenza cases and transmission.

Mass Specimen Collection Exercise 2017

by Karen Stiles MT(ASCP)SM[CM], NPHL Training Coordinator

The Omaha Metro Medical Response (OMMRS) Alternate Care Facility subcommittee completed a second exercise, to test protocol for mass specimen collection in the event of a chemical event (see NPHL Newsletter, Spring Edition 2017). The full-scale exercise was held October 27, 2017 at CHI-Midlands Hospital with Scott Pickering, CHI Compliance Specialist assisting with coordination.

During the exercise, patient flow was tested using volunteers in the role of patient players. The Omaha area Ambulatory Surgery Centers provided nursing staff for blood and urine collection. Specimens collected in a real event will be transported to the NPHL for further testing, to confirm the identity of the causative agent(s).

This year's scenario was developed by CPT Bernadette McCrory PhD, MPH, CPE, Nuclear Medical Science Officer with the 72nd Civil Support Team (CST). The setting depicted a terroristic chemical event occurring in the community near the hospital, with over 2,000 inhabitants evacuated from the surrounding area. Almost 90 patients in closest proximity, would require screening for suspected chemical agents, despite the fact symptoms were not evident. Local FBI, Omaha Fire Department Hazmat team and CST would have been onsite, with both mayor and governor advised.

In the event of a real event, OMMRS Emergency Coordination Center would be activated and a specimen collection site determined. In this exercise, floor plans for patient flow to include patient registration, data entry, behavioral health services, urine and blood collection, and patient information stations were set up. All setup and tasks were completed, with exception of actual specimen collection, to make the patient flow as realistic as possible.

The After Action Report revealed that patient flow improved compared to the first exercise in 2016. The number of patients completing all 9 stations had doubled within the same allotted time of 1 hour. The addition of Brett Matthias, Region 6 Behavioral Healthcare and Emilia Tamayo, medical interpreter from One World, greatly enhanced patient services. Signage and additional staff training were areas determined to need additional efforts. These will be built into next fall's exercise at Immanuel Hospital.

Tami Field, Vice President of Patient Care Services and Scott Pickering, Compliance Specialist, CHI-Midlands

From left: Emily Mccutchen, NPHL at Data Entry Station with patient player, Shawnna Wagner

From left: Dennis Curtis and Pamela Denney, Medical Reserve Corps

From Left: Jo Sperry and Judy Bencher, Medical Reserve Corp; and SGT Eric Randolph 72nd Civil Support Team

Meet the Laboratorian, Gail Burke MT(ASCP)

by Karen Stiles MT(ASCP)SM^{CM}, NPHL State Training Coordinator

I have had the pleasure to interact with Gail Burke, laboratory manger at Box Butte Hospital in Alliance, Nebraska on numerous occasions. Gail has recently accepted a position outside the laboratory but still within the hospital. She has carefully planned the transition to other well qualified laboratorians, working with them for over a year to fulfill the manger tasks. We wish her well in her new position. Through the years, Gail has been a positive individual to work with, always willing to keep up-to-date with public health policy and practices. Alliance is a great place to visit, despite the distance. She has agreed to share her story.

What got you interested in pursuing a career in laboratory science?

I started out in the pre-vet program at UNL but discovered I was allergic to anything with fur. I visited with my college advisor and she suggested I look into the Medical Technology (MT) program.

Where did you attend med tech school? Where did you receive your formal training?

I started at UNL then transferred to UNMC which I completed at Clarkson Hospital.

How long have you worked in your present location?

It has been 34 years. I started as a generalist on the bench in 1983; then became laboratory manager in 2003 (within 2 weeks of adopting our daughter). I am now transitioning out of the lab manager role and into the new role of Accreditation Specialist at Box Butte General Hospital.

Are there any specific areas of clinical laboratory science that you have special interest or expertise?

I like Chemistry but, I also enjoy the management.

What is unique about working at your facility and the challenges of being in Alliance, or western Nebraska?

We are a 25 bed critical access hospital. Especially rewarding is that we are able to get providers to come to our facility from such areas as Scottsbluff, Rapid City, Denver, to serve our population so they don't have to go out of town for care.

What do you see as future challenges for the field of medical technology?

I see an exciting and bright future in medical technology with molecular testing and how it will be applied to all areas of the lab.

What is the biggest challenge you face in your job today?

Right now, staffing is our biggest challenge. We are taking call in the lab at nights and on weekends, requiring us to work toward a 24/7 lab. We are currently filling the staffing void with traveling techs while we look into the possibility of hiring international employees.

What advice would you give to a first year clinical laboratory scientist?

Always put service excellence and the patient experience first. We don't get much time with the patient (5-10 minutes draw time) so we need to put our best foot forward to impress upon the patient how much we care about them.

What do you think is the single biggest change in the laboratory since you started?

The challenge of an ever-changing technology. A new analyzer today can become obsolete in 5 years. However, medical technologists love to learn new things and are always looking forward to what's new on the horizon.

What do you like most about your job?

Hands down it's the people. The coworkers in the lab, the hospital staff, the providers and the patients we serve make my job a joy to come to work each and every day.

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IN THIS ISSUE

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