

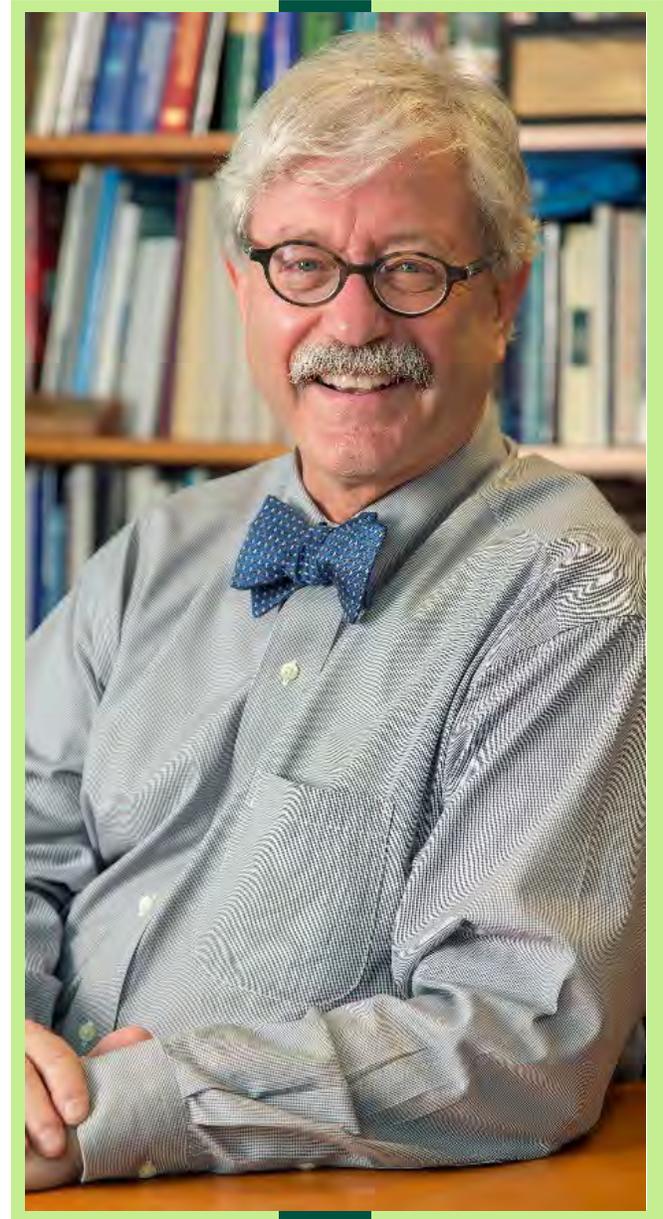


Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

The Evolution and Future of CDC Food Safety Consumer Education

Dr. Rob Tauxe

Director of Division of Foodborne,
Waterborne and Environmental Diseases
Centers for Disease Control and Prevention





The Evolution and Future of CDC Food Safety Consumer Education

Robert V. Tauxe, MD, MPH

**Director, Division of Foodborne, Waterborne, and
Environmental Diseases**

**USDA FSIS Virtual Public Meeting: Consumer Outreach and
Education Today and for the Future**

October 6, 2020

CDC's Role in Food Safety Education

- Provide estimate of the **overall health burden of** foodborne illness
- Educate the public about what **groups of people have a higher risk** for severe foodborne illness
- Warn consumers quickly about specific contaminated foods during an outbreak investigation.
- Inform the public on **how to reduce their risk** of foodborne illness
- Share information on **specific foods and practices most often linked to foodborne illness**, based on CDC surveillance systems, outbreak investigations, and consumer research.

**Using Outbreaks To Identify Where
More Education Is Needed**

Using Outbreaks To Identify Where More Education Is Needed

- **Emerging pathogens may require a change in practices**
 - *In the 1980s, Salmonella Enteritidis* inside intact eggs made traditional raw egg recipes unsafe
 - *In the 1990s, rise of E. coli O157* in ground beef made traditional undercooked ground beef recipes unsafe
 - *In the late 1990s, surge in Yersinia enterocolitica* infections in pigs was connected to severe infection in infants
 - Fed formula prepared by someone also preparing pork

Using Outbreaks To Identify Where More Education Is Needed

- **New product or kitchen technology may not seem risky**
 - In the 2000s, recurrent outbreaks from not-ready-to-eat breaded pre-browned chicken products, that were microwaved



Recent Educational Activities

Recent Educational Activities

Tweet advising against washing chicken was CDC's top 2019 tweet



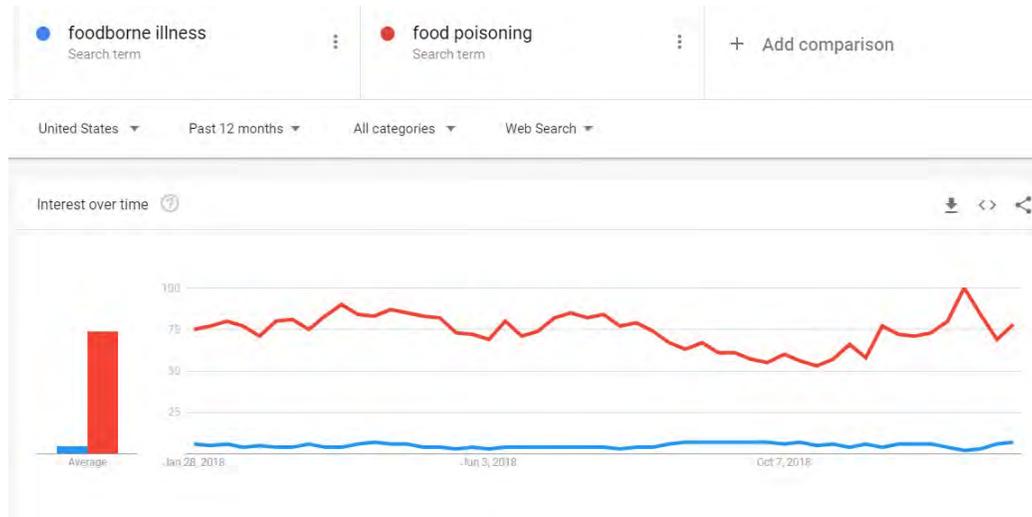
Leafy greens have become a growing concern



Recent Educational Activities

CDC revamped food safety web pages

Google analytics chart



Example of new webpage

When to See a Doctor for Food Poisoning

See your doctor or healthcare provider if you have symptoms that are severe, including:

- Bloody stools
- High fever (temperature over 102°F, measured orally)
- Frequent vomiting that prevents keeping liquids down (which can lead to dehydration)
- Signs of dehydration, including little or no urination, a very dry mouth and throat, or feeling dizzy when standing up
- Diarrhea that lasts more than 3 days



Consumer Needs and Messaging Trends of 2020

COVID-19 Effects on Consumer Food Behavior

- **Food safety cooking questions/basics**
 - People are cooking more at home and eating out less often
- **Bleaching produce to clean it**
 - 19% of survey participants reported washing produce with bleach-based products
- **Fear of getting COVID from delivered food and/or meat**
- **Leaving perishable groceries outside**

CDC content to address current needs

Web pages

- Resources on proper cleaning of food
- Tips for meal kit and food delivery
- Not likely to spread through food or packaging

Visit the web page here:

<https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/food-and-COVID-19.html>



Social media

- Emphasizing basic food safety messages

Future Consumer Research Needs

Future Consumer Research Needs

- Testing more food safety messages with focus groups
- Research changing behaviors related to COVID-19 and consumer perception of food risks
- Consumer research on *Salmonella* and raw chicken
- Behavioral research on food safety
- Create messages that target behavioral motivators (e.g., norms) and test with late adopters
- Better understand the consumer acceptance of novel prevention technologies like food irradiation

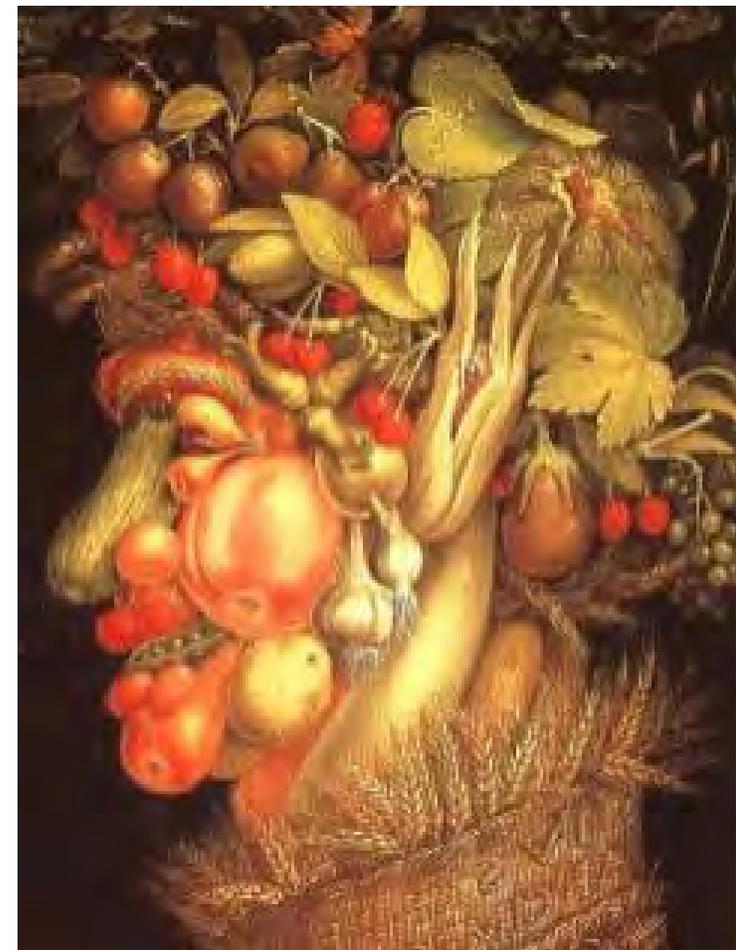
Key Takeaways

- Emerging pathogens and new products can show need for new consumer education messages
- Traditions and deep-rooted values can make behavior change challenging
- Using the same words consumers use can help reach them
- COVID-19 has changed food consumption behavior and must be considered in messaging
- Research can improve messaging so that it is more targeted, relevant and motivates behavior change

Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.





