

# Helping Teens Serve Food Safely



**FIGHT BAC!**



**NDSU**  
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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)

Ground beef used in an undercooked casserole was blamed for making 18 schoolchildren sick in an E. coli outbreak last month, and meat from the same batch may have been served in school lunches elsewhere in the state.

Minnesota Department of Health officials said Tuesday it appears the outbreak was caused by a casserole of ground beef, pasta and tomato sauce served at the Risen Christ 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 food-borne illnesses in the United States, according to the

Centers for Disease Control and Prevention. The bacteria live in the intestines of healthy cattle. Meat can be contaminated during the slaughtering process, and E. coli can be mixed into the beef 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 and 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 name it.

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 meat 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, they 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.

3 more E. coli cases reported in N.D.

## Bacteria outbreak in Bismarck linked to tainted ground beef

Associated Press

BISMARCK, N.D. — A strain of E. coli bacteria that sickened at least 10 people has been traced to hamburger products, state health officials said Tuesday.

Fred Heer, the health department's director of disease control, said seven other cases are awaiting the results of lab tests. Investigators who traced the background of those taken ill found a common link in the ground beef products eaten at a Bismarck restaurant, May 8.

"The thing that we haven't determined is how it got there," said Mel Fischer, Bismarck's city health inspector.

Seven of the 10 confirmed cases, ages 1 to 74, required hospitalization. Heer said those hospitalized ranged in age from 29 to 76 but their conditions were not life-threatening and all have been released from the hospital. He said there were no cases of hemolytic uremic syndrome, a condition in which red blood cells are destroyed and the kidneys fail.

Health officials declined to release the name of the restaurant where the victims ate. Heer said it has been inspected several times since the outbreak was reported.

"Thousands of people have eaten at this place since the outbreak, and there's been nothing occurring since," he said. "Unfortunately, something occurred (last time) with a contaminated product."

Fischer said the symptoms of poisoning from the strain known as E. coli O157:H7 bacteria include diarrhea, vomiting and sometimes kidney failure. There is no treatment or cure for advanced stages of the illness.

The city inspector said federal agriculture authorities will try to trace the restaurant's meat suppliers. The city also is interviewing workers at the restaurant, he said.

"They're following the procedure that are required," he said. "They have been very cooperative."

Heer said the health department got the first report of a case May 13, and then began a "food history" of the victims. He said the incubation period averages between four and six days.

"We put down all the places they ate, including homes, from May 4th through May 11th," he said.

"Then we line this all up, and we kind of look across and say a good number of people ate at this restaurant at this one day, at this one time."

An E. coli O157:H7 outbreak last year in the Pacific Northwest killed four people and made 500 severely ill. It was traced to tainted hamburger meat at a fast food restaurant.

North Dakota's biggest outbreak was in 1990. Heer said, when 27 people were reported ill after eating roast beef at a three-hour show.

## Bride sues restaurant over E coli

Bismarck, N.D. (AP) A Dickinson woman who was sickened on her wedding day by E. coli is suing the restaurant that catered her wedding reception.

Debra Kurts and her husband, Robert, filed suit against the Wood House in South Central District Court last week.

State health officials say 14 people were sickened by E. coli in the May 1994 outbreak. All the victims were traced to Wood House meals.

The restaurant had catered the Kurts' riverboat wedding reception, and Debra Kurts was hospitalized after she became ill.

The couple is seeking reimbursement of \$2,800 in medical bills and \$300 for the catering bill.

They are also seeking an unspecified amount for her pain and suffering, and his "loss of normal society and consortium of his wife."

Sunday, February 18, 1996

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

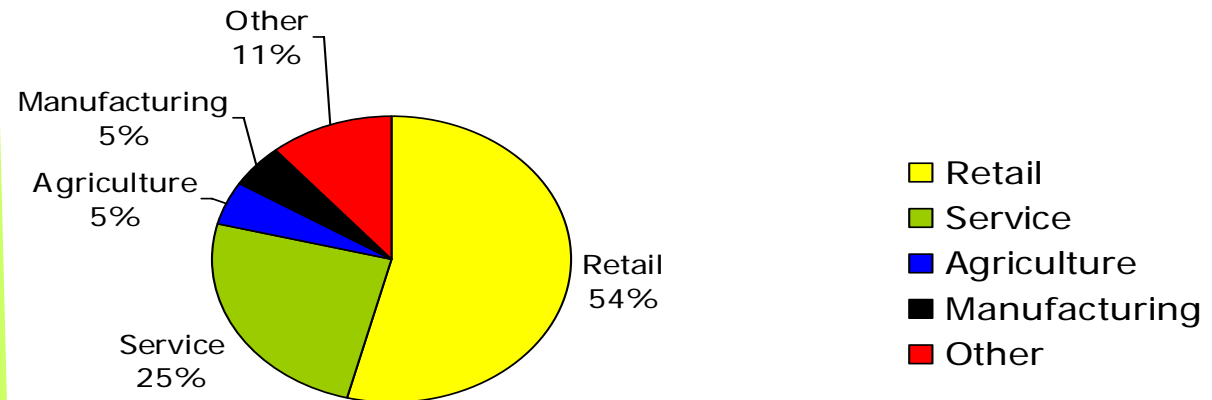
**Nearly 40% of people ages 15-24 eat their main evening meal out 3 or more times per week.**



