



Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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USDA Food Safety and Inspection Service
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U.S. DEPARTMENT OF AGRICULTURE

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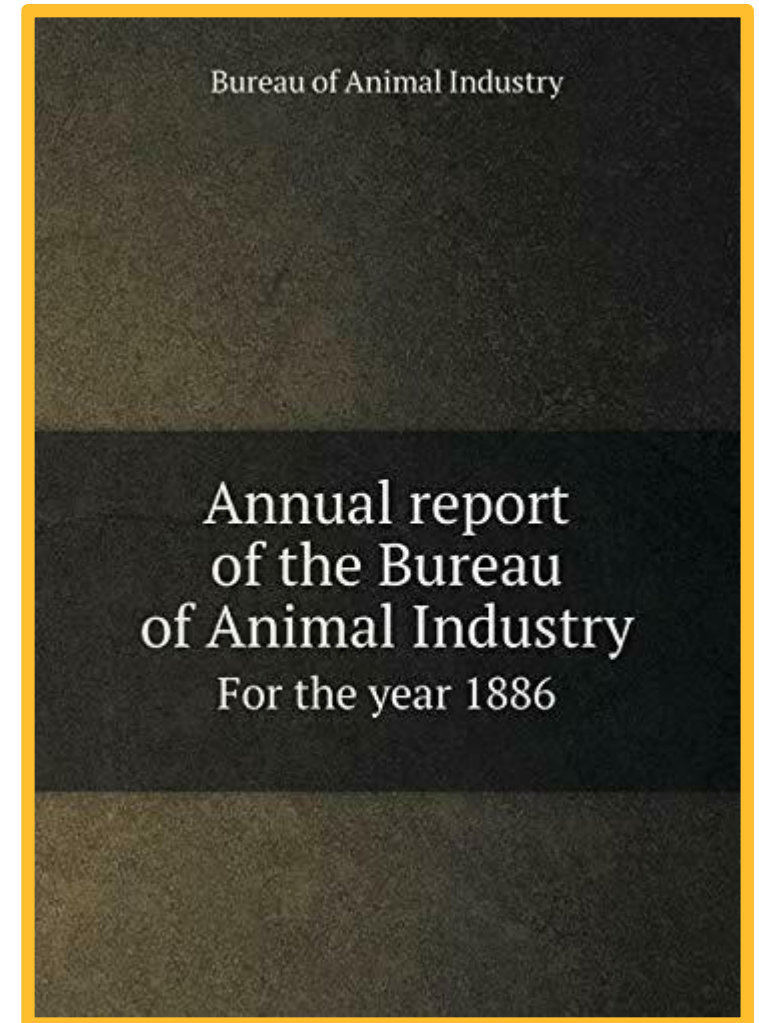
USDA's Division of Chemistry

- In 1862, President Abraham Lincoln founded the U.S. Department of Agriculture (USDA).
- In 1883, Dr. Harvey W. Wiley, was appointed chief chemist at USDA.
- Dr. Wiley devoted his career to raising public awareness of problems with adulterated food; developing standards for food processing; and campaigning for the Pure Food and Drugs Act, also known as the "Wiley Act."



