State of the Plate

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RI Department of Health

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Estimated Foodborne Illness in Rhode Island

- 160,000 illnesses each year
- 428 hospitalizations
- 10 deaths
- $16,730,000 to $20,075,000 in medical costs and lost productivity
The Food that Made You Ill Is Probably Not the Last Food that You Ate

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Incubation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norovirus</td>
<td>12-48 hours</td>
</tr>
<tr>
<td>Salmonella</td>
<td>6 to 72 hours</td>
</tr>
<tr>
<td>Campylobacter</td>
<td>2 to 5 days</td>
</tr>
<tr>
<td>E. coli O157:H7</td>
<td>1 to 10 days</td>
</tr>
<tr>
<td>Listeria</td>
<td>3 to 70 days</td>
</tr>
</tbody>
</table>
## FOOD SAFETY PROGRESS REPORT FOR 2013

<table>
<thead>
<tr>
<th>Disease Agents</th>
<th>Percentage change in 2013 compared with 2006–2008</th>
<th>2013 rate per 100,000 Population</th>
<th>2020 target rate per 100,000 Population</th>
<th>CDC estimates that...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>![Sad] 13% increase</td>
<td>13.82</td>
<td>8.5</td>
<td>For every Campylobacter case reported, there are 30 cases not diagnosed</td>
</tr>
<tr>
<td>Escherichia coli O157</td>
<td>![Neutral] No change</td>
<td>1.15</td>
<td>0.6</td>
<td>For every E. coli O157 case reported, there are 26 cases not diagnosed</td>
</tr>
<tr>
<td>Listeria</td>
<td>![Neutral] No change</td>
<td>0.26</td>
<td>0.2</td>
<td>For every Listeria case reported, there are 2 cases not diagnosed</td>
</tr>
<tr>
<td>Salmonella</td>
<td>![Neutral] No change</td>
<td>15.19</td>
<td>11.4</td>
<td>For every Salmonella case reported, there are 29 cases not diagnosed</td>
</tr>
<tr>
<td>Vibrio</td>
<td>![Sad] 75% increase</td>
<td>0.51</td>
<td>0.2</td>
<td>For every Vibrio parahaemolyticus case reported, there are 142 cases not diagnosed</td>
</tr>
<tr>
<td>Yersinia</td>
<td>![Neutral] No change</td>
<td>0.36</td>
<td>0.3</td>
<td>For every Yersinia case reported, there are 123 cases not diagnosed</td>
</tr>
</tbody>
</table>

For more information, see [http://www.cdc.gov/foodnet/](http://www.cdc.gov/foodnet/)

Preliminary FoodNet 2013 Data
Reported Foodborne Illness, Rhode Island, 1990-2012

Campylobacteriosis, Salmonellosis, Hepatitis A, E. coli 0157:H7, Listeriosis, Shigellosis

Number of Cases

Year


619 737 640 600 534 537 492 582 410 412 433 414 360 353 314 301 270 335 329 302 266
Shigellosis

- Northeast WAS about ½ national rate
- Mid Atlantic and E. N. Central more than doubled from 2011 to 2012
  - including Ohio, NJ, and NY
- Child care settings cited as a major source in Ohio
Shigellosis

- Said need to watch at NEFDOA in Nov. 2012
- In July, about 150 ill at a beach where we have not had bad samples
  - Many swam in child area near slide
  - Concern a cluster bomb
    - How many ill work in food, day care or health care?
Shigellosis

- Did press release
  - Don’t work in food establishments, day care and healthcare if ill
  - Don’t prepare food for others if ill
  - Need excellent hand washing
  - No hand contact of ready-to-eat foods
- Same controls for Norovirus
Confirmed and Probable *S. sonnei* by Outbreak, Rhode Island, June 22, 2013 – September 30, 2013

Note: Event date is generated based on the availability of data in the following order:

1. Illness onset date,
2. Specimen collection date,
3. Date of report to public health agency.
Campylobacter Rates 2011-2013

![Graph showing Campylobacter rates for different regions in the United States from 2011 to 2013. The y-axis represents the rate per 100,000 population, while the x-axis lists the regions: United States, New England, Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The graph uses different colors for each year, with 2011 in yellow, 2012 in blue, and 2013 in purple. The rates vary significantly across regions, with Vermont showing a notably higher rate in 2013.](image-url)
Campylobacter*

- Foreign travel
- Undercooked poultry
- Turkey or chicken cooked outside the home
- Chicken livers
- Other meat cooked outside the home
- Raw milk (raw milk cheeses?)
- Raw seafood
- Living on or visiting a farm
- Contact with farm animals
- Contact with puppies

* C. Friedman et al, Int Cont Emerg Infect Dis. 2000
How to Avoid Campylobacteriosis

- Thoroughly cook poultry (Chicken Liver) and eggs
  - Campy found in egg yolks in breeder hens
- Thoroughly wash hands, cutting boards, etc. after handling raw poultry.
- Avoid unpasteurized milk ("basket cheese")
Population-based Case-control Studies