# 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

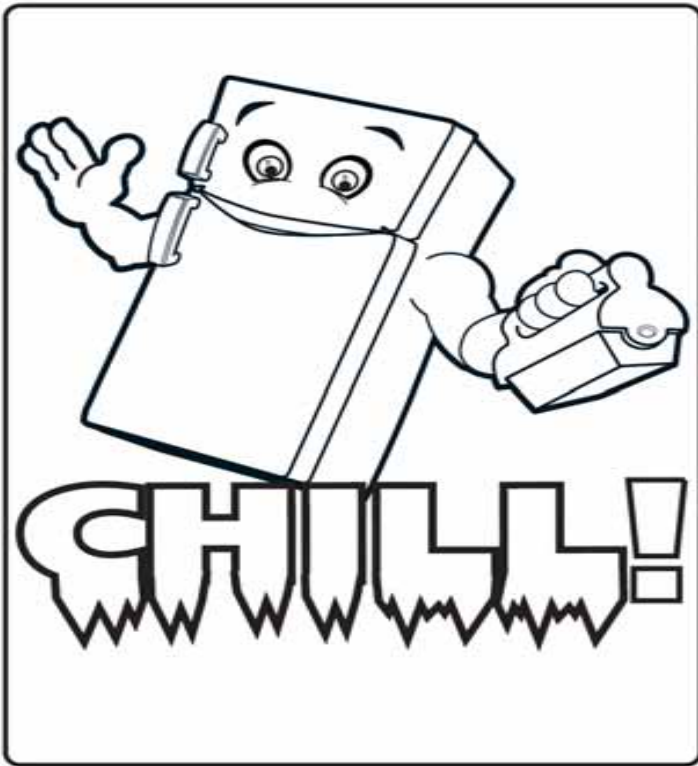
# Lesson 4 “Cook” - The Third Step to Food Safety



- Recognize safe cooking temperatures
- Cooking experiment “Is brown good enough?”
- Calibration and use of thermometers



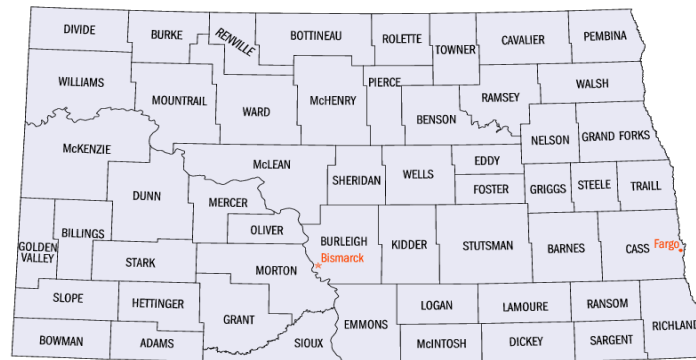
# Lesson 5 “Chill” – The Fourth Step to Food Safety



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

# Impact

- Statewide implementation
- 100 trained educators



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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.

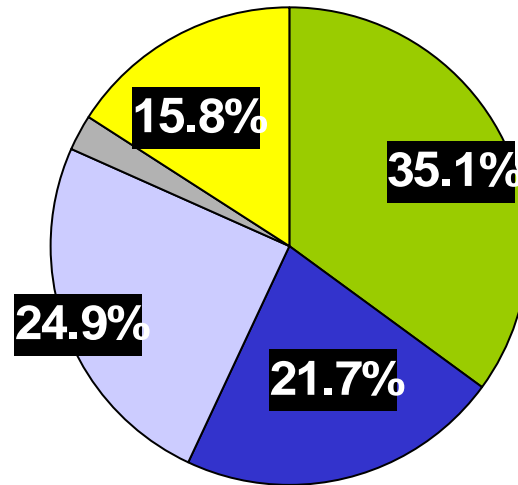


Follow-up test score average was 86%, indicating good retention of the facts they learned.

