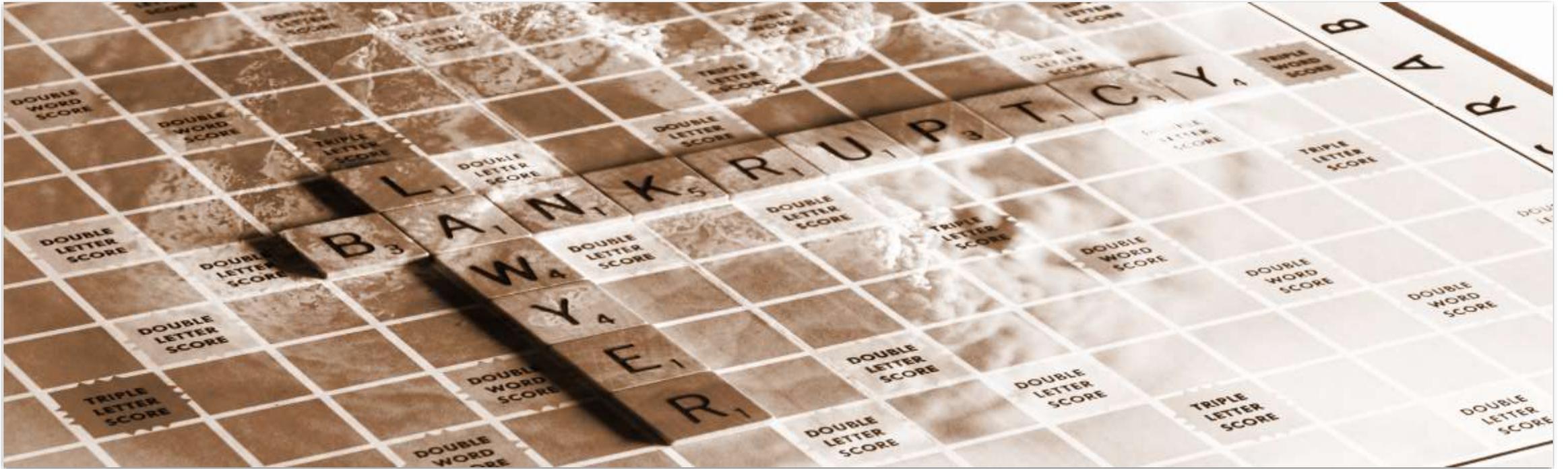


COST OF FOODBORNE ILLNESS



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THE DAILY TOON

BY MARK LYNCH

EMERGENCY



AGENDA

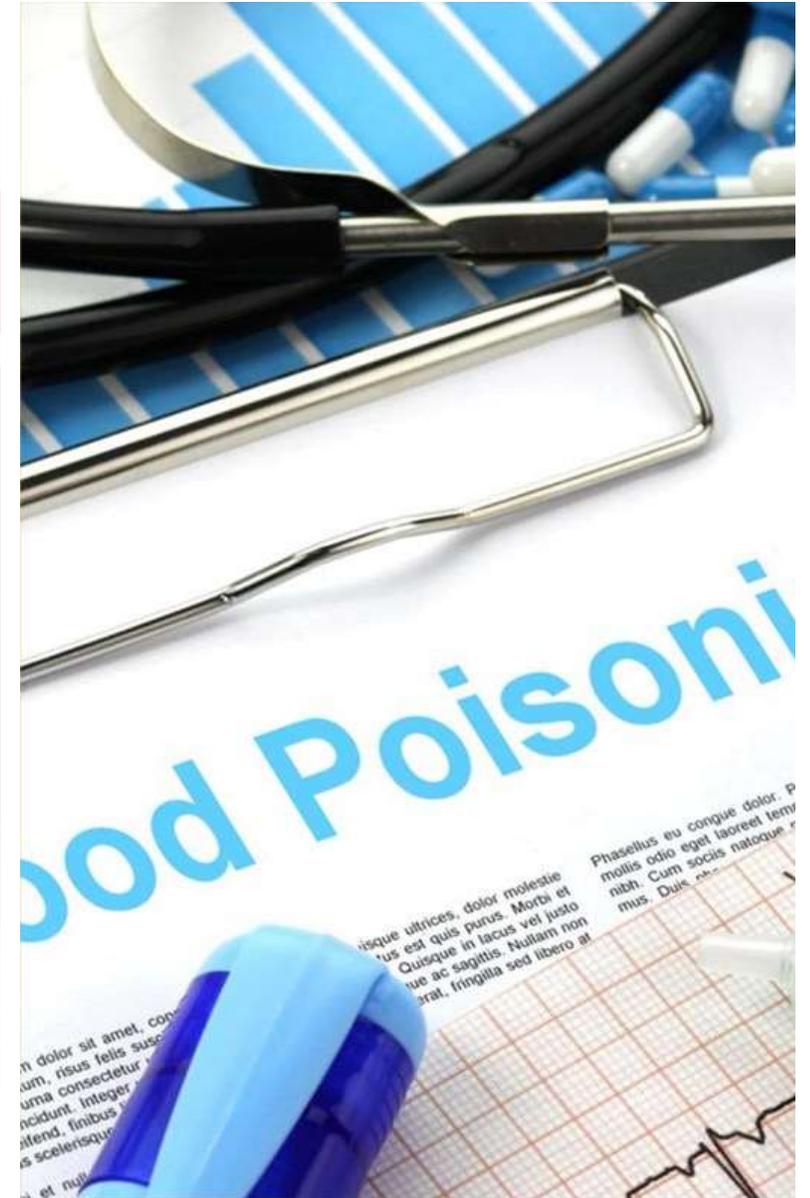
WHAT IS?