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U.S. DEPARTMENT OF AGRICULTURE

The New Era of Smarter Food Safety

Giving Consumers Actionable,
Accurate Information

Frank Yiannas

Deputy Commissioner

Food Policy and Response

U.S. Food and Drug Administration



The New Era of Smarter Food Safety

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@frankyiannasFDA
#SmarterFoodSafety

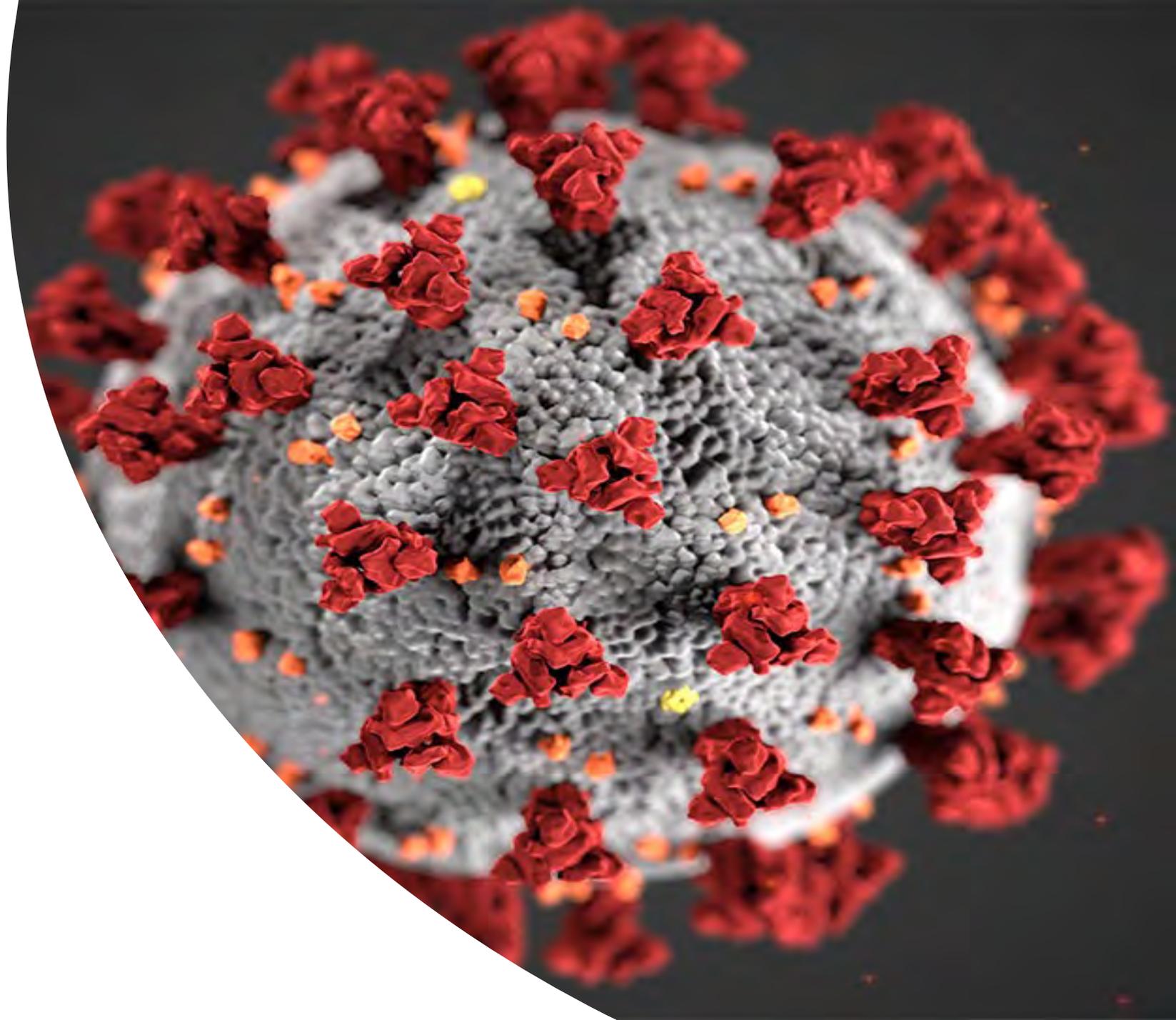


COVID-19

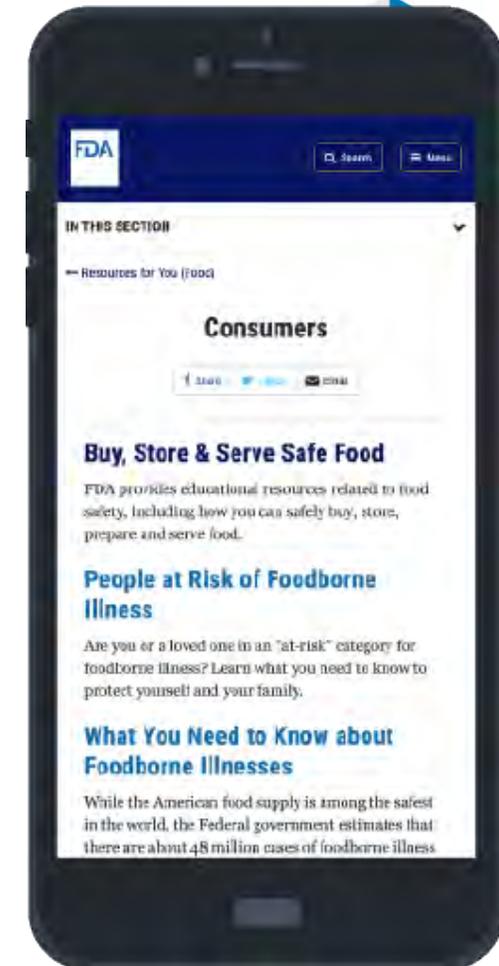
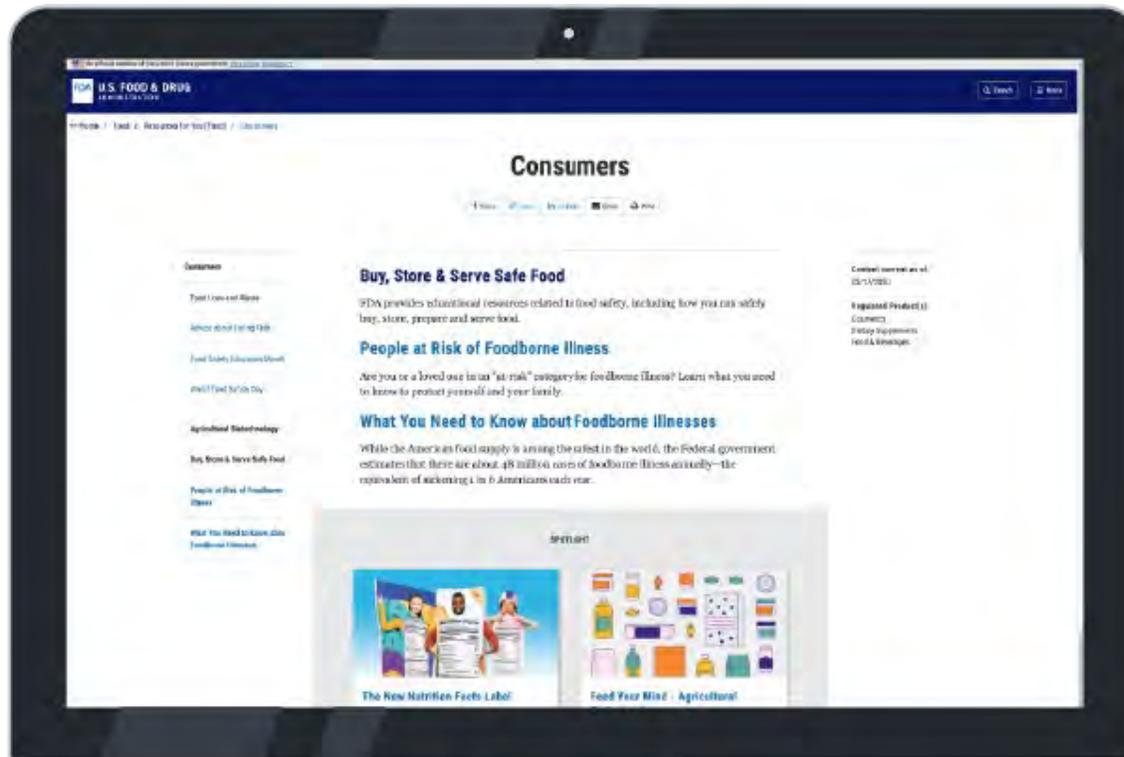
“It seems to me that it has never been more important for all nations, all of the states in our great country, and all food safety professionals, whether public or private, to stand together to help keep people all over the world safe and healthy.”

Deputy FDA Commissioner
Frank Yiannas

World Food Safety Day
June 5, 2020



Food Safety Education Resources

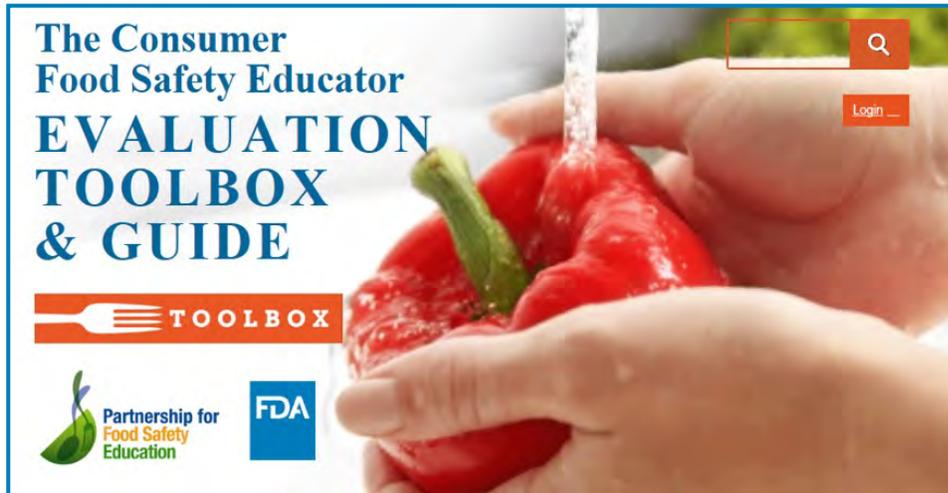


<https://www.fda.gov/food/resources-you-food/consumers>

FDA

Resources for Health Professionals

Foodborne Illness Continuing Medical Education Program



Consumer Food Safety Educator Evaluation Toolbox and Guide

<https://www.fda.gov/food/healthcare-professionals/foodborne-illness-continuing-medical-education-program>

<https://www.fda.gov/food/health-educators/consumer-food-safety-educator-evaluation-toolbox-and-guide>

