



Food Safety >

CHAPTER 10

Co-Lead Agencies

Food and Drug Administration

Food Safety and Inspection Service, Department of Agriculture

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GOAL:

Reduce foodborne illnesses.



This chapter addresses the rate of disease caused by microorganisms commonly transmitted by food, such as *Salmonella* and *Campylobacter*. Specific objectives monitor new cases of infections caused by important foodborne pathogens, as well as the food safety practices of consumers and of retail food establishments.

All Healthy People tracking data quoted in this chapter, along with technical information and Operational Definitions for each objective, can be found in the Healthy People 2010 database, DATA2010, available from <http://wonder.cdc.gov/data2010/>.

More information about this Focus Area can be found in the following publications:

- › *Healthy People 2010: Understanding and Improving Health*, available from <http://www.healthypeople.gov/2010/Document/tableofcontents.htm#under>.
- › *Healthy People 2010 Midcourse Review*, available from <http://www.healthypeople.gov/2010/data/midcourse/html/default.htm#FocusAreas>.

Highlights

- › Substantial progress was achieved in objectives for this Focus Area during the past decade [1]. Almost three-quarters (73%) of the Food Safety Focus Area objectives moved toward or achieved their Healthy People 2010 targets (Figure 10-1). With the exception of one objective (10-5), data on health disparities by race and ethnicity were unavailable [2]. However, most objectives exhibited health disparities of 10% or more by sex (Figure 10-2).
- › Statistically significant downward trends were observed in the rates of foodborne infections from *Campylobacter* species and Shiga toxin-producing *Escherichia coli* O157 (STEC O157) (objectives 10-1a and b) [3]. Between 1997 and 2009, the rate of *Campylobacter* species infections decreased 47.6%, from 24.6 to 12.9 per 100,000 population, moving toward the Healthy People 2010 target of 12.3 per 100,000; the rate of STEC O157 infections decreased 52.4%, from 2.1 to 1.0 per 100,000 population, meeting the 2010 target of 1.0 per 100,000. In addition, the rate of *Listeria monocytogenes* infections (objective 10-1c) declined 36.2% between 1997 and 2009, from 0.47 to 0.30, moving toward the 2010 target of 0.24 per 100,000 population.
- › The proportion of non-Typhi *Salmonella* from humans (percent of isolates) resistant to gentamicin (objective 10-3c) and ampicillin (objective 10-3d) declined. Gentamicin-resistant isolates declined 51.7% between 1997 and 2008, from 2.9% to 1.4%, exceeding the 2010 target of 2.9%. Ampicillin-resistant isolates declined 49.2% between 1997 and 2008, from 18.3% to 9.3%, exceeding the 2010 target of 18.3%.
- › Progress in outbreaks of foodborne infections was mixed. Outbreaks due to *Salmonella* serotype Enteritidis (objective 10-2b) decreased 44.9% between 1997 and 2008, from 49 to 27, achieving 88.0% of the 2010 target of 24 outbreaks. However, outbreaks due to *Escherichia coli* O157:H7 (objective 10-2a) increased between 1997 and 2008, from 10 to 32 outbreaks, moving away from the 2010 target of five outbreaks.
- › Consumer food safety practices (objective 10-5) improved 4.2% between 1998 and 2006, from 72% to 75%, moving toward the 2010 target of 79% of the population following safe food practices.
- › Food safety practices in retail establishments (objectives 10-6a through i) increased in all nine categories, moving toward or exceeding the 2010 targets.
 - Safe retail food preparation in meat and poultry departments (objective 10-6g) increased 8.6% between 1998 and 2008, from 81% to 88%, exceeding the 2010 target of 86%.

- Safe retail food preparation in produce departments (objective 10-6h) increased 10.5% between 1998 and 2008, from 76% to 84%, exceeding the 2010 target of 82%.