WHERE IS?

WHO IS?

WHY IS?

WHAT NOW?



WHAT IS?

- **Estimated 48 million Americans**
- **~128,000 people will become sick (hospitalized)**
- **~3,000 deaths**
- **Every year 1 in 6 (in US) is sickened by a foodborne illness**
- **15 pathogens cause > 95% foodborne illnesses, hospitalizations, and deaths in the US (when specific pathogen is identified)**
- **84% of the economic burden from these 15 is death-related**



WHAT IS?

TOP 5

- **Campylobacter spp.**
- **Clostridium perfringens**
- **Cryptosporidium spp.**
- **Cyclospora**
- **Listeria monocytogenes**

Next 5

- **Norovirus**
- **Salmonella non-typhoidal**
- **Shigella spp .**
- **STEC - E. Coli O157**
- **STEC - E. Coli non-O157**

Last 5

- **Toxoplasma**
- **Vibrio vulnificus**
- **Vibrio parahaemolyticus**
- **Vibrio other (non-cholera)**
- **Yersinia**

WHAT IS?

- **Ingest food (contaminated by bacteria, viruses, parasites or chemical)**
- **Occur when food safety practices are not followed**
- **Pathogens cannot be smelled or tasted, or seen**

Scene: Imagine the lunch was prepared by someone who recently recovered from norovirus but did not wash their hands properly after using the restroom.

- **Unwanted topping of norovirus particles that could sicken you with stomach pain, nausea, vomiting, and diarrhea for three days**
- **Missing work?**
- **Visit to the urgent care center?**

**Physical suffering of being sick, but also
the economic burden of healthcare costs & missed days of work**

WHERE IS?

Per 2018 CDC studies

- **Produce** (6 plant food categories: Fruits-Nuts, Fungi vegetables, Leafy vegetables, Root vegetables, Sprout vegetables, Vine-Stalk vegetables) accounted for 46% illnesses

[Leafy vegetables accounted for the most illnesses]

- Many - 46% were caused by norovirus

- **Meat and poultry** (4 animal food categories, Beef, Game, Pork, and Poultry, accounted for fewer illnesses – but accounted for 29% of deaths
 - Poultry accounted for the most deaths - 19%

[many were caused by Listeria and Salmonella infections]

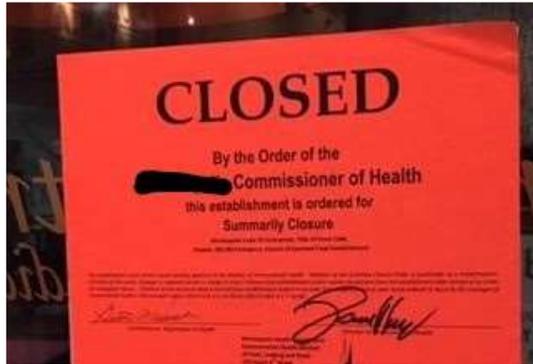
WHERE IS?