FDA

Tech-enabled Traceability



Smarter Tools and Approaches for Prevention and Outbreak Response



New Business Models and Retail Modernization



Food Safety Culture

**“Alone, we can do so little;
Together, we can do so much.”**

FDA



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

Consumer Education and Outreach

Greg Hale

Vice President & Chief Safety Officer
Worldwide Safety and Health
Disney Parks, Experiences and Products



Consumer Education and Outreach

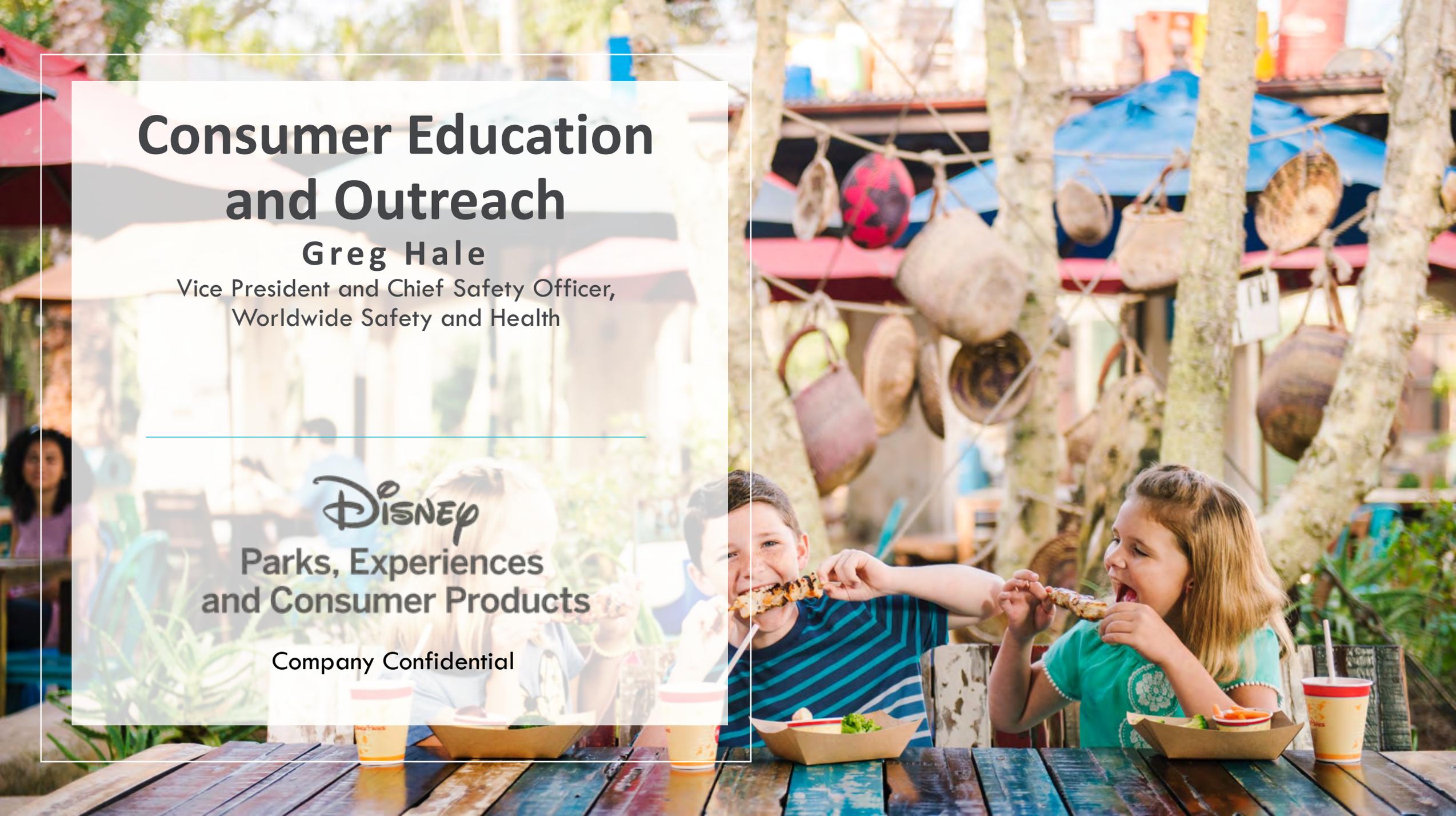
Greg Hale

Vice President and Chief Safety Officer,
Worldwide Safety and Health

Disney

**Parks, Experiences
and Consumer Products**

Company Confidential



Safety Initiative

Share the availability of
Disney-licensed safety technology
and expertise for a safer and more accessible world.

1

Demonstrate
Safety
Leadership

2

Promote Guest/Cast
Partnership in Safety

3

Build
Credibility

4

Develop
New
Technologies

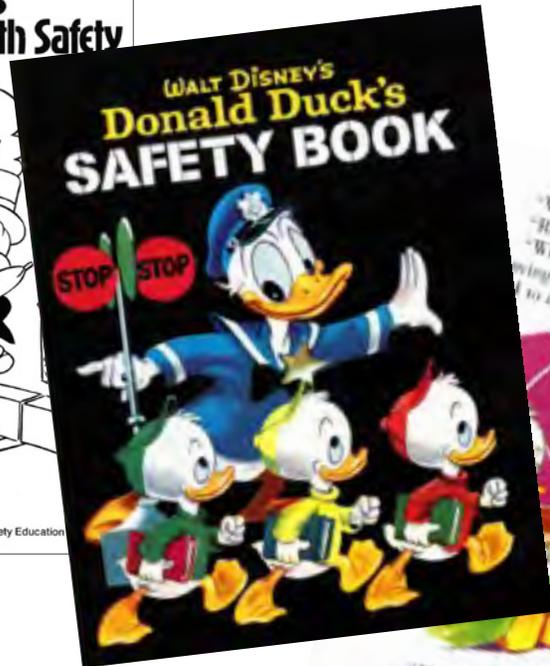
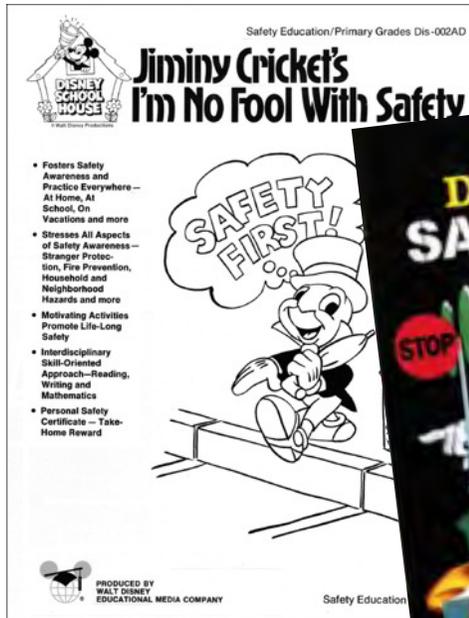
Using Technology

Disney Parks is partnering with companies to develop innovative safety software solutions based on Disney patented cutting-edge technology.



- Streamlines the auditing skills and technical skills required to drive the right behavior, at the right time and place to the right person.
- Provides the ability for real-time compliance from farm to fork.
- Allows those responsible for serving food safely to move from hindsight to insight to foresight when studying data and trends over time.

Disney's Enduring Commitment to Safety



Timeless Disney publications such as Donald Duck's Safety Book in 1954 and Jiminy Cricket's I'm No Fool series have been educating children about safety from the 1950s to the present day.

Three Dimensions of Character Initiative

1

Use compelling characters to connect with Guests in Disney's classic storytelling tradition

2

Empower parents and children to take an active role in their own safety by delivering relevant, effective messages

**Engage families in storytelling that promotes safe
behavior and demonstrates Disney's commitment to
delivering fun and safe experiences.**

3

Share Disney's long standing commitment to providing safe and magical experiences

Using Characters to Engage Young Families

Goals

Families and Children

- Reduce risky behavior = safer Parks and Resorts
- Encourage families to join as partners and share responsibility for their safety
- Enhance brand equity by reinforcing Disney as a safety leader

Character Selection

Timon and Pumbaa from the animated movie *The Lion King*

- Top-tier Disney characters – popular, current, enduring
- Good dynamic – humorous, inquisitive, playful
- Physical characteristics necessary to illustrate safety messages effectively
- Appeal transcends age, gender and national boundaries

Message Approach

Illustrate safety messages through amusing “vignettes”

- Engage audience in ongoing story of “Timon and Pumbaa’s Adventures”
- Interject humor and catchy visual elements
- Show consequences of risky behavior



Promote Safe Behaviors

Research

Leverage internal multi-disciplinary expertise to identify and focus on guest behaviors that most commonly result in injury

Development and Testing

Ensure messages and illustrations connect with target audience

- Leverage talents of our marketing, Imagineering and animation teams in refining messages and developing images
- Formally test messages and images in focus groups including Cast Members and guests (particularly the parents of young children)

Partner in Safety

Identify a partner known for their safety expertise

Two Companies one Vision

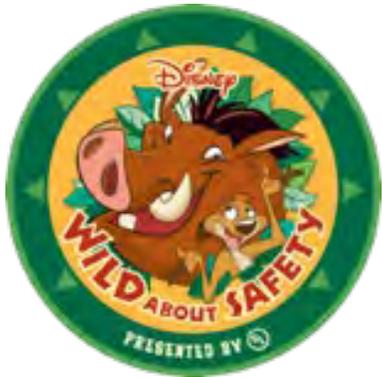


Utilized UL's century of expertise in safety knowledge



Leveraged Disney characters and storytelling capabilities

To...



2003

- Teach safety and health to defined audience
- Use existing data, conduct benchmarking studies and formative research to identify gaps in knowledge and behavior
- Illustrate clear safety messages using creative approach
- Show consequences of risky actions
- Execute unique, engaging, empowering delivery
- Instill 'safety smart' behavior

Focus on Changing Behavior

Behavior

Message

Tip

Properly securing items on attractions



Secure your belongings



Hold on to your gear!



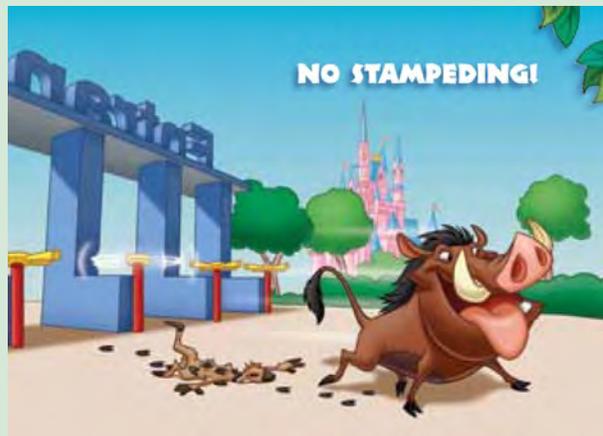
No running, trip and fall hazard



Walk, don't run



No stampeding!



