

# THE PREPAREDNESS POST

UTAH DEPARTMENT OF HEALTH

## Cooperating Through an *E. coli* Outbreak *Adapted from an article written by David Heaton, SWUPHD PIO*

Isolated *E. coli* bacterial infections are not uncommon in southern Utah, but a cluster of cases in Hildale in late June caught the attention of local public health officials when it became evident that they were dealing with a serious outbreak. Hildale, Utah and Colorado City, Arizona form a community that straddles the Utah/Arizona state lines, so staff from the local and state health departments serving the towns helped in the investigation.

The *E. coli* strain O157:H7 is particularly dangerous since it produces toxins that can cause hemolytic uremic syndrome (HUS), a condition associated with kidney failure. Other symptoms of this infection typically include diarrhea (often bloody), and stomach cramping.

By July 4th, the Southwest Utah Public Health Department (SWUHD) and Utah Department of Health (UDOH) had received information about six confirmed cases, including two young children who died after developing serious kidney complications. The cases appeared to be clustered geographically. A local epidemiology team was sent to the site in an attempt to locate the source of the illness, while encouraging preventive measures throughout the community. The team, which included the Mohave County Department of Public

Health (MCD-PH), was soon joined by personnel from the UDOH, Arizona Department of Health Services (ADHS) and the Centers for Disease Control and Prevention (CDC).



Health (MCD-PH), was soon joined by personnel from the UDOH, Arizona Department of Health Services (ADHS) and the Centers for Disease Control and Prevention (CDC). Within several weeks, the confirmed case count had grown to 12, most of whom were children requiring hospitalization. While the source of the outbreak was still uncertain, area residents were advised against consuming ground beef or raw milk, since these foods are known to have a higher risk of harboring *E. coli* bacteria. Hundreds of samples were collected and tested through the tireless efforts of environmental health scientists, veterinarians, nurses, laboratorians, and epidemiologists, including human, food, environmental, and water samples.

The investigation was completed by July 28. Community leaders and residents were helpful in assisting health officials with all aspects of the investigation, including surveys, focus groups, and case control studies. Ultimately, it was determined that the

most likely source of the illness was infected animals, followed by person-to-person spread. Several livestock tested positive for the specific *E. coli* strain involved in the outbreak.

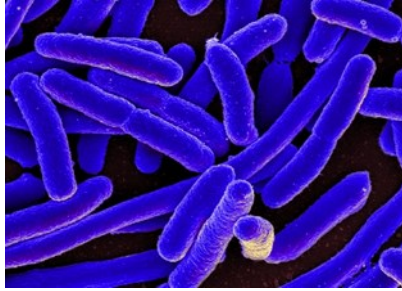
Due to the complexity of the outbreak, the UDOH initiated the Incident Command System (ICS) to coordinate and organize response efforts. The Utah Department of Health's Operations Center in Salt Lake City coordinated the participating agencies through daily calls and ad hoc meetings. A field team (continued on page 2)



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## Cooperating Through an E. Coli Outbreak (continued)



comprised of staff members from each of the participating agencies including: SWUHD, CDC, AZDHS, La Paz County, MCD-PH, and UDOH conducted daily coordination meetings and then carried out the response activities as determined by the field team lead. Field team representatives operated in three sections: environmental investigation, medical/case follow up, and epidemiological investigation. Medical and laboratory partners were coordinated through the field team sections to ensure response activities were completed. All information was shared and coordinated through daily calls, incident action plans, and

email communications between participating agencies. Because of this cooperative effort, consistent messaging was relayed through local communication channels to keep residents up-to-date and informed.

Even though the outbreak is over, public health agencies continue to monitor the region for illnesses such as *E. coli* O157:H7. As this case illustrates, diseases have a devastating impact on individuals and their families, highlighting why coordinated, effective public health surveillance and response is so critical for all communities.

### Commemorating 15 Years of Public Health Emergency Preparedness



Since 2002, the Public Health Emergency Preparedness (PHEP) program has provided vital resources to ensure communities can effectively respond to infectious disease outbreaks, natural disasters, and chemical, biological, radiological, or nuclear threats. Over the past 15 years, the PHEP cooperative agreement has provided more than \$11 billion to public health departments across the nation. This funding helps health departments build and strengthen their abilities. Preparedness activities funded by the PHEP cooperative agreement are targeted specifically for the development of emergency-ready public health departments that are flexible and adaptable.

In response to the 2009 H1N1 influenza pandemic, the Centers for Disease Control and Prevention (CDC) also administered funding through the Public Health Emergency Response grant to increase state and local preparedness and response capacity during the pandemic.

