

# THE PREPAREDNESS POST

UTAH DEPARTMENT OF HEALTH

## Preparing for Health Emergencies by Charla Haley

Recently, the Robert Wood Johnson Foundation (RWJF) released the 2018 National Health Security Preparedness Index. Out of a possible 10 points, the United States averaged a 7.1, a nearly 3 percent improvement over last year and nearly 11 percent better than when the index began five years ago. The Preparedness Index analyzes 140 measures such as number of pediatricians and flu vaccination rates, to come up with a composite score that provides insight into the state of health security. Utah's score came in at 7.4, higher than the national average.

Utah's biggest improvement was recorded in the Community Planning & Engagement domain which increased by 14.1% between 2013 and 2017. The national

average was 6 while Utah recorded a 7.3. Among the various requirements where Utah recognized success was the Utah Department of Health becoming accredited by the Public Health Accreditation Board in November 2017. The state of Utah also received high marks for all the work being done at the state and local levels to continue developing a robust system of health care coalitions.

Utah's highest health security level in 2017 occurred in the domain of Incident & Information management with a 9.7. The national average was 8.8. Utah received a score of 100 based on the Centers for Disease Control and Prevention's (CDC) assessment of the state health department dispensing plan for prophylaxis or disease fighting materiel from the Strategic National Stockpile. Another perfect score was in the area of the state health department coordination plan with hospitals and alternate facilities to procure medical materiel in an emergency.

The area where Utah needs to see some improvement is Healthcare Delivery which involves taking actions to ensure access to high quality medical services across the continuum of care during and after disasters and emergencies.

To read the entire study, visit:  
<https://nhspi.org/>

### What the Index Measures

The Index includes 140 measures grouped into six broad domains of health security:

- **Health security surveillance:** detecting and monitoring health threats and identifying where hazards start and spread so that they can be contained rapidly;
- **Community planning and engagement:** maintaining supportive relationships among government agencies, community organizations, and individual households; and developing shared plans for responding to hazards;
- **Information and incident management:** deploying people, supplies, money, and information to the locations where they are most effective in protecting health and safety;
- **Healthcare delivery:** ensuring access to high-quality medical services across the continuum of care during and after emergencies;
- **Countermeasure management:** storing and deploying medical and pharmaceutical products that protect against diseases and toxic agents, including vaccines, prescription drugs, masks, gloves, and medical equipment;
- **Environmental and occupational health:** maintaining the security and safety of water and food supplies, testing for hazards and contaminants in the environment, and protecting workers and emergency responders from hazards while on the job.

### What It Does Not Measure

The Index does not characterize the performance of individual state or local public health preparedness programs, healthcare preparedness programs, or other sector-specific initiatives. It measures **collective impact** in health security across multiple sectors.



### The National Health Security Preparedness Index



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## Timing is Everything

*Castor Bean Accidental Ingestion Investigation by Jackie Patel*

Over the past year, the chemical threat response (CT) group at The Utah Public Health Laboratory (UPHL) has focused on its long-neglected outreach program. To breathe new life into the program, the CT group joined forces with the BT group, the lab bio-safety officer, and the client relations manager to visit local health departments and many hospitals throughout Utah's large and geographically diverse countryside. As with many states in the western U.S., a lot of areas are very rural and remote and require an overnight stay.



At each hospital visit, a member of the CT team provides a flyer to the laboratory managers and any other staff who are able to attend summarizing UPHL's testing capabilities and contact information. The CT team also explains the UPHL's 24/7/365 lab readiness.

During a recent routine outreach trip to a southern Utah hospital, the CT group introduced the lab's capabilities for screening clinical urine samples for arbaine and ricinine. Coincidentally, the hospital was treating a patient who accidentally ingested castor beans while working on a landscaping site. The castor beans were given to the patient in a ziplock type bag by another person working on the property. Mistaking them for pine nuts, the patient ate them.

During the outreach visit, the CT group was able to coordinate with the hospital to organize sample collection, packaging, and delivery of urine samples to UPHL for confirmation of ricinine levels. The hospital was located approximately four hours away from the laboratory. Due to the distance, the sample was collected, frozen, and then shipped via overnight courier. The UPHL worked in cooperation with local and state level epidemiologists to gather all the patient information.