Summary of Progress

- › Figure 10-1 presents a quantitative assessment of progress in achieving the Healthy People 2010 objectives for Food Safety [1]. Data to measure progress toward target attainment were available for 22 objectives. Of these:
 - Five objectives met or exceeded their Healthy People 2010 targets (objectives 10-1b, 10-3c and d, and 10-6f and g).
 - Eleven objectives moved toward their targets. A statistically significant difference between the baseline and the final data points was observed for one of these objectives (10-5, consumer food safety practices). No significant differences were observed for seven objectives (10-6a through f, and i); and data to test the significance of the difference were unavailable for three objectives (10-1a and c, and 10-2b).
 - Six objectives moved away from their targets. No statistically significant differences between the baseline and final data points were observed for one objective (10-4b). Data to test the significance of the difference were unavailable for five objectives (10-1d and f, 10-2a, and 10-3a and b).
- › Fifteen objectives were deleted at the Midcourse Review (objectives 10-1e and g, 10-3e through p, and 10-7). One objective (10-4a) remained developmental [4].
- › Figure 10-2 displays health disparities in the Food Safety Focus Area objectives from the best group rate for each characteristic at the most recent data point [2]. It also displays changes in disparities from baseline to the most recent data point [5].
 - The non-Hispanic white population had the best group rate for one objective with statistically significant racial and ethnic health disparities of 10% or more (objective 10-5).
 - One objective had statistically significant health disparities by sex of 10% or more (objective 10-5). Four additional objectives had health disparities by sex of 10% or more but lacked data to measure variability (objectives 10-1a through c, and f). Males were the better group for three of these five objectives (10-1b, c, and f). Females were the better group for two objectives (10-1a and 10-5).

Transition to Healthy People 2020

The Healthy People 2020 Food Safety Topic Area has fewer objectives than those included in Healthy People 2010. See HealthyPeople.gov for a complete list of Healthy People 2020 topics and objectives.

The Healthy People 2020 objectives can be grouped into several sections:

- › Food-related infections
- › Antimicrobial resistance
- › Consumer food safety practices
- › Retail food safety practices.

The differences between the Healthy People 2010 and Healthy People 2020 objectives are summarized below:

- › The Healthy People 2020 Food Safety Topic Area has 28 objectives, whereas the Healthy People 2010 Focus Area had 38 objectives.
- › Eight Healthy People 2010 objectives were retained “as is” [6].
 - Infections caused by microorganisms transmitted commonly by food:
 - *Campylobacter* species (objective 10-1a)
 - Shiga toxin-producing *Escherichia coli* O157 (objective 10-1b)
 - *Listeria monocytogenes* (objective 10-1c)
 - *Salmonella* species (objective 10-1d)
 - Cases of postdiarrheal hemolytic uremic syndrome (HUS) in children under age 5 years (HUS) (objective 10-1f).
 - Non-Typhi *Salmonella* from humans (percent of isolates) resistant to:
 - Gentamicin (objective 10-3c)
 - Ampicillin (objective 10-3d).
 - Severe allergic reactions to food among adults aged 18 and over with food allergy diagnosis (objective 10-4b).
- › Three Healthy People 2010 objectives were modified and expanded to six Healthy People 2020 objectives [7]. Non-Typhi *Salmonella* from humans (percent of isolates) resistant to fluoroquinolones (objective 10-3a) and third-generation cephalosporins (objective 10-3b) will be tracked in Healthy People 2020 with nalidixic acid and ceftriaxone, respectively. The consumer food safety practices objective (10-5) was modified by subdividing the existing composite

objective into four discrete objectives to track specific consumer practices.

- › Nine objectives for improving food safety practices in retail and food service establishments were measurable in Healthy People 2010 but are developmental in Healthy People 2020 (objectives 10-6a through i) [4]. Actual measures and targets for improvement will be modified but will continue to be based on observed levels of compliance in select retail establishment types.
- › Two Healthy People 2010 objectives were archived [8]. These include: outbreaks of foodborne infections due to *Escherichia coli* O157:H7 (objective 10-2a) and *Salmonella* serotype Enteritidis (objective 10-2b).
- › Fifteen Healthy People 2010 objectives were deleted at the Midcourse Review. Two of these were determined not to be a significant public health concern (objectives 10-1e and 10-7). One did not have a national data source (objective 10-1g). Twelve objectives (10-3e through p) were dependent upon data from a regulatory program of the U.S. Department of Agriculture’s Food Safety and Inspection Service that was not designed to estimate prevalence and, therefore, could not be used to establish measurable objectives.
- › One Healthy People 2010 objective (10-4a, food allergy deaths) that remained developmental was removed during the Healthy People 2020 planning process because the data source did not reliably track the actual number of cases of anaphylaxis mortality.
- › Nine new objectives were added for Healthy People 2020. These will track the number of infections caused by *Vibrio* species and *Yersinia* species; the number of outbreak-associated infections caused by food commodity group for beef, dairy, fruits and nuts, leafy vegetables, and poultry; prevention of non-Typhi *Salmonella* occurring in humans (percent of isolates) resistant to three or more classes of antimicrobial agents; and prevention of *Campylobacter jejuni* from occurring in humans (percent of isolates) resistant to erythromycin.