Children getting lost or exhibiting unsafe behavior



Supervise children



Watch over your herd



Disney Wild About Safety App



Engaging Guests and Cast Members in our Parks and Communities

Pre-Arrival



- Website disneywildaboutsafety.com
- Social Media

Theme Parks



- Safety Tip Cards
- Guide Maps
- Bus Advertisements



Resorts



- In – Room TV Safety and Security PSA
- Activity Books
- Movie Under the Stars

Community



- Safety Smart Community Outreach Program
- Eight Award-Winning Videos
- Disney VoluntEARS

Engagement Opportunities in Parks and Resorts



Cruise Ships



Tip Cards



Transportation



Stroller Tag

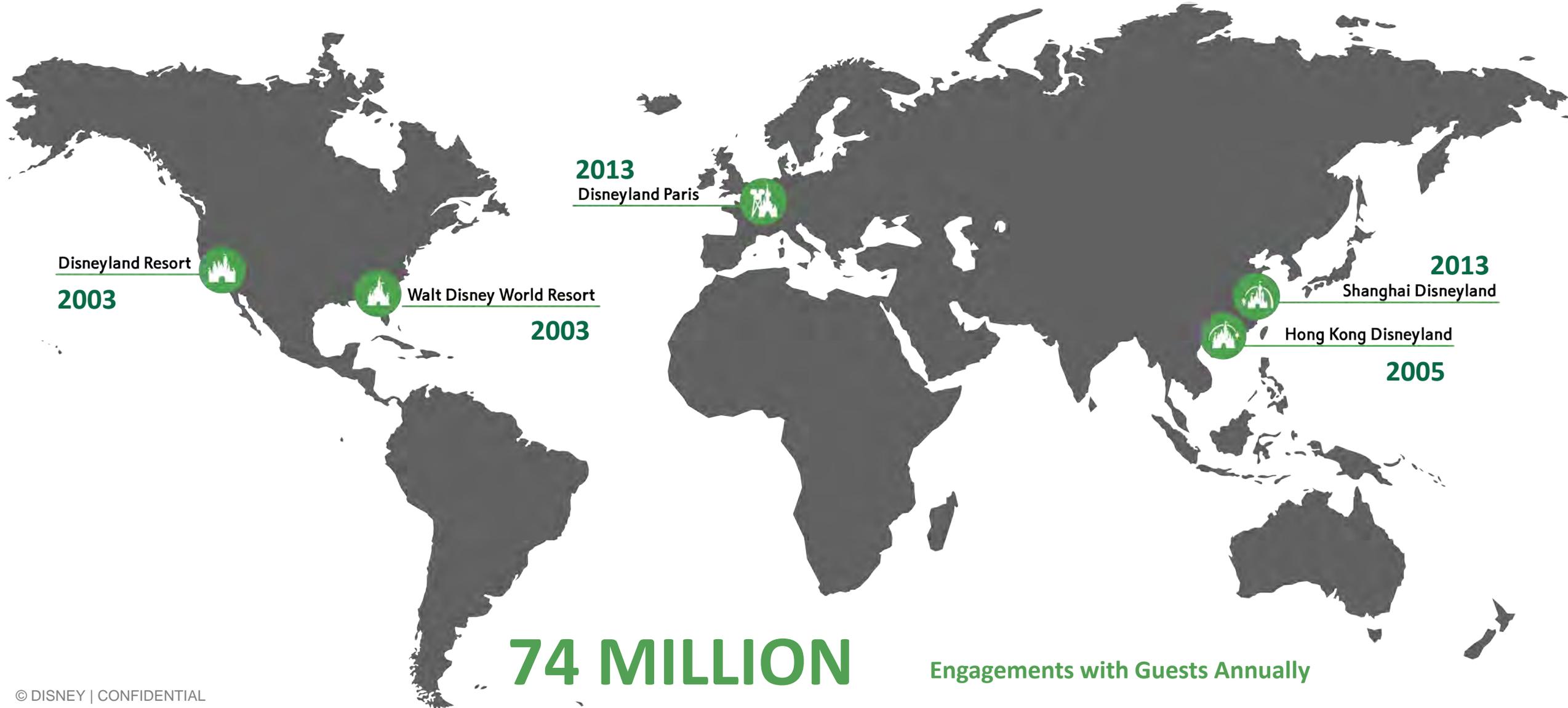


Creative Guest Engagements
Disneyland Paris

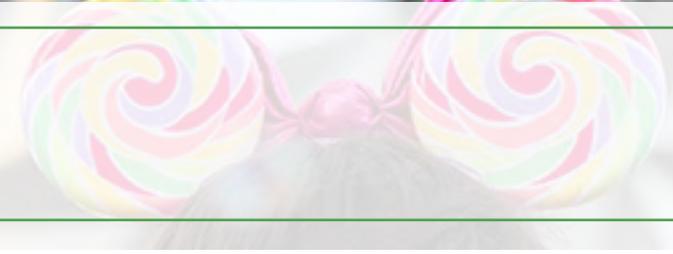


Guide Maps

Program Expansion at Walt Disney Parks and Resorts



Engaging the Community



Safety Smart

- Award-winning Safety Smart animations: Parents Choice Gold, Teachers Choice, Environmental Media Award, Learning Magazine – Teachers Choice Award, Parents Choice Silver
- Eight different subject matters
- Children ages 5 – 9 years old
- Twelve to fifteen minute custom animations featuring Timon and Pumbaa from animated movie The Lion King
- Online training portal gives access to Safety Smart animations, activity sheets and training guides
- Offered in 34 different languages

Using Research to Tell Our Safety Smart Stories

Ages
5-9

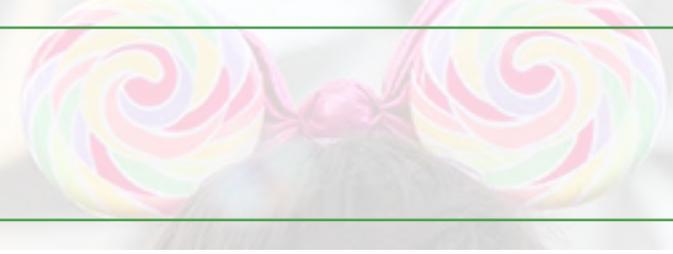


- **Measure general safety awareness** knowledge and preparedness among children ages 5 to 9 years of age
- **Identify high-priority safety topic areas** those in which children have the lowest levels of knowledge and awareness
- **Test content** with children for reaction, recall and comprehension

Reassuring, clear and confidence-building messages is critical, warranted and justifiable



Versatile Delivery in the Community



Schools



Community Events



Government



Organizations



Radio Disney



Disney Channel
In Latin America and Turkey

Engaging the Community Around the World

Safety Smart at Disneyland Paris



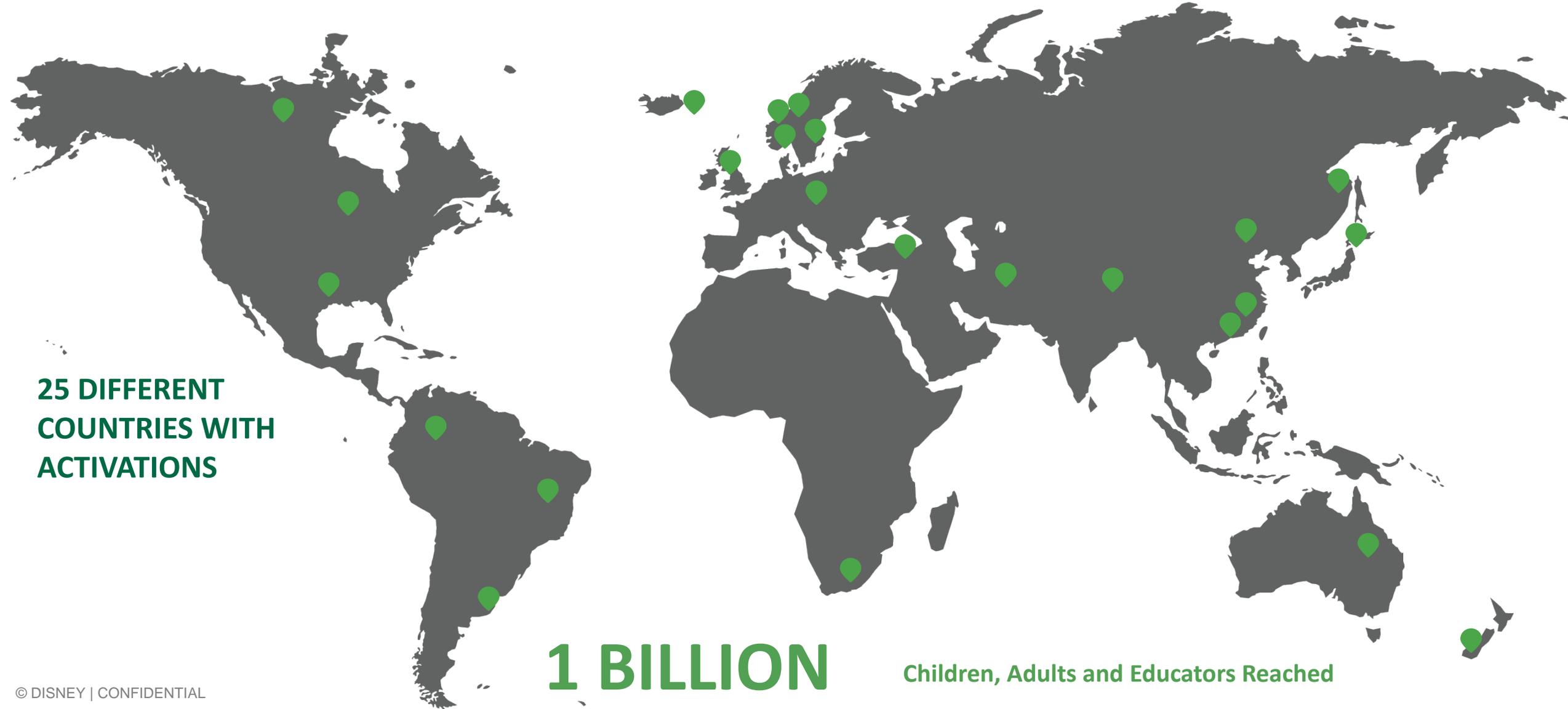
- French Firefighters Federation school program
- 7,500 Safety Smart – About Fire! videos donated
- 52,200 elementary schools
- Reaching over one million children across France

Safety Smart at Shanghai Disney Resort



- 1,000 Safety Smart - About Fire! videos donated
- Every elementary school in Shanghai
- Over 800,000 children reached

Wild About Safety Around the World



**25 DIFFERENT
COUNTRIES WITH
ACTIVATIONS**

1 BILLION

Children, Adults and Educators Reached

Lessons for Success

17 Years and Going Strong...

- Co-developed program with a partner who has shared values and goals
- Utilized partner's subject matter expertise, Disney I.P. and storytelling
- Leveraged the Disney distribution network and character recognition
- Sustained program through an equal commitment from both partners
- Continuously finding new opportunities to develop content, programming and outreach
- Opens doors to develop relationships with new organizations



Future Opportunities – Food Safety Education

Sample Content Focus

Leverage food safety organizations as subject matter experts with Wild About Safety brand to develop an integrated marketing campaign(s) to support food safety education strategies.