As a result of the long distance between the hospital and UPHL, the lab was able to ready the instrument, prepare all the lab supplies required for testing, and gather the paperwork needed to receive the sample. Lab staff worked quickly and all were ready to run by the time the sample arrived. Unfortunately, it was frozen solid. Lesson learned? Allow for thaw time.

Thanks to a prior ricin poisoning in Utah, lab staff knew it would be important to make a series of dilutions of the urine sample to account for ricinine levels over the calibration range. Once the sample thawed, it was prepared at full strength, as well as a 1:1 and 1:2 dilution. Ricinine was present in the sample and the dilutions proved useful as the undiluted sample was above the greatest calibrator, and only in calibration range at the dilution factor of 1:2.

Because of critical preparedness lessons, the lab was able to receive the sample, run the sample, review the data, and get the patient result report to the hospital the same day the sample arrived. In other words, a successful experience for the outreach program that also helped cement the lab-hospital-epi relationship.

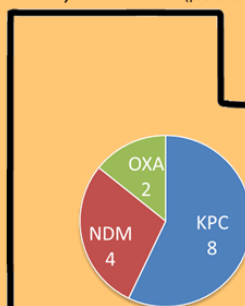
## ‘Nightmare Bacteria’ in Utah

by Amanda Smith, Maureen Vowles and Karen Singson

Utah Healthcare Associated Infections/Antimicrobial Resistance Program

Bacteria that no longer respond to routine antibiotic treatments, also known as multi-drug resistant organisms (MDROs) are becoming a more common threat worldwide. The Centers for Disease Control and Prevention (CDC) recently released a “Vital Signs” report, covering bacteria with unusual resistance or ‘nightmare bacteria’ and described the detailed strategy for prevention and containment of these organisms. These bacteria include common bacteria, such as *E.coli* and *Klebsiella* species, that have developed resistance to commonly used antibiotics, including carbapenem antibiotics. Carbapenems are generally reserved for infections that are difficult to treat, and are usually considered one of the last options for treatment. These bacteria can also produce a carbapenemase enzyme that inactivates carbapenems; and the genes that code for this enzyme can be easily passed to other bacteria, making this a significant public health concern. These infections are most common in people with extensive antibiotic history, multiple or extended healthcare facility stays, medical procedures or invasive devices (e.g., urinary catheters and central lines), international travel, and/or international surgeries or healthcare stays. About a third of these infections occurred in people who have taken numerous antibiotics for urinary tract infections (UTIs).

Carbapenemase Producing (CP) *Enterobacteriaceae* (CP-CRE) and *Acinetobacter* species (CP-CRA) in Utah, 2017-2018 (preliminary)



### 5 most common Carbapenemase Genes

1. New Delhi Metallo- $\beta$ -lactamase (NDM)
2. *Klebsiella pneumoniae* carbapenemase (KPC)
3. OXA-48
4. VIM
5. IMP

Pan-resistant organisms	7
Community CP cases	5
CP cases with international travel/medical treatment	4

Over the past few years, carbapenem-resistant organisms have been found throughout the United States, including Utah. Since the beginning of 2017, 240 cases of carbapenem-resistant organisms have been reported to Utah public health from all 13 local health districts. Also, since testing for carbapenemase production became widespread in 2017, 221 cases of carbapenemase-producing bacteria were reported nationwide, with 14 cases identified in Utah. Four of these cases were associated with international travel, and five cases were identified in non-hospitalized community patients with UTIs. Additionally, seven cases of bacteria that are resistant to all routinely tested antibiotics (pan-resistant) have been reported in the state.

The CDC’s containment strategy for these ‘nightmare bacteria,’ likened to controlling spread of a fire, is a collaborative approach between multiple stakeholders, including public health, healthcare facilities, and the general public.

