State of the Plate

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Foodborne Illness in the U.S.

• 48 million illnesses each year
  – One person in 6 ill each year
• 128,000 hospitalizations
• 3,000 deaths
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
Top Foodborne Illnesses

58% of Total Foodborne Illness

Norovirus: 58%
Salmonella: 11%
Perfringens: 10%
Campylobacter: 9%
Staphlococcus: 3%

5 account for 91% of FBI
Risks Related to Processes

Complete Trips Through the Danger Zone

Danger Zone Diagram

- 135°F
- 41°F

- No Cook
- Same Day
- Complex
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>
Long-term effects of FBI

• Kidney failure
  – HUS may occur after E. coli infection
    • Most common cause of acute kidney failure in children
• Chronic arthritis
  – Salmonella, Campylobacter, Shigella
• Brain and nerve damage
  – Meningitis
    • L. monocytogenes
  – Guillain Barré
    • Campylobacter (as many of 40% of GB cases may be triggered by Campy)
• Death

Source: foodsafety.gov/poisoning/effects
## 2015 FOOD SAFETY REPORT

Measuring progress toward Healthy People 2020 goals

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Healthy People 2020 Target Rate*</th>
<th>2015 Rate†</th>
<th>Change Compared with 2006-2008§</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>8.5</td>
<td>12.97</td>
<td><strong>9%</strong></td>
</tr>
<tr>
<td>E. coli O157</td>
<td>0.6</td>
<td>0.95</td>
<td><strong>30%</strong></td>
</tr>
<tr>
<td>Listeria</td>
<td>0.2</td>
<td>0.24</td>
<td>No change</td>
</tr>
<tr>
<td>Salmonella</td>
<td>11.4</td>
<td>15.89</td>
<td>No change</td>
</tr>
<tr>
<td>Vibrio</td>
<td>0.2</td>
<td>0.39</td>
<td><strong>34%</strong></td>
</tr>
<tr>
<td>Yersinia</td>
<td>0.3</td>
<td>0.29</td>
<td>No change</td>
</tr>
</tbody>
</table>

*Per 100,000 population
†Culture-confirmed infections per 100,000 population
§2006-2008 were the baseline years used to establish Healthy People 2020 targets
*Shiga toxin-producing Escherichia coli O157

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[Image source: CDC](https://www.cdc.gov/foodafety/food-safety-report.html)
Lab Confirmed Illnesses, Rhode Island, 1990-2012
Campylobacteriosis, Salmonellosis, Hepatitis A, E. coli 0157:H7, Listeriosis, Shigellosis
E. coli 0157:H7 in the Northeast


*2014–2015 data are provisional
E. coli o157:H7 by State in the Northeast

Rates of Shigatoxin-producing E. Coli (STEC) in Rhode Island, New England States, and New York State (2002–2015*)

*2014–2015 data are provisional

HP 2020 Goal

Year

Connecticut
Rhode Island
Maine
Vermont
Massachusetts
New York
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 was Twice National Rate in NE until 2013
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
Norovirus – Ill Worker Study
Food Handlers Work Sick

• 51% of food workers — "always" or "frequently" work while sick

• Another 38 percent said they go to work sick "sometimes."

• Why?
  • No paid sick leave
  • Did not want to burden coworkers
Norovirus Controls

RI is one of 5 states funded by CDC to research what causes and how best to prevent foodborne illnesses

• Norovirus research
  – Restrict/exclude ill personnel
    • Have on call staff for sick employees
    • Sick time, or employees can make up hours
    • Written sick time policy
  – No hand contact of ready-to-eat foods
  – Excellent handwashing
  – Proper cleanup of vomitus
Three Leading Priorities Guide Our Work

1. Address the Social and Environmental Determinants of Health in Rhode Island
2. Eliminate the Disparities of Health in Rhode Island and Promote Health Equity
3. Ensure Access to Quality Health Services for Rhode Islanders, Including Our Vulnerable Populations

Five Strategies Will Move Us Forward

Fifteen Population Health Goals

Key Metrics

Action Plan Key Initiatives and Intermediate Measures

Individual Achievement Goals
Center for Food Protection

Metrics

• Reduce Salmonella infections from 16 cases/100,000 to 11.4 by 2020
  – Achieved: 9.7 in 2015 in RI

• Decrease food disposals from 17% to 12% by 2018 (13% in August)

• Decrease critical violations per inspection from 1.5 to .8 by 2018 (1.1 in August)

• Decrease reinspections from 27% to 16% in 2018 (21% in August)

• # of “Excellent” facilities
Salmonellosis in the Northeast


*2014–2015 data are provisional

Year

Rate per 100,000 people

- United States
- New England
- Rhode Island
- New York

HP 2020 Goal
Salmonellosis by State in the Northeast


*2014–2015 data are provisional

HP 2020 Goal

Connecticut
Maine
Rhode Island
Massachusetts
Vermont
New York
Foods associated with *Salmonella* outbreaks*
Salmonella

