

Public Health Fact Sheet Project

(Paper, 2-minute Twitter Brief, Online Tweet)

Twitter Brief Date: 11-09-09

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Topic: Food-Borne Illness

CATEGORY			POINTS	SCORE
Used template Grammar 6 pages	Clarity of Thought Punctuation	Coherence in organization Spelling	5	
<ul style="list-style-type: none"> • Introduction (1/2 page) [1] • Background/Problem Statement section – 3 sites (1.5 pages) (include Healthy People 2010) [7] • Research section – 3 sites (1 page) [4] • Statistics section – 3 sites (1 page) [4] • Consumer Information section - 3 sites (1 page) [4] • Solutions to the Problem – 3 sites (1 page) [4] 			25	
TOTAL POINTS FOR FACT SHEET			30	
E-mailed electronic copy to Professor Jung BEFORE class			3	
Posted one factual tweet on PCH201wellness BEFORE class			2	
Submitted hard copy with grid to Professor Jung			2	
2-minute Twitter Brief			3	
PROJECT COMPLETION POINTS			10	
LATE/INCOMPLETE			(-20%)	
Missing Grading Grid			(-3)	
FINAL TOTAL POINTS			40	

FOOD-BORNE ILLNESS

Introduction

My topic for this fact sheet is Food-Borne Illness. These food-borne illnesses can include the infamous Salmonella, E-Coli, and other pathogens that we have seen recently in many outbreaks. Food-borne illnesses are usually caused by what are called “pathogens” micro-organisms, bacteria, and NOT self-induced poisons. For instance, NOT alcohol poisoning, but a bacteria like E-Coli.

I chose this topic because I was interested in food-borne illness after reading an article about e-coli and other pathogens and hearing that my friend had had a food-borne illness this summer. The article I read opened insight into the horrors of burger meat in various companies, restaurants, and stores. I discovered while reading a few articles that sparked my interest that certain pathogens are not found in only certain foods but rather that one pathogen can be found in different foods. Therefore, it is not specifically the food that contains the pathogens that cause the food-borne illness, but rather the animals that produce the food, and the process by which the food is prepared.

By doing the research required for this fact sheet, I hope to gain much knowledge in this field of understanding. I would like to find ways in which to avoid getting such food-borne illnesses; not only what companies who make food can do to avoid these pathogens, but also the average human being. This way I will have further knowledge to keep myself healthy and safe through life.

Section 1: Background and Problem Statement

- **Web site #1 Name:** Healthy People 2010: Food Safety

- **Web address:**

http://www.healthypeople.gov/document/HTML/Volume1/10Food.htm#_Toc490555741

- **Background Information:**

Food-borne illness as defined by Healthy People 2010 is an “infection or intoxication caused by microbial or chemical contaminants in food. Some food-borne illnesses, such as salmonellosis and staphylococcal food poisoning, can be caused by a single helping or less of a food that contains sufficient microorganisms or toxin to cause illness. Other food-borne illnesses result from eating compounds, such as naturally occurring aflatoxin, in foods over long periods of time.”

The number one goal is obviously to reduce food-borne illness. Healthy People 2010 has 7 objectives to reduce food-borne illnesses in order to achieve this goal. They intend to reduce infections and outbreaks of infections caused by food-borne illness by 50 percent from 1997 until 2010. Healthy People, however, does not intend to “prevent an increase in the proportion of isolates in Salmonella species from humans and from animals at slaughter that are resistant to antimicrobial drugs.” I am not sure as to why they would not want to have a plan for this specific pathogen. There is no plan stated in their objectives to reduce deaths from allergic reactions due to food-borne illnesses, in fact they consider it “developmental” and there is no information stated on this objective in their statistics and objective list. Healthy People 2010, however, would like to increase the proportion of the general public who follow the four guidelines to food safety by 79 percent. The four guidelines every human being should strive to follow to be safe with food and reduce the risk for food-borne illnesses are: clean hands and surfaces a lot, separate

foods (for instance raw from cooked), cook to the right temperatures, and refrigerate correctly. The sixth and seventh objectives for food-borne illnesses are also considered “developmental.” There is no target stated for the improvement of employees who handle “food preparation practices that directly relate to food-borne illnesses in retail food establishments.” There is also no target set to reduce the human contact with “organophosphate pesticides” in food.

Data has been collected by Healthy People 2010 that shows many different food-borne illnesses in many different perspectives. Graphs show the fluctuations of reported and estimated food-borne illnesses looking at age, gender, ethnicity, family income level, and type of food-borne illness. Their targets seem to be a reasonable percent to reach considering their data that shows the percent in 1997 and 1998. For instance, for one objective their target is 79 percent, and the current taken in 1998 was between 69 and 75 percent.

- **Web site #2 Name:** WHO (World Health Organization)
- **Web address:** <http://www.who.int/mediacentre/factsheets/fs237/en/>
- **Background Information:**

According to WHO, World Health Organization, food-borne illnesses cause economic and social pressure on the healthcare system and costs a lot of money. Food-borne illnesses in countries cause exports, and therefore large sums of money, to be lost in importing countries. For instance, in 1991 a cholera epidemic in Peru cost the US an estimated “\$500 million in fish and fishery product exports.”

