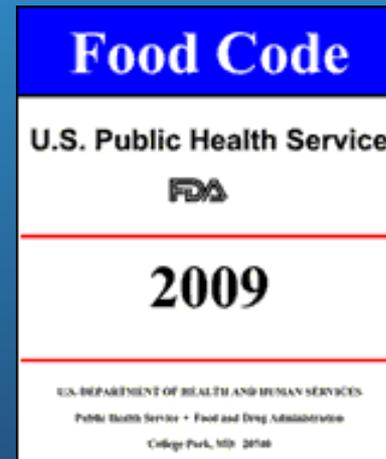
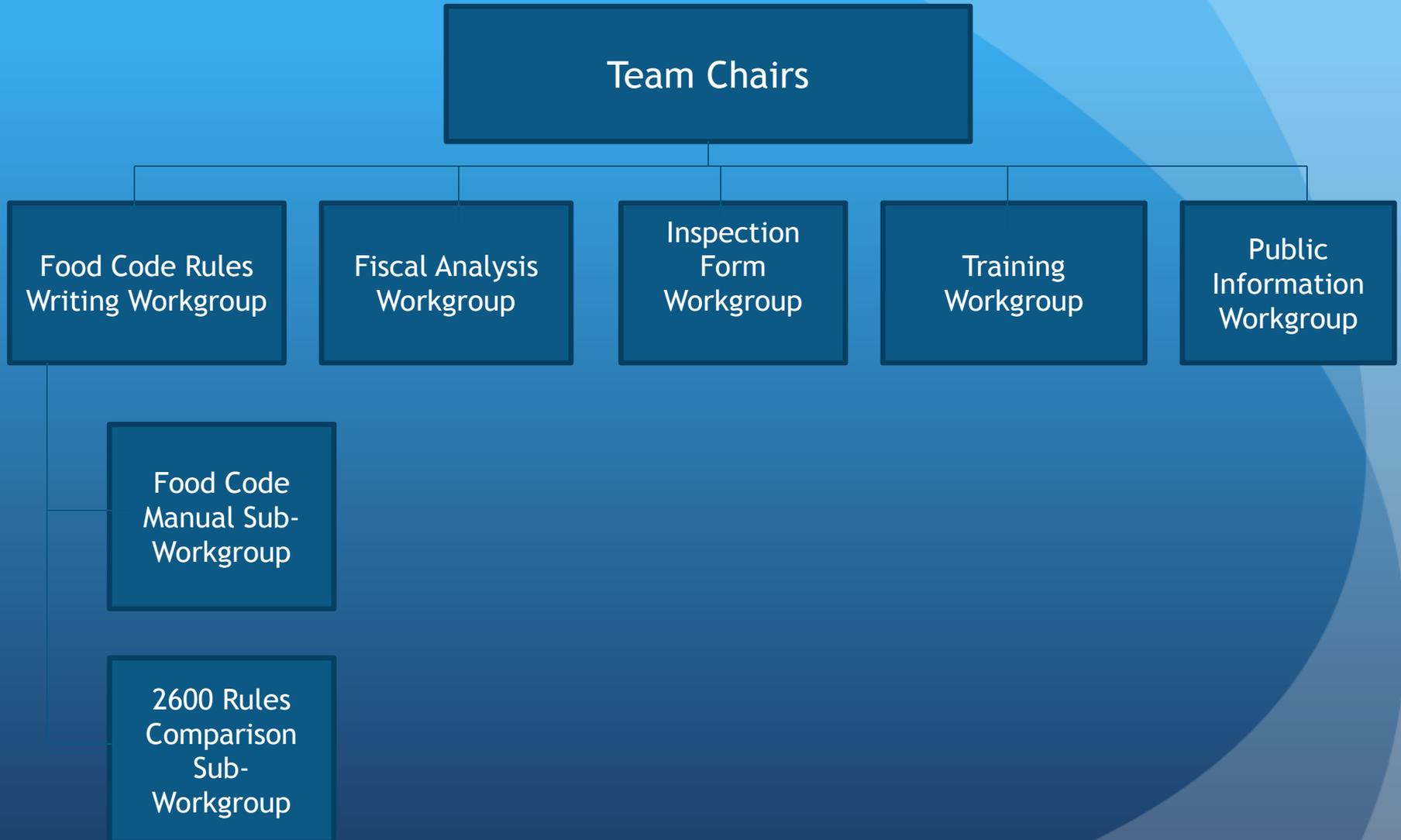