In commemoration of the PHEP anniversary and National Preparedness Month in September, CDC has released a supplement to the American Journal of Public Health, *The Evolution of Public Health Emergency Management from Preparedness to Response and Recovery (Volume 107:S5)*. To read the supplement, visit <http://ajph.aphapublications.org/doi/10.2105/AJPH.2017.304060>

BeReadyUtah.gov

- ✓ Make a Plan
- ✓ Get a Kit
- ✓ Be Informed
- ✓ Get Involved



## Kudos to Paul Patrick and Dean Penovich

Recently, Paul Patrick, Utah Department of Health Division Director, Family Health and Preparedness and Dean Penovich, Bureau Director, Bureau of Emergency Medical Services and Preparedness, were named Outstanding Public Health Professionals for 2017 by the Utah Association of Local Boards of Health. This award is reflective of the principles used over the past 15 years with public health preparedness. The state and local partnership built in preparedness worked so well that the entire Utah public health system adopted these principles. The principles are: Trust, Respect, Excellent Communication, Collaboration, Funding, and Public Health Service Delivery.

### Principles for a Unified and Effective State and Local Public Health Partnership

#### Trust and Respect

- Demonstrate trust among all jurisdictions.
- Show reciprocal respect.
- Treat each other as partners in the statewide public health system.
- Understand and appreciate the role of each agency.
- Maintain good relationships between state and local agency representatives.
- Have budget transparency between agencies.
- Share information regularly, including all grant information.

#### Excellent Communication

- Establish honest, up front, open, direct, ongoing and two-way communication that is friendly, timely, and respectful.
- Communicate regularly between all thirteen health departments; establish communication plans that include decision-making, programmatic and budget points of contact.
- Be willing to listen and work on solutions. Clearly define needs, share information and negotiate openly.

#### Collaboration

- Establish a shared vision for each public health program.
- Emphasize collaboration when hiring and training employees.
- Recognize and discuss shared successes.
- Support regular meetings, work groups, and committees to foster collaboration and shared decision making.

#### Funding

- Make every effort to allocate funding to the local level while funding necessary state health department operations.
- Allocating funding and responsibility for provision of public health services should consider:
  - The importance of strong local health departments that are able to provide comprehensive public health services customized for the people in their jurisdiction and
  - The importance of a strong state health department with the specialized expertise to support and assure effective public health services statewide.
- Acquire local, state, and federal funds necessary to support the entire Utah public health system. State and local health departments should consider it their responsibility to find funding for the public health system.

#### Public Health Service Delivery

- Public health services are evidence-based and resources are allocated to support evidence-based activities. Resources and responsibility to provide population based public health services should be assigned so as to maximize the benefits to the public health of the people of Utah.
- Direct provision of services to individuals should be primarily the responsibility of local health departments.
- Resources to provide public health services should be allocated in proportion to the work required to provide those services with an understanding that the cost to provide services may be higher for smaller populations and in rural areas.
- Allocation of resources to deliver public health services should consider:
  - The importance of serving populations with the greatest need so as to reduce health disparities.
  - The efficiency and effectiveness of service delivery.

## There's No Place Like Home *Preparing for mass casualties*

In August 2017, the state of Utah hosted the National Mass Care Exercise. The exercise brought together professionals from local, state, federal, and tribal agencies to discuss and plan how Utah will manage resources in sudden large scale disasters. Members of the Utah Department of Health (UDOH) Bureau of Emergency Medical Services and Preparedness (BEMSP) staff are members of the State Emergency Response Team (SERT) and several played in the exercise.



The exercise tested some core capabilities including operational communication, operational coordination, and mass care services. Since the exercise was primarily focused on Emergency Support Function (ESF) 6 (Mass Care, Emergency Assistance, Housing, and Human Services), UDOH's role of ESF 8 (Public Health and Medical Services) served to support the needs identified by ESF 6. Some items exercised included getting medications to established shelters, providing coordination with local health departments to conduct shelter inspections, and coordination of a local/state/federal health and medical response to support the mass care efforts.

The Division of Emergency Management holds monthly SERT trainings with all ESFs to refine the emergency operation procedures which were used during this exercise.



