



Preparing our Community:

Putting Public Health
Preparedness and
Response Theory into Action

Exercise Bite Back 2014



Introductions

- University of Michigan School of Public Health
 - Eden Wells, MD, MPH, FACPM
 - Department of Epidemiology
 - Phoebe Goldberg, MPH, CHES
 - Michigan Public Health Training Center
- Washtenaw County Department of Public Health
 - Cindra James, MPA

[Martin Intro](#)

Background

- Funded by Quick Wins funding support from the Transforming Learning for a Third Century (TLTC) program at the University of Michigan
- Based on CDC template
- Piloted 2013 at UMSPH



cdc.gov/phpr/zombies.htm

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Zombie Preparedness



Wonder why Zombies, Zombie Apocalypse, and Zombie Preparedness continue to live or walk dead on a CDC web site? As it turns out what first began as a tongue in cheek campaign to engage new audiences with preparedness messages has proven to be a very effective platform. We continue to reach and engage a wide variety of audiences on all hazards preparedness via Zombie Preparedness.

Zombie Products

Zombie Blog



There are all kinds of emergencies out there that we can prepare for. Take a zombie apocalypse for example.

Educators Website



Looking to teach preparedness in the classroom? We've got full lesson plans and activities for you to use or adapt with your students.

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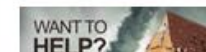
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We Are Not Alone...

USA | MILITARY

No prank: On Halloween, US military forces train for zombie apocalypse

The scenario is part of a counterterrorism summit held this week. A zombie invasion would have characteristics similar to other catastrophic events and would be 'a federal incident,' a summit organizer says.

By Anna Mulrine, Staff writer | OCTOBER 31, 2012



Exercise Goals

- Achieve an understanding of public health practice in the local health department setting
- Develop awareness of the important partnerships between public health agencies, community organizations, and the University of Michigan
- Appreciate the important role that public health agencies have in community engagement, education, public health emergency preparedness and response.

Exercise Bite Back Objectives

1. Apply Incident Command System (ICS) skills learned from EPID 607 within exercise setting
2. Design functional public health epidemiology and preparedness exercise tools for community setting in partnership with WCPH
3. Implement a functional public health epidemiology and preparedness exercise within a community setting in partnership with WCPH
4. Understand the role of a field epidemiologist during an emergency response -implement questionnaires and collect data
5. Develop risk communication/data-based material's for health department and community stakeholders

Scenario- FINAL

- March 20, 2014:
 - Patient Zero consumes exotic sausage comprised primarily of lynx meat at a popular local restaurant and pub. The meat was contaminated with a novel form of *Toxoplasma gondii*, a blood parasite.
 - NOTE: EIS investigation estimates that approximately 33 individuals consumed the lynx meat sausage. There were 20 total orders sold (15 single orders and 5 orders shared by couples/friends). The sausage was also consumed by the chef, the owner and one additional worker.
- March 22, 2014:
 - Washtenaw County Sheriff's Department receives 4 reports of civilians being bitten (or attempted to be bitten) by an unidentified assailant. The reports describe the assailant as having jerky, awkward movements/gait and occasionally moaning.
 - The University of Michigan Hospital Emergency Room admits four cases with flu-like symptoms and sensitivity to light. Two of the cases exhibit similar jerky movements and attack hospital staff several hours after being admitted. One attack results in a physician's assistant being bitten on the hand. The PA was treated according to bite protocol, including immediately providing a blood sample. The two aggressive cases are restrained.
 - Approximately 10 minutes after providing the blood sample, the bitten PA attacks another staff member and chases several patients out of the hospital.
- March 23, 2014:
 - The third of four admitted cases at UM Hospital unsuccessfully attacks a nurse. All four cases are isolated and restrained.
 - Ann Arbor Police Department responds to a domestic disturbance to find a woman attempting to bite her husband. Two officers apprehend and restrain the woman and transport her and her husband to the police station. While providing his statement to the arresting officer, the husband complains about becoming suddenly hungry. Several minutes later, he attacks and bites the interviewing officer and another officer before being restrained and placed in a holding cell.
- March 24, 2014:
 - Reports of biting in Ann Arbor, Ypsilanti, Saline, Dexter and Canton continue to increase. Local and regional news begin coverage of the story. Additional reports of biting attacks in Chicago, Toledo, Detroit and Windsor are initially disregarded as "copycat" attacks.