Food-borne illnesses are considered a focus area and NOT a leading indicator.

- **Web site #3 Name:** CDC (Center for Disease Control)
- **Web address:** <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5304a1.htm>
- **Background Information:**

There are many important symptoms to look for when diagnosing food-borne illnesses. Gastrointestinal problems, such as vomiting, diarrhea, or abdominal pain, can occur in food-borne illnesses, and such symptoms should be noted. A sample should be sent to a laboratory for examination and determination of a food-borne illness if it is expected.

If a food-borne illness is found to exist one should report such a case to higher authorities, that way an outbreak will be noted sooner rather than later. Each pathogen has a different treatment, and treatment also depends on how far along the pathogen has “incubated.” Since these pathogens are microorganisms, bacteria, and not viruses and/or diseases, antibiotics may be distributed to counter act the pathogen’s destruction on the human body.

When not treated most, if not all, pathogens can lead to destruction of the human body and eventually death. This being the case, it is extremely important to catch the existence of one or more pathogens in the earliest stages possible.

Section 2: Research

- **Web site #1 Name:** Food safety knowledge, attitudes and practices of mothers: findings from focus group studies in South India
- **Web address:**
http://www.ncbi.nlm.nih.gov/pubmed/17448570?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=20
- **Summary of the research:**

This article is a good representation of the efforts being made involving food-borne illnesses in developing countries. Someone may want to read this article because it gives a good picture of the state of health safety in a developing nation. This particular article was information found from a discussion group of Indian mothers of children under the age of 5. The study revealed that the mothers seemed to follow the four general food safety guidelines pretty well. Their awareness of these safety precautions could be from the standards passed down from generation to generation.

- **Web site #2 Name:** *Bacillus cereus*, the causative agent of an emetic type of food-borne illness
- **Web address:**
<http://www3.interscience.wiley.com/journal/109792394/abstract?CRETRY=1&SRETRY=0>
- **Summary of the research:**

This article specifically discusses one type of causative agent that produces emesis, vomiting, in a food-borne illness. *Bacillus cereus* is the technical term for the bacterial agent that produces one toxic emesis and three enterotoxins. This means it causes three toxins in the intestinal tract and one vomiting toxic agent. This article is important because many studies have focused on the emesis toxin on *bacillus cereus* rather than the enterotoxins and the emetic agents. Until this article, there has not been much research on the emetic agents, and therefore more research needs to be done to understand the emetic type of diseases. This article also gives ways to help in spotting symptoms of emetic *bacillus cereus*, which should be useful in the identification of yet more food-borne illnesses.

- **Web site #3 Name:** Scientists Use Technology To Tackle Food-Borne Illnesses
- **Web address:** <http://www.sciencedaily.com/releases/2005/12/051215084859.htm>
- **Summary of the research:**

If someone was interested in what was being done to combat food-borne illnesses, or was interested in new technology in the health and food industry, this would be a good and helpful article to read. According to this article, laboratories are working with two patented machines that hold cold plasma close to an electrically reactive gas in hopes that it will help successfully eliminate food-borne pathogens and therefore food-borne illnesses. Scientists hope to be able to spray the new material on food to keep it from allowing pathogens to survive long enough for humans to consume causing food-borne illnesses.

Section 3: Statistics

- **Web site #1 Name:** Healthy People 2010:Food Safety
- **Web address:** <http://www.healthypeople.gov/document/HTML/Volume1/10Food.htm>
- **Summary of the statistics:**

As reported by Healthy People 2010, from 1988 to 1992 outbreaks of diseases caused an average of 15,000 food-borne related illnesses a year. This only includes the cases that were reported, and so the actual number of cases could be much higher than was reported. Taking in the fact that all illnesses may not have been reported, HP2010 estimates that there were an average of 76 million cases of illnesses, 325,000 hospitalizations, and 5,000 deaths a year possibly associated with food-borne illnesses. This shows the need for well established objectives and or targets and the need to better identify and counteract food-borne illnesses, making food-borne illness a major health concern.

- **Web site #2 Name:** CDC (Center for Disease Control): Data2010
- **Web address:** <http://wonder.cdc.gov/scripts/broker.exe>
- **Summary of the statistics:**

This very complicated chart of the data of the progress of each objective that Healthy People 2010 has shows some very interesting information. There seems to be no steady decrease or increase in the objective, but rather a very fluctuated table of information. In some objectives there is a steady decrease in the gender category, and in other objectives there is a steady decrease or increase in the ethnicity category, however, in each objective or all objectives overall, there is no steady increase or decrease. Sadly, this could mean that the protocol to handle the target percent may not be working affectively, and a better protocol should be discussed for Healthy People's next 10-year plan. However, a few of the categorical objectives have already met the 2010 target, and some have sadly hit the target and bounced back.