North Carolina's Adoption of the FDA Food Code

Larry D. Michael
NC Division of Public Health
May 2012



Food Code Adoption Transition Team



Status Update and Timeline

- Published in the NC Register—March 2012
 - Available online and listserv
- Public hearings & town hall meetings
- Commission for Public Health—May 16, 2012
- Rules Review Commission—June 21, 2012
- Adoption—July 1, 2012
- Effective Date—September 1, 2012

Major Additions to the NC Code

- Definition of Potentially Hazardous Food (1-201.10 (b))
- Demonstration of Knowledge (2-102.11)
- Employee Health (2-201)
- Preventing Contamination from Hands (3-301.11)
- Cold Holding at 41°F or less (3-501.16)
- Date Marking (3-501.17)
- Reduced Oxygen Packaging (3-502.12)
- Consumer Advisory (3-603.11)
- Variances (8-103)

Definition of Potentially Hazardous Food (TCS)

- Time/temperature control for safety food (TCS)
 - pH
 - A_w
 - pH and a_w interaction
 - Heat treatment
 - Packaging
- “Hurdle” technology—The ability for several inhibitory factors to work together to control or eliminate pathogen growth, when they would otherwise be ineffective if used alone.
- Product Assessment Required (PA)
 - Evaluated for the ability to support the growth of pathogenic organisms and toxin formation.

Demonstration of Knowledge (2-102.11)

- The Person in Charge (PIC) shall demonstrate knowledge of food safety and foodborne illness prevention by passing a test that is part of an ANSI-accredited program.
 - No minimum classroom hours required
 - Accreditation will be good for five years
- Certified PIC must be available on-site during all hours of operation.
- Rating Scale=100 percent

Idaho Risk Factor Study

Percent Risk Factor Compliance Comparison (2005 to 2010)

Facility Type	Time/Temperature Control		Contaminated Equipment		Poor Personal Hygiene		Inadequate Cooking		Food From Unsafe Source		% Increase In Risk Factor Compliance WITH Manager Certification training
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010	
Elementary School	92.14%	96.88%	94.68%	97.59%	95.68%	96.83%	97.98%	98.19%	99.40%	99.43%	16.39%
Fast Food	83.27%	82.59%	87.97%	94.08%	91.36%	90.53%	100%	100%	99.40%	99.45%	10.42%
Full Service	72.51%	81.25%	83.46%	87.02%	82.94%	87.58%	97.84%	97.75%	98.47%	99.04%	10.22%
Deli Department	77.95%	81.81%	84.98%	93.73%	92.73%	94.24%	96.80%	97.76%	97.01%	99.33%	17.55%
Meat Department	89.74%	90.78%	89.21%	95.56%	92.70%	94.96%	100%	100%	98.46%	99.49%	4.88%
Average % Compliance Changes (Industry Wide)	59.37%	61.90%	62.90%	66.85%	65.06%	66.31%	70.37%	70.53%	70.39%	70.96%	8.49%