Scenario (2)- FINAL

- March 25, 2014:
 - MDCH requests CDC assistance via Governor Snyder's office and sends blood samples and oral swab cultures from admitted cases for laboratory analysis.
 - Increasing number of patients reporting to emergency rooms with unseasonal flu-like symptoms across the Midwest. Many of these cases must be restrained after attempting to bite hospital staff.
- March 26, 2014:
 - CDC identifies novel parasite and begins testing antibiotics and antiparasitics based on treatment for *T. gondii*.
 - CDC issues recommendation to isolate and restrain anyone reporting to ER with unseasonal flu-like symptoms and sensitivity to light to prevent further biting attempts, regardless of complaints regarding hunger and/or agitation.
- March 30, 2014:
 - CDC identifies Zombiediazine for prophylaxis and as ZomBGone effective treatment for *T. zombii* in laboratory animals. Due to the severe nature of the outbreak (now in 39 states, including Hawai'i, Canada, Mexico and several European countries), FDA approves human testing in volunteer cases already in hospitals.
- April 3, 2014:
 - FDA approves use of above medications and CDC begins stockpiling the pharmaceuticals for distribution.
- April 4, 2014:
 - CDC Director, Dr Tom Freiden, notifies Gov Snyder that SNS assets for *T. zombii* will arrive at strategic locations in Michigan at 2300 local time.
- Scheduled for April 5, 2014:
 - MDCH will deliver SNS assets to Washtenaw County Distribution Node at 0300. Point of Dispensing (POD) will be established at Washtenaw County LLRC and open to the public daily from 10am until 3pm until further notice. Pharmaceutical cache accommodates five days of treatment per person. Additional medication will be made available through national pharmaceutical supply chain, anticipated availability in 72-96 hours.

Case Definition: Parasitic Infection-

- Exposure:
 - Consumption of contaminated Lynx meat
 - Close contact with another parasitic infection case (fecal-oral exposure)
 - Ocular exposure can lead to infection
 - Symptoms:
 - 36-48 hour incubation
 - Flu-like symptoms (fever, swollen lymph nodes, sore muscles, fatigue, some vomiting/diarrhea, etc)
 - Unprovoked agitation toward others
 - Insatiable hunger
 - Fasciculation—rapid, temporary contraction of large portions of muscle fibers in a single motor unit independent of voluntary control. Causes jerky movements and awkward gait. Additionally, results in rapid exhalation that generates an unpleasant guttural sound or moan. Difficulty speaking or writing.
 - Ocular infection- eye pain, sensitivity to light, excessive tearing, blurred vision and red or bleeding eyes
- Prophylaxis (jellybean):
 - Anti-parasitic- Zombidiazine
- Treatment for Sx (dermal patch):
 - Patch treatment to mitigate hunger/agitation-m ZomBGone

Example Evaluation Questions

1. On a scale of 1 to 5, how **confident are you about your own ability to prepare** for a disaster?*
2. On a scale of 1 to 5, how confident are you in your ability to **know what to do in the first 5 minutes** of each of the following incidents?*
3. **Does your household have an emergency plan** that includes instructions for household members about where to go and what to do in the event of a disaster?*
4. Which of the following things do you think you **should do when going to a Point of Distribution (POD) site** during an emergency event?
5. On a scale of 1 to 5, how **familiar** are you with each of the following?*

*Adapted from FEMA's 2009 Citizen Corps National Survey

Benefits – UM SPH

- Action-based learning
- Graduate students and PH issues
- Risk Communication
- Community engagement



Benefits – Michigan PHTC



- Increases in student competencies
- Useful to professional development
- Fulfilled funding requirement
- Useful to partners' work

