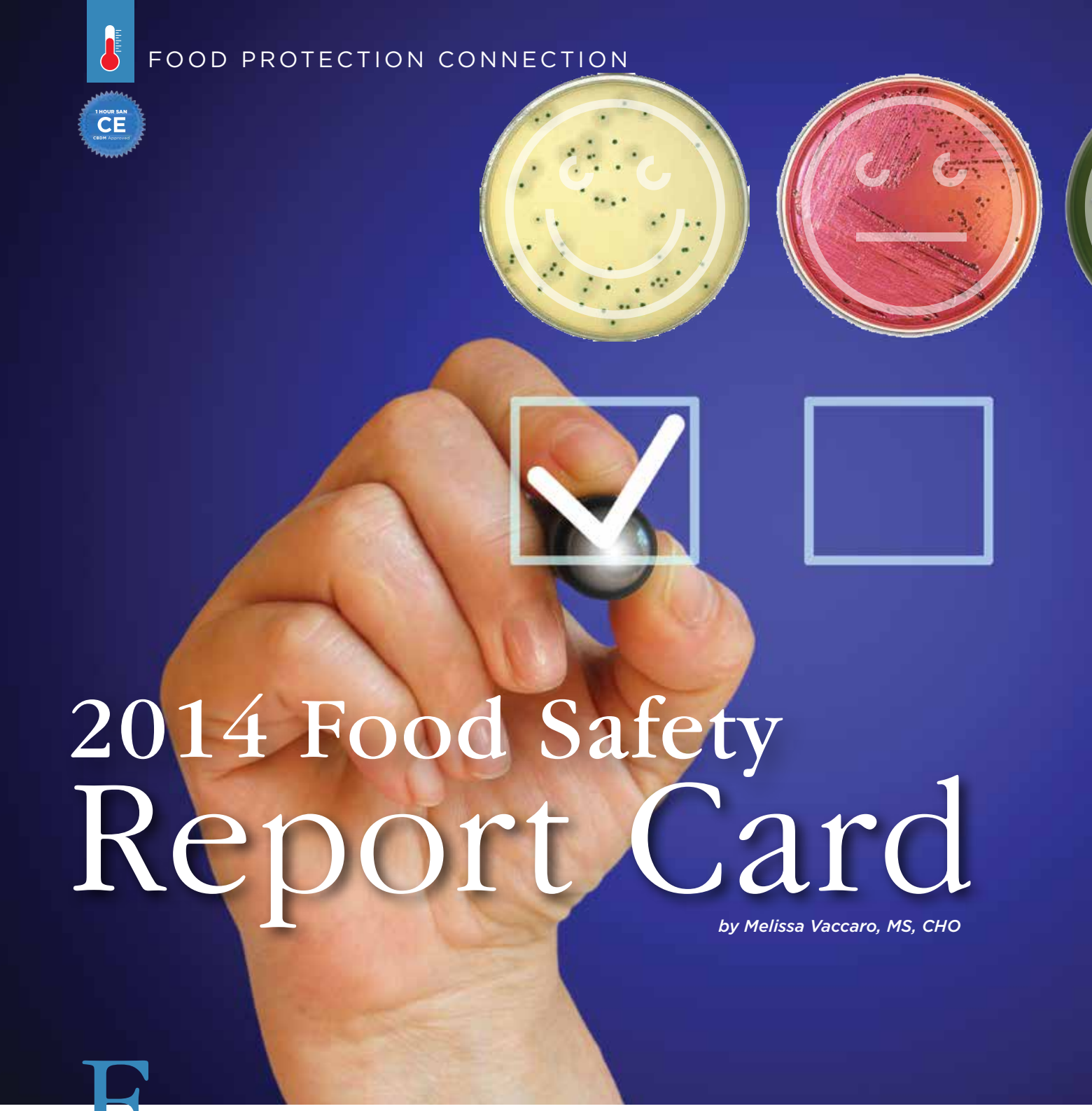


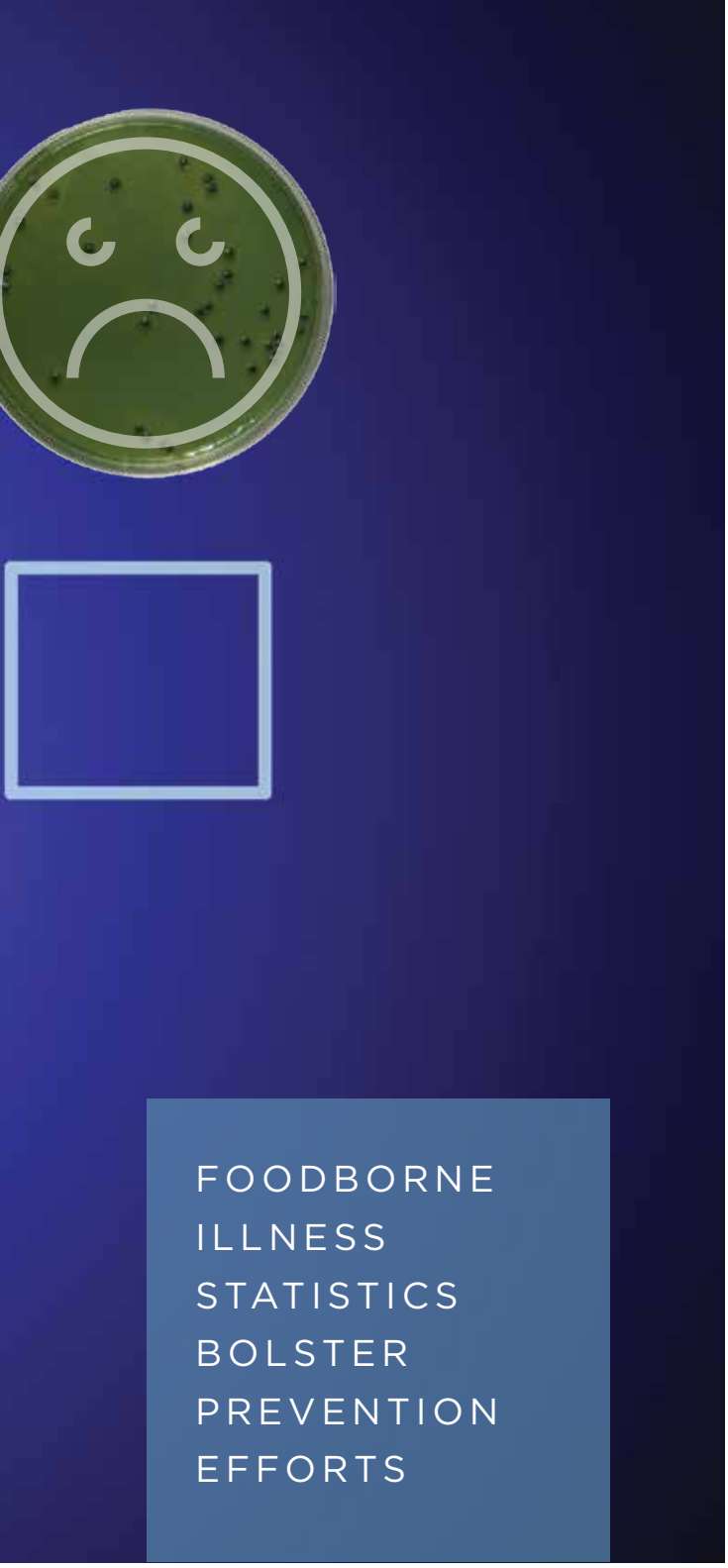
2014 Food Safety Report Card

by Melissa Vaccaro, MS, CHO

Foodborne illnesses are responsible for making 48 million people sick annually in the United States. They send approximately 128,000 people to the hospital and, unfortunately, kill 3,000 people annually. Surveillance systems are responsible for these statistics. Being able to evaluate foodborne illness outbreaks is vital to help determine the burden of foodborne illness, the trends (increases and decreases), and what foods are responsible for causing these illnesses. The ultimate goal is to reduce the number of people who get ill due to these pathogens.