Color indicates an improvement in compliance %

Employee Health

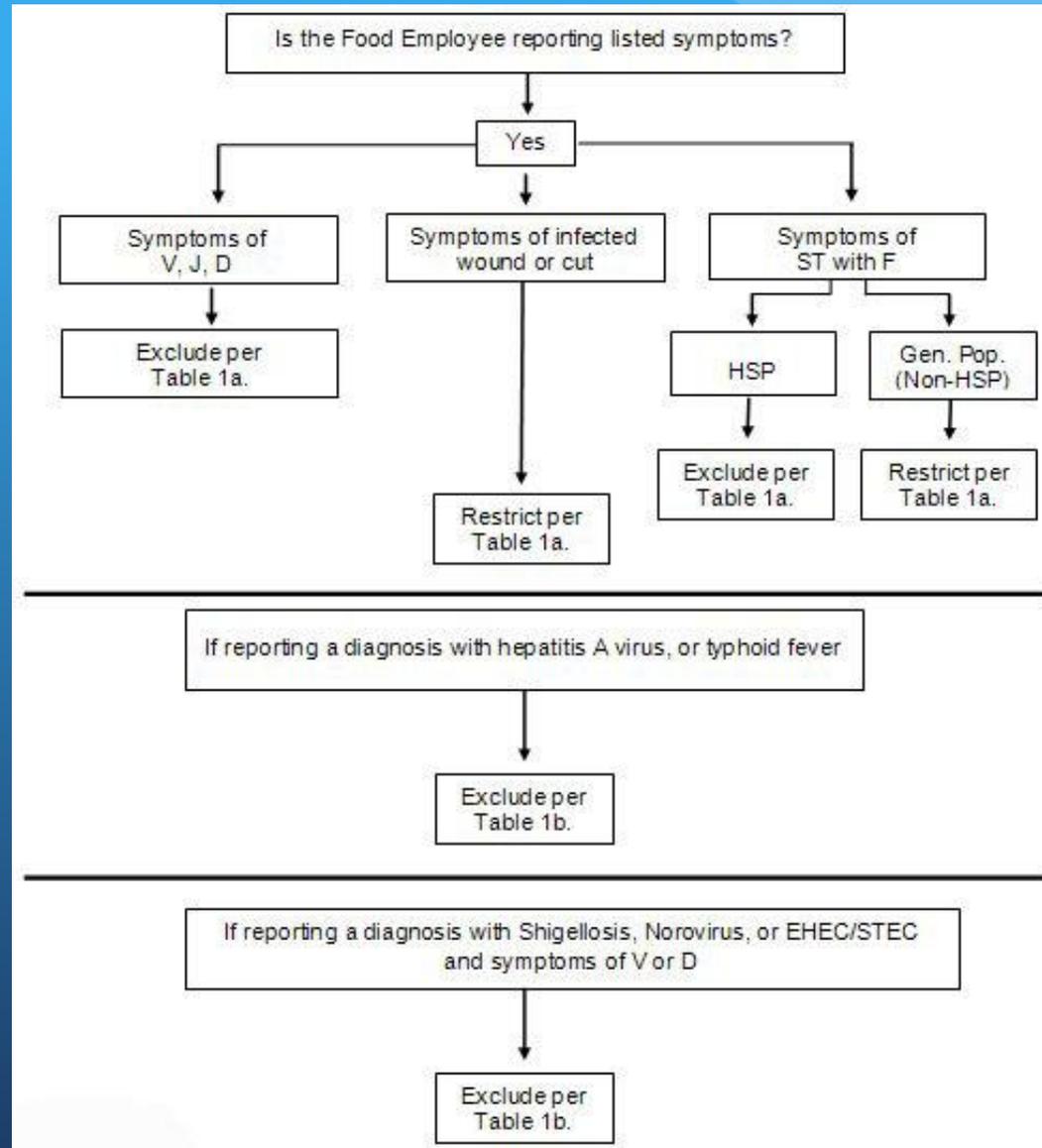
(2-201.11, 2-201.12, 2-201.13)

- Employee Health Policy
- Employees and conditional employees to report:
 - Active symptoms
 - Vomiting, diarrhea, jaundice, sore throat with fever, and lesions containing pus on parts of the body that can come in contact with food.
 - Any diagnosis or exposure to:
 - Norovirus, Hepatitis A virus, *Shigella* spp., Enterohemorrhagic or Shiga-toxin producing *Escherichia coli*, or *Salmonella* Typhi

Employee Health

- Exclusion
- Restriction
- The level of exclusion and restriction is based on a tiered structure specified within the Code.
- The same tiered structure specifies when the exclusion or restriction can be lifted