Joint Information Center

## Using Syndromic Data for Opioid Overdose Surveillance in Utah

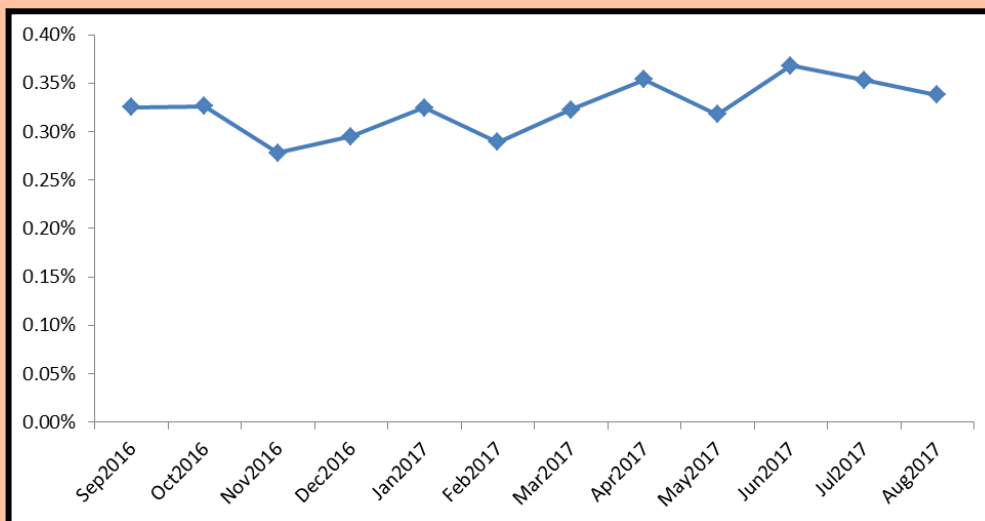
*By Wei Hou*

Drug overdose deaths and opioid-involved deaths continue to increase in the United States, and Utah is no exception. To better understand the impact in Utah and implement public health interventions, the Utah Department of Health (UDOH) collects and analyzes surveillance data for opioid-related overdoses. The current surveillance data for opioid-related overdoses is based on mortality data provided by the Office of the Medical Examiner (OME). However, timeliness of the data is a concern as lag time in receiving data from the OME can often be up to six months, or more. In an effort to receive surveillance data for opioid overdoses and deaths more rapidly, UDOH is also collecting syndromic data to monitor fatal and nonfatal opioid-related overdoses in Utah. The fundamental objective of syndromic surveillance is to identify illness clusters early, before diagnoses are confirmed and reported to public health agencies, and to initiate a rapid response, thereby reducing disease and death.

Patient data on emergency department (ED) visits are collected from Utah facilities for opioid overdose surveillance, and analyzed using the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) system. This type of syndromic analysis allows for early detection of abnormal patterns in ED visits. A total of 38 out of 48 acute care hospitals and multiple urgent care facilities in Utah are enrolled in the ESSENCE system. UDOH uses chief complaint and discharge diagnosis reported by these facilities for analysis.

Between September 1, 2016 and August 31, 2017, UDOH identified 4,063 opioid-related overdose ED visits through the ESSENCE system using both chief complaint and discharge diagnosis data. Opioid-related visits comprised approximately 0.3% of the total ED visits (1,267,244) reported during this time (Figure 1). More than half of the opioid-related emergency visits were reported from five facilities. Rate of opioid-related visits ranging from 0 to 292 visits per 100,000 population per year (median: 108 visits per 100,000 population per year), with an overall rate for the state of 129 visits per 100,000 population per year (Figure 2). The highest rate of opioid-related visits occurred among patients aged 18 to 24 years (219 visits per 100,000 population per year), and 59% of all opioid-related patients in Utah were female.

**Figure 1: Monthly ED Visits for Opioid-related Overdose as Percent of Total Visits in Utah**



(continued on next page)

## Using Syndromic Data for Opioid Overdose Surveillance in Utah (continued)

These results are estimates of opioid-related overdoses reported using close to real-time data. These results do not include visits with incomplete or incorrectly coded chief complaints or discharge codes, or cases of opioid overdose patients who do not present to an ED or urgent care facility. The results from using syndromic data are consistent with existing surveillance findings using mortality data in Utah. This suggests that syndromic surveillance data are useful for rapidly capturing opioid events, which may allow for faster public health response and interventions.

### International Influenza Surveillance Update

*By Rachele Boulton, MSPH*

*The CDC's Influenza Division uses cooperative agreements, paired with technical assistance, to assist Ministries of Health in countries throughout the world establish and improve capacity for sustainable epidemiologic and virologic influenza surveillance programs. Ensuring these systems generate useful, reliable data consistently involves routine assessment of how well they are functioning, identification of problems and assistance in solving those problems. Council of State and Territorial Epidemiologists (CSTE) frequently collaborates with CDC and the Association of Public Health Laboratories (APHL) to conduct surveillance assessments. Recently, Rachele Boulton of the Utah Department of Health (DOH) completed two consecutive international influenza surveillance assessments in Sri Lanka and Maldives. This is Rachele's blog post about her experience.*

I had the opportunity to represent CSTE on an international influenza surveillance assessment to Sri Lanka and the Maldives in May 2017. For each assessment, I was accompanied by the CDC Project Officer and an APHL representative conducting a concurrent influenza laboratory capacity assessment. Each of my assessments lasted four to five days, and I spent the majority of my time with the epidemiology surveillance staff. Each country begins influenza surveillance with varying amounts of existing resources and infrastructure, and each country encounters vastly different challenges throughout the process of building and maintaining influenza surveillance. One of my favorite components of the assessments is the site visits to hospitals and clinics that see patients and collect epidemiologic and laboratory data. I am always impressed with the enthusiasm, dedication and ingenuity of the surveillance staff and their clinical and laboratory partners to build and maintain high-quality influenza surveillance systems for their country.