Surveillance systems are always estimates because only a fraction of illnesses are reported or diagnosed. The best data available is used to make reasonable assumptions regarding trends in an effort to decrease incidences of illness. Foodborne illness investigators, regulators, trainers, industry, and consumers can all use this statistical information to make steps towards prevention.

In May 2015 the Centers for Disease Control and Prevention (CDC) published a FoodNet Annual Report of foodborne disease outbreaks that occurred in 2013. Ad-



FOODBORNE ILLNESS STATISTICS BOLSTER PREVENTION EFFORTS

ditionally, Morbidity and Mortality Weekly (May 15, 2015) released a summary of initial findings of foodborne illness for 2014. This report summarizes preliminary 2014 data and describes changes in incidence compared with 2006-2008 and 2011-2013. You can view the reports at www.cdc.gov/foodnet

The CDC collects reports of foodborne outbreaks due to enteric bacterial, viral, parasitic, and chemical agents. State, local, and territorial public health agencies report these outbreaks to the CDC. The CDC analyzes this data to understand the impact of foodborne outbreaks and the pathogens, foods, settings, and contributing factors involved. The FOOD tool is a web-based platform for searching the CDC's Foodborne Disease Outbreak Surveillance System database. FOOD provides access to national information and is intended to be used for limited descriptive summaries of outbreak data. (http://www.cdc.gov/foodborneoutbreaks/)

Summaries of outbreak investigations provide important pictures of the human health impact of foodborne disease outbreaks and the agents, foods, settings, and contributing factors involved in these outbreaks. In comparing data between years, it is essential to note that changes were made to the foodborne disease outbreak surveillance system in 2009, and a new food categorization scheme was implemented in 2011.

An outbreak of foodborne disease is defined as the occurrence of two or more cases of a similar illness resulting from ingestion of a common food. Foodborne disease outbreaks are a nationally notifiable condition. When illnesses occur outside an outbreak setting, it is usually impossible to know what food or other exposure caused them. Therefore, although only a small proportion of illnesses occur as part of recognized and reported outbreaks, outbreak investigations provide some of the best data about sources of foodborne illness. This information can then be used for foodborne illness prevention, education, and regulations.

WHAT IS FOODNET?

The Foodborne Diseases Active Surveillance Network (FoodNet) is a cooperative program of the CDC, 10 state health departments, the U.S. Department of Agriculture's Food Safety and Inspection Service (USDA-FSIS), and the Food and Drug Administration (FDA). It provides needed information for tracking trends. Each year FoodNet provides information on changes in the number of people in the US made ill with foodborne infections that have been confirmed via laboratory testing, monitors changes in their incidence, collects information about the sources of infection, and distributes information to provide a foundation for food safety policy and prevention efforts. FoodNet monitors the bacteria Campylobacter, E. coli 0157, Listeria, Salmonella, Shigella, Vibrio, and Yersinia; and also the

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parasites Cryptosporidium and Cyclospora.

In 2013, FoodNet identified 19,162 laboratory-confirmed cases of infection, 4,276 hospitalizations, and 88 deaths.

- The incidence of infection and the numbers of hospitalizations and deaths were highest for *Salmonella*.
- Percentages of hospitalizations and deaths were highest for *Listeria*.
- Incidences of all infections were highest among children <5 years except for *Listeria, Vibrio,* and *Cyclospora*, which were highest among people ≥65 years.
- Overall, the highest percentages of hospitalizations and deaths were among people ≥65 years.