### How is public health in Utah responding to ‘nightmare bacteria’?

- Under the new 2018 Utah Communicable Disease Rule, healthcare providers and clinical laboratories serving facilities in Utah are required to report certain bacteria resistant to carbapenem antibiotics to Utah public health, specifically, enteric bacteria (*Klebsiella* spp., *Enterobacter* spp. and *E. coli*), *Acinetobacter baumannii* and *Pseudomonas aeruginosa* within three working days of identification.
- Testing facilities are requested to submit samples of these bacteria to the Utah Public Health Laboratory for further testing.

## ‘Nightmare Bacteria’ in Utah (continued)

- To quickly prevent further spread to other people, Utah public health initiates investigation for infections due to carbapenem resistant bacteria within one to three days of reporting to public health.
- Many people who have become sick with these ‘nightmare bacteria’ have been in multiple facilities, including hospitals and long-term care facilities. Public health helps coordinate prevention activities with all providers and facilities involved.
- In high-risk situations where there is evidence of high potential for spread, public health conducts extensive investigations and surveillance to contain these infections and reduce transmission risks.

### What are healthcare facilities in Utah doing to prevent spread of these ‘nightmare bacteria’?

- Many hospitals and long-term care facilities have implemented antibiotic stewardship programs to encourage appropriate antibiotic prescription and usage to prevent further antibiotic resistance.
- Patients or residents with carbapenem-resistant bacterial infections are placed in isolation precautions where care providers and visitors must use special measures and wear personal protective equipment, such as gowns and gloves, to prevent further spread of these infections.
- Healthcare facilities clean and disinfect medical equipment and facility surfaces with appropriate methods and disinfectants effective against these bacteria.
- All healthcare facilities provide education and expect care providers to use effective hand hygiene practices (alcohol-based hand sanitizer or soap and water) and to wear personal protective equipment, e.g., gown and gloves, to avoid contact and spread with infectious body fluids, such as wound drainage.
- Healthcare providers and facilities are encouraged to share MDRO and other information about a patient’s infectious status to the next care provider so appropriate prevention measures can be implemented.

### What can the general public do to prevent spread of or prevent infections with ‘nightmare bacteria’?

- Practice good hygiene, especially effective hand-washing, prior to eating or preparing food and when in close contact with ill and immunocompromised individuals.
- Take antibiotics as prescribed for bacterial infections, and not for viral infections, such as the common cold or influenza, when antibiotics are ineffective.
- Talk to healthcare providers if you have had an infection with bacteria resistant to carbapenem antibiotics so that appropriate prevention measures can be used.
- Communicate with your healthcare providers about infection prevention, take care of chronic health conditions, and make sure recommended vaccinations are up-to-date.

For more information or questions about multi-drug resistant organisms, contact the Utah Department of Health, Healthcare Associated Infections/Antimicrobial Resistance program (801) 538-6191 [Amanda Smith—[amandarsmith@utah.gov](mailto:amandarsmith@utah.gov) or Maureen Vowles—[mvowles@utah.gov](mailto:mvowles@utah.gov)].

**BeReadyUtah.gov**

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



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## The Importance of Vaccines

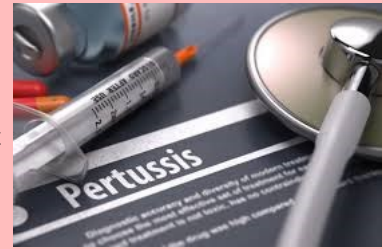
by Bree Barbeau

In March 2018, the Salt Lake County Health Department (SLCoHD) identified pertussis outbreaks at three school locations in Draper, Utah including Corner Canyon High School, Draper Park Middle School, and Oak Hollow Elementary School. Vaccination rates of 80%-100% were reported among these cases. SLCoHD sent notification letters to students and staff but no school exclusions were recommended.

These outbreaks serve as a reminder that the best way to prevent pertussis is to get vaccinated. Pertussis vaccines are effective, but protection may wane over time. Similarly, infection with pertussis does not result in lifelong immunity. Therefore, the Centers for Disease Control and Prevention (CDC) recommends pertussis vaccination for everyone, even those who have previously been infected with or vaccinated against pertussis.