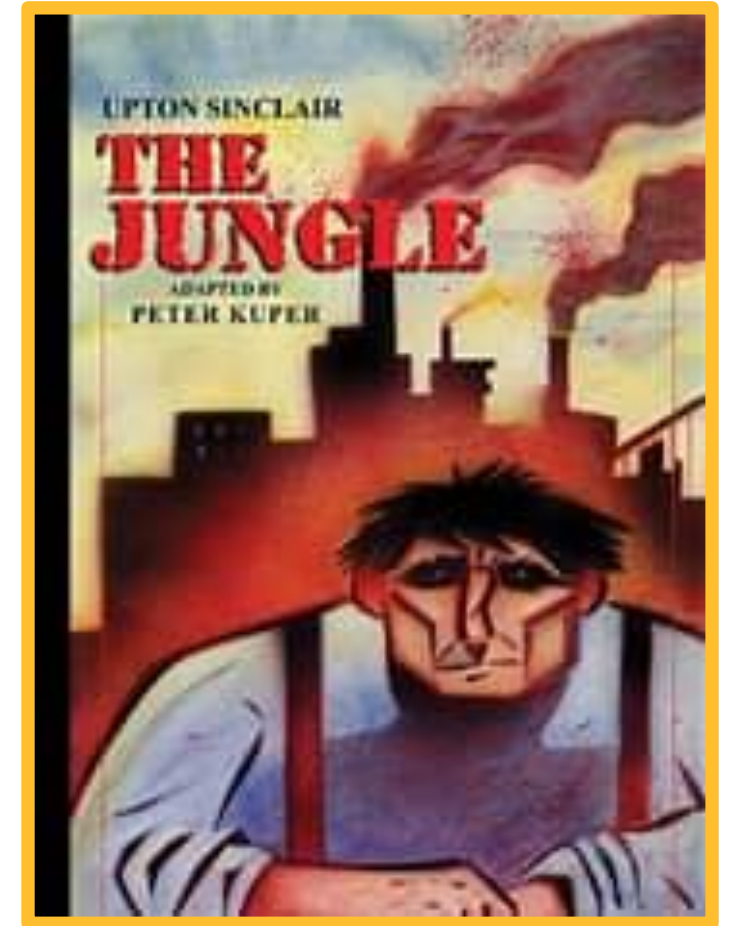
Foreign Trade and Meat Inspection

- On August 30, 1890, President Benjamin Harrison signed the first law requiring inspection of meat products.
- The law required that USDA, through the Bureau of Animal Industry, inspect salted pork and bacon intended for exportation.
 - In 1891, this law was amended to require the inspection and certification of all live cattle and beef intended for exportation.



Turning Point for Meat Inspection

- 1905: Author Upton Sinclair published *The Jungle*
- 1906: The Pure Food and Drug Act prevented the manufacture, sale, or transportation of adulterated or misbranded foods, drugs, medicines, and liquors.
- 1906: The FMIA prohibited the sale of adulterated or misbranded meat and meat products for food and ensured that meat and meat products were slaughtered and processed under sanitary conditions.



Origins of the Food and Drug Administration

- In 1927, USDA's Bureau of Chemistry was reorganized and renamed the Food, Drug, and Insecticide Administration.
- In 1931, it was renamed the Food and Drug Administration (FDA).
- In 1938, Congress passed the Federal Food, Drug and Cosmetic Act, which gave the FDA the authority to issue food safety standards, among other authorities.
- In 1940, the FDA was moved from USDA to the Federal Security Agency, which in 1953 became the Department of Health, Education, and Welfare—now the Department of Health and Human Services.



Poultry Inspection

- Health concerns posed by poultry were first addressed in 1926, when USDA began to offer a voluntary inspection and grading service to poultry processors through its Federal Poultry Inspection Service.
- In 1957, Congress passed the Poultry Products Inspection Act, which ensured that poultry products shipped in interstate commerce are continuously inspected: prior to slaughter, after slaughter, before processing and, if the poultry was imported, at the point of entry into the United States.
- The law also required that plant facilities be sanitary and that product labels be accurate and truthful.