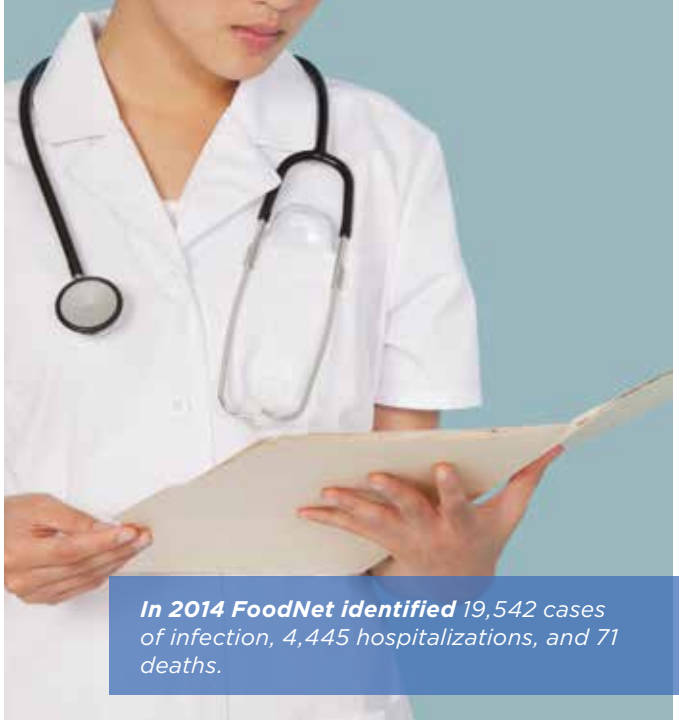
Compared with 2010-2012, the 2013 incidence was significantly:

- Lower for *Salmonella*
- Higher for *Vibrio*

2014 REPORT CARD FROM FOODNET

In 2014, FoodNet identified 19,542 cases of infection, 4,445 hospitalizations, and 71 deaths.

- E. coli 0157 infections were lower than they were in 2011-2013, and have decreased 32 percent since 2006-2008.



***In 2014 FoodNet identified** 19,542 cases of infection, 4,445 hospitalizations, and 71 deaths.*

- Campylobacter and Vibrio infections are higher than in 2006-2008, continuing a pattern from 2013.
- Salmonella infections overall are at 2006-2008 levels, with about 15 lab-confirmed cases per 100,000 people. However, infections with Salmonella serotype Typhimurium are down 27 percent from the 2006-2008 levels.
- Infections from types of Shiga toxin-producing E. coli other than 0157 were higher than in 2011-2013. This increase is partially due to changes in diagnostic tests that make testing quicker and easier.
- Rates of Yersinia have decreased 22 percent since 2006-2008.

2013—Pathogens, Cases, Hospitalizations and Deaths

Number of Cases

	Cases		Hospitalizations		Deaths	
Pathogen	**n**	**Incidence***	**n**	**(%)**	**n**	**(%)**
Campylobacter	6,622	13.73	1,028	(16)	11	(0.2)
Listeria	123	0.25	112	(91)	27	(22.0)
Salmonella	7,307	15.15	2,029	(28)	30	(0.4)
Shigella	2,331	4.83	460	(20)	3	(0.1)
STEC† 0157	555	1.15	211	(38)	2	(0.4)
STEC non-0157	571	1.18	76	(13)	2	(0.4)
Vibrio	249	0.52	61	(24)	5	(2.0)
Yersinia	173	0.36	56	(32)	4	(2.0)
Cryptosporidium	1,217	2.52	241	(20)	4	(0.3)
Cyclospora	14	0.03	2	(14)	0	(0.0)
TOTAL	**19,162**		**4,276**		**88**	

With these 2014 initial statistics, the CDC states that "Progress has been made in decreasing contamination of some foods and reducing illness caused by some pathogens. However, little or no recent reductions for most infections have occurred… More information is needed to understand sources of infection and changes in incidence, and to help determine where to target prevention efforts." Additional findings and summaries will become available from the CDC as they dig deeper into the numbers and population estimates.