Clean Hands



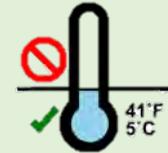
Separate Raw Meats



Cook to Correct Temperature



Proper Refrigeration



Vehicles

Modular content utilized not only for education outreach but for marketing, social media, television, and other promotional vehicles.

Full-Length
Video Series

Short Form
Content

Branded Portal
and Microsite

Books

Mobile App



www.disneywildaboutsafety.com

“We have always tried to be guided by the basic idea that, in the discovery of knowledge, there is great entertainment — as, conversely, in all good entertainment there is always some grain of wisdom, humanity or enlightenment to be gained.”

- Walt Disney



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

How do Consumers Handle Meat and Poultry Products?

A Review of FSIS Consumer Behavior Research

Christopher Bernstein

Director, Food Safety Education Staff
Office of Public Affairs and Consumer Education
USDA Food Safety and Inspection Service

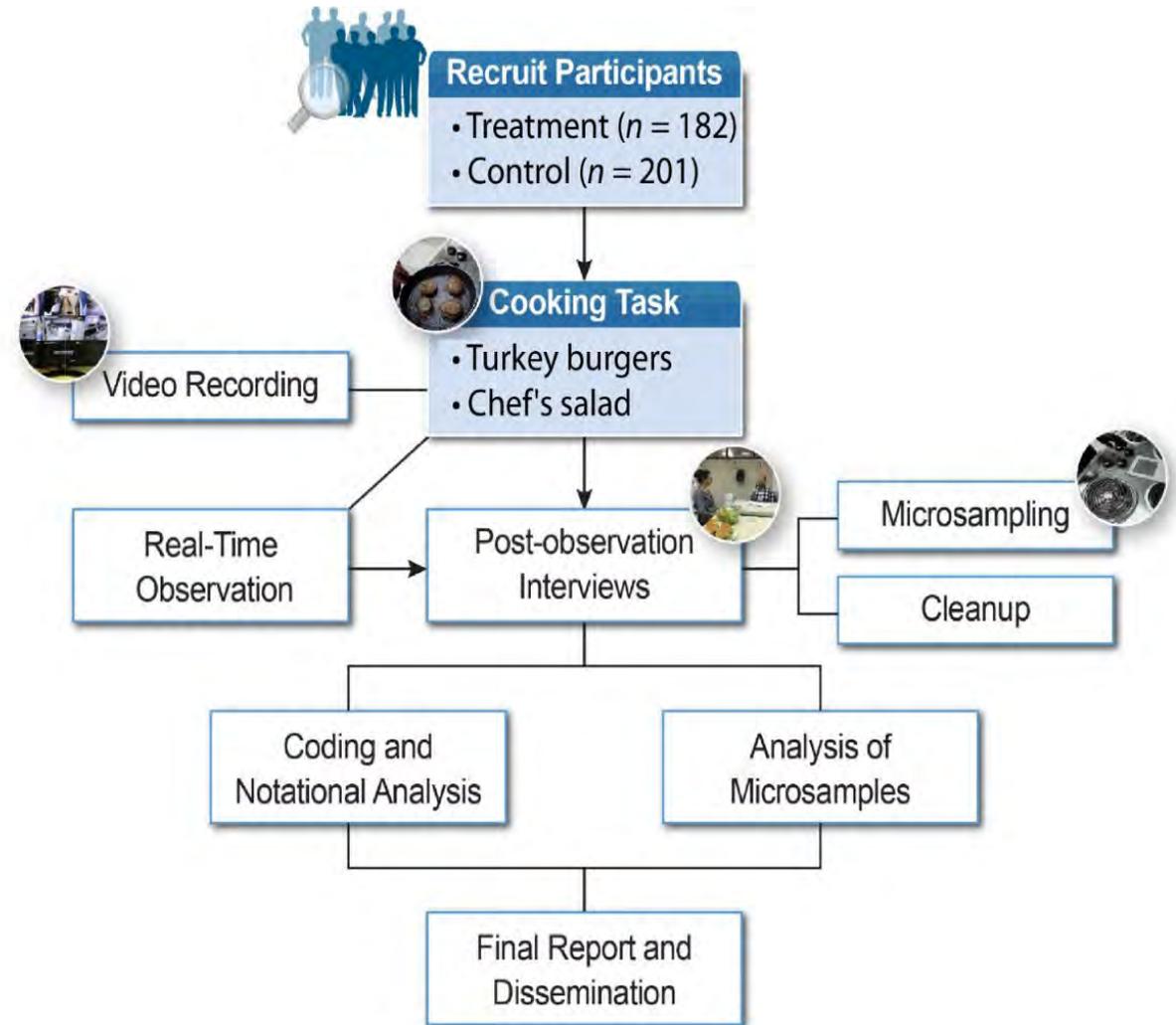


FSIS: Using an Integrated, Holistic Approach

Five-Year Consumer Behavior Research Plan

Activity	Year 1 FY17 (Complete)	Year 2 FY18 (Complete)	Year 3 FY19 (Complete)	Year 4 FY20	Year 5 FY21
Observational Experiment w/ Microsampling	“Cook” Messages: <ul style="list-style-type: none"> Food thermometer usage Pathogen transfer 	“Clean” Messages: <ul style="list-style-type: none"> If wash/rinse raw chicken before cooking Pathogen transfer 	“Cook” Messages: <ul style="list-style-type: none"> Prepare not-ready-to-eat (NRTE) frozen chicken product 	“Clean, Separate, Cook, and Chill” : <ul style="list-style-type: none"> Prepare hamburgers Prepare ready-to-eat (RTE) food 	“Separate and Chill” Messages: <ul style="list-style-type: none"> Intact beef Leftovers
Focus Groups		<ul style="list-style-type: none"> Thermometer use messaging Consumption of raw, undercooked meat & poultry products 		<ul style="list-style-type: none"> USDA recall notices Manufacturer cooking instructions 	
Nationally Representative Web-based Survey			<ul style="list-style-type: none"> USDA Meat and Poultry Hotline Recall/outbreak awareness, fatigue Food safety information sources Preparing/storing hot and cold foods 		Investigate topics gleaned from previous research and any emerging food safety topics

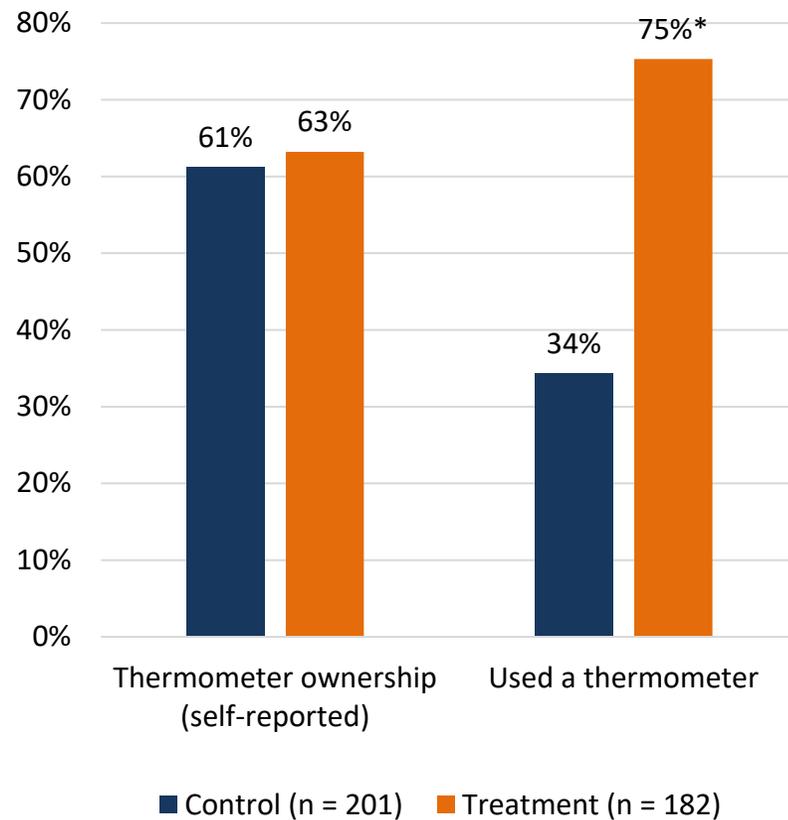
Year 1: Cook



Year 1: Cook (Results)