- USDA testing: 83% of mechanically separated chicken is positive for Salmonella
  - May be used in ground chicken
  - Thoroughly cook
Salmonellosis Risk Factors

- Summer months (June, July, and August)
- Children under 5 years old
- Infants who are not breast fed
- Adults over 65 years old, and people with weakened immune systems
- Certain medications
  - Medications to reduce stomach acid
  - Antibiotics
Salmonellosis Risk Factors

- Egg consumption
- Reptiles
  - Turtles, iguanas, snakes
- Consuming chicken outside the home
- Microwaving stuffed chicken (undercooking)
- Contaminated pet food
- Tomatoes, peppers, cucumbers, cilantro from Mexico
- 7% of spices contaminated
  - (Add spices before cooking)
Prevention

• Avoid eating high-risk foods, including raw or lightly cooked eggs, undercooked ground beef or poultry, and unpasteurized milk

• Clean hands with soap and warm water before handling food and after contact with animals, their food or treats, or their living environment.

• Clean surfaces before preparing food on them.
Prevention

- Separate cooked foods from ready-to-eat foods.
- Do not use utensils or plates for cooked foods previously used for raw foods unless thoroughly cleaned.
- Use a meat thermometer to make sure foods are cooked to a safe temperature.
- Chill foods promptly after serving and when transporting from one place to another.

Source: Foodsafety.gov
Salmonella Controls

• Increase number of managers certified in food safety
  – Not having someone certified is correlated with outbreaks and foodborne illness risk factors
• Test produce and drive improved produce safety (tomatoes, peppers, cucumbers)
• Evaluate restaurants serving chicken livers
  – Associated with Campylobacter and probably Salmonella cases
• Whole Genome Sequencing to find and eliminate the sources
FS6: Increase the proportion of restaurants that follow food safety practices that prevent foodborne illness outbreaks

- 6.1: Proper employee handwashing
- 6.2: No bare hand contact with RTE foods
- 6.3: Food contact surfaces are properly cleaned and sanitized
- 6.4: Proper refrigeration temperature
- 6.5: Proper hot holding
  – (6.1- 6.5 fast food, 6.6 - 6.10 full service)
Individual Achievement Goals

- Promote and require more industry training
- Update manager certification requirements
- Promote industry preventive control plans
- Adopt FDA Produce, Preventive Control regs
- Consumer education
- Rapidly remove recalled high risk products
- ID and eliminate the root cause during outbreaks and inspections
- Assure consistency of inspections
- Target limited resources at eliminating the highest risk practices in the highest risk facilities
Other Metrics

- Voluntary National Retail Food Regulatory Program Standards
- Manufactured Food Regulatory Program Standards
- Council to Improve Foodborne Outbreak Response Metrics
  - www.CIFOR.us
Direction

- Industry has systems in place to assure food safety
- Health assures those systems are working
- Focus on Prevention vs reacting to serious hazards
Findings and Actions

- Satisfactory
- Conditional
- Unsatisfactory
  - Clearer expectations and what will occur
  - Determine root cause
  - Get systems in place to prevent reoccurrence
- Excellence
If system is not working, what is root cause?

- Equipment – refrigeration not working, slicer design...
- Facility
- Lack of knowledge
- There is no system
- Corporate policy
- Lack of food safety culture/motivation
Direction- Excellence Criteria

• To achieve an “A” Rating
  – History of no critical violations that would lead to illness
  – Certified Manager/Persons in Charge present at all times during food preparation
  – Written food safety plan and procedures in place
    • All staff are trained according to their duties
    • Effective employee health policy
      – Policy to restrict/exclude ill personnel
      – Call in procedure to replace ill workers
      – Sick time for employees or they can make up hours
• Records to show effective response to illness complaints
• Hazards are monitored and controlled
  – Cooling time/temperatures
  – Temperature recording for hot holding over 4 hours
  – Automatic refrigeration temperature monitoring, alarms, or monitoring records for when refrigeration fails
  – No bare hand contact of ready-to-eat foods
• Allergy control plan
• Pest control plan
• Self and/or third party verification of plan once per year
Direction

- Food Safety Modernization Act
  - 7 new FDA regulations
  - Preventive Controls
  - Produce
    - Water
    - Manure use
Produce First Year Expectations
Strategic Planning

• The focus of Year 1 is dedicated to planning activities for Years 2-5

• Activities include:
  – Jurisdictional Self-Assessment
  – Farm Inventory
  – Legislative Research
  – Infrastructure Development
  – Education and Outreach and Technical Assistance to Growers
Food Donations

• Lot of leftover produce rots in the fields
• Problems with harvesting, transporting and storing leftover perishable foods
• Challenge getting safe high quality produce to the poor in the food deserts (lack of supermarkets)
  – Fast food and convenience stores
Questions?