[Appendix D](#), “A Crosswalk Between Objectives From Healthy People 2010 to Healthy People 2020,” summarizes the changes between the two decades of objectives, reflecting new knowledge and direction for this area.

Data Considerations

Education and income are the primary measures of socioeconomic status in Healthy People 2010. Most data systems used in Healthy People 2010 define income as a family’s income before taxes. To facilitate comparisons among groups and over time, while adjusting for family size and for inflation, Healthy People 2010 categorizes income using the poverty thresholds developed by the Census Bureau. Thus, the three categories of family income that are primarily used are:

- › Poor—below the Federal poverty level
- › Near poor—100% to 199% of the Federal poverty level
- › Middle/high income—200% or more of the Federal poverty level.

These categories may be overridden by considerations specific to the data system, in which case they are modified as appropriate. See *Healthy People 2010: General Data Issues*, referenced below.

In general, data on educational attainment are presented for persons aged 25 and over, consistent with guidance given by the Census Bureau. However, because of the requirements of the different data systems, the age groups used to calculate educational attainment for any specific objective may differ from the age groups used to report the data for other Healthy People 2010 objectives, as well as from select populations within the same objective. Therefore, the reader is urged to exercise caution in interpreting the data by educational attainment shown in the Health Disparities Table. See *Healthy People 2010: General Data Issues*, referenced below, for additional information.

Additional information on data issues is available from the following sources:

- › All Healthy People 2010 tracking data can be found in the Healthy People 2010 database, DATA2010, available from <http://wonder.cdc.gov/data2010/>.
- › Detailed information about the data and data sources used to support these objectives can be found in the Operational Definitions on the DATA 2010 website, available from <http://wonder.cdc.gov/data2010/focusod.htm>.
- › More information on statistical issues related to Healthy People tracking and measurement can be found in the [Technical Appendix](#) and in *Healthy People 2010: General Data Issues*, which is available in the General Data Issues section of the NCHS Healthy People website under Healthy People 2010; see http://www.cdc.gov/nchs/healthy_people/hp2010/hp2010_data_issues.htm.

Notes

1. Displayed in the Progress Chart (Figure 10-1), the percent of targeted change achieved expresses the difference between the baseline and the final value relative to the initial difference between the baseline and the Healthy People 2010 target. As such, it is a relative measure of progress toward attaining the Healthy People 2010 target. See the [Reader's Guide](#) for more information. When standard errors were available, the difference between the baseline and the final value was tested at the 0.05 level of significance. See the Figure 10-1 footnotes, as well as the [Technical Appendix](#), for more detail.
2. Information about disparities among select populations is shown in the Health Disparities Table (Figure 10-2). Disparity from the best group rate is defined as the percent difference between the best group rate and each of the other group rates for a characteristic. For example, racial and ethnic health disparities are measured as the percent difference between the best racial and ethnic group rate and each of the other racial and ethnic group rates. Similarly, disparities by sex are measured as the percent difference between the better group rate (e.g., female) and the rate for the other group (e.g., male). Some objectives are expressed in terms of favorable events or conditions that are to be increased, while others are expressed in terms of adverse events or conditions that are to be reduced. To facilitate comparison of health disparities across different objectives, disparity is measured only in terms of adverse events or conditions. For comparability across objectives, objectives that are expressed in terms of favorable events or conditions are re-expressed using the adverse event or condition for the purpose of computing disparity, but they are not otherwise restated or changed. For example, objective 1-1, to increase the proportion of persons with health insurance (e.g., 72% of the American Indian or Alaska Native population under age 65 had some form of health insurance in 2008), is expressed in terms of the percentage of persons without health insurance (e.g., $100\% - 72\% = 28\%$ of the American Indian or Alaska Native population under age 65 did not have any form of health insurance in 2008) when the disparity from the best group rate is calculated. See the [Reader's Guide](#) for more information. When standard errors were available, the difference between the best group rate and each of the other group rates was tested at the 0.05 level of significance. See the Figure 10-2 footnotes, as well as the [Technical Appendix](#), for more detail.
3. The presence of a monotonic increasing or decreasing trend in the underlying measure was tested with the nonparametric Mann-Kendall test, then the slope of a linear trend was estimated with the nonparametric Sen's method. See [Technical Appendix](#) for more information.
4. To be included in Healthy People 2010, an objective must have a national data source that provides a baseline and at least one additional data point for tracking progress. Some objectives lacked baseline data at the time of their development but had a potential data source and were considered of sufficient national importance to be included in Healthy People. These are called "developmental" objectives. When data become available, a developmental objective is moved to measurable status and a Healthy People target can be set.
5. The change in disparity is estimated by subtracting the disparity at baseline from the disparity at the most recent data point and, therefore, is expressed in percentage points. See the [Reader's Guide](#) for more information. When standard errors were available, the change in disparity was tested at the 0.05 level of significance. See the Figure 10-2 footnotes, as well as the [Technical Appendix](#), for more detail.
6. As of the Healthy People 2020 launch, Healthy People 2020 objectives that were retained "as is" from Healthy People 2010 had no change in the numerator or denominator definitions, the data source(s), or the data collection methodology. These include objectives that were developmental in Healthy People 2010 and are developmental in Healthy People 2020, and for which no numerator information is available.
7. As of the Healthy People 2020 launch, objectives that were modified from Healthy People 2010 had some change in the numerator or denominator definitions, the data source(s), or the data collection methodology. These include objectives that went from developmental in Healthy People 2010 to measurable in Healthy People 2020, or vice versa.
8. Archived objectives had at least one data point in Healthy People 2010 but were not carried forward into Healthy People 2020.