An incident can cost businesses significant \$\$

- DECREASED REVENUES
- HEFTY LEGAL FEES
- POTENTIAL LAWSUITS
- DIMINISHED SALES (AND LOYALTY)
- A DAMAGED REPUTATION - PERMANENT CLOSURE

Foodborne illnesses cost is \$55 billion/year in medical treatment, lost productivity, and illness-related mortality in the US, according to a study by Ohio State University. Overall cost is >\$77 billion.

WHERE ARE \$\$\$ GOING?



WHO IS SUFFERING?

- **Lost business - closing to clean and sanitize it**
- **Business loss - waiting for the health department (reopening)**
- **Throwing out potentially contaminated food and restocking**
- **Possible lab testing to ensure the location is safe for business**
- **Marketing costs to spend for repairing business reputation**
- **Potential backlash related to attacks on social media**
- **Health-code violation fines, lawsuits, and legal fees**
- **Higher insurance premiums**
- **Medical bill coverage for affected guests**

Recovering from the damage is much more costly than creating and enforcing a good food-safety management program in your establishment

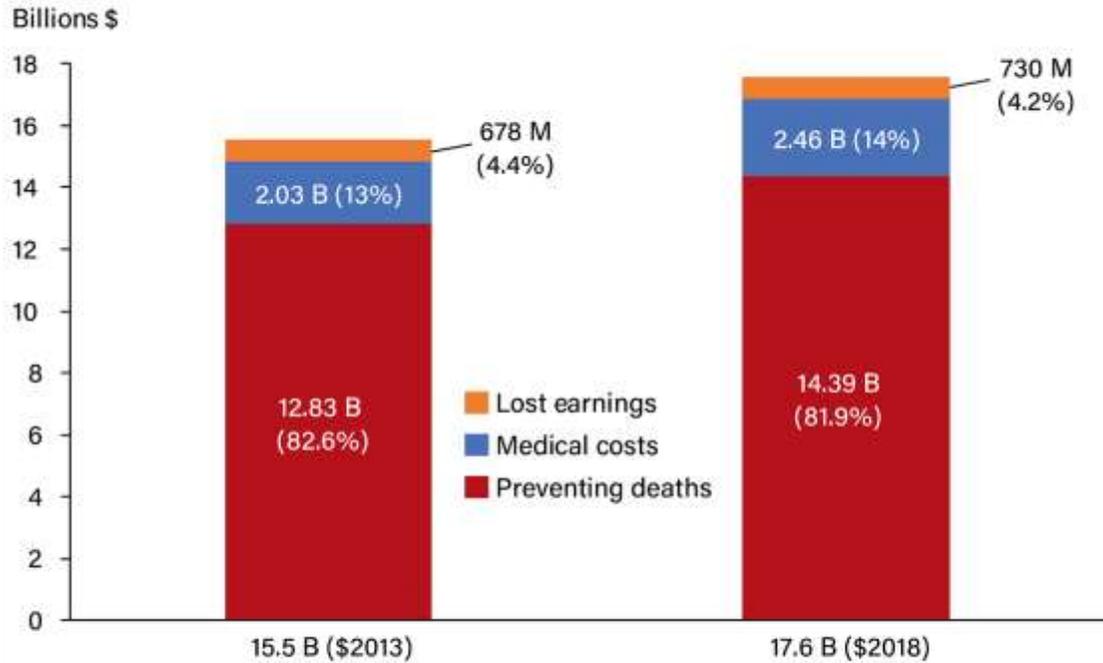
WHO IS?

