



PATHOGEN REDUCTION INITIATIVES – USDA/FSIS PERSPECTIVE

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FSIS Mission*




As the public health regulatory agency at USDA, FSIS is responsible for ensuring that the nation's commercial supply of meat, poultry, and processed egg products is:

- Safe
- Wholesome
- Correctly labeled and packaged

* Jurisdiction -- slaughter to processing, including pre-harvest control are exerted at slaughter/processing and in-commerce controls exerted at distribution points of sale/storage; daily inspection occurs at slaughter/processing; surveillance occurs in-commerce; primary statutes -- EPIA, FMIA, PPIA

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U.S. HEALTHY PEOPLE 2020




	1997	2010	2020*
Pathogen	Baseline Case Rate (infections from all foods per 100,000 population)**	FoodNet Case Rate	Target
<i>Campylobacter</i>	24.6	13.6	8.5
<i>Escherichia coli</i> O157:H7	2.1	0.9***	0.6
<i>Listeria monocytogenes</i>	0.47	0.3	0.2****
<i>Salmonella</i>	13.6	17.6	11.4

- Food Safety: <http://healthypeople.gov/2020/topic/objectives2020/objectiveslist.aspx?topicid=14> ; applies to all food sources, not just meat, poultry, and processed egg products
- *CDC MMWR – June 10, 2011; 60(22): 749-755
- **Minor revisions were made in some case rates in November 2000
- ***First met in 2004 and then again in 2009 and 2010; CDC tracks non-O157 STEC and for 2010, the case rate was 1.0 (greater than that for O157 STEC)
- ****Changed to year 2005 by Presidential Executive Order

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U.S. HEALTHY PEOPLE 2020 (continued)



Food	2005-2007 Baseline # Outbreaks from STEC O157, <i>Campylobacter</i> , <i>Listeria monocytogenes</i> , and <i>Salmonella</i>	2020 Target for Outbreaks*
Beef	200	180
Poultry	258	232


- Food Safety: <http://healthypeople.gov/2020/topic/objectives2020/objectiveslist.aspx?topicid=14> ; applies to all food sources, not just meat, poultry, and processed egg products
- *Represents a ten percent decrease from baseline

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Pathogen-Specific Data for All-Illness Measure									
Pathogen	Measures			Objectives					Goal
	Baseline 2005-2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
<i>Salmonella</i>	576,436	636,266	596,598	559,053	553,379	547,845	542,367	536,943	531,574
<i>E. coli</i> O157:H7	20,415	19,214	16,984	17,155	16,984	16,814	16,646	16,479	16,315
<i>Listeria monocytogenes</i>	1,236	1,222	1,432	1,053	1,043	1,032	1,022	1,012	1,002
All Illness	598,087	656,702	615,014	577,262	571,406	565,691	560,035	554,434	548,890

1: In July 2011, *Campylobacter* in poultry carcasses and in March 2012, six non-O157 STEC in raw beef will be added to the calculations for the All-Illness measure in FY2012

2: A four percent decrease in illnesses associated with *Salmonella* through FY2015 is the primary driver for overall public health improvement from foods regulated by FSIS

FSIS Strategic Plan FY2011–FY2016			
<ul style="list-style-type: none"> Engages FSIS employees and directly affects the ~\$1 billion budget 			
Themes <ol style="list-style-type: none"> Prevent foodborne illness Understand and influence the farm-to-table continuum Empower people and strengthen infrastructure 			
Goals <ol style="list-style-type: none"> Ensure that food safety inspections align with existing and emerging risks Maximize domestic and international compliance with food safety practices Enhance public education and outreach to improve food—handling practices Strengthen collaboration among stakeholders to prevent foodborne illness Effectively use science to understand foodborne illnesses and emerging trends Implement effective policies to respond to existing and emerging risks Empower employees with the training, resources, and tools to enable success Use innovative methodologies (e.g., PHIS) to protect public health 			
Corporate Performance Measures <ol style="list-style-type: none"> Total # All Illnesses from FSIS regulated products % of broiler plants passing the new <i>Salmonella</i> standard % of all establishments with a functional food defense plan % of slaughter plants with effective systematic approach to humane handling Average % of consumers following “best practices” – cook, clean, chill, separate 			

HACCP



- 9 CFR 417.2(a)(1) states: “Every official establishment shall conduct, or have conducted for it, a hazard analysis to determine the food safety hazards reasonably likely to occur in the production process and identify the preventive measures the establishment can apply to control those hazards. **The hazard analysis shall include food safety hazards that can occur before, during, and after entry into the official establishment. ...**”
- A prudent establishment would be assessing pre-harvest controls as part of an effective food safety system...

