



Improving communication and collaboration between Epidemiology and Environmental Health programs on foodborne illness investigations

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Introduction

In Florida, Chapter 64D-3 of the state administrative code identifies the communicable diseases that are required to be reported to the Department of Health. Of these reportable diseases several are classified further as enteric diseases; they are campylobacteriosis, cyclosporiasis, cryptosporidiosis, *E. coli* O157:H7, shigellosis, salmonellosis, giardiasis, *vibrio cholerae* and hepatitis A. As laboratories and/or medical facilities confirm a case(s) of any one of these enteric illnesses, they are required to report it to their local health department and at the Manatee County Health Department, specifically to the Epidemiology Division. Additionally, state statute provides that when food is the suspected cause of any illness, it is considered a foodborne illness complaint and should be referred to the Environmental Health Division for investigation. While it is not the only manner of transmission, contaminated food is often the culprit in the transmission of the aforementioned enteric diseases. Unfortunately, the trend over the last four years in Manatee County indicated that none of the confirmed cases of these diseases reported to the Manatee County Health Department were referred to the Environmental Health Division for investigation. This is despite the fact that the enteric disease rate has remained constant or has increased over the course of these years. In fact, Manatee County had the lowest numbers of foodborne illness investigations in a four county region, despite the fact that the enteric disease rate per 100,000 population was fairly even.

Public Health Significance

So what is the public health significance here?? What many community members and leaders don't realize is that these diseases can cause severe symptoms in our vulnerable populations such as young children, seniors, and those who are immune-compromised. In some cases, the complications from foodborne illness can lead to death. Due to the fact that secondary cases of foodborne illness can occur via direct transmission from the initial case, and additional cases can occur if the situation that caused the initial illness (infected food handler, improper cooking temperatures, etc.) is not corrected, an uncontained outbreak can pose a significant threat to public health. While the current absence of collaboration between Environmental Health and Epidemiology is only mildly inconvenient, when contemplating the investigation of a large outbreak it becomes extremely concerning. Every effort should be made to properly investigate the cause of the foodborne illnesses to not only prevent secondary cases, but to provide education in the community to prevent the further spread of disease through unsafe food handling practices.



Figure 1. Article in the St. Petersburg Times, Sept. 2007. There are 40,980 restaurants in the State of Florida.

Problem Statement

Why, despite the common desired outcome in a foodborne illness outbreak investigation, don't Environmental Health and Epidemiology work more collaboratively?

Systems Thinking Approach

System archetypes help us to identify why there is a breakdown in a process that makes that process ineffective. The "Shifting the Burden" archetype most aptly represents this case as it indicates that a quick fix has been applied, with inadvertent results, where a long term solution would bring more effectiveness and competency to the investigation process.

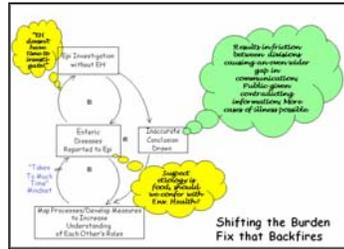


Figure 2. Causal Loop Diagram and Systems Thinking Archetype: Shifting the Burden

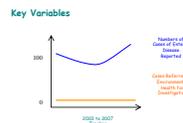


Figure 3. This graph represents the key variables over time. Even though the number of lab confirmed enteric diseases is constant or increases, the numbers of cases referred to Environmental Health for investigation as a possible foodborne illness has remained at zero.

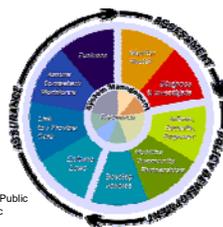


Figure 4. 10 Essential Public Health Services Graph

ESSENTIAL SERVICE #8

Results

- Improved communication between the Epidemiology and Environmental Health Divisions.
- Active participation by team members from both divisions relayed into increased understanding of each other's roles and functions.
- Relationship building made for improved attitudes about new ideas and change.
- Implemented new investigation flow chart and call down protocol. (Figures 5 & 6)
- Epidemiology Division reporting all foodborne illness complaints to Environmental Health for evaluation.
- Epidemiology Division utilizing DOH Foodborne Complaint Form to refer complaints to see Environmental Health time.
- All complaints of foodborne illness are now tracked and monitored by Environmental Health and reported to the Regional Epidemiologist.
- Final Foodborne Illness Complaint and Outbreak Investigation Protocol in progress.
- More confidence in each other's knowledge



Figure 5. Complaint call down protocol.

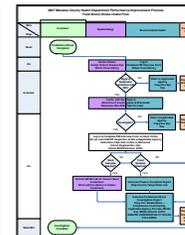


Figure 6. Process Map (flow chart) of foodborne illness complaint intake.

CORE FUNCTION: ASSURANCE:

Assure Competent Workforce

This project is seeking to assure a competent workforce by defining and clarifying the role(s) of environmental health specialists during foodborne illness investigations and providing training focused on these roles. Increasing our capacity in this area is paramount to the health of Florida's citizens, as we have a not only large numbers vulnerable populations (the elderly and very young), but a tourism driven economy which is largely dependent on visitors from other areas of the country and the world. Our visitors and citizens should be assured that the food that they eat is safe. A competent investigation of complaints of food related illnesses is essential to the prevention of new cases and/or secondary cases of illnesses, thereby keeping the public healthy.

Conclusions

The key to the success of this project was the Environmental Health and Epidemiology division's enthusiastic agreement to team together to address this opportunity for improvement in our organization. During face-to-face meetings, preliminary exploration into the reasons for the breaks in communication between Epidemiology and Environmental Health began - resulting in the "Shifting the Burden" theory. By identifying the root causes of the primary cause of the miscommunications (an imperfect knowledge of each other's roles in the investigation arena), the team was able to move forward almost immediately. While the analysis between numbers of enteric diseases reported to the health department versus the numbers of foodborne illness investigations initiated proved to be an imperfect methodology of measuring the communication in this area, the resulting discussions between the two divisions opened many new avenues of collaboration. Since, the inception of this project, a new "call-down" protocol and a process map (flow chart) has been adopted and implemented by both divisions for assessing complaints of foodborne illness from the public. Additionally, an investigation "manual" is in development phase. I feel positive progress is being made on these investigations in this county, and I hope to bring it to the state level as a "best practice" manual once we have a chance to evaluate its effectiveness to all of our stakeholders.

References

- Chapter 64D-3, Florida Administrative Code, **Disease Control**
- Chapter 381.006(10), Florida Statute, **PUBLIC HEALTH, Environmental Health**
- Florida Department of Health, Bureau of Environmental Epidemiology, "Food and Waterborne Disease Annual Reports 2003 - 2007"
- Florida Department of Health, Division of Environmental Health, Environmental Health Program Manual 150-4, **Chapter 6, Food and Waterborne Disease Surveillance and Investigation**
- Epi Moves*, Monthly Epidemiology Newsletter Volume 4, Issue 9, September 2006
- St. Petersburg Times, online archives, 2007

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For further information

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This project will be available online at both the Manatee County Health Department and the Environmental Public Health Leadership Institute websites: <http://www.doh.state.fl.us/chd/Manatee/index.htm> and <http://www.heartlandcenters.slu.edu/16080/ephl/index.html>

