Helping Teens Serve Food Safely

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Rationale

- Foodborne illness continues to make headlines. An estimated 76 million Americans are sickened, 325,000 are hospitalized and 5,000 die each year due to contaminated food.

Casserole’s undercooked ground beef blamed for E. coli outbreak at school

Minneapolis (AP) — Undercooked casserole was blamed for making 18 schoolchildren sick in an E. coli outbreak last month, and news of the same batch may have been served in school lunches elsewhere in the state.

Minnesota Department of Health officials Tuesday confirmed the outbreak was caused by a casserole of ground beef, pasta and tomato sauce served at the Girl Scout Catholic School in Minneapolis.

Infection by the E. coli O157:H7 strain was confirmed in six students, said Kirk Smith, a department epidemiologist. Testing on 12 other students who had E. coli symptoms — severe or bloody diarrhea and abdominal cramps — was not complete, he said.

E. coli is one of the leading causes of foodborne illnesses in the United States, according to the Centers for Disease Control and Prevention. The bacteria live in the intestines of healthy cattle and can be contaminated during the slaughtering process, and it can also be introduced into the meat when it is ground.

Although testing of the suspected beef hasn't been finished, Smith and other state health officials were confident that it was the culprit.

"There's no question in my mind that it was the beef," Smith said.

Smith said federal officials said that the beef, which was purchased through the U.S. Department of Agriculture's school lunch program, came from several plants and was processed in December. One of them is in Minneapolis; federal officials declined to say which.

The plants supply other schools in Minnesota and elsewhere, said Carol Blake, a spokeswoman for the U.S. Food and Safety Inspection Service, so it's possible that food containing E. coli may have been shipped to other Minnesota schools.

Smith said there are no indications of outbreaks at other schools.

Although parents should be alert for symptoms of E. coli, Smith said they shouldn't be alarmed. Cooking ground beef until it is well done with no pinkness kills any E. coli.

Blake said investigators were working with the plants. If they find widespread problems at the plants, she may decide to take stronger action to reduce the risk of other students getting infected.

"It's possible that we may issue a recall of the meat, but we're not at that stage yet," she said.

Bacteria outbreak in Bismarck linked to tainted ground beef

Associated Press

Bismarck, N.D. — A 23-year-old woman, who was hospitalized for food poisoning, has eaten ground beef that has been linked to an E. coli outbreak in Bismarck.

"I think the health department doesn't know what they're doing," the woman said. "I want them to stop eating this stuff."

The outbreak has been linked to a local restaurant and has already led to one death and one hospitalization in North Dakota. But the restaurant has not said whether it is responsible.

The restaurant, which sits in a shopping center in Bismarck, has been closed since last week, when health officials said it was the source of the outbreak.

The restaurant owner said the restaurant is re-opening Monday.

"I'm still going to serve the same food, and we're going to serve it the same way," the owner said. "If they don't like it, they can come in and eat it."

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Fifty cents of every food dollar is spent on food prepared *outside* the home.

Nearly 40% of people ages 15-24 eat their main evening meal out 3 or more times per week.
Food Service Employees

- According to a 2002 U.S. Department of Labor report, 22% of workers in food service establishments were aged 16 to 19.

Where do teens work?
Objectives

• To conduct food safety focus group research on gaps in food safety education using the Group Decision Center Process
• To adapt and develop train-the-trainer materials detailing food safety issues
• To create a model system to improve the manner food safety education is accomplished.
Curriculum Objectives

• To improve food handling practices among teenage food handlers
• To increase food safety knowledge among participating students and teachers
• To increase use of thermometers at home and in community settings
Method: Group Decision Center

• Electronic Focus Groups
  – Anonymity
  – Simultaneous participation
  – Equal voices
  – Criticism-free discussion
  – Efficient and effective use of time and resources
Participants in Focus Groups

- High school, technical/tribal and college teachers
- Extension agents
- College/high school/technical college/tribal college students
Results
Primary Issues Identified and Ranked by all Groups (10 = highest concern)

- Poor handwashing (9.5)
- Cross contamination (8.8)
- Lack of training (7.9)
Primary Barriers to Safe Food Handling

• Lack of training/supervision

• Lack of education (eg. Poor time/temperature knowledge)
Primary Recommendations of Focus Groups

- Lessons with age-appropriate materials
- Real-life examples (case studies)
- Incentives
Curriculum

Five lessons based on the concepts of the “Fight BAC” and “Thermy” national food safety campaigns.

- Pre-test, post-test and follow-up survey
- Hands-on activities
- Certificates of completion
Lesson 1

- Define foodborne illness
- Recognize the four leading causes of foodborne illness
- Identify the acronym “FAT TOM”
Lesson 2  “Clean” - The First Step to Food Safety

• Practice the five steps of cleaning
• Clean hands
• Personal cleanliness
• Make/use sanitizing solutions
Lesson 3 “Separate” - The Second Step to Food Safety

- Define cross-contamination
- Identify cross-contamination sources
- Identify the steps to prevent cross-contamination
Lesson 4 “Cook” - The Third Step to Food Safety

- Recognize safe cooking temperatures
- Cooking experiment “Is brown good enough?”
- Calibration and use of thermometers
Lesson 5 “Chill” – The Fourth Step to Food Safety

- Time and temperature rules
- Food safety trivia
- Post-test
Impact

• Statewide implementation
• 100 trained educators

Since 2002 over 3,000 North Dakotan teens have been trained and most have received completion certificates.
Results

Knowledge test scores increased from 54% on the pre-test to 84% on the post-test.

Follow-up test score average was 86%, indicating good retention of the facts they learned.
• 61.8% of participants have been involved in food preparation for the public.
Results

What is the "Danger Zone" range?

-20 to 0 F
0 to 32 F
32 to 100 F
41 to 140 F
70 to 200 F

Pre-test
Post-test
Results

The pretest and post-test scores for 2003, 2004, 2005 and 2006 were fairly consistent.
Results

• On the post-test 92% of participants responded that turkey should not be thawed on the counter compared to 76% on the pre-test.

• On the post-test 81% correctly identified clean, separate, cook and chill as the four steps to food safety compared to 28% on the pre-test.
Self Reported Behavior

- One month follow-up survey
  - 81.8% reported washing their hands more often when preparing food
  - 66.9% were more careful about cleaning and sanitizing
  - 51.5% had shared their knowledge about food safety with others
  - 37.5% had already applied what they learned when preparing food for the public
Food safety kits

- As a result of teachers requesting thermometers for classroom use, funding was sought to provide food safety kits to participants. To date, over 5,000 kits have been distributed.

Did You know?
Less than half of the population owns a food thermometer!

Only 3 percent use one when cooking hamburgers.
Food Safety Kits

- Food thermometer
- Web card detailing calibration techniques
- Refrigerator thermometer
- Educational pamphlets
- Refrigerator magnet listing safe cooking temperatures

We acknowledge the following for their contribution to the food safety kits: North Dakota Beef Commission, North Dakota Nutrition Council, Regional office of the FDA, the Food and Safety Inspection Service of the USDA, and CSREES/USDA under Agreement NO. 2002-51110-01512.