



United States Department of Agriculture

One Team, One Purpose



Food Safety and Inspection Service

Protecting Public Health and Preventing Foodborne Illness





Update on Preliminary Analysis of Modernization of Poultry Slaughter

Christopher Alvares, Director
Office of Data Integration and Food Protection
Data Analysis Staff

Presentation to Stakeholders
October, 2017

Outline

- Summary of Findings
- Overview
- Analysis Highlights
 1. Mandatory Requirements Implementation
 2. Inspection Task Findings at NPIS Establishments
 3. Comparison of pre-Conversion to post-Conversion
 4. Comparison of NPIS to non-NPIS
- Preliminary conclusions
- Moving Forward

Summary of Findings

1. *Salmonella* and *Campylobacter* levels are lower after implementation of the mandatory requirements
2. Inspectors are performing increased off-line verification tasks as intended under NPIS
3. Establishments that convert to NPIS are able to maintain process control
4. NPIS-converted establishments have similar *Salmonella* levels to other like establishments

Overview

- Poultry Slaughter Modernization introduced a new inspection system
 - Mandatory requirements for all establishments
 - Have pathogen levels changed since implementation?

For NPIS:

- IPP spend more time doing certain off-line inspection tasks
 - Are IPP performing tasks at expected rates?
- Establishments expected to take greater responsibility controlling pathogens
 - Are establishments that convert able to maintain process control?
 - Are establishments in NPIS performing as well as similar establishments in other inspection systems?

Salmonella Rates Before and After Modernization

- All poultry slaughter establishments were required to implement certain provisions of the rule
- A comparison of *Salmonella* and *Campylobacter* rates shows overall decreases since implementation of the rule.
 - 176 chicken and 41 turkey slaughter establishments analyzed
 - Timeframe is pre-nBPW

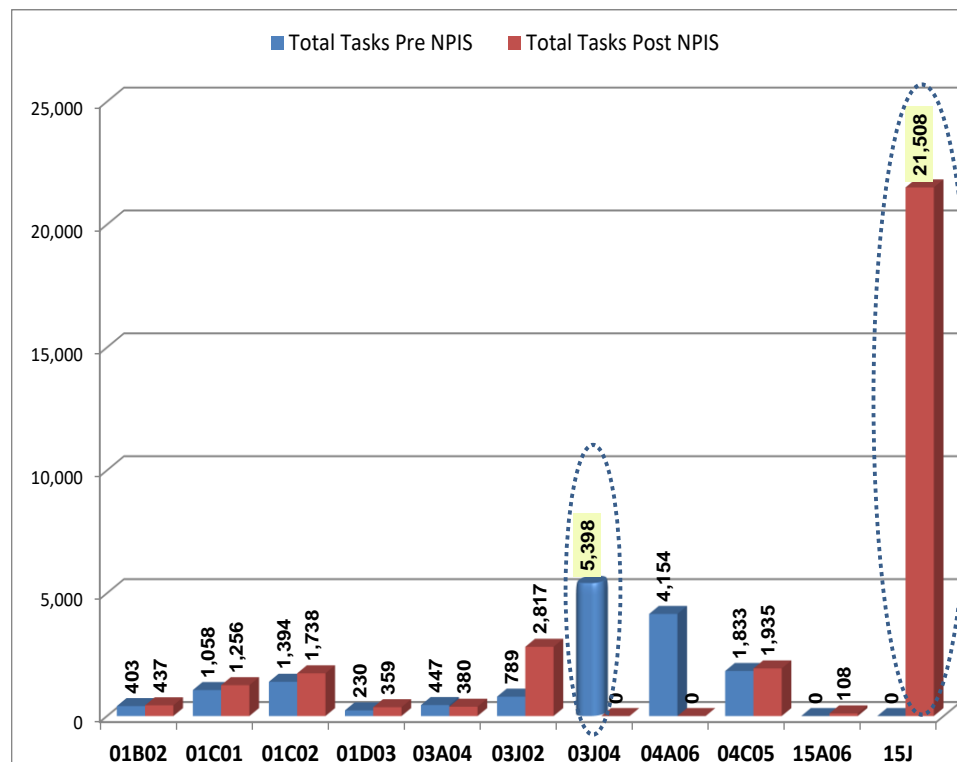
Salmonella Positive Rates in Chicken, Turkey and all Poultry Slaughter Establishments