My favorite part of my most recent trip to the Maldives was the opportunity to put down the clipboard, step out of the role of the assessor and work in depth with the data alongside surveillance staff. We worked together to develop several charts and graphs that demonstrated influenza trends in the Maldives, discussed how these figures could be compiled into different reports to tell a comprehensive and meaningful story, and identify future data collection and analysis goals.



*Rachele Boulton (second from left) joins assessors and surveillance staff in Sri Lanka.*

I thoroughly enjoyed my time spent in Sri Lanka and the Maldives, and I look forward to future opportunities.

## Calendar

## 2017 Training

Date	Event	Location	Information
October 4-5 8:30 a.m.-5:00 p.m.	ICS-300 Intermediate Incident Command System for Expanding Incidents  UTrain #1011051	Lehi City Offices  153 N 100 E Lehi ,Utah	Mark Hafen 385-201-2277 <a href="mailto:mhafen@lehi-ut.gov">mhafen@lehi-ut.gov</a>
October 12-13 8 a.m. to 5:00 p.m.	Medical Preparedness & Response to Bombing Incidents MGT 348  UTrain #1061210	Heritage Center  105 N 100 E Cedar City, UT 84721	John Higley (435) 267-1740 <a href="mailto:jhigley@ironcounty.net">jhigley@ironcounty.net</a>  Ryan Putman (801) 440-7696 <a href="mailto:rputman@utah.gov">rputman@utah.gov</a>
October 13 7:30 a.m. (all day)	Disaster Symposium  UTrain #1065094	Salt Lake City Marriott University Park  480 Wakara Way	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>
October 18-19 8:00 a.m.—5 p.m.	Emergency Response to Domestic Biological Incidents PER-220  UTrain #1071399	Intermountain Center for Disaster Preparedness 325 8th Ave and C Street LDS Hospital 3rd Floor North Salt Lake City, UT 84143	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>
October 24—25	Basic Public Information Officer Training  UTrain #1011053	Utah Task Force 1 6726 S. Navigator Drive  West Jordan, UT	Karen Madsen 801-538-3410 <a href="mailto:kmadsen@utah.gov">kmadsen@utah.gov</a>  Ted Wooley 801-556-3166 <a href="mailto:tedwooley@utah.gov">tedwooley@utah.gov</a>
November 7-8	ICS-300 Intermediate Incident Command System for Expanding Incidents  UTrain #1011051	Bryce Canyon National Park Highway 63, HQ Number 1  Conference Room D Bryce ,UT	Karen Madsen 801-538-3410 <a href="mailto:kmadsen@utah.gov">kmadsen@utah.gov</a>  Ted Wooley 801-556-3166 <a href="mailto:tedwooley@utah.gov">tedwooley@utah.gov</a>
November 8-9 8:30 a.m.—12:30 p.m.	Incident Command System Public Health - Hospital ICS 100-200 ICS 700 - Quick Start	San Juan Co Health Department- 735 South 200 West  Blanding, UT	<a href="https://www.eventbrite.com/e/incident-command-system-ics-training-tickets-37738642295">https://www.eventbrite.com/e/incident-command-system-ics-training-tickets-37738642295</a>  <a href="mailto:christinewarren@utah.gov">christinewarren@utah.gov</a>



UTAH DEPARTMENT OF  
**HEALTH**

Bureau of Emergency Medical Services and Preparedness

## Calendar

## 2017 Training

Date	Event	Location	Information
November 8 8 a.m.-5 p.m.	Community Resilience UTrain #1071291	Intermountain Center for Disaster Preparedness 325 8th Ave and C Street LDS Hospital 3rd Floor North Salt Lake City, UT	Barb Clark 801-408-7061 barb.clark@imail.org
November 17 8 a.m.-4 p.m.	Utah One Health Symposium 2017	S.J. Quinney College of Law, University of Utah 383 South University Street Salt Lake City, UT	<a href="https://www.eventbrite.com/e/utah-one-health-symposium-2017-tickets-35353358848">https://www.eventbrite.com/e/utah-one-health-symposium-2017-tickets-35353358848</a> Kerry A. Rood, MS, DVM Associate Professor and Extension Veterinarian 435-797-1882 (office)
December 6 8:30 a.m.—4:30 p.m.	Joint Information System/Joint Information Center Planning for Tribal, State and Local Public Information UTrain #1020466	Bear River Health Department 655 E. 1300 North Logan, UT	Karen Madsen 801-538-3410 kmadsen@utah.gov

Division of Emergency Management Training Calendar

Website: <http://dem.utah.gov/training-and-exercise/training/>

*Newsletter produced by Charla Haley*



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