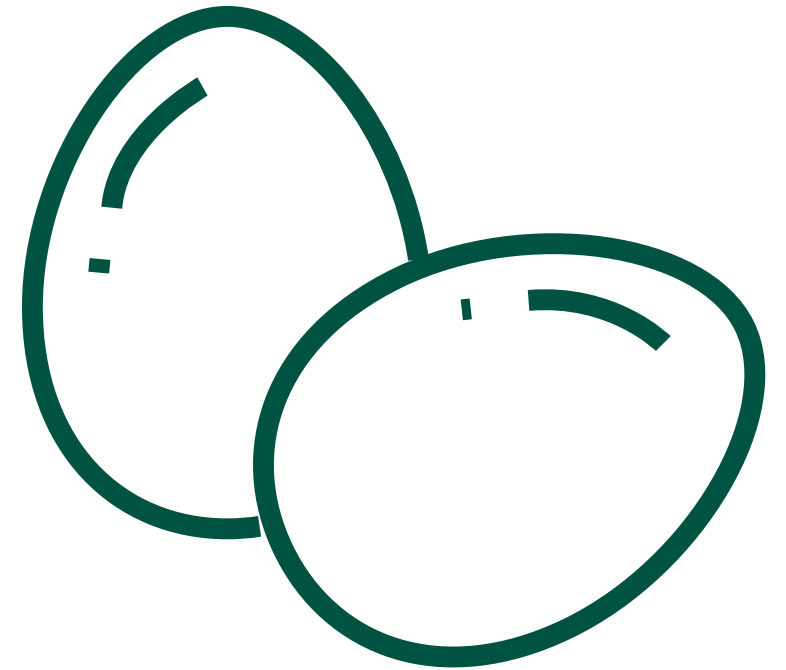
1960s: A Decade of Regulatory Reform

- In 1967 and 1968, respectively, the Wholesome Meat Act and the Wholesome Poultry Act amended the FMIA and the PPIA, addressing the new inspection challenges that had arisen from an increasingly complicated market.
- Under the new laws, states were required to maintain meat and poultry inspection programs "at least equal to" the federal program.



Egg Inspection

- In 1970, Congress passed the Egg Products Inspection Act (EPIA), which provides for the mandatory continuous inspection of the processing of liquid, frozen, and dried egg products.
- For the next 25 years, ARS' Poultry Division inspected egg products to ensure they were wholesome, otherwise not adulterated, and properly labeled and packaged to protect the health and welfare of consumers.
- In 1995, FSIS became responsible for the inspection of liquid, frozen, or dried egg products. FDA assumed responsibility for shell egg safety.



A New Science-Based Inspection System

- In 1993, an outbreak of *E. coli* O157:H7 infections occurred in the Pacific Northwest, causing over 700 illnesses and four deaths. The public demanded change for safer ground beef products.
- On July 25, 1996, FSIS issued its landmark rule, Pathogen Reduction/HACCP Systems. The rule focuses on the prevention and reduction of microbial pathogens on raw products that can cause illness.
- HACCP was implemented in all FSIS- and state-inspected meat and poultry slaughter and processing establishments across the nation, between January 1997 and January 2000.
- The Centers for Disease Control and Prevention have recognized HACCP as an important factor in the overall decline in bacterial foodborne illnesses since 1996.





Opportunities to Collaborate

Interagency Food Safety Analytics Collaboration (IFSAC)

- IFSAC was established in 2011 by the CDC, FDA, and FSIS.
- Shared vision amongst CDC, FDA, and FSIS to improve foodborne illness source attribution.
- Establishes cross-cutting priorities for food safety data collection, analysis, and use.
- Improves coordination of federal food safety efforts in preventing foodborne illness.



National Antimicrobial Resistance Monitoring System (NARMS)



- NARMS was established in 1996 as a collaborative public health surveillance program to monitor susceptibility of enteric bacteria to antimicrobial agents used in human and veterinary medicine.
- This partnership with state and local public health departments, FDA, CDC, and FSIS monitors trends in antimicrobial resistance among enteric bacteria from humans, retail meats, and animals.
- This allows public health agencies to promote interventions which reduce resistance among bacteria found in food.

National Antimicrobial Resistance Monitoring System (NARMS)



- FSIS samples intestinal contents and meat and poultry samples at slaughter.
- Samples are sent to FSIS laboratories and are tested for important pathogenic bacteria.
- The labs then use whole genome sequencing to determine the antimicrobial resistance properties of bacteria.



Cellular Agriculture

- Animal cell culture technology involves taking cells from living animals to create food (among other uses).
- In 2019, FDA and FSIS entered into an agreement to jointly oversee meat and poultry product from cell culture technology.
- Under the agreement, FSIS would ensure establishments producing these products follow the regulations.
- FSIS would also conduct inspections at these establishments.