Comprehensive Summary of Objectives: Food Safety

Objective	Description	Data Source or Objective Status
10-1a	Foodborne infections— <i>Campylobacter</i> species (per 100,000 population)	Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-1b	Foodborne infections— <i>Escherichia coli</i> O157:H7 (per 100,000 population)	Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-1c	Foodborne infections— <i>Listeria monocytogenes</i> (per 100,000 population)	Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-1d	Foodborne infections— <i>Salmonella</i> species (per 100,000 population)	Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-1e	Foodborne infections— <i>Cyclospora cayetanensis</i> (per 100,000 population)	Deleted at the Midcourse Review.
10-1f	Foodborne infections—Cases of postdiarrheal hemolytic uremic syndrome (HUS) (per 100,000 population <5 years)	Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-1g	Foodborne infections—Congenital <i>Toxoplasma gondii</i>	Deleted at the Midcourse Review.
10-2a	Outbreaks of foodborne infections— <i>Escherichia coli</i> O157:H7	Foodborne Disease Outbreak Surveillance System, CDC, NCEZID.
10-2b	Outbreaks of foodborne infections— <i>Salmonella</i> serotype Enteritidis	Foodborne Disease Outbreak Surveillance System, CDC, NCEZID.
10-3a	Non-Typhi <i>Salmonella</i> from humans (percent of isolates) resistant to fluoroquinolones	National Antimicrobial Resistance Monitoring System: Enteric Bacteria-Salmonella (NARMS: Enteric Bacteria), CDC, NCEZID; FDA, CVM; Department of Agriculture (USDA). Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-3b	Non-Typhi <i>Salmonella</i> from humans (percent of isolates) resistant to third-generation cephalosporins	National Antimicrobial Resistance Monitoring System: Enteric Bacteria-Salmonella (NARMS: Enteric Bacteria), CDC, NCEZID; FDA, CVM; Department of Agriculture (USDA). Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-3c	Non-Typhi <i>Salmonella</i> from humans (percent of isolates) resistant to gentamicin	National Antimicrobial Resistance Monitoring System: Enteric Bacteria-Salmonella (NARMS: Enteric Bacteria), CDC, NCEZID; FDA, CVM; Department of Agriculture (USDA). Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-3d	Non-Typhi <i>Salmonella</i> from humans (percent of isolates) resistant to ampicillin	National Antimicrobial Resistance Monitoring System: Enteric Bacteria-Salmonella (NARMS: Enteric Bacteria), CDC, NCEZID; FDA, CVM; Department of Agriculture (USDA). Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
10-3e	Non-Typhi <i>Salmonella</i> from cattle at slaughter (percent of isolates) resistant to fluoroquinolones	Deleted at the Midcourse Review.
10-3f	Non-Typhi <i>Salmonella</i> from cattle at slaughter (percent of isolates) resistant to third-generation cephalosporins	Deleted at the Midcourse Review.
10-3g	Non-Typhi <i>Salmonella</i> from cattle at slaughter (percent of isolates) resistant to gentamicin	Deleted at the Midcourse Review.

