2017 AFDO Annual Educational Conference

Houston, Texas
June 17-21, 2017

Interstate Shellfish Sanitation Conference
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FDA Cooperative Programs

- Interstate Shellfish Sanitation Conference (ISSC)
- National Conference on Interstate Milk Shipments (NCIMS)
- Conference for Food Protection (CFP)

Purpose of the ISSC

- To provide formal structure for State regulatory authorities to participate in establishing regulatory guidelines and procedures for uniform State application of the National Shellfish Sanitation Program (NSSP). These guidelines include the necessary control measures to ensure a safe shellfish supply to the consuming public.
- Purpose includes fostering and improving the implementation of the Guidelines of the NSSP

What Are Shellfish?

- Shellfish means all species of:

  (a) Oysters, clams or mussels, whether:

  (i) Shucked or in the shell;

  (ii) Raw, including post-harvest processed;

  (iii) Frozen or unfrozen;

  (iv) Whole or in part; and

  (b) Scallops in any form, except when the final product form is the adductor muscle only.

Potential Hazardous Foods

- Cooked or Raw Animal Products:
  - Meat, fish and poultry
  - Dairy products, including custard pies
  - Eggs (except for air-dried, hard boiled eggs with an intact shell)
- Cooked fruits or vegetables (including cooked starches)
- Raw seed products
- Cut melons
- Fresh herb-in-oil mixtures
- Garlic-in-oil mixtures
- Cut leafy greens (as of 5/1/13)
- Cut tomatoes (as of 5/1/13)

Why are shellfish included on the list of Potentially Hazardous Foods.

1. Shellfish are a Raw Animal Product
2. Often consumed raw or undercooked
3. Shellfish are filter feeders and they filter food from the environment
4. The entire animal is consumed including the digestive tract which could contain pathogens

What do shellfish consume that poses a public health concern?

- Marine Biotoxin
- Norovirus
- Naturally Occurring Vibrios

Emerging Issues

- Marine Biotoxin
- Vibrios
- Norovirus
- Illness Reporting
- Funding

Biotoxins in Shellfish

- Toxic Algae blooms → Toxins → Ingestion by Shellfish → Intoxication

Biotoxin

- Toxin Producing Algae
  - Dinoflagellates
    - Saxitoxin – Paralytic Shellfish Poisoning (PSP)
    - Brevetoxin – Neurotoxic Shellfish Poisoning (NSP)
    - Okadaic Acid and Dinophysistoxins Diarrhetic Shellfish Poisoning (DSP)
    - Azaspiracids – Azaspiracid Shellfish Poisoning (AZP)
  - Diatoms
    - Domoic Acid – Amnesic Shellfish Poisoning (ASP)

Biotoxin

- PSP – Tingling, dizziness, 5 min – 1hr can be fatal
- NSP – Vomiting, nausea, neurological symptoms, tingling, slurred speech, a few minutes to 18 hours
- DSP – norovirus-like symptoms but usually mild symptom, can occur within 30 minutes
- AZP – diarrhea, vomiting, nausea, stomach cramps, 5 min – 3- hrs
- ASP – Flu like, 24-48 hrs

Geographical Distribution Northeast

- PSP toxin producers [ME, NH, MA, RI, CT, NY]
- ASP toxin producers [ME, MA, RI, CT]
- DSP toxin producers [ME, MA, CT]

Geographical Distribution Southeast/Gulf of Mexico

- NSP toxin producers [FL, AL, MS, LA, TX, GA, NC, SC]
- PSP toxin producers [FL]
- DSP toxin producers [TX, AL]
- ASP toxin producers [FL, AL]

Geographical Distribution West Coast

- PSP toxin producers [AK, WA, OR, CA]
- ASP toxin producers [WA, OR, CA]
- DSP toxin producers [WA]

Biotoxin Emerging Concerns

- Climatic changes resulting in warmer coastal water
  - Toxic Algae proliferation
  - Duration of algae blooms
  - Multiple Toxins in Same Growing Areas
  - Affordable laboratory method to identify and quantify toxins

Vibrios

Vibrios of Concern

- Vibrio Vulnificus
- Vibrio Parahaemolyticus

Vibrio vulnificus

- *Vibrio vulnificus* – Predominantly affects immuno-compromised individuals
  - Liver disease
  - Iron overload disease
  - Diabetes
  - Cancer
  - Stomach disorders
  - Any illness or medical treatment that weakens the body's immune system

Vibrio Vulnificus

Number of Cases

	Yearly Averages
1995 – 1999 Baseline	29.4
2002 – 2011 Risk Management Plan Requirements	28.7
2012 – 2015 Control Plan Requirements	20.8

Vibrio Parahaemolyticus

Year	Reported oyster-Associated Vp*	Reported clam-associated Vp*	Vp with seafood info available	Total Vp
2007	108	36	180	234
2008	144	32	234	280
2009	188	74	329	385
2010	211	70	338	423
2011	142	49	262	336
2012	225	78	376	462
2013	371	110	520	590
2014	374	82	538	605
2015	373	64	556	622

Data provided by CDC

*Cases may have consumed more than one type of seafood

Vibrio Parahaemolyticus

- 2013-2015 Increases in Reported Illnesses
  - O4-K12 and 04 Untypeable Strains
    - More Pathogenic
    - Cooler Waters (≈60-72°F) – Northeast/Northwest

Norovirus

- 9 Outbreaks since 2013
- 2017 Norovirus Outbreaks
  - 125 reported cases involving Washington State oysters
    - 3 growing areas
  - 330 reported cases involving British Columbia oysters
    - Multiple Growing Areas

Illness Reporting Issues

- NSSP response requirements for reported illnesses
  - Rapid Response
    - Harvest Area Closure
    - Recalls
  - Trend Analysis
    - Control Strategy Assessment
    - Program Effectiveness Review

Rapid Response Issue

- Timeliness
  - Closure and Recall Effectiveness
- Identification of Harvest Areas
  - Identifying Harvest Area for Regulatory Action Critical for Minimizing Illnesses

Funding Issues

- State Program Budget Concerns
  - Biotoxin Programs
    - Sampling/Lab Analysis
  - Training
  - Equipment