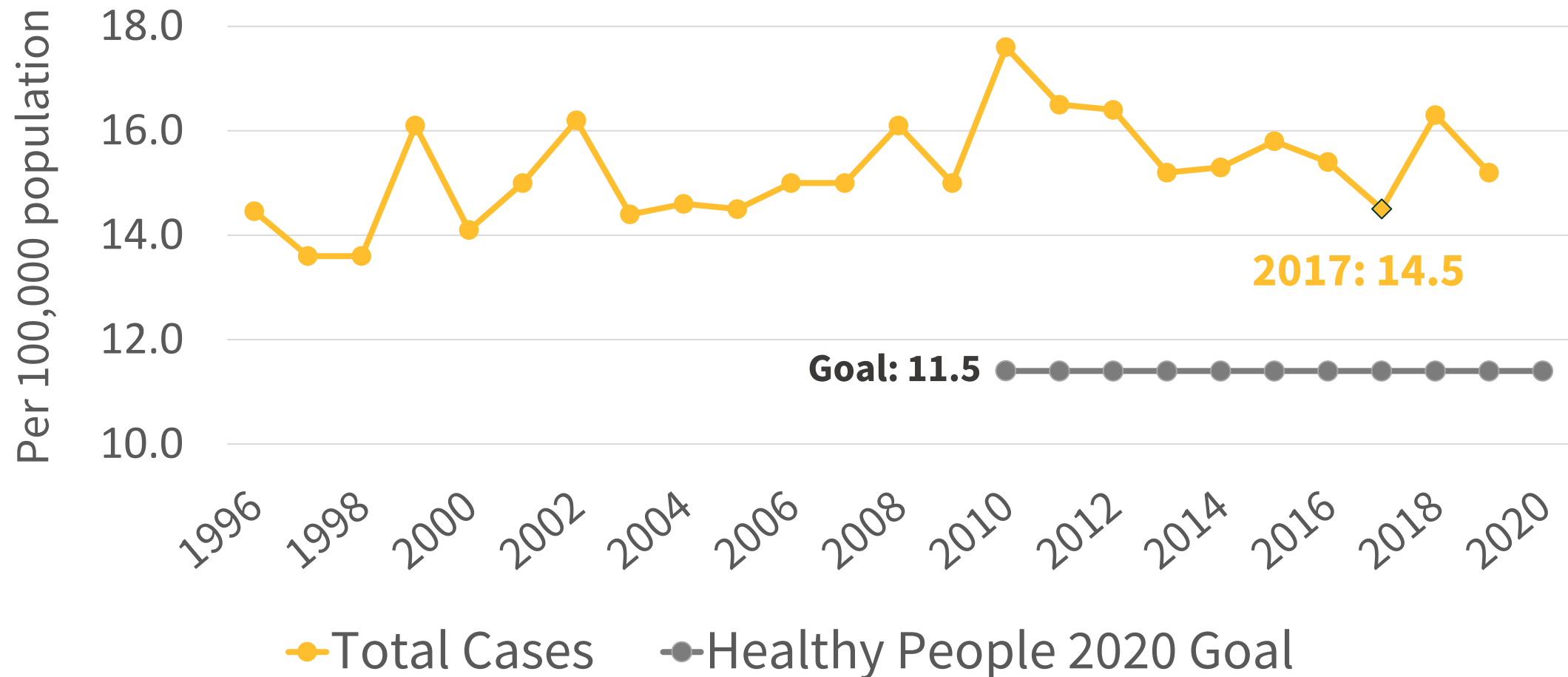
Cellular Agriculture

- On Sept 2021, FSIS published a Notice of Proposed Rulemaking to solicit comments on the labeling of these products.
- The comments are still under review.
- Currently, FSIS does not intend to issue any new food safety regulation for cell cultured products other than labeling.