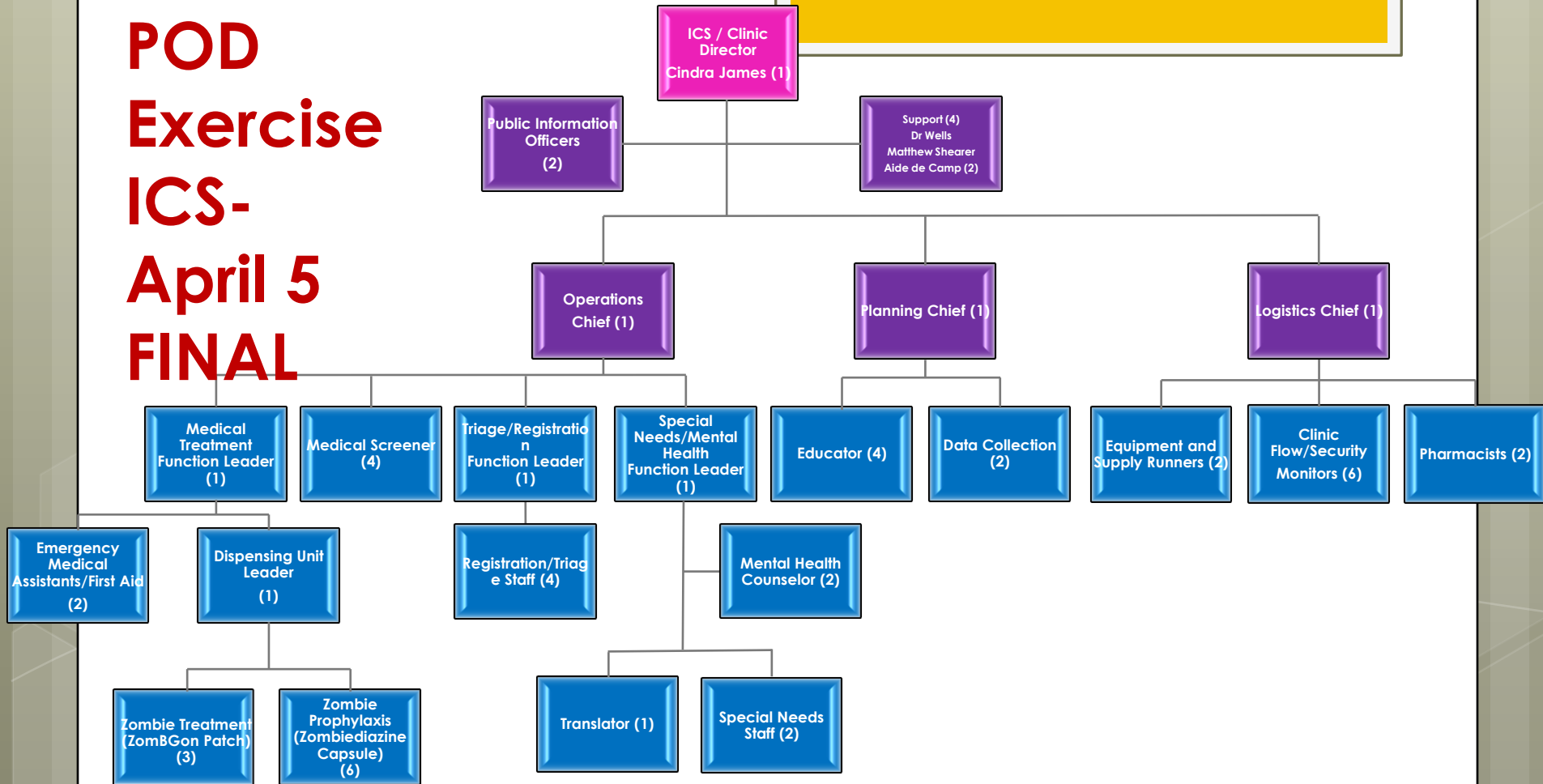
Benefits - WCDPH

- Working with community partners
- Utilizing MRC volunteers
- Working with next generation of public health workers
- Meeting Cooperative Agreement tasks

Challenges – UM SPH

- Training for volunteer engagements
 - PHAST exception
- Incident Command in academic settings
- Weather
- **TIME, TIME, TIME**

POD Exercise ICS- April 5 FINAL



Challenges – Michigan PHTC

- Low response rate from participants not part of student course
- Need to align knowledge questions more closely with exercise content
- Survey drew from existing resources but was not validated itself

Challenges - WCDPH



- Proper space for exercise
- Motivating more MRC volunteers and community partners to participate
- Explaining the Incident Command System
- Resources

Lessons Learned – UM SPH

- UMSPH graduate students not familiar with the on-the-ground logistics of the Strategic National Stockpile and POD plans at beginning of event
- Space



Lessons Learned – Michigan PHTC

- Exercise should emphasize local emergency preparedness services
- Narrow survey or broaden exercise
- Recruit and evaluate wider, interdisciplinary audience



Lessons Learned - WCDPH

- Spend more time on Just-in-Time training
- People just don't understand a good old fashioned zombie exercise
- Preparedness is a dying art
- Flexibility is key to any good response

Special Thanks to:

- Matthew Shearer, MPH
- Jamaica Robinson, MPH(c)





MG

Q&A

**Students are
Creative!**

**WCPH a Great
Partner!**