	Salmonella Positives Before	Salmonella Negatives Before	Salmonella Positive Rate Before	Salmonella Positives After	Salmonella Negatives After	Salmonella Positive Rate After
Chicken	255	8,212	3.01%	122	7,711	1.56%
Turkey	42	2,011	2.05%	18	1,645	1.08%
All Poultry	297	10,223	2.82%	140	9,356	1.47%

Before the mandatory testing rule: July 1, 2013 to June 30, 2014 and
 After the mandatory testing rule: July 1, 2015 to June 30, 2016.

Inspection Task Findings

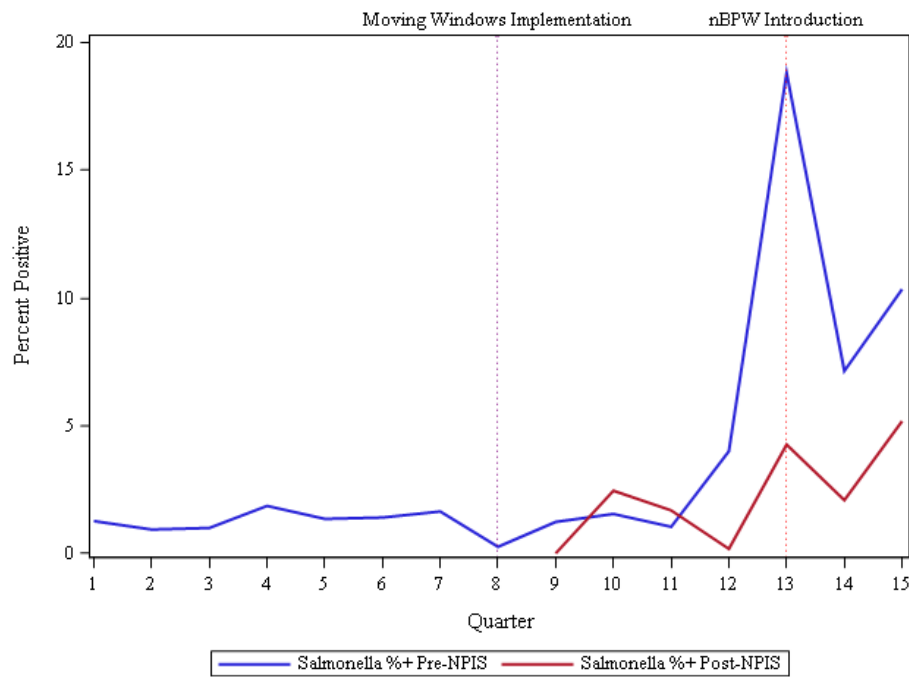
- PHIS tasks were evaluated in the 30-120 days prior to conversion and the 30-120 days after.
 - 18 non-HIMP establishments used in this analysis
 - The NPIS Zero Tolerance Food Safety Verification task (15J) was performed 4 times more often than the Poultry Zero Tolerance Verification task (03J04)
 - The non-food safety Finished Product Standards task (04A06 for pre-NPIS and 15A06 post-NPIS) frequency was reduced to monthly



pre-Conversion vs post-Conversion

- FSIS Pathogen testing data evaluated in 55 chicken and turkey establishments that converted to NPIS
 - Accounted for other factors including
 - Seasonality and different conversion dates
 - Former-HIMP
 - nBPW introduction
 - Implementation of moving window based sampling
- No significant change was seen in pathogen levels for converting establishments

Salmonella Percent Positive (unweighted) Pre- and Post-NPIS Implementation Periods, July 1, 2013, through March 31, 2017, Young Chickens and Young Turkeys Combined.



Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
pre-NPIS Ests	28	20	22	23	26	21	14	52	52	32	17	13	9	5	2
post-NPIS Ests									17	34	39	43	46	51	54

Establishments that converted mid-quarter would be counted in both pre- and post-NPIS counts for that quarter

NPIS vs non-NPIS

- Focused on more recent data, 12 months post nBPW
- 39 Large (23 former HIMP) NPIS converted establishments compared to 126 Large non-NPIS establishments

	<i>Salmonella</i> Positive Percentage (Number)			<i>Campylobacter</i> Positive Percentage (Number)		
	chicken carcasses	chicken parts	turkey carcasses	chicken carcasses	chicken parts	turkey carcasses
NPIS	4.5% (67)	14.5% (147)	0.4% (3)	1.5% (22)	3.2% (32)	0.3% (2)
HIMP	2.9% (31)*	14.8% (102)	0.4% (1)	0.8% (8)*	3.2% (22)	0.0% (0)
Non-HIMP	8.9% (36)	13.9% (45)	0.4% (2)	3.5% (14)	3.1% (10)	0.4% (2)
Non-NPIS	4.1% (214)	13.3% (494)	0.2% (1)	1.6% (79)	2.6% (96)	0.0% (0)

* Statistically significant compared to Non-NPIS (chi-squared, $p < 0.05$)

- Comparable results are seen between the NPIS establishments and similar non-NPIS establishments
 - Note: the non-HIMP data is skewed by one outlier establishment. With that establishment excluded, chicken carcass *Salmonella* rates in former non-HIMP sub-group is 4.0% (14 positive) and in all NPIS is 3.1% (45 positive)

Preliminary Conclusions

- *Salmonella* and *Campylobacter* levels are lower after implementation of the mandatory requirements
- Increased off-line food safety verification tasks are occurring as instructed
 - Off-line bird checks are 4X more frequent
- Plants that convert to NPIS are able to maintain process control
- The group of NPIS converted establishments are comparable to those who have not converted in terms of both *Salmonella* and *Campylobacter* rates
 - Converted HIMP plants have lower carcass *Salmonella* rates in this analysis

Next steps

- Continue to monitor and evaluate
 - Monitor converted establishments to ensure a smooth transition
 - Track pathogen rates as more establishments convert and as more data is collected
 - Evaluate the public health impact and compare to the estimates in the risk assessment
 - Provide periodic updates

Supplemental Info

Inspection Task Code Key

InspTaskCode	InspectionTaskName	Description
01B02	Pre-Op SSOP Review and Observation	Review the establishment's SSOP and become familiar with the procedures
01C01	Operational SSOP Record Review	Verify operational SSOP records
01C02	Operational SSOP Review and Observation	Verification of the establishment's operational SSOP
01D03	Poultry Sanitary Dressing	Verification of sanitary dressing in poultry slaughter
03A04	Review of Establishment Data	Weekly review of establishment data per Directive 5000.2
03J02	Slaughter HACCP	Verification of all 5 HACCP regulatory requirements through the review/observation and recordkeeping components
03J04	Poultry Zero Tolerance Verification	Verification of zero tolerance for feces on poultry carcasses entering chilling system
04A06	Poultry Finished Product Standards	Verify poultry products are produced in a safe, wholesome manner and not misbranded
04C05	Poultry Good Commercial Practices	Poultry Good Commercial Practices
15A06	NPIS Poultry Ready-to-Cook	Ready to Cook Task for NPIS establishments
15J	NPIS Zero Tolerance Food Safety Verification	Verification of zero tolerance for feces in NPIS system establishments

Notes: When establishments convert to NPIS they perform 15J and 15A06 tasks in lieu of 03J04 and 04A06, respectively