Food Safety Challenges
The World of Food Safety Changed in 2007
Food Safety Changed in 2007

- Spinach and Carrot Juice – September 2006
- Peanut Butter – February 14, 2007
- Contaminated Pet Food with Melamine – March 16, 2007
- Chili July 12, 2007
- Consumer voice concern regarding human food
Food Safety Changed in 2007

- Key driving force was:
  - Contaminated Pet Food Contaminated with Melamine – March
  - Consumer voiced concern regarding human food – April, May and June 2007
  - “If this was in pet food what maybe in the food I am feeding my family?”
  - Questions about food and ingredients
Food Safety Changed in 2007

- Consumer’s took charge of food safety in attempting to protecting their families!
  - Buy local
  - Buy organic
  - Buy natural
  - Clean label
  - Artisan
Food Safety Changed in 2007

- Trend to buy local / buy Organic / Artisan
- Major changes in the what we eat
  - Good or Bad?
- Created food safety issues
  - The change highlighted weaknesses in the marketplace
Food Safety Changed in 2007

- Timing is everything!
- June 29, 2007
iPhone Launched
June 29, 2007

Twitter
Facebook
You Tube
Electronic Marketing
FDA Trends by Number of Recalled Products

Chart showing the number of recalled products from 2008 to 2018, with a general upward trend.
Recalls By Reasons: 2018
Recalls By Reasons: 2016-2018
Recalls By Reasons: 2018

- Microbiological: 49.6%
- Allergen: 28.3%
- Process Deviations: 7.9%
- Chemical: 5.7%
- Foreign Material: 4.1%
- Mislabeled: 3.0%
- Packaging: 1.5%
Micro Reasons: 2018

- E. coli O157:H7 or others, 3.8%
- Clostridium botulinum, 0.7%
- Salmonella, 34.6%
- Other (General/Spoilage), 27.1%
- Listeria monocytogenes, 33.8%
Foreign Material Trends: 2016-2018

- Metal, 53.6%
- Plastic, 20.3%
- Glass, 14.5%
- Insect, 7.2%
- Other, 4.3%
FDA Inspection Result 2018

- **Foods**
  - FDA issued 2583 “483’s” in 2018
  - >50% of the 483’s identified ten CFR references
  - These are related to food facilities and equipment design and maintenance for food safety
FDA Inspection Result 2018

- Citations by CFR #
  - 117.10 Personnel
  - 117.20 (b) Plant Construction and Design
  - 117.35 (a) Sanitary Operations – Plant Maintenance
  - 117.35 (c) Pest Control – Building Maintenance
  - 117.35 (d) Sanitation of Food Contact Surface
  - 117.37 Sanitary Facilities and Control
FDA Inspection Result 2018

- 117.40 Equipment and Utensils - Design & M
- 117.80(c) Manufacturing, Processing, Packaging, Holding – Controls
- 110.20(b)(4) Floors, Walls and Ceilings
- 123.80(b)(2) Manufacturing Conditions
- 123.11 (b) Sanitation monitoring
Why the Change?

- Food production consolidation
- Products have changed
  - Complexity
  - Extended shelf life
  - Global impact
- Complexity of food distribution
- Consumer has changed
- Science has changed
- Epidemiology
Evolution of Epidemiology
Evolution of Epidemiology Tools

- **FoodNet** - 1996
- **PulseNet** – 1996
  - Nationwide – 2001 Now World Wide
- **Pulsed-field Gel Electrophoresis (PFGE)** - 1984
- **DNA Fingerprinting Technology** – 2005
- **FDA Reportable Food Registry** - 2007
- **FDA, USDA, CDC CORE Team Investigations**
- **Regulatory Inspections** – Swabs – 2010
- **Whole Genome Sequencing** – 2013
- **WGS now in all state laboratory as of March 26, 2019**
January 2007*

# Cases of *Salmonella* Tennessee (outbreak profile) by month, USA 2004 - 2006

* Preliminary data

**Slide Compliments of Dr. Art Liang Center of Disease Control and Prevention**
Peanut Paste 2009

Infections with the outbreak strain of Salmonella Typhimurium, by date of illness onset*
(n=662 for whom information was reported as of March 1, 9pm EDT)

Number of persons

Date of illness onset

*Some illness onset dates have been estimated from other reported information

Source: CDC 030609

RECALL
Ice Cream 2015

Case Count: 10
States: 4
Deaths: 3
Hospitalizations: 10
Recall: 05/20/15
Cheese Products

February 21, 2014  CDC Report of Illnesses
FDA Inspection February 18 to March 4, 2014
FDA Suspended Facility Registration March 11, 2014

Case Count: 8
States: 2
Deaths: 1
Hospitalizations: 7
Recall: 02/23/14
Evolution of Epidemiology

- Electronic communications
- DNA technology advancements
- Identification of commonality
- Identification of a food and/or an ingredient
- Patient sample
- Swab-a-thon (FDA inspections)
- Data base of over 50,000 finger prints on file that traces back to mid 1990’s
- Whole Genome Sequencing includes state labs
We live in a Micro World
Whole Genome Sequencing

- WGS Technology can identification of:
  - A group of ill consumers
  - A common product
  - A manufacturer
Whole Genome Sequencing

- WGS Technology can identification of:
  - A group of ill consumers
  - A common product
  - A manufacturer
  - An area of a production plant
  - A piece of equipment
Consumer Concerns Regarding Food Safety
Consumer Confidence in Food Safety

- Grocery Stores 88%
- Restaurants 75%
Whom Consumers Rely on to Ensure What Foods to Purchase 2018

- Themselves 58%
- Government 50% FDA, 49% USDA
- Grocery Store 45%
- Food Manufacturing 37%
- Consumer Groups 23%
- Farmers 17%
Consumer Believe Where Food Safety Problems Most Likely Occur

- Food Processing: 47%
- Warehouse: 11%
- Transportation: 5%
- Store: 4%
- Restaurant: 11%
- Home: 6%
- Unsure: 12%

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U.S. Grocery Shopper Trends 2018
Conditions Consumer Believe Pose Some/Serious Health Risk

- Microbiological 75%
- Pesticides 71%
- Product Tampering 59%
- Terrorism 49%
- Antibiotics / Hormones 62%
- Food from China 52%
- GMO 47%
- Irradiated Foods 38%

U.S. Grocery Shopper Trends 2018
Source of Foodborne Illness

1. Consumer’s home
2. Food Service
3. Food Manufacturing
4. Retail
Sanitary Design
Importance of Sanitary Design

- FDA Environmental Swabs Results 2017 & 2018
- Sampled 89 ice cream plants in 32 states
  - Detected Listeria monocytogenes in 19 (21.3%)
  - Detected Listeria monocytogenes on non food contact surfaces in 18 of the 19 plants
  - One plant on food contact surface
Sanitary Design

- Food Contact
- Support structures
- Installation
Sanitary Design

- Food Contact
- Support structures
- Installation
- Human Factors
Litigation
Importance of History

“Those Who Do Not Learn From History Are Doomed to Repeat It!”

Source: Winston Churchill
Food Safety is more than ...
Responsibilities
Our Responsibilities

- **Moral**
  - To do what is right for our customers

- **Legal**
  - To meet regulatory requirements

- Both as a Corporation and each of us personally
Complacency
Complacency

WE Cannot Accept A Complacent Attitude With

FOOD SAFETY
Meeting Consumer Expectations

Food Safety
Food Safety
A Shared Responsibility
Food Safety is a Journey
Not a Destination!

You must continue to strive for improvements each and every day in fulfilling consumer expectations.
Thank You!

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