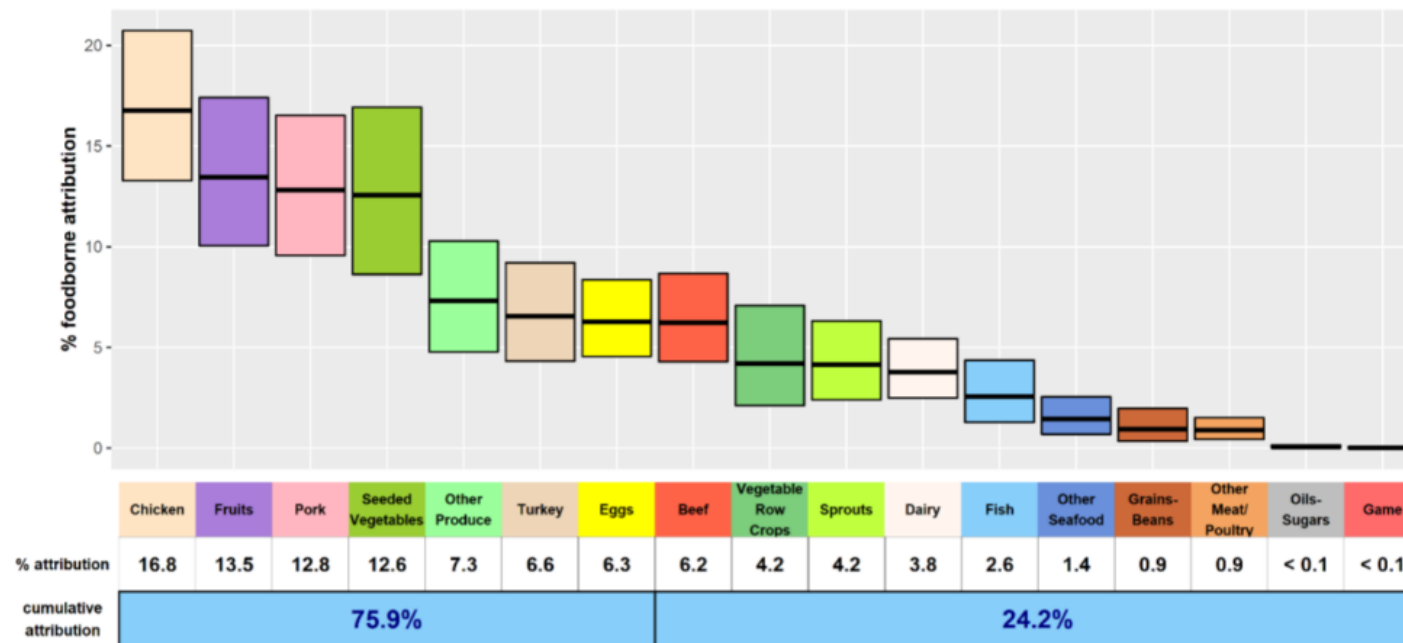
Healthy People 2030 Goal

Salmonella Infections Commonly Transmitted Through Food



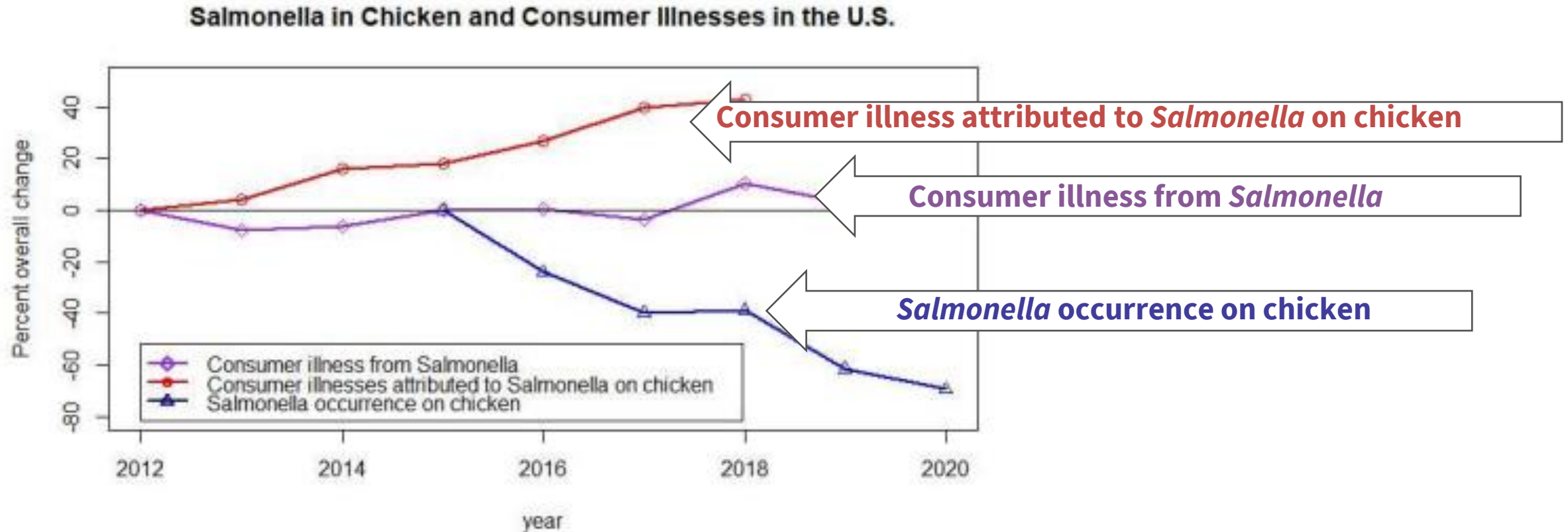
Poultry is a leading source of *Salmonella* infections