FoodNet, which reports trends in foodborne illness infections and tracks the impact of food safety policies nationally, is only one foodborne disease surveillance data collection system. Several other tracking systems are in place nationally and include:

National Antimicrobial Resistance Monitoring System—enteric bacteria (NARMS)
Tracks trends in resistance.

National Electronic Norovirus Outbreak Network (CaliciNet)
Rapidly links clusters of illness and identifies emerging norovirus strains.

National Molecular Subtyping Network for Foodborne Disease Surveillance (PulseNet)
Connects cases of illness nationwide to quickly identify outbreaks, including many that would otherwise go undetected.

Foodborne Disease Outbreak Surveillance System (FDOSS)
Captures outbreak data on agents, foods, and settings responsible for illness.

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Percentage Change and Incidence of Bacterial and Parasitic Infections in 2013 (compared with average annual incidence for 2006-2008 and 2010-2012, by pathogen)

Source: FoodNet, 2013

Pathogen	Percentage Change in 2013 Compared With		
	1996-1998*	2006-2008*	2010-2012*
Campylobacter	23% ↓	12% ↑	1% ↑
Listeria	40% ↓	3% ↓	4% ↓
Salmonella	10% ↓	4% ↓	10% ↓
Shigella	51% ↓	20% ↓	13% ↑
STEC† 0157	29% ↓	9% ↓	16% ↑
STEC non-0157	‡		10% ↑
Vibrio	173% ↑	78% ↑	34% ↑
Yersinia	48% ↓	2% ↑	8% ↑
Cryptosporidium	16% ↑	20% ↑	6% ↑
Cyclospora			
2013 OVERALL§	**20% ↓**	**8% ↑**	**4% ↑**

**Percentage change reported as increase (↑) or as decrease (↓) and shading denotes statistical significance n at p<0.05 level; †Shiga toxin-producing Escherichia coli; ‡Changes over time not evaluated. §The measure of overall trends in incidence combines data for Campylobacter, Listeria, Salmonella, STEC O157, Vibrio, and Yersinia, the six key bacterial pathogens for which >50% of illnesses are estimated to be transmitted by food. The model weights by incidence of infection for each pathogen.*

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Always remember foodborne illnesses can be prevented by following safe food handling procedures, such as:

- Keeping foods out of the danger zone of 41°F to 135°F
- Washing hands frequently with soap and warm water
- Thawing foods in the refrigerator or under cold running water
- Avoiding cross-contamination by keeping raw and cooked foods separate
- Cooking foods to the minimum temperatures
- Serving foods at the correct temperature: below 41°F for cold foods and above 135°F for hot foods
- Keeping food contact surfaces clean and sanitized
- Not handling food when ill

SUMMING IT UP

Outbreak studies provide valuable data on the frequency and health consequences of foodborne illness. They help us detect whether prevention efforts are working, and assist in developing prevention and education initiatives to improve food safety and protect consumers.

SOURCES:

1. www.cdc.gov/foodsafety
2. www.cdc.gov/foodnet/reports/index.html
3. MMWR, May 15, 2015. Vol. 64, No. 18. Preliminary Incidence and Trends of Infection with Pathogens Transmitted Commonly Through Food.

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2014 FOOD SAFETY PROGRESS REPORT

Pathogen	Healthy People 2020 target rate	2014 rate*	Change compared with 2006-2008†	
Campylobacter	8.5	13.45	13% increase	
E. coli O157§	0.6	0.92	32% decrease	
Listeria	0.2	0.24	No change	
Salmonella	11.4	15.45	No change	
Vibrio	0.2	0.45	52% increase	
Yersinia	0.3	0.28	22% decrease	

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS255465-B May 2015

*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

For more information, visit www.cdc.gov/foodnet