Comprehensive Summary of Objectives: Food Safety (continued)

Objective	Description	Data Source or Objective Status
10-3h	Non-Typhi <i>Salmonella</i> from cattle at slaughter (percent of isolates) resistant to ampicillin	Deleted at the Midcourse Review.
10-3i	Non-Typhi <i>Salmonella</i> from poultry at slaughter (percent of isolates) resistant to fluoroquinolones	Deleted at the Midcourse Review.
10-3j	Non-Typhi <i>Salmonella</i> from poultry at slaughter (percent of isolates) resistant to third-generation cephalosporins	Deleted at the Midcourse Review.
10-3k	Non-Typhi <i>Salmonella</i> from poultry at slaughter (percent of isolates) resistant to gentamicin	Deleted at the Midcourse Review.
10-3l	Non-Typhi <i>Salmonella</i> from poultry at slaughter (percent of isolates) resistant to ampicillin	Deleted at the Midcourse Review.
10-3m	Non-Typhi <i>Salmonella</i> from swine at slaughter (percent of isolates) resistant to fluoroquinolones	Deleted at the Midcourse Review.
10-3n	Non-Typhi <i>Salmonella</i> from swine at slaughter (percent of isolates) resistant to third-generation cephalosporins	Deleted at the Midcourse Review.
10-3o	Non-Typhi <i>Salmonella</i> from swine at slaughter (percent of isolates) resistant to gentamicin	Deleted at the Midcourse Review.
10-3p	Non-Typhi <i>Salmonella</i> from swine at slaughter (percent of isolates) resistant to ampicillin	Deleted at the Midcourse Review.
10-4a	Deaths from food-induced anaphylaxis	Developmental.
10-4b	Severe allergic reactions to food among adults with food allergy diagnosis (18+ years)	Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).
10-5	Consumer food safety practices (18+ years)	Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).
10-6a	Safe retail food preparation—Hospitals	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6b	Safe retail food preparation—Nursing homes	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6c	Safe retail food preparation—Elementary schools	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6d	Safe retail food preparation—Fast food restaurants	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6e	Safe retail food preparation—Full-service restaurants	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6f	Safe retail food preparation—Deli departments	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6g	Safe retail food preparation—Meat/poultry departments	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6h	Safe retail food preparation—Produce departments	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-6i	Safe retail food preparation—Seafood departments	Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.
10-7	Human exposure to organophosphate pesticide from food	Deleted at the Midcourse Review.

Figure 10-1. Progress Toward Target Attainment for Focus Area 10: Food Safety

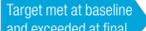
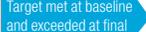
LEGEND										
		Moved away from target ¹		Moved toward target		Met or exceeded target				
Objective	Percent of targeted change achieved ²				2010 Target	Baseline (Year)	Final (Year)	Baseline vs. Final		
	0	25	50	75				100	Difference ³	Statistically Significant ⁴
10-1. Foodborne infections (per 100,000 population)										
a. <i>Campylobacter</i> species					12.3	24.6 (1997)	12.9 (2009)	-11.7	Not tested	-47.6%
b. <i>Escherichia coli</i> O157:H7					1.0	2.1 (1997)	1.0 (2009)	-1.1	Not tested	-52.4%
c. <i>Listeria monocytogenes</i>					0.24	0.47 (1997)	0.30 (2009)	-0.17	Not tested	-36.2%
d. <i>Salmonella</i> species					6.8	13.6 (1997)	15.0 (2009)	1.4	Not tested	10.3%
f. Cases of postdiarrheal hemolytic uremic syndrome (HUS) (<5 years)					0.90	1.80 (2000)	2.03 (2006)	0.23	Not tested	12.8%
10-2. Outbreaks of foodborne infections										
a. <i>Escherichia coli</i> O157:H7					5	10 (1997)	32 (2008)	22	Not tested	220.0%
b. <i>Salmonella</i> serotype Enteritidis					24	49 (1997)	27 (2008)	-22	Not tested	-44.9%
10-3. Non-Typhi <i>Salmonella</i> from humans (percent of isolates) resistant to:										
a. Fluoroquinolones					0.0%	0.0% (1997)	0.1% (2008)	0.1	Not tested	*
b. Third-generation cephalosporins					0.1%	0.1% (1997)	0.3% (2008)	0.2	Not tested	200.0%
c. Gentamicin					2.9%	2.9% (1997)	1.4% (2008)	-1.5	Not tested	-51.7%
d. Ampicillin					18.3%	18.3% (1997)	9.3% (2008)	-9.0	Not tested	-49.2%
10-4b. Severe allergic reactions to food among adults with food allergy diagnosis (18+ years)					21%	26% (2001)	29% (2006)	3	No	11.5%
10-5. Consumer food safety practices (18+ years)					79%	72% (1998)	75% (2006)	3	Yes	4.2%