- Poultry products are widely recognized as leading sources of *Salmonella* infections.
- IFSAC estimates that over 23% of foodborne *Salmonella* illnesses are attributable to poultry consumption — almost 17% from chicken and 6.6% from turkey.



Source: Interagency Food Safety Analytics Collaboration (IFSAC), 2021

There is a disconnect between product contamination and illness.



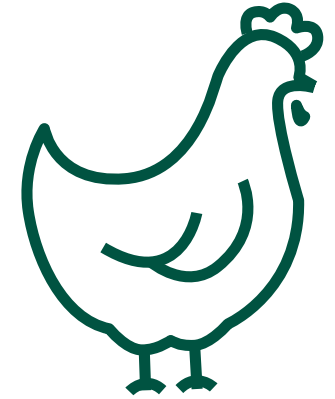
Publicly available FSIS sampling verification testing data on *Salmonella* on chicken analyzed to show percentage decline from 2015–2020 (see: Sampling Results for FSIS Regulated Products | Food Safety and Inspection Service (usda.gov)). Percent change in consumer illnesses attributed to poultry based on the Interagency Food Safety Analytics Collaboration reports from 2012–2020.



Characterization of *Salmonella*

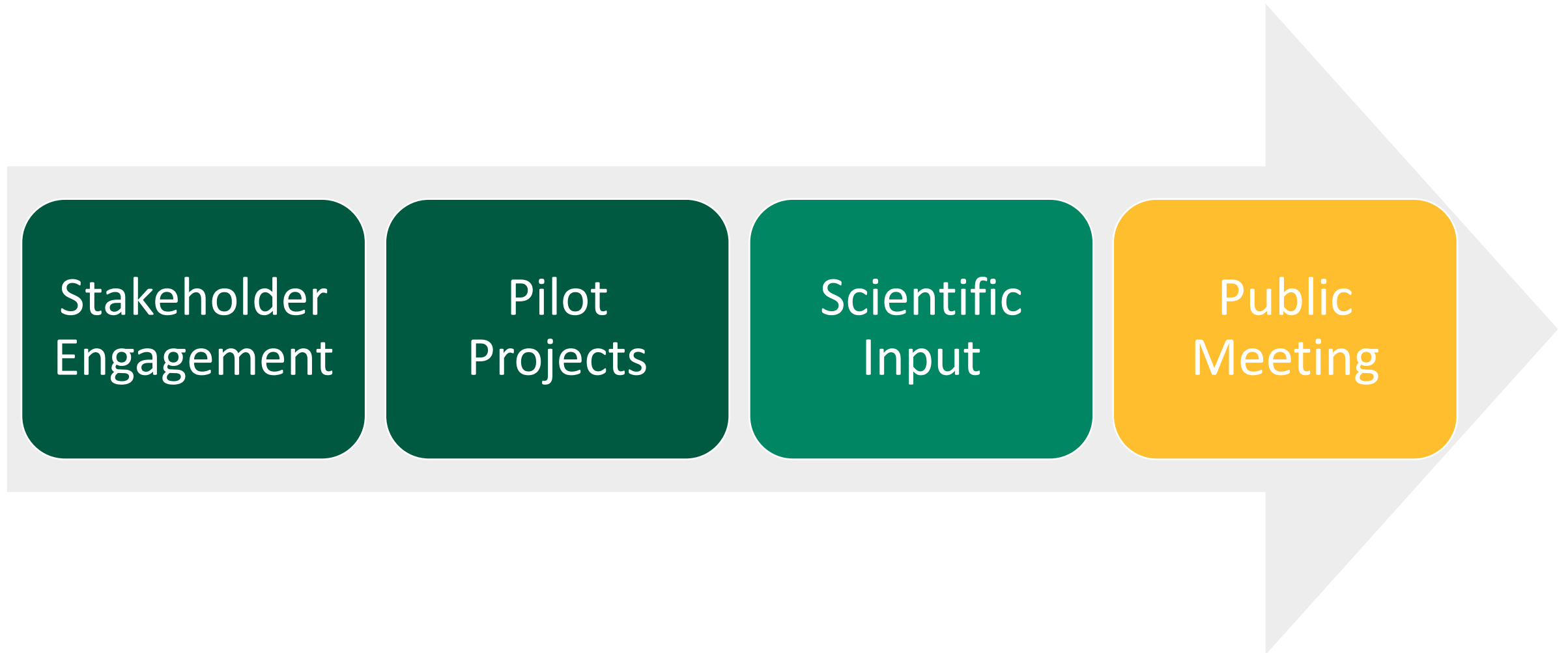
- Our current approach focuses on meeting performance standards (presence or absence of *Salmonella*).
- These standards do not account for bacterial quantity or the serotype.
 - There are 2,600 different forms of *Salmonella*, known as serotypes. Not all serotypes make you sick.
- Emerging science shows that both the quantity of bacteria present in the food and the specific serotype are critical components to causing someone to get sick.

Pre-Harvest Interventions



- FSIS jurisdiction begins when birds enter the slaughter facility.
- **BUT** we know that *Salmonella* control is important at every step, especially at preharvest, or before the birds go to slaughter.
- This includes farming and husbandry practices with breeding, hatchery, and grow-out flocks.
- Less *Salmonella* on live birds reduces risk of *Salmonella* illness with poultry product.