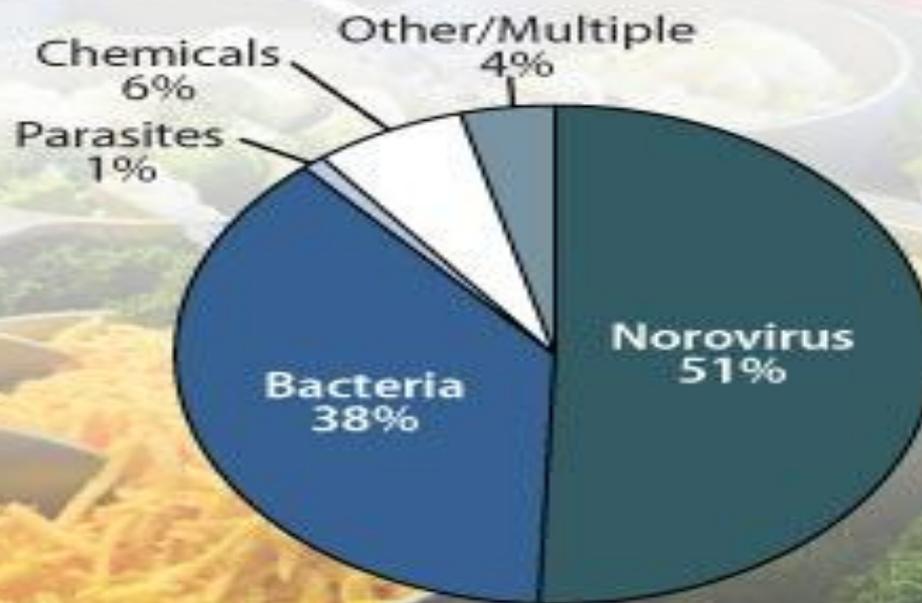
Annex 3—Decision Tree 1



Preventing Contamination from Hands (2-301.11)

- No bare hand contact of RTE food
- Alternate means:
 - Deli tissue
 - Spatulas
 - Tongs
 - Single-use gloves
 - Dispensing equipment

Known Causes of Foodborne Illness Outbreaks, U.S. 2006–2008



Impact of Foodborne Illnesses in NC

Pathogen	Number of Cases in NC (avg. 2008– 2011)	Cost per Case*	Cost per Year Sub- Total	Additional Cost per Death	Sub-Total Cost for Death Cases**	Total Cost in NC per Year
HAV	187	\$5,187	\$969,969	\$32,814	\$65,628	\$1,035,597
Shigella spp.	307	\$9,548	2,931,236	\$558	\$1,674	\$2,932,910
STEC	145	\$2,349	\$340,605	\$8,097	\$8,097	\$348,702
Norovirus	19,000***	\$595	\$11,305,000	\$200	\$38,000	\$11,343,000
Total						\$15,660,209

*Cost per case includes cost of medical care, loss of productivity of the ill person and caregiver, and quality of life loss

** Cost per death assumes 1% of cases in NC result in death

*** The Division of Public health estimates 1,900,000 cases of norovirus per year. If 1% is attributed to food service establishment transmission, then the total number of cases in NC is 19,000.

Scharff, Robert L. *Economic Burden from Health Losses Due to Foodborne Illness in the United States*.
Journal of Food Protection, Vol. 75, No. 1, 2012, Pages 123-131.

Potential Reduction in Cases

- If the new requirements can reduce the number of *cases by only two percent, then:
 - 439 fewer cases/year
 - \$882,300 cost savings/year

*Includes HAV, *Shigella* spp., STEC, *Salmonella* spp., norovirus

Preventing Contamination of RTE Food

- National Advisory Committee on Microbiological Criteria for Foods concluded that three factors must work together to effectively prevent the transmission of foodborne illnesses transmitted via the fecal-oral route (1999):
 1. Handwashing
 2. Employee Health Policy that prohibits ill employees from handling food, and
 3. No bare hand contact with ready-to-eat foods.