Figure 10-1. Progress Toward Target Attainment for Focus Area 10: Food Safety (continued)

Objective	Percent of targeted change achieved ²	2010 Target	Baseline (Year)	Final (Year)	Baseline vs. Final		
					Difference ³	Statistically Significant ⁴	Percent Change ⁵
10-6 Safe retail food preparation							
a. Hospitals	20.0%	85%	80% (1998)	81% (2008)	1	No	1.3%
b. Nursing homes	20.0%	87%	82% (1998)	83% (2008)	1	No	1.2%
c. Elementary schools	80.0%	85%	80% (1998)	84% (2008)	4	No	5.0%
d. Fast food restaurants	57.1%	81%	74% (1998)	78% (2008)	4	No	5.4%
e. Full-service restaurants	40.0%	70%	60% (1998)	64% (2008)	4	No	6.7%
f. Deli departments	14.3%	80%	73% (1998)	74% (2008)	1	No	1.4%
g. Meat/poultry departments	140.0%	86%	81% (1998)	88% (2008)	7	No	8.6%
h. Produce departments	133.3%	82%	76% (1998)	84% (2008)	8	No	10.5%
i. Seafood departments	75.0%	87%	83% (1998)	86% (2008)	3	No	3.6%

NOTES

See the [Reader's Guide](#) for more information on how to read this figure. See DATA2010 at <http://wonder.cdc.gov/data2010> for all HealthyPeople 2010 tracking data. Tracking data are not available for objective 10-4a. Objectives 10-1e, 10-1g, 10-3e through p, and 10-7 were deleted at the Midcourse Review.

FOOTNOTES

¹ Movement away from target is not quantified using the percent of targeted change achieved. See [Technical Appendix](#) for more information.

² Percent of targeted change achieved = $\frac{\text{Final value} - \text{Baseline value}}{\text{Healthy People 2010 target} - \text{Baseline value}} \times 100$.

³ Difference = Final value - Baseline value. Differences between percents (%) are measured in percentage points.

⁴ When estimates of variability are available, the statistical significance of the difference between the final value and the baseline value is assessed at the 0.05 level. See [Technical Appendix](#) for more information.

⁵ Percent change = $\frac{\text{Final value} - \text{Baseline value}}{\text{Baseline value}} \times 100$.

* Percent change cannot be calculated. See [Technical Appendix](#) for more information.

DATA SOURCES

- 10-1a-d. Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
- 10-1f. Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
- 10-2a-b. Foodborne Disease Outbreak Surveillance System, CDC, NCEZID.
- 10-3a-d. National Antimicrobial Resistance Monitoring System: Enteric Bacteria-Salmonella (NARMS: Enteric Bacteria), CDC, NCEZID; FDA, CVM; Department of Agriculture (USDA). Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN, Department of Agriculture, USDA; State agencies.
- 10-4b. Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).
- 10-5. Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).
- 10-6a-i. Retail Food Database of Foodborne Illness Risk Factors, FDA, CFSAN.

Figure 10-2. Health Disparities Table for Focus Area 10: Food Safety

Disparities from the best group rate for each characteristic at the most recent data point and changes in disparity from the baseline to the most recent data point.