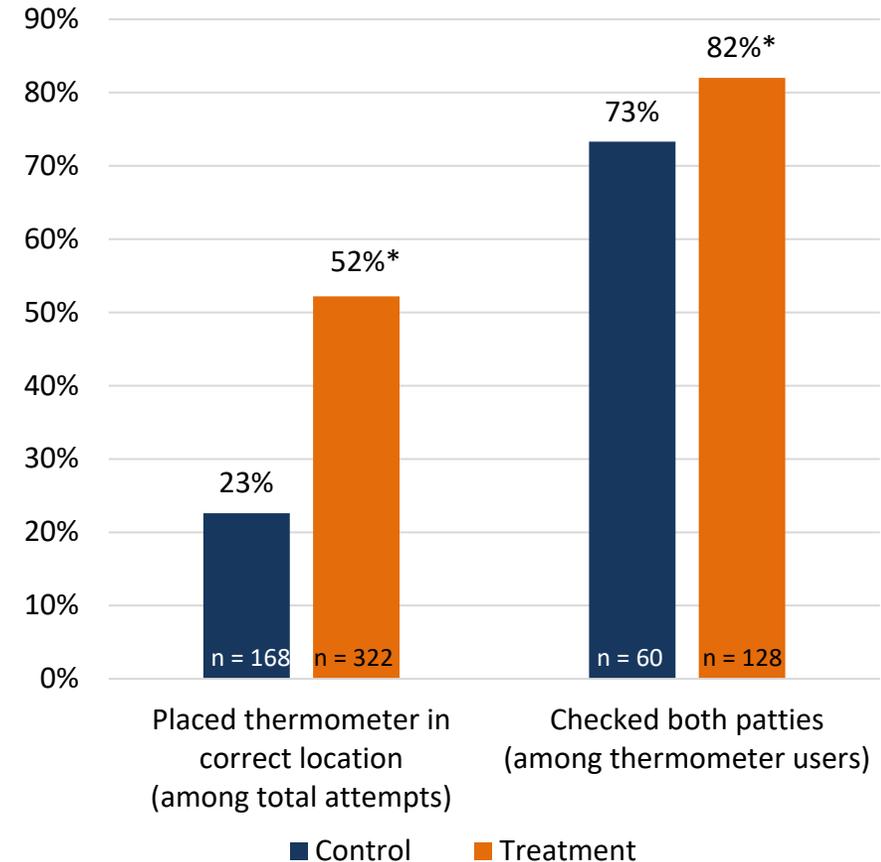
Thermometer Use

Thermometer Ownership and Use



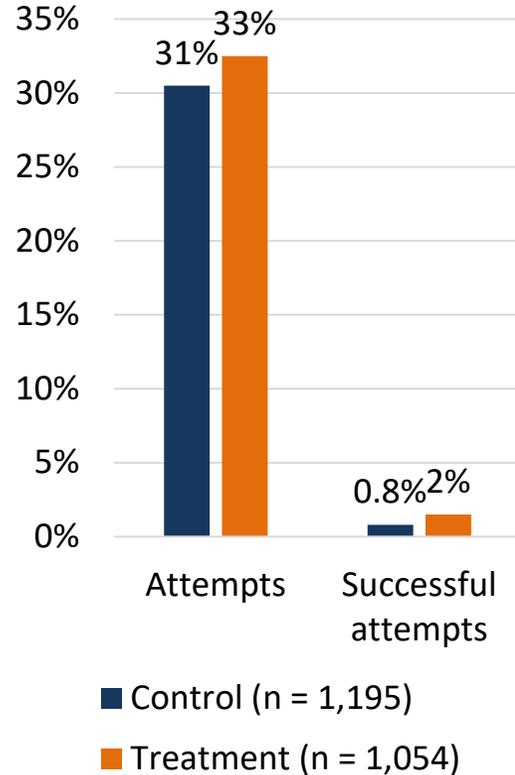
* Differences between two groups statistically significant at $p < .001$

Correctly Used Thermometer

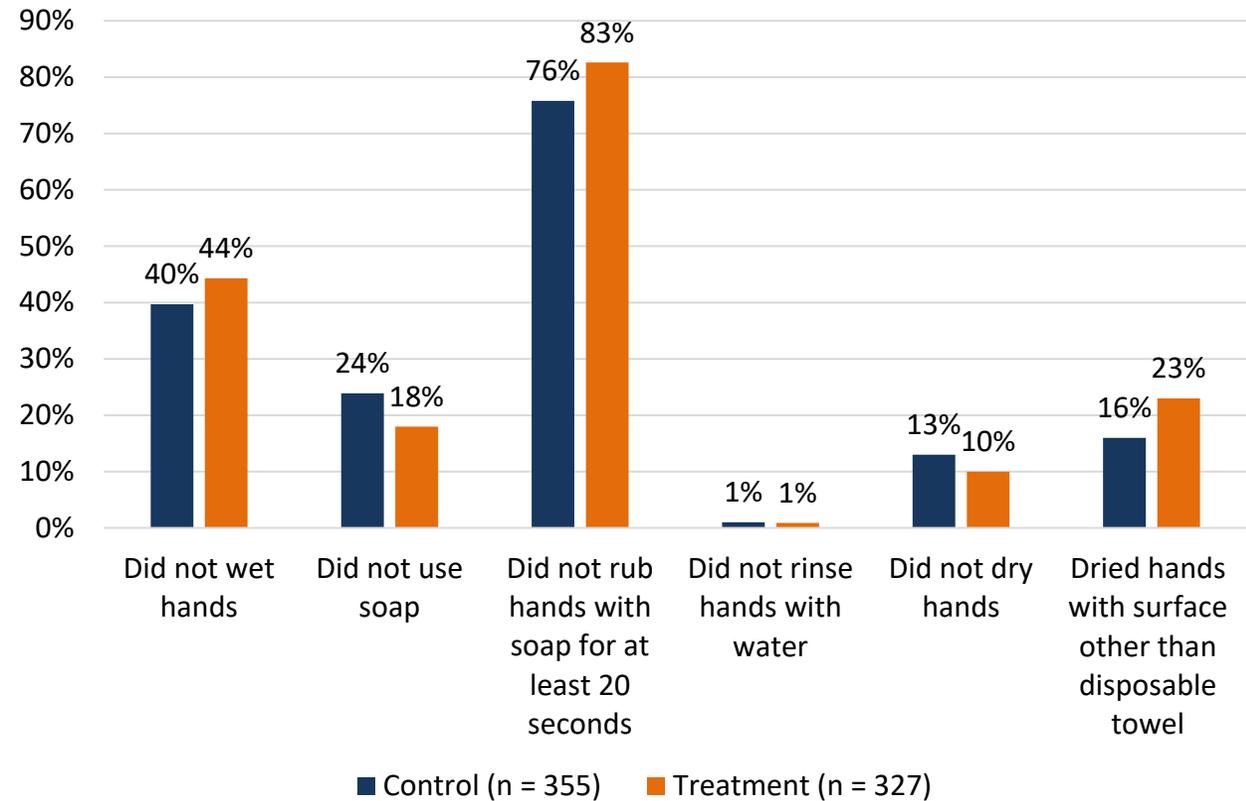


Year 1: Cook (Results)

Handwashing Attempts and Reasons for Unsuccessful Handwashing

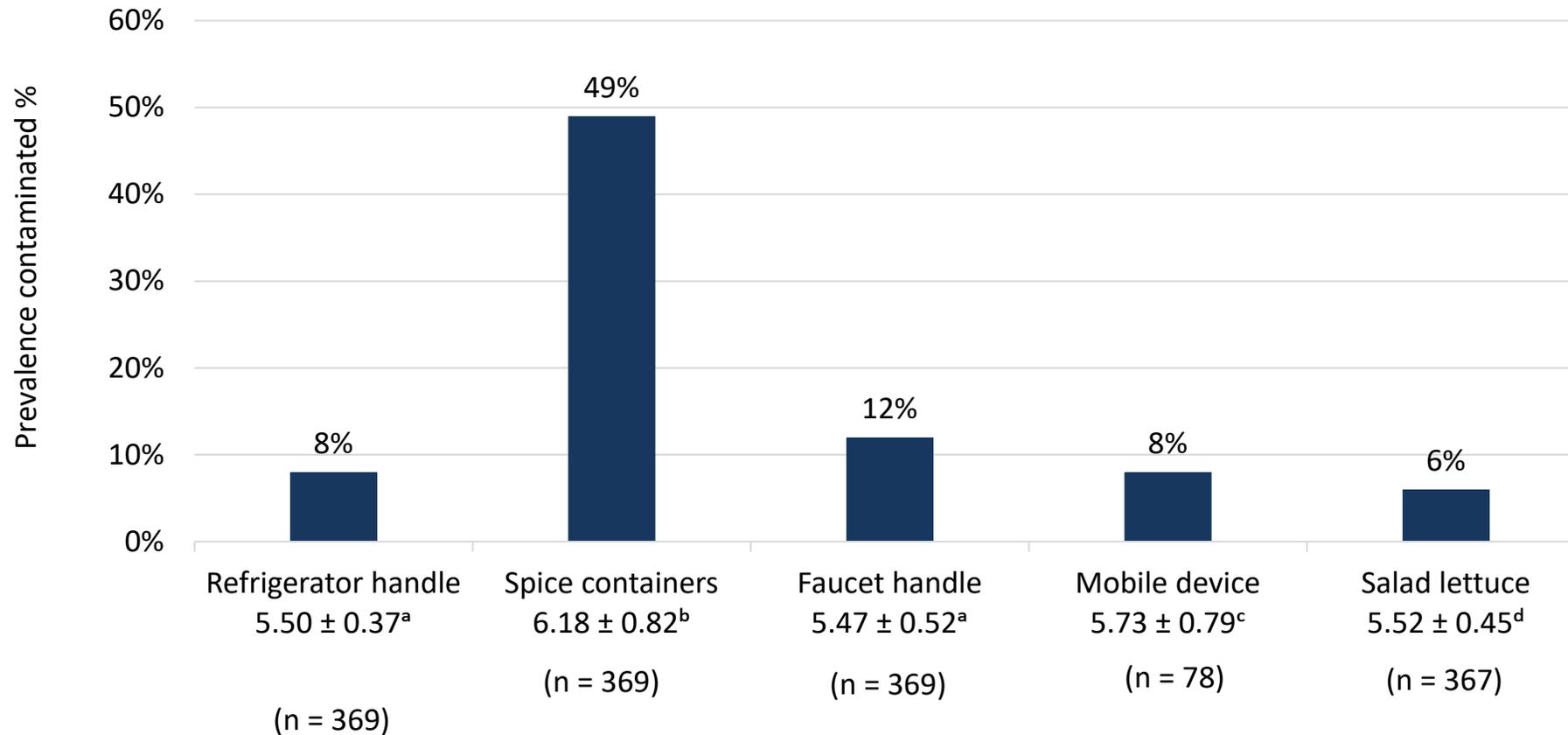


Successful attempts: 26 out of 2,249 (1.15%)



Note: there may be multiple reasons for a handwashing event to be unsuccessful.

Year 1: Cook (Results) Prevalence of MS2 Contamination for Four Kitchen Locations and Salad Lettuce (All Participants)



^a Level of contamination ± SD, log genome copies/handle.

^b Level of contamination ± SD, log genome copies/bottle.

^c Level of contamination ± SD, log genome copies/device.