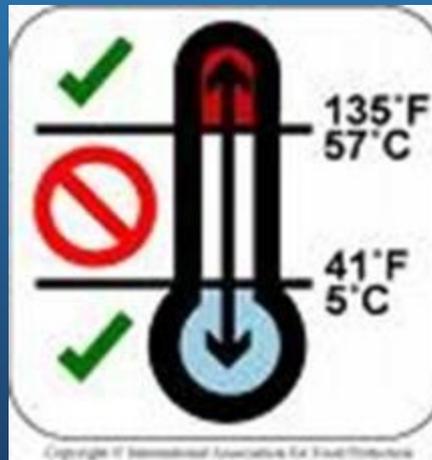
Parasite Destruction

(3-402.11)

- Food establishments that serve raw-marinated, or marinated and partially cooked fish must ensure destruction of naturally-occurring parasites prior to serving.
- Can be accomplished by:
 - A certification, or Letter of Guarantee, from their supplier that the product is parasite-free; or
 - Freeze the fish to the following parameters:
 - Frozen and stored at a temperature of -200°C (-40°F) or below for a minimum of 168 hours (7 days) in a freezer;
 - Frozen at -35°C (-31°F) or below until solid and stored at -35°C (-31°F) or below for a minimum of 15 hours; or
 - Frozen at -35°C (-31°F) or below until solid and stored at -20°C (-4°F) or below for a minimum of 24 hours.

Cold Holding of Potentially Hazardous Foods (3-501.16)

- Cold holding requirement of TCS foods
 - 45°F to 41°F
- Provisions are in place in the rules to allow for 45°F or less in existing refrigeration in existing facilities to allow for upgrade or replacement by January 1, 2016



Date Marking (3-501.17)

- Establishments must mark prepared RTE foods and opened, RTE packaged foods to reflect a holding date:
 - Maximum of 7 days from the date prepared or opened, respectfully, if held at 41° F or
 - Maximum of 4 days from the date prepared or opened, respectfully, if held at 45° F.



The Control of *Listeria monocytogenes*

- Listeriosis
 - Results in death in 20-30 percent of clinical infections.
 - Leading cause of death among foodborne bacterial pathogens.
- The growth of Lm is affected by the interplay of both time and temperature.
- By lowering the requirement by 4° F and requiring date marking, the occurrence of foodborne illnesses originating from *Listeria monocytogenes* can be greatly reduced.

Costs Related to Listeriosis in NC

Pathogen	Number of Cases in NC/year (avg. 2008–2011)	Cost per Case*	Cost per Year Sub-Total	Additional Cost per Death Case	Sub-total Cost for Death Cases**	Total Cost in NC per year
Listeriosis	23	\$109,260	\$2,512,980	\$1,174,628	\$3,523,884	\$6,036,864

*Cost per case includes cost of medical care, loss of productivity of the ill person and caregiver, and quality of life loss

** Cost per death assumes 15% of cases in NC result in death, based on data from the US CDC

If the implementation of new cold-holding and date-marking requirements reduces the number of cases by only 1 case, then the total cost savings could be between \$109,000 and \$1.28 million or **\$696,600 on average per year.**

Scharff, Robert L. *Economic Burden from Health Losses Due to Foodborne Illness in the United States.*
Journal of Food Protection, Vol. 75, No. 1, 2012, Pages 123-131.

Consumer Advisory (3-603.11)

- Required if animal food is served or sold raw, undercooked, or without otherwise being processed to eliminate pathogens.
 - RTE form; or
 - As an ingredient in another RTE food.
- Examples of animal foods commonly sold or served raw:
 - Beef
 - Eggs
 - Fish
 - Lamb
 - Pork
 - Poultry
 - Shellfish

Consumer Advisory

- Disclosure—Written statement identifying the animal-derived food.
- Reminder—Written statement concerning the health risk.
- Can use the following methods:
 - Deli case or menu advisories; or
 - Label statements; or
 - Table tents; or
 - Placards; or
 - Other effective, written means.



What's Not Going to Change?

- Grading and Scoring System
 - Inspection form will be changed to reflect 100-point scale
- Enforcement and Legal Remedies



SANITATION RATING

A | | | |

This is to certify that

_____ , 20__ .

was inspected on _____ , 20__ .

North Carolina Department of Health and Human Services
Division of Public Health

Javel
State Health Director MD, MPH

By _____
Registered Environmental Health Specialist

ESHS 1097 (Revised 7/09) Environmental Health Section

Just missing one thing...

- ☑ Grading and scoring system
- ☑ Enforcement and legal remedies
- ☑ Nationally recognized training model
- ☑ Enrollment in FDA Retail Food Program Standards
- ☑ Food Defense and Emergency Preparedness Program
- Adoption of the Food Code



Questions ?

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