Like many respiratory illnesses, pertussis spreads by coughing and sneezing while in close contact with others, who then breathe in the bacteria. CDC recommends practicing good hygiene to prevent the spread of respiratory illnesses. To practice good hygiene you should:

- Cover your mouth and nose with a tissue when you cough or sneeze.
- Put your used tissue in the waste basket.
- Cough or sneeze into your upper sleeve or elbow, not your hands, if you don't have a tissue.
- Wash your hands often with soap and water for at least 20 seconds.
- Use an alcohol-based hand rub if soap and water are not available.



## ShakeOut, Don't Freak Out

In 2012, Utah embarked on an earthquake preparedness campaign to help Utahns get ready for the big one. Following the example of California and other states, Utah joined the the ShakeOut movement. Since that time, millions of people have participated in the Great Utah ShakeOut, the only statewide emergency drill in Utah.

It happens at 10:15 a.m. on the third Thursday in April.

The ShakeOut promotes the following goals:

- Teach people the correct earthquake actions of drop, cover and hold on.
- Motivate people to do more emergency preparedness

Did you know Utah has a 57 percent chance of an earthquake of magnitude 6 or higher in the next 50 years?

Remember to register at [ShakeOut.org](http://ShakeOut.org).



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## Calendar

## 2018 Training

Date	Event	Location	Information
June 6-7 1 p.m. to 5 p.m. 8 a.m. to 5 p.m. YOU MUST ATTEND BOTH DAYS	Medical Examiner Investigator Mass Fatality Training UTrain #1077425	Salt Lake Community College—Student Pavillion	<a href="mailto:lanettesorensen@utah.gov">lanettesorensen@utah.gov</a> 435-994-1277
June 8 6:30 a.m. to 2:30 p.m.	ICS-300 Intermediate ICS for Expanding Incidents UTrain #1078111	Salt Lake County Government Center: University training room 950, North Building, 4th floor 2001 South State St Salt Lake City, Utah	Tommy Miller <a href="mailto:tmiller@unifiedfire.org">tmiller@unifiedfire.org</a> 385-226-6204
June 13-15 6:30 a.m. to 2:30 p.m.	Certified Healthcare Emergency Coordinator UTrain #1076187	Intermountain Center for Disaster Preparedness LDS Hospital 3rd Floor North 325 8th Ave and C St Salt Lake City, UT	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a> \$250 class fee
June 15 6:30 a.m. to 2:30 p.m.	ICS-300 Intermediate ICS for Expanding Incidents UTrain #1078111	Salt Lake County Government Center: University training room 950, North Building, 4th floor 2001 South State St Salt Lake City, Utah	Tommy Miller <a href="mailto:tmiller@unifiedfire.org">tmiller@unifiedfire.org</a> 385-226-6204
June 15, 16, 22, 23 Fridays (15 & 22) 5:30 p.m. to 9:30 p.m. Saturdays (16 & 23) 8 a.m. to 5 p.m.	Community Emergency Response Team (CERT) Program Manager Course (G427)	Salt Lake County Emergency Operations Center 3380 South 900 West Salt Lake City, Utah	Matt Burchett <a href="mailto:Mburchett@unifiedfire.org">Mburchett@unifiedfire.org</a> 801-842-4412
June 18-19 8 a.m. to 5 p.m.	ICS-300 Intermediate ICS for Expanding Incidents UTrain #1078111	Carbon County Emergency Operations Center : Room 104 - classroom 1551 East Airport Road Price, Utah	Justin Needles <a href="mailto:justin.needles@carbon.utah.gov">justin.needles@carbon.utah.gov</a> 435-636-3742
June 27-28 9 a.m. to 5 p.m. 9 a.m. to 4 p.m.	Community Mass Care and Emergency Assistance (G108) UTrain #1013917	Sevier County SAR and EOC Facility 801 E 300 N Richfield, Utah	<a href="mailto:dpsdemtrainex@utah.gov">dpsdemtrainex@utah.gov</a> 801-538-3400 <a href="https://dem.utah.gov/training-and-exercise/">https://dem.utah.gov/training-and-exercise/</a>