^d Level of contamination (SD), log genome copies/18–25g

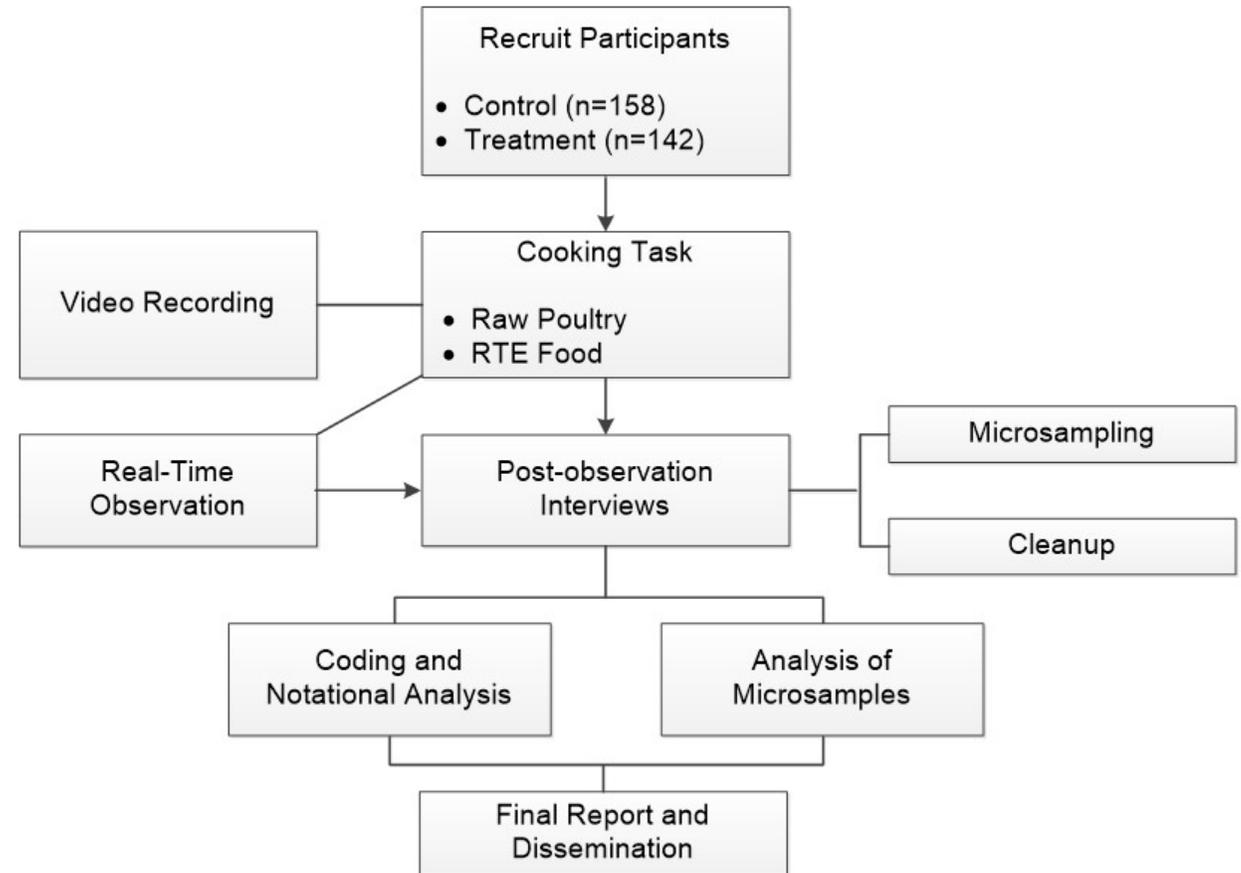
Year 1: Cook

Implications for Message Development

- Address consumer food safety behaviors that could lead to the most serious consequences, especially:
 - Inadequate handwashing
 - Cross-contamination of kitchen surfaces or items
- Focus on proper and increasing food thermometer usage
- Clearly outline the potential risk of illness from not following recommended food safety behaviors
 - e.g. contamination of ready-to-eat foods like salads)

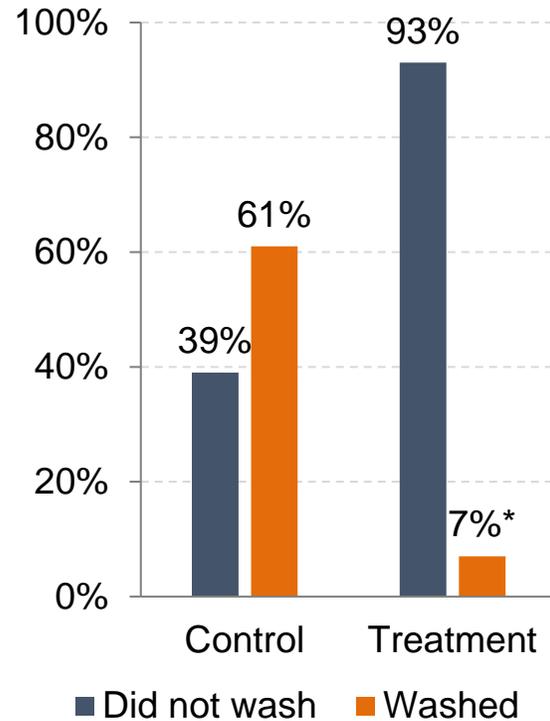


Year 2: Clean

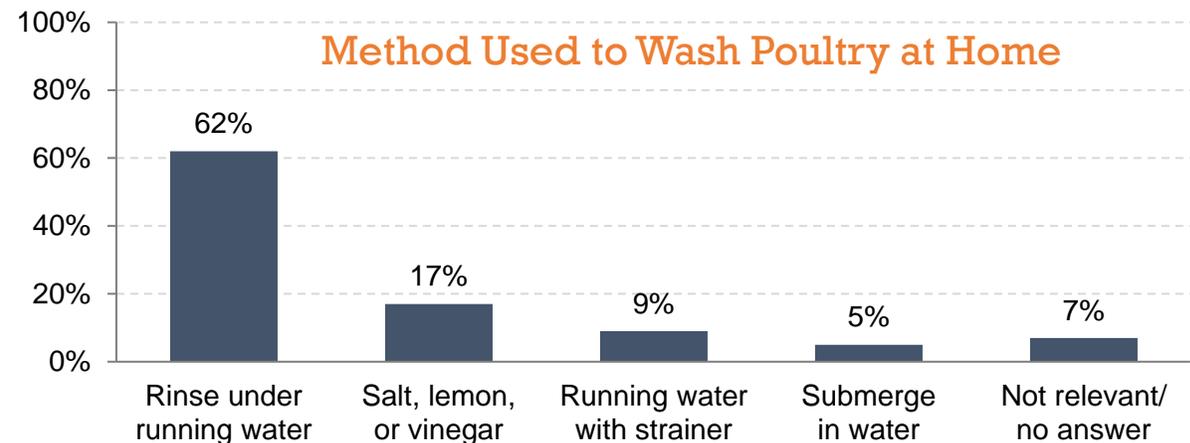
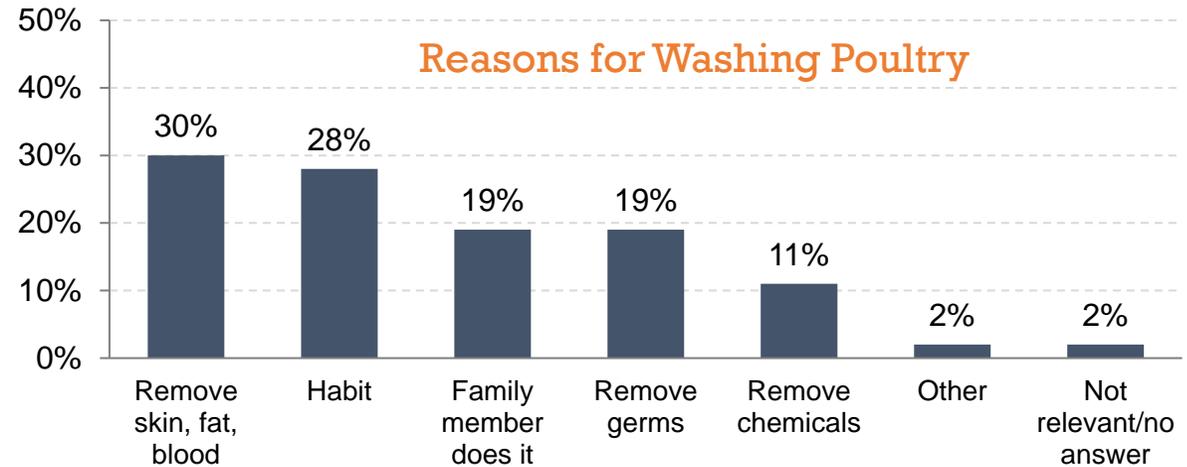


Year 2: Clean (Results)