# Results

•61.8% of participants have been involved in food preparation for the public

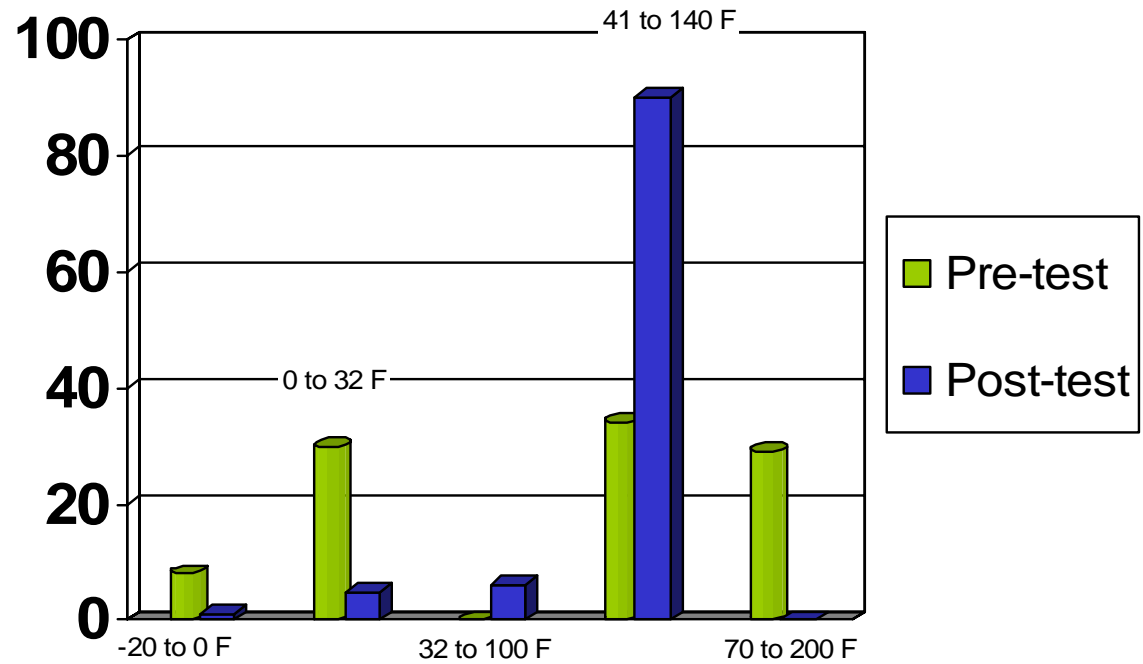
**Places Participants Serve Food**



■ Volunteer ■ Restaurant ■ School  
■ Food Court ■ Other

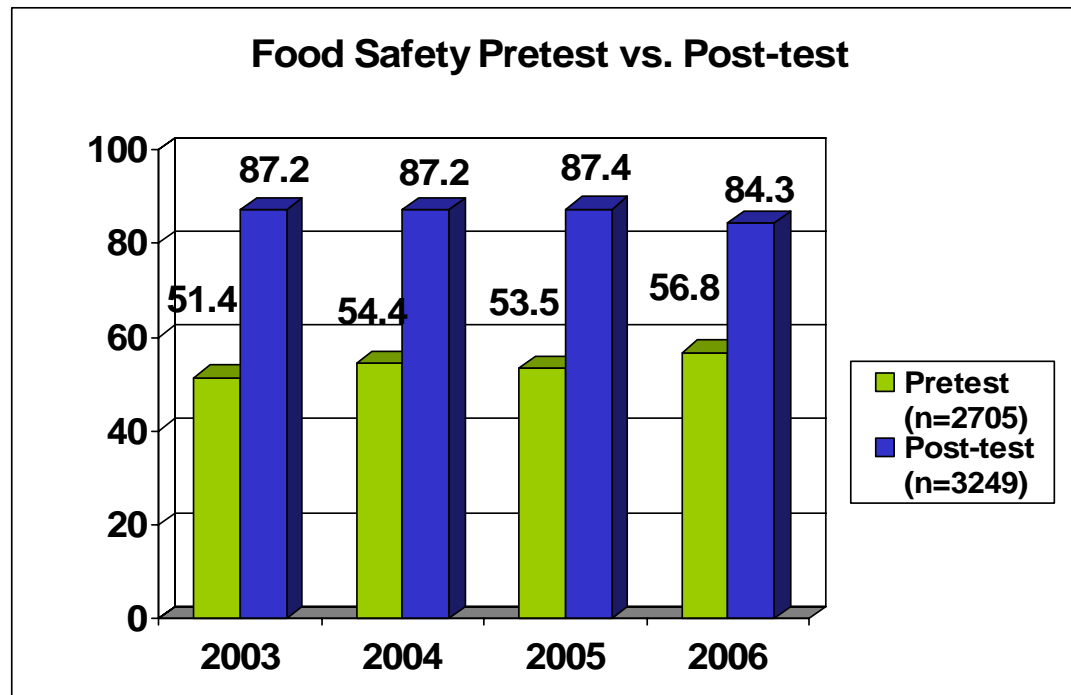
# Results

What is the "Danger Zone" range?



# 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



## Did You know?

Less than half of the population owns a food thermometer!



Only 3 percent use one when cooking hamburgers.

# 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.

# 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.