E. coli O157

✓ pink hamburger
✓ farm animals
✓ eating at a table-service restaurant

(Source: Art Liang CDC)
RATES of Shigatoxin-producing E. Coli (STEC)
in Rhode Island, New England States, & New York State
(2002-2012)
E. coli 0157:H7 Controls

- Thorough Cooking of Ground Beef Especially for Kids under 5 Years Old
  - Changed national Food Code to require foods on children’s menus to be thoroughly cooked
- Consumer advisory

- Pasteurize Cider and milk
  - Test raw milk cheeses and soft cheeses

- Don’t Use Uncomposted Manure for Fertilizer (Organic) or contaminated water for irrigation of ready-to-eat crops
Listeriosis

- Rate in Northeast almost twice U.S. rate
- In 2008-09 in NE, had outbreaks and illnesses due to soft cheese plants in NJ and New York
- Recalls due to sprouts from Conn. and Mass.
- 2013 Boston Salad recalls
Listeriosis

- Incubation Period 3-70 days

- High Risk Foods
  - Unpasteurized (raw) milk and cheeses
  - Soft cheeses
  - Deli meat and hot dogs
    - Especially sliced turkey and other products sliced at deli
  - Smoked seafood
  - Sprouts…
  - Grows at refrigerator temps
Salmonella infections:

- Since 1996–1999, SE in FoodNet has increased 44%.
  - “…chickens from which SE was isolated has increased.”

- ”problem is growing. Chicken and eggs are likely major sources of SE.”
Salmonella infections:

- RI illnesses increased 2009-11
  - Burger facility
    - Tomatoes from Florida and Globe slicer
  - Salami outbreak implicating pepper from Vietnam, China and India
  - Italian cream filled pastry
    - 82 ill, 4 deaths
  - 2012 RI cases down by 60%
Georgia tested slicers as a result of a Salmonella outbreak.
Globe Slicer - Area under white plastic piece (secured with screw) tested + for Salmonella
Blade side view of slicer blade guard

Non-removable, non-cleanable white plastic on inside of blade guard was Salmonella + PFGE match to outbreak
Area between blade and guard could not be easily cleaned and sanitized

Area under foot was also positive for RI outbreak strain of Salmonella
FDA Brochure on Slicers

Commercial Deli Slicer Inspection Tips for Food Safety Professionals

- Mechanical deli slicers commonly used in retail and foodservice establishments to slice meats, cheeses and produce may become difficult or impossible to adequately clean and sanitize after a period of use.
- Recent foodborne illness outbreaks have been associated with the accumulation of food soils and disease-causing microorganisms on areas of commercial deli slicers that are difficult to clean and sanitize.
- These outbreaks have resulted in serious illnesses and hospitalizations.

There are many seams created between the numerous adjoining parts and components of a typical deli slicer. Sealants and gaskets are often used to seal these seams. These seams can become worn, degraded or removed as a result of the heavy use and cleaning regimens to which deli slicers are subjected. As these seals and gaskets become degraded, spaces can be created that can trap debris and moisture, which can lead to areas that may not be adequately cleaned and sanitized under normal cleaning methods.

During routine inspections of retail and foodservice establishments:

- Pay special attention to commercial deli slicers.
- Examine the equipment for degraded, defective or worn parts.
- If there are any signs of cracks, chips, deep scratches or loss of adhesion or if any seam or part is found defective or damaged, have the food establishment remove the slicer from service until repaired or replaced.
- Stress that establishment managers need to contact the slicer manufacturer for repairs and maintenance; all repairs should be performed by the manufacturer’s authorized service representatives.
- Check that the retail or foodservice establishments are following the manufacturer’s instructions for cleaning and maintenance.

NSF/ANSI Standard 8, Commercial Powered Food Preparation Equipment

Most slicers used in food establishments are models that have been certified to the NSF/ANSI (American National Standards Institute) Standard 8, Commercial Powered Food Preparation Equipment by an ANSI accredited certification body. However, these certifications are issued for newly manufactured products only, and do not ensure that the slicer will be maintained in a cleanable condition after extended use. Once in the field, slicer seal and gasket life will be affected by a variety of factors such as conditions of use, type and frequency of cleaning protocols, and types of foods being sliced. Since slicers typically remain in use for a number of years, operators and regulators must be diligent in their inspection, evaluation and maintenance of this equipment.