Population-based objective	Race and Ethnicity							Summary index	Sex		Education				Income				Disability	
	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Two or more races	Hispanic or Latino	Black, not Hispanic	White, not Hispanic		Female	Male	Less than high school	High school graduate	At least some college	Summary index	Poor	Near poor	Middle/high income	Summary index	Persons with disabilities	Persons without disabilities
10-1a. Foodborne infections— <i>Campylobacter</i> species (per 100,000 population) (1997, 2009) [†]									B											
b. Foodborne infections— <i>Escherichia coli</i> O157:H7 (per 100,000 population) (1997, 2009) [†]									↑	B										
c. Foodborne infections— <i>Listeria monocytogenes</i> (per 100,000 population) (1997, 2009) [†]										B ⁱ										
d. Foodborne infections— <i>Salmonella</i> species (per 100,000 population) (1997, 2009) [†]										B ⁱ										
f. Foodborne infections—Cases of postdiarrheal hemolytic uremic syndrome (HUS) (per 100,000 population <5 years) (2000, 2006) [†]									↑↑	B										
10-4b. Severe allergic reactions to food among adults with food allergy diagnosis (18+ years) (2001, 2006) [*]																				
10-5. Consumer food safety practices (18+ years) (1998, 2006) [*]							ii	B			B ⁱ		B ⁱ							

NOTES

See DATA2010 at <http://wonder.cdc.gov/data2010> for all Healthy People 2010 tracking data. Disparity data are either unavailable or not applicable for objectives 10-2a and b, 10-3a through d, 10-4a, and 10-6a through i. Objectives 10-1e and g, 10-3e through p, and 10-7, were deleted at Midcourse Review.

Years in parentheses represent the baseline and most recent data years (if available).

Disparity from the best group rate is defined as the percent difference between the best group rate and each of the other group rates for a characteristic (e.g., race and ethnicity). The summary index is the average of these percent differences for a characteristic. Change in disparity is estimated by subtracting the disparity at baseline from the disparity at the most recent data point. Change in the summary index is estimated by subtracting the summary index at baseline from the summary index at the most recent data point. See [Technical Appendix](#) for more information.

Figure 10-2. Health Disparities Table for Focus Area 10: Food Safety (continued)

LEGEND								
The “best” group rate at the most recent data point.		The group with the best rate for specified characteristic.		Most favorable group rate for specified characteristic, but reliability criterion not met.		Reliability criterion for best group rate not met, or data available for only one group.		
Percent difference from the best group rate								
Disparity from the best group rate at the most recent data point.		Less than 10%, or difference not statistically significant (when estimates of variability are available).		10%–49%		50%–99%		100% or more
Changes in disparity over time are shown when: (a) disparities data are available at both baseline and most recent time points; (b) data are not for the group(s) indicated by “B” or “b” at either time point; and (c) the change is greater than or equal to 10 percentage points and statistically significant, or when the change is greater than or equal to 10 percentage points and estimates of variability were not available. See Technical Appendix .	Increase in disparity (percentage points)							
		10–49 points		50–99 points		100 points or more		
	Decrease in disparity (percentage points)							
		10–49 points		50–99 points		100 points or more		
Availability of Data		Data not available.		Characteristic not selected for this objective.				

FOOTNOTES

* Measures of variability were available. Thus, the variability of best group rates was assessed, and statistical significance was tested. Disparities of 10% or more are displayed when the differences from the best group rate are statistically significant at the 0.05 level. Changes in disparities over time are indicated by arrows when the changes are greater than or equal to 10 percentage points and are statistically significant at the 0.05 level. See [Technical Appendix](#).

† Measures of variability were not available. Thus, the variability of best group rates was not assessed, and statistical significance could not be tested. Nonetheless, disparities and changes in disparities over time are displayed according to their magnitude. See [Technical Appendix](#).

ⁱ The group with the best rate at the most recent data point is different from the group with the best rate at baseline. Both rates met the reliability criterion. See [Technical Appendix](#).

ⁱⁱ Change in the summary index cannot be assessed. See [Technical Appendix](#).

DATA SOURCES

- 10-1a–d. Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
- 10-1f. Foodborne Disease Active Surveillance Network (FoodNet): CDC, NCEZID; FDA, CFSAN; Department of Agriculture (USDA); State agencies.
- 10-4b. Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).
- 10-5. Food Safety Survey (FSS), FDA, CFSAN; and Department of Agriculture (USDA).