Poultry Washing

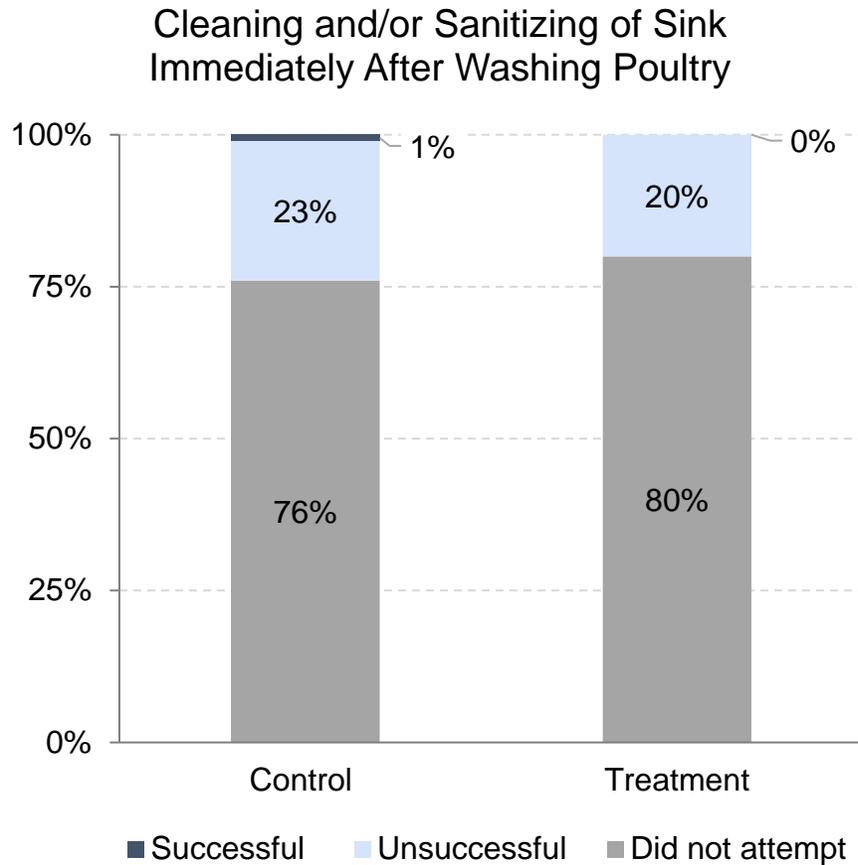


* Differences between two groups statistically significant at $p < .0001$



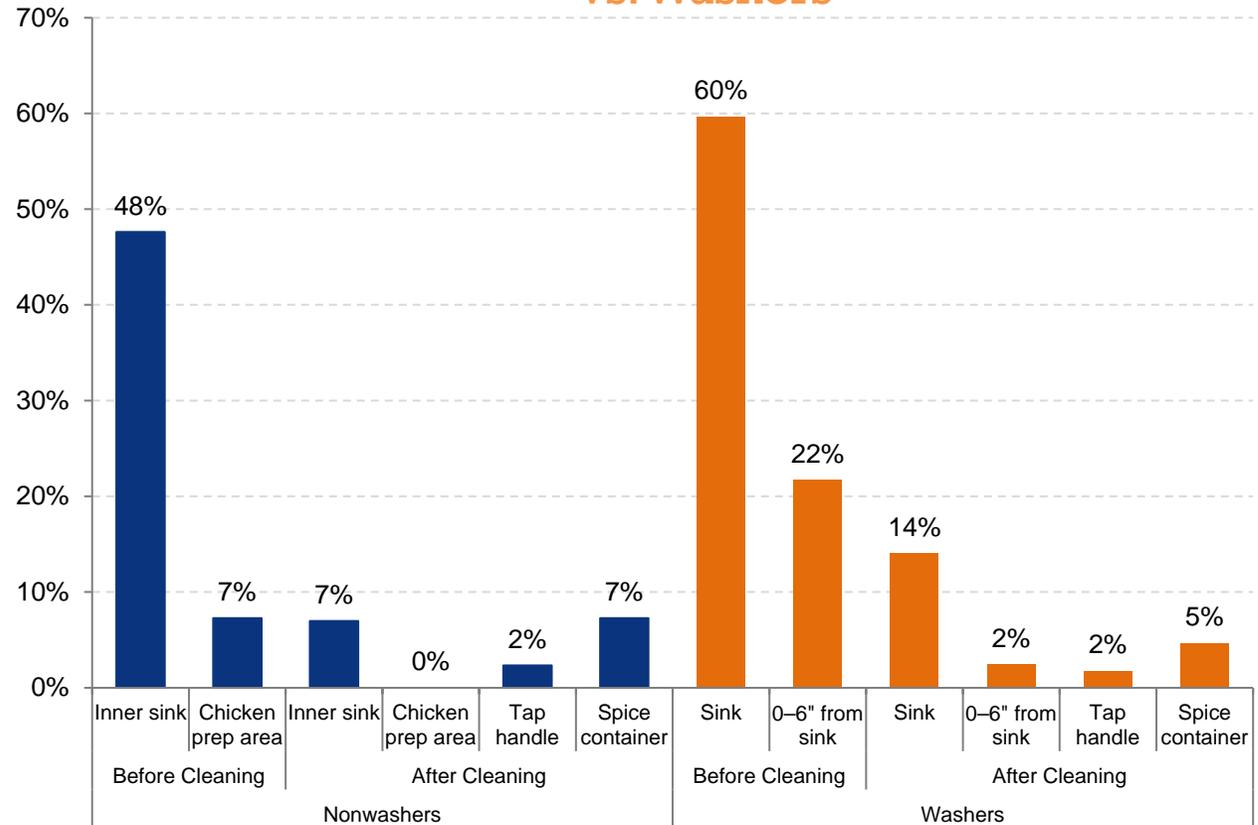
Year 2: Clean (Results)

Cleaning and/or Sanitizing of Sink Among Poultry Washers



n = 94 control, 10 treatment

Prevalence of Contamination by Location: Nonwashers vs. Washers



n = 55 for nonwashers and n = 57 for washers

Year 2: Clean

Implications for Message Development

- Updated frame of “don’t wash your poultry” messaging to focus on preventing contamination at sinks, where vegetables are often washed
 - Clarify that not washing poultry includes not rinsing as well
- Emphasize the importance of both cleaning and sanitizing
- Continue to emphasize handwashing and cross-contamination because improvements are needed in this area



Year 3: Cook



Video Recording

Recruit Participants

- Control ($n = 197$)
- Treatment ($n = 206$)

Cooking Task

- NRTE frozen, breaded stuffed chicken breasts
- Salad made from NRTE frozen corn and fresh produce

Post-observation Interviews

Coding and Notational Analysis

Final Report and Dissemination

RAW

RAW— DO NOT MICROWAVE: to help prevent foodborne illness caused by eating raw poultry

CONVENTIONAL OVEN COOKING INSTRUCTIONS:
Due to variations in ovens, cooking times may vary.

1 PREHEAT OVEN to 375°F.

2 Remove frozen **RAW** breast(s) from pouch(es). Place each breast AT LEAST 2 INCHES APART on a **FLAT METAL BAKING SHEET**.

3 Bake in PREHEATED OVEN for:

1-2 BREASTS	3-4 BREASTS
29-31 MINUTES	32-34 MINUTES

For Food Safety, cook to a **MINIMUM INTERNAL TEMPERATURE** of 165°F measured by a meat thermometer.

INSTRUCTIONS: insert meat thermometer into meat layer on each breast cooked (see diagram)

4 After baking, **LET COOL** for AT LEAST 3 MINUTES before serving.
CAUTION: Filling will be hot and may splatter if not cooled.

DO NOT MICROWAVE

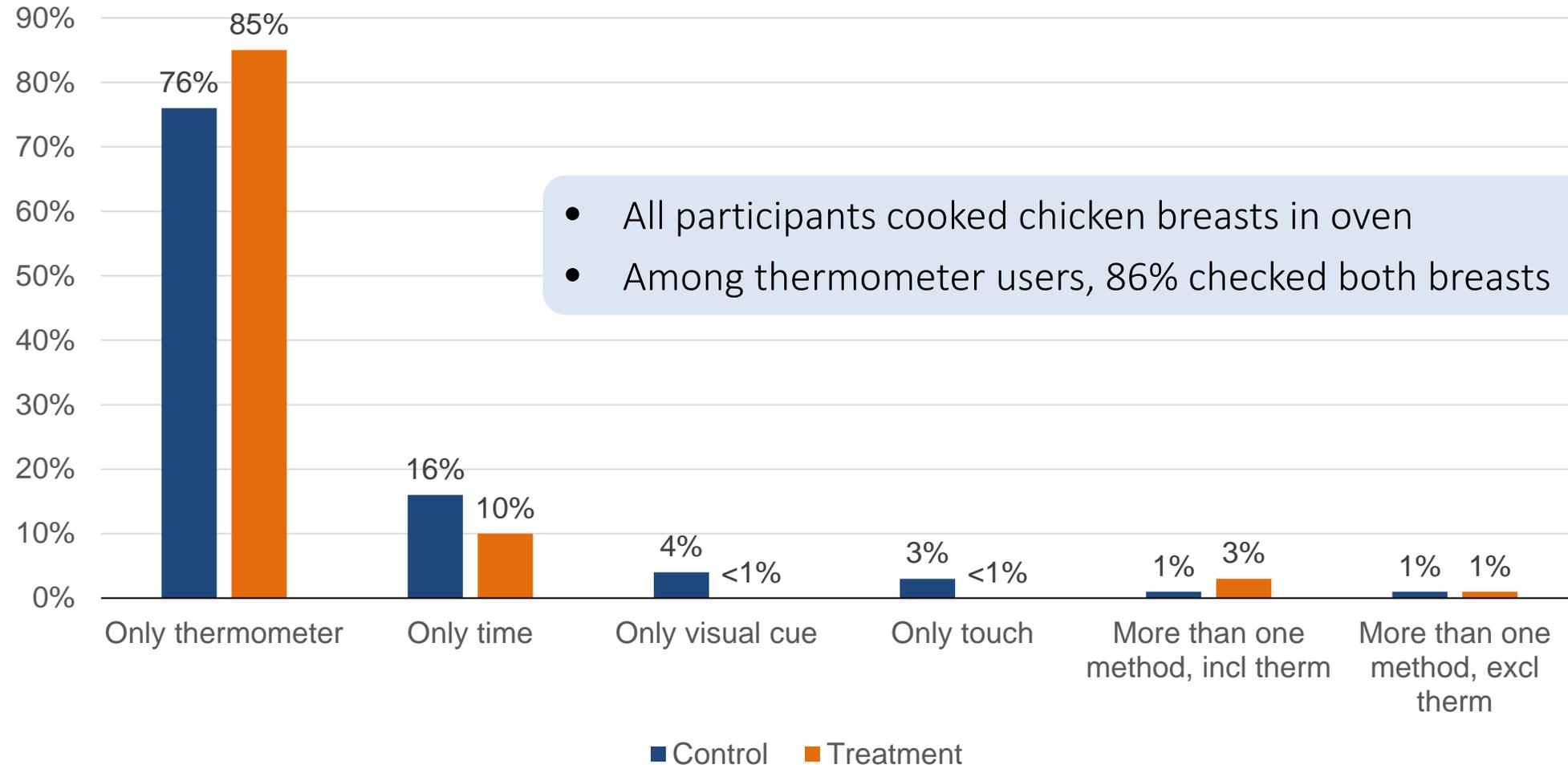
375°F Oven Bake Only

165° Cross Section of Breast

Stuffing

Year 3: Cook (Results)

Observed Practices for Determining Doneness of NRTE Chicken Product



Year 3: Cook

Implications for Message Development (in progress)

- Manufacturer's cooking instructions are important
- Food safety recommendations (e.g. using a food thermometer) may be more effective for meat and poultry products, rather than frozen vegetables
 - Only eight participants used a food thermometer to check for corn doneness, even though recommended by product packaging
- Handwashing, especially *after* handling frozen products, needs to be emphasized

Comparison of Multi-Year Outcomes

(Control Group)

	Year 1 (n = 185)	Year 2 (n = 154)	Year 3 (n = 196)
Handwashing			
Handwashing Event Required (before or during meal preparation)	1,195	1,299	695
% did not attempt	69%	68%	77%
% attempt	31%	32%	23%
% successful attempt (out of all attempts)	3%	0.7%	4%
Thermometer Use			
% used thermometer on at least one item	34%	44%	77%
% checked temperature of multiple items (among thermometer users)	79%	76%	85%
Cross Contamination of Salad Lettuce			
% observations contaminated	6%	26%	N/A



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Christopher Bernstein

Director, Food Safety Education Staff
Office of Public Affairs and Consumer Education
USDA Food Safety and Inspection Service
Christopher.Bernstein@usda.gov

For More Information:
[FSIS Consumer Research](#)