- **Web site #3:** CDC (Center for Disease Control): Data 2010
- **Web address:** <http://wonder.cdc.gov/scripts/broker.exe>
- **Summary of the statistics:**

From most of the statistics in this article the percent in almost all the categories increased rather than decreased. Just like the other article of statistics, the methods for improvement may need to be reviewed if the target is to be met by 2010 and also for the next 10-year plan. In other words, the statistics showed that the problem of food-borne illness has, in fact, increased since the baseline statistic in many of the categories.

If new policies and environment changes were made to help with food-borne illness then it should in theory decrease. There are already policies in place, such as preparation guidelines for food distributors, but since the statistics show the targets are not and may not be met by the deadline, the policies could be updated to improve the statistics.

Section 4: Consumer Information

- **Web site #1 Name:** Food Contamination and Poisoning

- **Web address:**

<http://www.nlm.nih.gov/medlineplus/foodcontaminationandpoisoning.html>

- **Summary of the information:**

About 76 million people get sick from food-borne diseases each year in the United States. There are many symptoms of food-borne illness and they include, but are not limited to: upset stomach, abdominal cramps, nausea and vomiting, diarrhea, fever, and dehydration. Treatment for more minor illnesses is increased fluid intake, but for more serious or progressive illnesses a hospital visit might be necessary. Food-borne illnesses are not just caused by bad preparation methods of food, but can also be the fault of the consumers' poor health protocol. If food is left at room temperature for more than 2 hours it can result in harmful bacteria, and therefore there is a risk for food-borne illness.

- **Web site #2 Name:** Food-borne Illness-Causing organisms in the U.S. – What you need to know

- **Web address:** <http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm103263.htm>

- **Summary of the information:**

In this article I found the same statistics for number of people who are hospitalized, are sick with and die because of food-borne illness. I also found that these statistics mean that roughly 13 people die each day from food-borne illness. This article would be really helpful because of the chart it offers of the most common organisms that cause food-borne illness in the United States. The chart gives the official name of the organism, what the organism is more commonly known as, the time it takes before symptoms usually appear, the duration the sickness usually lasts, the symptoms of the illness, and the food sources the organism could have come from.

- **Web site #3 Name:** Mayo Clinic: Listeria Infection
- **Web address:** <http://www.mayoclinic.com/health/listeria-infection/DS00963>
- **Summary of the information:**

Listeria infection is an infection that is a food-borne illness. This illness can sometimes look like and be mistaken for flu. In fact, many people who get this illness may not even know they have it because the symptoms are so mild. This just goes to show the difficulty that can occur sometimes to diagnose a food-borne illness. According to the CDC, the Center for Disease Control, Listeria is the cause of 500 deaths a year in the United States. Just like all other food-borne illnesses prevention is key to avoiding a food-borne illness, so the four important food safety guidelines, mentioned many times above, should always be followed to the best of one's ability. The commonly known bacterial meningitis is a complication of listeria infection, so it is important to recognize symptoms and know when to get serious professional help.

Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name:** AboutKidsHealth
- **Web address:** <http://www.aboutkidshealth.ca/News/Food-borne-illness-protecting-your-family-against-food-poisoning.aspx?articleID=13429&categoryID=news-poh6>
- **Summary of the information:**

This is an article that gives some general information on food-borne illness in response to the many outbreaks in the recent years. The article is from a program called Sick Kids. It specifically addresses illness in kids, and so the article addresses combating food-borne illness, especially those that lead to death, in kids. The statistics mentioned are ones that appeared in other articles, above, and therefore further support the reality of the information on food-borne illness. The best the organization can offer the general public is to follow the four food safety guidelines, as many other organizations agree. This article showed me that the common infections meningitis and staph infection are food-borne illnesses, which I did not know before researching food-borne illness.

- **Web site #2 Name:** The White House: President Clinton Announces Aggressive Food Safety Strategy to Combat Listeria in Hot Dogs and Other Ready-to-Eat Foods
- **Web address:** <http://www.hhs.gov/news/press/2000pres/20000506.html>
- **Summary of the information:**

This article is a press release from President Clinton in the White House. Hi staff put in place a suggestion of new regulations to improve the safety of food in order to combat food-borne illnesses like listeria. These regulations date from 1993 until the press release in 2000.

Budgeting in more money for the safety precautions of food, recommending that more people be aware and involved in food safety precautions, creating disease surveillance programs, requiring that the public be notified of contaminated drinking water, and developing a committee in the White House that decides the efforts and progress of food safety summarize the many efforts that have been made by the Clinton-Gore administration. Because of the Clinton-Gore administration, there is now a Food-borne diseases Active Surveillance program, a Safe Drinking Water Act of 1996, National Food Safety Initiative-A Five Point Plan, a Joint Institute for Food Safety Research, the President's Food Safety Council.

- **Web site #3 Name:** Stricter Restaurant Regulations Proposed to Combat Food-borne Illnesses
- **Web address:** <http://www.idph.state.il.us/public/press95/foodrele.htm>
- **Summary of the information:**

This article just shows that individual states are also taking the initiative to combat food-borne illnesses. In Illinois new regulations were decided as of the year 1995 to create a safer environment for food in restaurants. Not surprisingly these new regulations were derived from the U.S. Food and Drug Administration's Food Code.

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