## Calendar

## 2018 Training

Date	Event	Location	Information
July 18 9 a.m.	Planning for the Needs of Children in Disasters (G366) UTrain #1076163	State Office Building— B110 Salt Lake City, UT	<a href="mailto:dpsdemtrainex@utah.gov">dpsdemtrainex@utah.gov</a> 801-538-3400 <a href="https://dem.utah.gov/training-and-exercise/">https://dem.utah.gov/training-and-exercise/</a>
July 11 8 a.m. to 5 p.m.	ICS/EOC Interface (G191) UTrain #1011067	State Office Building - B110 : Room B110 450 N. East Capitol Dr Salt Lake City, Utah	<a href="mailto:dpsdemtrainex@utah.gov">dpsdemtrainex@utah.gov</a> 801-538-3400 <a href="https://dem.utah.gov/training-and-exercise/">https://dem.utah.gov/training-and-exercise/</a>
July 18 9 a.m.	Planning for the Needs of Children in Disasters (G366) UTrain #1076163	State Office Building - B110 : Room B110 450 N. East Capitol Dr Salt Lake City, Utah	<a href="mailto:dpsdemtrainex@utah.gov">dpsdemtrainex@utah.gov</a> 801-538-3400 <a href="https://dem.utah.gov/training-and-exercise/">https://dem.utah.gov/training-and-exercise/</a>
July 31-Aug. 1	Readiness: Training Identification Preparedness Planning MGT 418 UTrain #1064671	Intermountain Center for Disaster Preparedness LDS Hospital 3rd Floor North 325 8th Ave and C St Salt Lake City, UT	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>
Aug. 8 8 a.m. to 5 p.m.	Personal Protective Measures for Biological Events (PPMB PER 320) UTrain #1063694	Intermountain Center for Disaster Preparedness LDS Hospital 3rd Floor North 325 8th Ave and C St Salt Lake City, UT	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>
Aug. 21 9 a.m. to 4 p.m.	Basic Medical Moulage	Intermountain Center for Disaster Preparedness LDS Hospital 3rd Floor North 325 8th Ave and C St Salt Lake City, UT	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>



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**Calendar****2018 Training**

Date	Event	Location	Information
Aug. 22-23 8 a.m. to 5 p.m.	Emergency Operation Center Management and Operations (G-775) UTrain #1011065	State Office Building - B110 : Room B110 450 N. East Capitol Dr Salt Lake City, Utah	Kris Repp <a href="mailto:krepp@utah.gov">krepp@utah.gov</a> 801-209-2070
Aug. 28- 31 8:30 a.m. to 5 p.m.	L 582 Mitigation for Tribal Governments UTrain #1077009	State Capitol Building - EOC : Room State Emergency Operations Center 350 North State Street Salt Lake City, Utah	<a href="mailto:dpsdemtrainex@utah.gov">dpsdemtrainex@utah.gov</a> 801-538-3400 <a href="https://dem.utah.gov/training-and-exercise/">https://dem.utah.gov/training-and-exercise/</a>
Aug. 30 9 a.m. to 4 p.m.	Moulage Special Effects UTrain #1071892	Intermountain Center for Disaster Preparedness LDS Hospital 3rd Floor North 325 8th Ave and C St Salt Lake City, UT	Barb Clark 801-408-7061 <a href="mailto:barb.clark@imail.org">barb.clark@imail.org</a>
Sept. 5-6 8 a.m. to 5 p.m.	Recovery From Disaster, the Local Government Role (G-205) UTrain #1011066	State Office Building - B110 : Room B110 450 N. East Capitol Dr Salt Lake City, Utah	Karen Madsen <a href="mailto:kmadsen@utah.gov">kmadsen@utah.gov</a> (801)538-3410
Sept. 7, 8, 14, 15 Fridays (7&14) 5:30 p.m. to 9:30 p.m.  Saturdays (8&15) 8 a.m. to 5 p.m.	Community Emergency Response Team Train-the-Trainer (G428) UTrain #1033034	Salt Lake County Emergency Operations Center (2.4 miles away) 3380 South 900 West Salt Lake City, Utah	Matt Burchett <a href="mailto:Mburchett@unifiedfire.org">Mburchett@unifiedfire.org</a> 801-842-4412

Division of Emergency Management Training Calender

Website: <http://dem.utah.gov/training-and-exercise/training/>*Newsletter produced by Charla Haley*

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