For additional copies and more information visit: www.fda.gov/retailfoodprotection
Greatest Predictor for Listeriosis is Consuming Luncheon Meat Sliced at the Deli

- Role of slicers in question
- NSF national standards for slicers changed effective November 2012
- Take unsafe slicers out of service
Foods associated with *Salmonella* outbreaks*
To avoid Salmonella infections:

- Don't drink unpasteurized milk.
- Don't eat undercooked poultry (including turkey) and poultry products such as eggs.
  - Eggnog
- Avoid contact with infected domestic and wild animals, including poultry, pigs, cattle, and pets such as turtles, iguanas, chicks, dogs, and cats.
- Wash hands after any animal or feed contact
To avoid Salmonella infections:

- 12% of spices are contaminated
- 7% contaminated with Salmonella
- Buy spices from reputable sources
- Add spices before cooking not after
Global Warming - Major Increase in Vibrio Illnesses from Raw Shellfish in Northeast

Due to illnesses in Summer, shellfish closures in NY, Connecticut and Massachusetts in 2012-2013

FDA recommended Vibrio control plan

- Chill shellfish within 5 hours of harvest
- RI illnesses decreased this year
  - 20 to 7 inches of rain (2012 to 2013)
- MA still had illnesses associated with Cape Cod Bay
Direction

“Go After the Bad Guys”
- Places most likely to cause illness
- Find the underlying cause and eliminate it or the problem is likely to happen again

Continue Implementing grants
- Rapid Response Team
- Manufacturing Standards
- Retail Standards
- Improve Recall Effectiveness
- CDC EHS-Net Research
To Prevent Foodborne Illnesses

Monitor and control:

- Ill workers
- Bare hand contact of ready-to-eat foods
- Cooling
- Hot Holding
- Cooking
- Cold Holding (check refrig. temps twice daily (and take action))
- Receiving/transportation
- Sanitization
FDA Foodborne Illness Risk Factors

- Certified Manager Had a Positive Effect on:
  - Poor Personal Hygiene
  - Contaminated Equipment
  - Holding Temperatures
- Lack of certified manager associated with outbreaks
- Should be a certified manager at all times and worker training
Finding the Cause of Foodborne Outbreaks

**Production at the farm**
- Is there contamination from manure or animals?
- Is the water used for irrigation and washing safe?
Finding the Root Cause

Processing

- Are foods cooked to temperatures to kill bacteria?
- Are ingredients that won’t be thoroughly cooked safe?
- Are foods protected from contamination?
  - (Not outbreak, but cat in filthy bakery
  - Roaches in bakery source of infestation for community – association asthma and roaches)
Finding the Root Cause of Foodborne Outbreaks

Restaurants and Markets

- Are foods cooked to safe temperatures?
- Are ready-to-eat ingredients safe?
- Was anyone ill preparing food?
- Are foods held (hot and cold) at safe temperatures?
- Are foods protected from contamination?
  - Was there bare hand contact of ready-to-eat foods such as salads?
Questions

- How much variance in illness between states is due to reporting versus differences in illness?
  - E.g. Mass. Salmonella and Shigella high due to better reporting or local sources?
  - Vermont high E. coli O157:H7 and Campylobacter due to raw milk products?
  - Are these products coming here?
Next Steps

- Target reducing Salmonellosis and Campylobacteriosis
  - Thorough cooking of all poultry and egg products
  - Evaluation of spices used on ready-to-eat foods
<table>
<thead>
<tr>
<th>Regulation</th>
<th>Court Ordered Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive Controls for Human and Animal Food</td>
<td>August 30, 2015</td>
</tr>
<tr>
<td>Produce, Foreign Supplier Verification Program (FSVP) and Third Party</td>
<td>October 31, 2015</td>
</tr>
<tr>
<td>Transport</td>
<td>March 31, 2016</td>
</tr>
<tr>
<td>Intentional Adulteration</td>
<td>May 31, 2016</td>
</tr>
</tbody>
</table>
FDA Preventive Control Rule

- Will be reissued for comments
- Applies HACCP type requirements to foreign and domestic food processing firms
- Need written hazard control plans
FDA Preventive Control Rule

- Large businesses 1 year to comply after effective date
- “small businesses” 2 years
- “very small businesses” 3 years
  - Definition of sizes open for comment
FDA Produce Rule

- Safe Water
- Manure Use
- Processing
- Exemptions

“Small” business sells annually no more than $500,000 in food
“Very small” business sells annually no more than $250,000 in food
FDA Produce Rule

“small businesses” three years to comply after effective date

“very small businesses” four years after effective date

Longer for some water-related requirements
Changes in Office of Food Protection

- 4 deaths from zeppoles in 2010
- 7 to 18 inspectors and looking to fill two more
- Department budget cuts this year and next
RI Inspections 2013

- 7,000 inspections
- Food discarded in 18% of inspections
- 20% of inspections were reinspections
- 10,647 critical violations
- Average of 1.6 critical violations per inspection
July 2014
RI Inspection Findings

- 700 inspections
- Food discarded in 20% of inspections
- 26% of inspections were reinspections
- 1,156 critical violations
- Average of 1.6 critical violations per inspection
CIFOR INDUSTRY GUIDELINES

FOODBORNE ILLNESS RESPONSE GUIDELINES

For Owners, Operators and Managers of Food Establishments

www.CIFOR.us
GMO’s

- Some people want to know what foods have GMO ingredients

- Enforcement problem
  - No way of knowing whether an ingredient from out of state was genetically modified

- Relative Risk
  - Discarding unsafe food in 20% of facilities
  - No illnesses being reported from GMOs
Questions?