- FSIS wants to incentivize industry to adopt practices and strategies that help control *Salmonella* on the farm and reduce the levels of *Salmonella* when the birds arrive for slaughter.

Progress and Direction



Pilot Projects

- Poultry slaughter and processing establishments are invited to submit proposals for pilot projects on control strategies for *Salmonella* contamination in poultry products.
- Proposals should consider new or existing control and measurement strategies for controlling *Salmonella*, before and/or after harvesting of live birds.





Scientific Input

- Our strategy must be backed by science.
- In November, FSIS charged The National Advisory Committee on Microbiological Criteria for Foods (NACMCF) with enhancing *Salmonella* Control in Poultry Products.
- In February, FSIS hosted a roundtable focused on the latest science regarding *Salmonella* in poultry
- FSIS is also seeking proposals to collaborate on risk assessments for *Salmonella* in poultry.
 - Intent is to provide scientific support for FSIS to develop new framework for *Salmonella* control.
- In March, FSIS held a webinar to answer questions stakeholders had on the risk assessment.

We must be able to measure our public health impact.



There is a need to identify measurable and enforceable targets at different points in the production chain.

A Look Behind to A Look Ahead



A Look Behind to A Look Ahead

- Past examples of USDA efforts to address public health concerns are a valuable roadmap to our capacity to improve food safety:

Declaring additional strains of Shiga-toxin producing *E. coli* (STECs) adulterants..



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