CDC have identified certain populations that are prone to serious illness due to contaminated food:

- ❑ **Adults 65+ are considered high risk due to their lower immune systems**
- ❑ **Children <5 years have immune systems that are still developing**
- ❑ **Individuals with compromised immune systems due to illness or treatments**
- ❑ **Pregnant women, who are 10 times more susceptible to Listeria**

FACTS

Costs of 15 major foodborne illnesses in the United States totaled \$17.6 billion in 2018

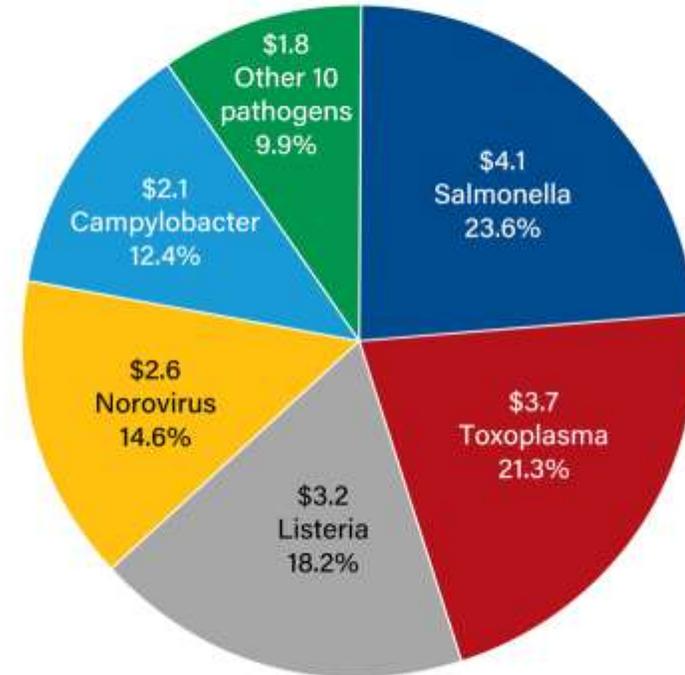


Costs of U.S. foodborne illnesses

Source: USDA, Economic Research Service (ERS), using data from ERS Cost of Foodborne Illness Data Product, U.S. Bureau of Economic Analysis, and U.S. Department of Labor, Bureau of Labor Statistics.

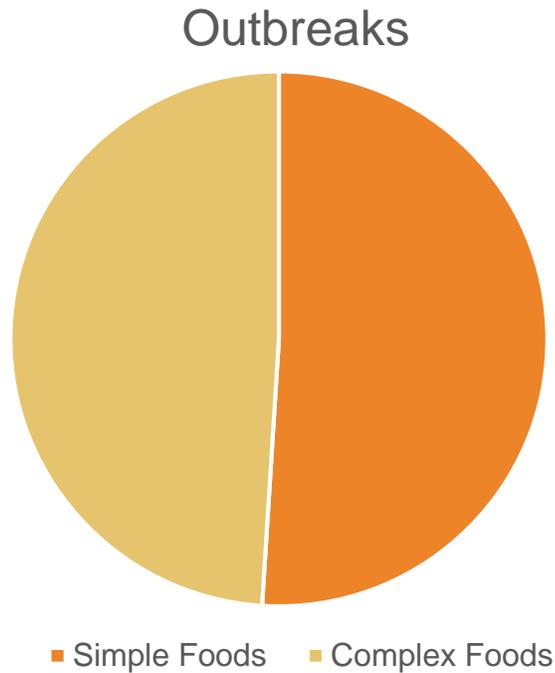
Five pathogens caused most foodborne illness costs in United States

Economic cost (billions of 2018 dollars)