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Acceptable # of *Salmonella* Positive Samples in Raw Classes of Product

Raw Class of Product	Standard %	Sample Set Size	Standard
Broilers (updated 2011)	7.5	51	5
Cows/Bulls	2.7	58	2
Hogs (to be updated in 2012)	8.7 Highest standard other than ground poultry	55	6
Steers/Heifers	1.0	82	1
Young Turkeys (updated 2011)	1.7	56	4
Ground Beef	7.5	53	5
Ground Chicken	44.6	53	26
Ground Turkey	49.9	53	29

Top 3 *Salmonella* Serotypes in Raw Meat and Poultry Products, CY2010

Raw Class of Product	Top 3 Serotypes	% of Total Positive Samples	# Positive Samples
Broilers	Kentucky, Enteritidis, Typhimurium	45.4, 27.1, 9.0	208, 124, 41
Cows/Bulls	Montevideo, Bredeney, Hadar	44.4, 11.1, 11.1	4, 1, 1
Hogs	Derby, Typhimurium, Saintpaul	16.8, 12.9, 10.9	17, 13, 11
Steers/Heifers	Anatum, Adelaide, Derby	50.0, 16.7, 16.7	3, 1, 1
Young Turkeys	Hadar, Muenchen, Saintpaul	22.7, 16.6, 9.1	15, 9, 6
Ground Beef	Montevideo, Dublin, Typhimurium	25.6, 18.7, 5.9	52, 38, 12
Ground Chicken	Kentucky, Enteritidis, Heidelberg	35.0, 30.0, 10.0	28, 24, 8
Ground Turkey	Hadar, Muenchen, Saintpaul	22.7, 16.6, 9.1	15, 9, 6

Substantive *Salmonella* Initiatives in 2012



- Currently scheduling 9 of 75 sets monthly for *Salmonella/Campylobacter* in broiler/turkey carcasses; will increase to 16 sets in Fall 2011
- End-of-set letters – establishments will receive FSIS data on serotype and antimicrobial resistance, along with status amongst peers in class of product and information about repeat strains
- Baseline studies: Poultry parts with the intent of establishing pathogen reduction performance standards; unpasteurized liquid egg with the intent of establishing lethality performance standards
- Prevention of contamination during slaughter/dressing, along with performance standards for pre-evisceration
- CSPI petition on four multi drug-resistant strains: Hadar, Heidelberg, Newport, and Typhimurium
- Recontamination post-lethality
- Begin analyzing trim and ground beef at time of STEC analysis
- Pursue importance of lymph nodes

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Substantive *Campylobacter* Initiatives in 2012



- Began assessing in July 2011; although the 1 ml sample affects performance, FSIS will continue to assess the larger sample (30 ml for broiler and 24 ml for turkey) in order to assess if changes occurring in positive rate
- Same actions as for *Salmonella* in poultry (prior slide)

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Substantive Shiga Toxin *Escherichia coli* (STEC) Initiatives in 2012



- Tentative plans to begin assessing for six non-O157 STECs in beef manufacturing trimmings in March 2012 (O26, O103, O111, O121, O45, AND O145); other raw beef will be assessed as laboratory capacity is established (FR Notice will announce implementation plans prior to March 2012)
- Baseline study on beef carcasses immediately after hide removal but prior to evisceration, as well as post-chill and possibly pre-chill
- On-going baseline in trim and ground beef
- Issue a proposed rule on grinding logs for ground beef operations, with a particular focus at retail

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Substantive *Listeria monocytogenes* Initiatives in 2012



- Continue RLM (i.e., intensified food safety assessment with product, environmental, and food contact surface sampling)
- End ALLRTE sampling, as designed, and established a mechanism to provide an on-going baseline of prevalence in RTE product
- Develop options for assessing the sanitary conditions of NRTE operations that produce products that appear RTE
- Continue with support for the ARS sampling of retail RTE product in support of the retail risk assessment

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Public Meetings/Workshops



- November 9, 2011 – First of multiple pre-harvest sessions
 - All day workshop at the APHIS Riverdale, MD, facility
 - Session will focus on control of enteric pathogens in cattle, specifically STECs and *Salmonella*

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Thank you

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