



Zombie Outbreak: Case-driven and Flipped

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ABSTRACT

Background/Purpose: Recent natural and man-made disaster events such as Hurricane Katrina, the 2009 H1N1 pandemic, shootings at Sandy Hook Elementary School in Connecticut, and Hurricane Sandy demonstrate the critical importance and implications of understanding how the Public Health System prepares for, and responds to disaster and emergency events.

Using current, popular cultural interest in the “zombie apocalypse”, we developed and implemented an innovative and novel college course based on a hypothetical zombie outbreak with the university campus as “ground zero”.

Methods: Our team developed and implemented a novel, hybrid preparedness and response zombie outbreak course in which students were immersed in public health response; specifically, how to prepare for, and respond to a disaster event through live simulation exercises, from initial zombie outbreak to community stakeholder engagement in the response. This included participation of real world stakeholders, e.g., public health, emergency response, government, volunteer agencies, etc. in the zombie outbreak activities.

Results/Outcomes: Our process and outcome evaluation demonstrates that this teaching method is an excellent tool for educating students and the general public about the broader discipline of public health, and specifically the public health response system, including preparedness, response, and relevant community stakeholders.

Conclusion: With disaster and emergency events increasing globally, utilizing popular culture and a hypothetical zombie outbreak is an excellent way to introduce students and the public to the public health response system and the complexity involved in effective and comprehensive disaster/emergency response.



A zombified Dr. John Staley.

INTRODUCTION

In “Zombie Outbreak,” we applied innovative pedagogical techniques in terms of a ‘flipped’ course design applying a novel zombie outbreak, as there is little evidence of the effectiveness of using such teaching approaches. We capitalized on current popular zombie culture to improve student learning outcomes regarding the roles and responsibilities of the Public Health Response System and other relevant stakeholders during a disaster event.

METHODS & PEDAGOGY

Emergency preparedness content was derived from Kapur, GB and JP Smith, *Emergency Public Health*. 2011, Jones & Bartlett Learning: Sudbury. The course was fashioned after the CDC’s Preparedness 101: Zombie Outbreak (<http://www.cdc.gov/phpr/learn.htm>) and aligned with recent B.S. public health competencies as defined by the Association of Schools of Public Health (www.asph.org/competency). Content delivery was with 30-45 minute audio recordings as integrated PowerPoint presentations, using iSpring software. Presentations delivered the essentials of risk assessment, emergency preparedness, public health law, situational response and recovery, and of course, a bit of zombie culture. Students received this content and responded to weekly discussion questions through BlackboardLEARN. Writing assignments were also facilitated and received using BlackboardLEARN.

In-class times were devoted to practical applications of emergency preparedness through the application of a zombie outbreak case history. Early class meetings examined the events surrounding natural and contrived disasters and asked students to dissect the emergency response and recovery aspects. Students were then introduced to the various literary constructions of zombies, their origins, pathologies, and cultures. The course was flavored with “disease detective” epidemiology, as the zombie scenario unfolded. Students learned about water purification and fire production. They built a virtual “bug-out bag” after brainstorming the items required for survival on their own for 72 hours. As the case unfolded, students were assigned roles within an incident command structure to plan a response guide. In one assignment they acted as investigative reporters following leads surrounding the outbreak and planning processes.



Students in Zombie Outbreak course



Graduate student volunteers act as scientist, physician, “zombie hunter,” and zombie, respectively.

PEDAGOGY (con’t)

Campus volunteers acted as zombies, CDC scientists, zombie “hunters,” and health care providers. They responded to student queries from a prepared script aligned with the case. Midway through the course, city and county officials (police, fire, hazmat and emergency management first responders; and health commissioners, city council members, health educators, etc. visited with the students, described how they would address a disaster, and responded to student questions. Students finished the course by responding virtually to the zombie outbreak, responding to the prescribed case-driven outcomes. An after-action report of their semester-long actions served as review and assessment of their class performance.

A pre- and post- course survey instrument of student knowledge was used to assess the methods and pedagogy. Individual student assignments served to assess acquisition of ASPH competencies.



Google map of zombie encroachment.

RESULTS & DISCUSSION

The first offering of the Zombie Outbreak course enrolled 33 students from various majors. Students surveys indicated that 25% thought that a hybrid course would help them learn; 43% indicated so after the course. Pre and post course responses demonstrate increased knowledge base (table).

Question	% Strongly Agree/Agree BEFORE	% Strongly Agree/Agree AFTER
I feel like I know what to do if a disaster occurs in my hometown	60.7	90.5
I know everything that is needed for a home emergency preparedness kit	28.6	90.5
I have all the items needed for a home emergency preparedness kit	3.6	81.0
I have a first aid kit in my home/residence	53.6	81.0
I have a 3-day supply of water for each person that lives in my home/residence	39.3	71.4
I have a 3-day supply of food for each person that lives in my home/residence	46.4	90.5



Students responding to the zombie outbreak case.

Anecdotal evidence of success:

“I just wanted to say thank you so much for an enjoyable course. Now that I have taken the course, I realize how much I learned in this class that will truly help me in the future. I have even shared my knowledge with my friends and family. I have a new found respect for Public Health too -- it is a very important field that is not valued enough.”

“The course taught me a lot more than I expected and I am proud to say I took this course and plan to pass on the knowledge that was provided to me to others. This class was one of those " I'll actually use that information later on in life" type of lessons, which I feel you don't find a lot anymore in college courses.”

“It was a pleasure being in your class. ... I came out of this knowing things I never thought existed.”