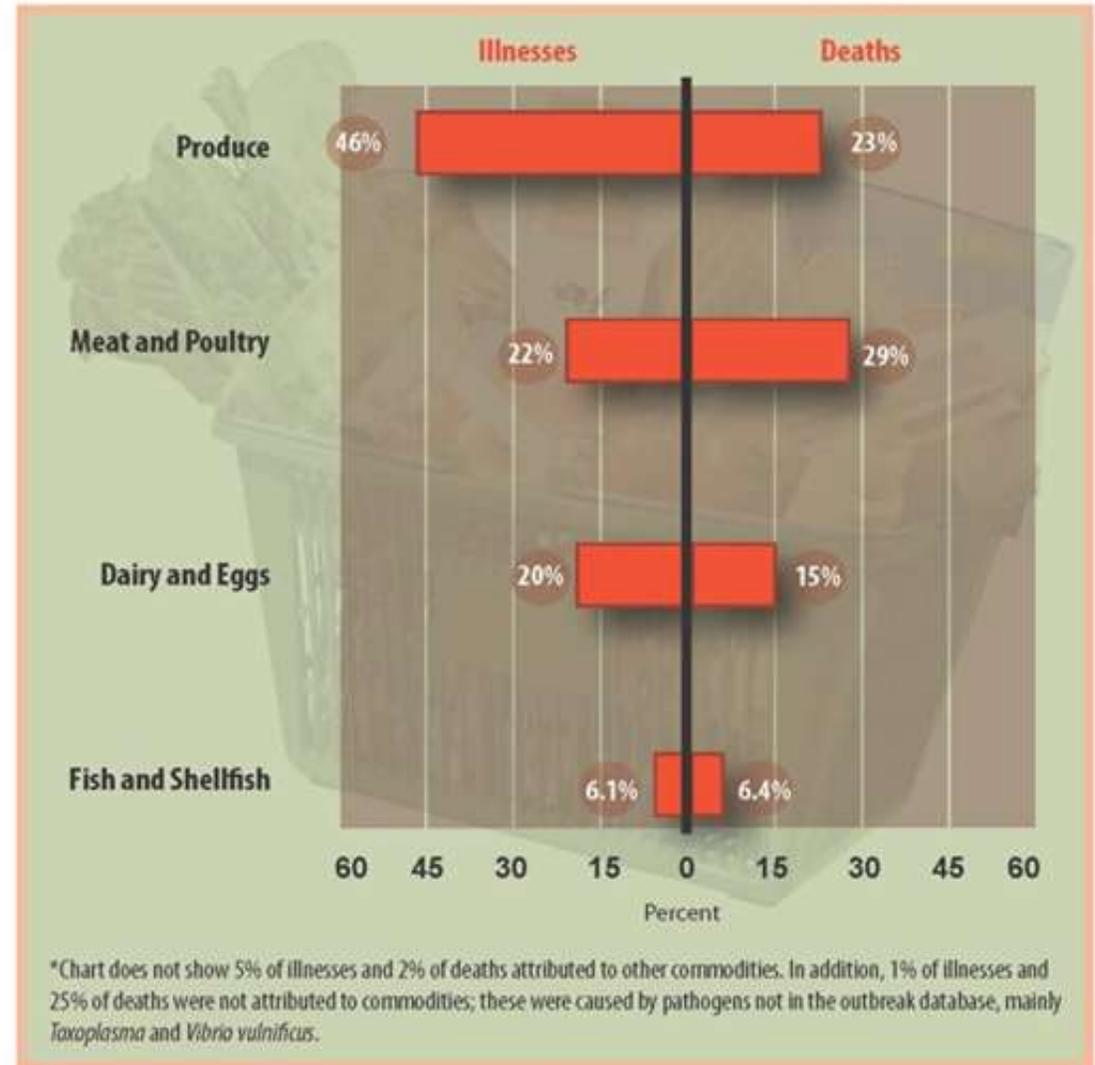
Source: USDA, Economic Research Service (ERS) using data from ERS Cost of Foodborne Illness Data Product.

FACTS



**Outbreaks by type of food implicated
1998 – 2008 (7,757 outbreaks)**

Food categories – illnesses and deaths (1998 – 2008)



Source: Painter JA, Hoekstra RM, Ayers T, Tauxe RV, Braden CR, Angulo FJ, Griffin PM. Attribution of foodborne illnesses, hospitalizations, and deaths to food commodities by using outbreak data, United States, 1998–2008. *Emerg Infect Dis* [Internet]. 2013 Mar [date cited]. <http://dx.doi.org/10.3201/eid1903.111866>

WHY IS?

Poor Personal Hygiene

Employee illness policy, Proper handwashing procedure, and No barehand contact policy with ready to eat foods.

Improper Holding Temperatures

Cold foods $\leq 41^{\circ}\text{F}$ and hot foods $\geq 135^{\circ}\text{F}$. When in doubt, throw it out!

Improper Cooking Temperatures

Cook to minimum internal cooking temps to ensure pathogen reduction to safe levels. Use thermometers to monitor

Food from Unsafe Sources

All foods must be obtained from approved sources that comply with applicable laws and regulations.

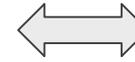
Contaminated Equipment/Cross-Contamination

All equipment and utensils shall be properly cleaned and sanitized (proper strength) at least once every 4 hours

INTRODUCTION



Pathogens/Hazards
get into Food



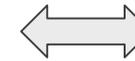
An ill food worker
handles food with
bare hands

WHY IS?

PROLIFERATION



Growth of
pathogens in
Food

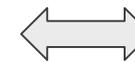


Food is held in a
cooler above
41°F

SURVIVAL



Pathogens survive
kill/reduction step



Food is NOT
cooked hot/long
enough

WHAT NOW?

- ❑ Before food preparation, wash hands, scrubbing for at least 20 seconds using soap and water
- ❑ Cook all food to the proper temps and reheat all leftovers to 165°F. Use a thermometer and ensure
- ❑ Bacteria grow fastest (41°F and 135°F), so chill or heat food to proper temps promptly
- ❑ All surfaces that come in contact with foods, hands are clean
- ❑ Cross-contamination: Keep raw meat, poultry, seafood away from ready-to-eat food. Use separate utensils for raw meat, poultry and seafood, salads and ready-to-eat foods.
- ❑ Don't permit sick employees to return to work until they're completely recovered and cleared by a doctor. **MUST** have Employee Health and Illness Policy that is implemented and enforced
- ❑ Invest in training programs, which teach proper food safety techniques and best practices to all staff – managers included
- ❑ Require that all employees follow proper hygiene and handwashing protocols and food safety management system
- ❑ Active Managerial Control



WHAT NOW?

- ❑ **A single foodborne illness outbreak can incur substantial costs, enough to compose a large portion of a business's annual profits.**
- ❑ **Many of these costs outweigh the costs of various infection prevention and control measures that are available to operators.**
- ❑ **Investing in food safety is one of the smartest things that food service operators can do. The expense, time and energy necessary to implement—or elevate—food safety protocols won't be overwhelming, and it's crucial to your business success.**

SUMMARY

- ✓ Food service operators **MUST** prioritize food safety culture, utilizing the most efficient and effective tools to protect the health of their guests, employees and businesses.
- ✓ Technology and tools streamlines operations, improves safety protocols, reduces errors — and so much more. The benefits are significant.



Boss: “I can’t afford the investment” for food safety related costs.

You: “You can’t afford not to.”

Listeria outbreak traced to [REDACTED] packaged salads ends with three patients dead

Over 300 with Norovirus linked to British Columbia Raw Oysters

Ex-Peanut Exec Gets 28 Years Prison For Deadly Salmonella Poisonings

Singapore food caterer [REDACTED] fined for fatal food poisoning case

February 12, 2015 — The *Washington Post* reports that the victims of an outbreak of *Listeria* linked to [cantaloupe](#) have reached an undisclosed settlement.

It was one of the deadliest outbreaks of [food poisoning](#) in United States history. At least 147 people in 28 states fell ill after eating cantaloupe, including 33 who died and one pregnant woman who had a miscarriage.

Attorneys reported that the litigation was resolved by “mutual agreement of the parties.” [REDACTED], one of 20 defendants in the litigation, stated:

FDA issues warning for oyster eaters in at least 13 states over a norovirus outbreak



Check your fridge. [#Wisconsin](#) is part of a multi-state [#Listeria](#) outbreak linked to packaged salads produced by [REDACTED]. At least 17 people have been infected in 13 states. One Wisconsinite has died. See what you need to look for: dhs.wisconsin.gov/outbreaks/inde...

Salmonella Outbreak Linked to [REDACTED] Packaged Salad Greens

 Food Safety Alert

(CNN) — An outbreak of E. coli made 17 people ill and killed one person across the United States between November 15 and December 8, according to the US Centers for Disease Control and Prevention. Though the source of infection is still unknown, the CDC is investigating leafy greens and romaine lettuce.

THANK YOU

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