



# FSIS Risk Assessments for *E. coli* O157:H7

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# Risk Assessment Process

- Develop a plan and gather data
- Formulate questions
- Develop risk assessment model
- Peer review
- Public presentation
- Update based on comments
- Post to web



**Risk Assessment of the  
Public Health Impact of  
*Escherichia coli* O157:H7  
in Ground Beef**

Prepared for the Food Safety and Inspection Service  
by the *Escherichia coli* O157:H7 Risk Assessment Team



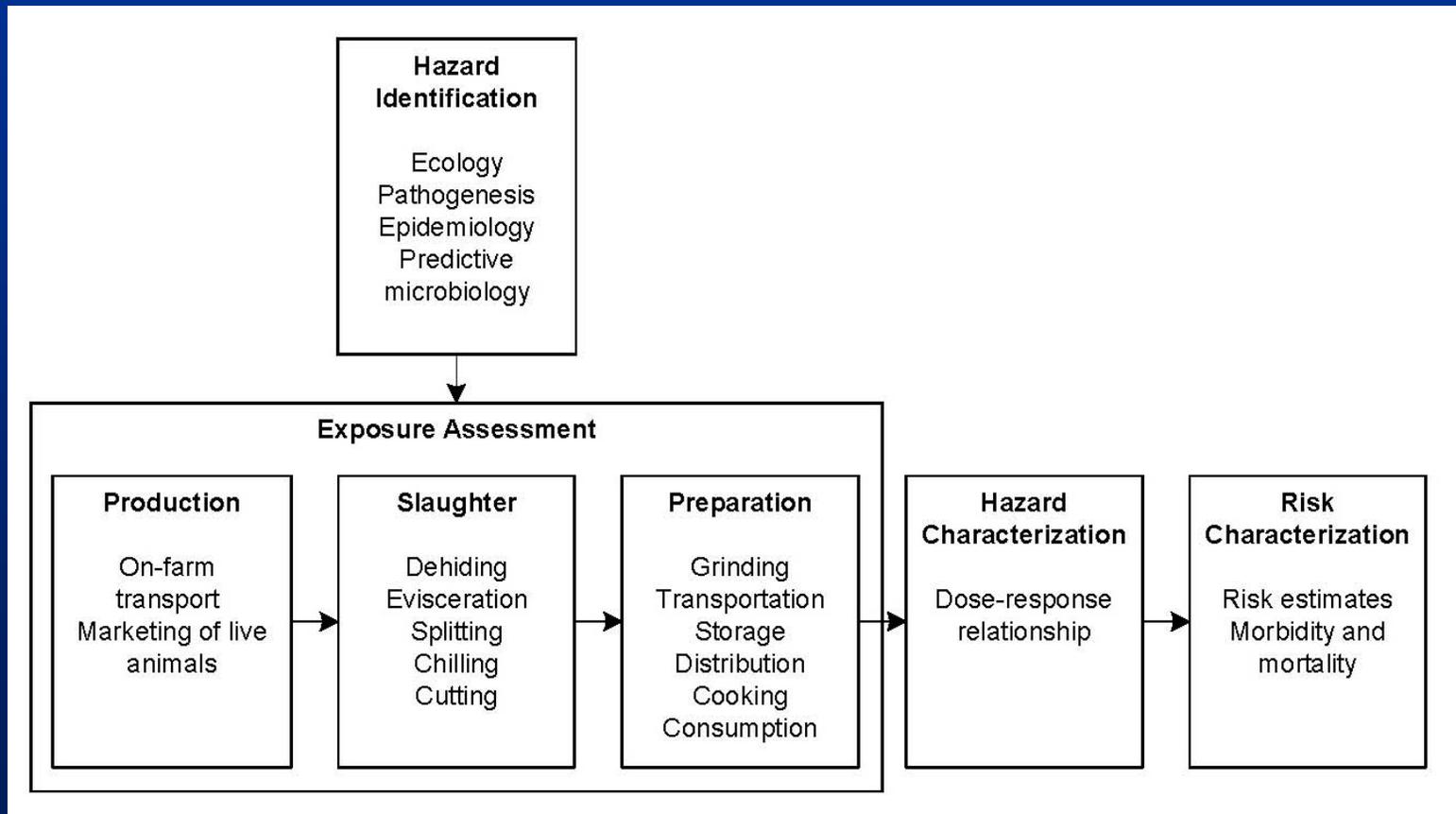


# Questions

- What is the risk of illness from *E. coli* O157:H7 in ground beef?
- What is the occurrence and extent of *E. coli* O157:H7 contamination at points along the farm-to-table continuum?



# Model





# Results

- Risk of illness
  - June to September: 1 in every 600,000 ground beef servings
  - October to May: 1 in every 1.6 million ground beef servings
- Risk factors for contamination
  - Prevalence of *E. coli* at feedlots
  - Occurrence and extent of carcass contamination
  - Effectiveness of procedures used to decontaminate carcasses
  - Effect of carcass chilling



# Conclusion

- Mitigations during cattle production and slaughter are effective for reducing the risk of illness from *E. coli* O157:H7 in ground beef



**Comparative Risk Assessment  
for Intact (Non-Tenderized)  
and  
Non-Intact (Tenderized) Beef:  
Technical Report**

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Prepared by:

Risk Assessment Division  
Office of Service  
United States Department of Agriculture  
Public Health Science  
Food Safety and Inspection

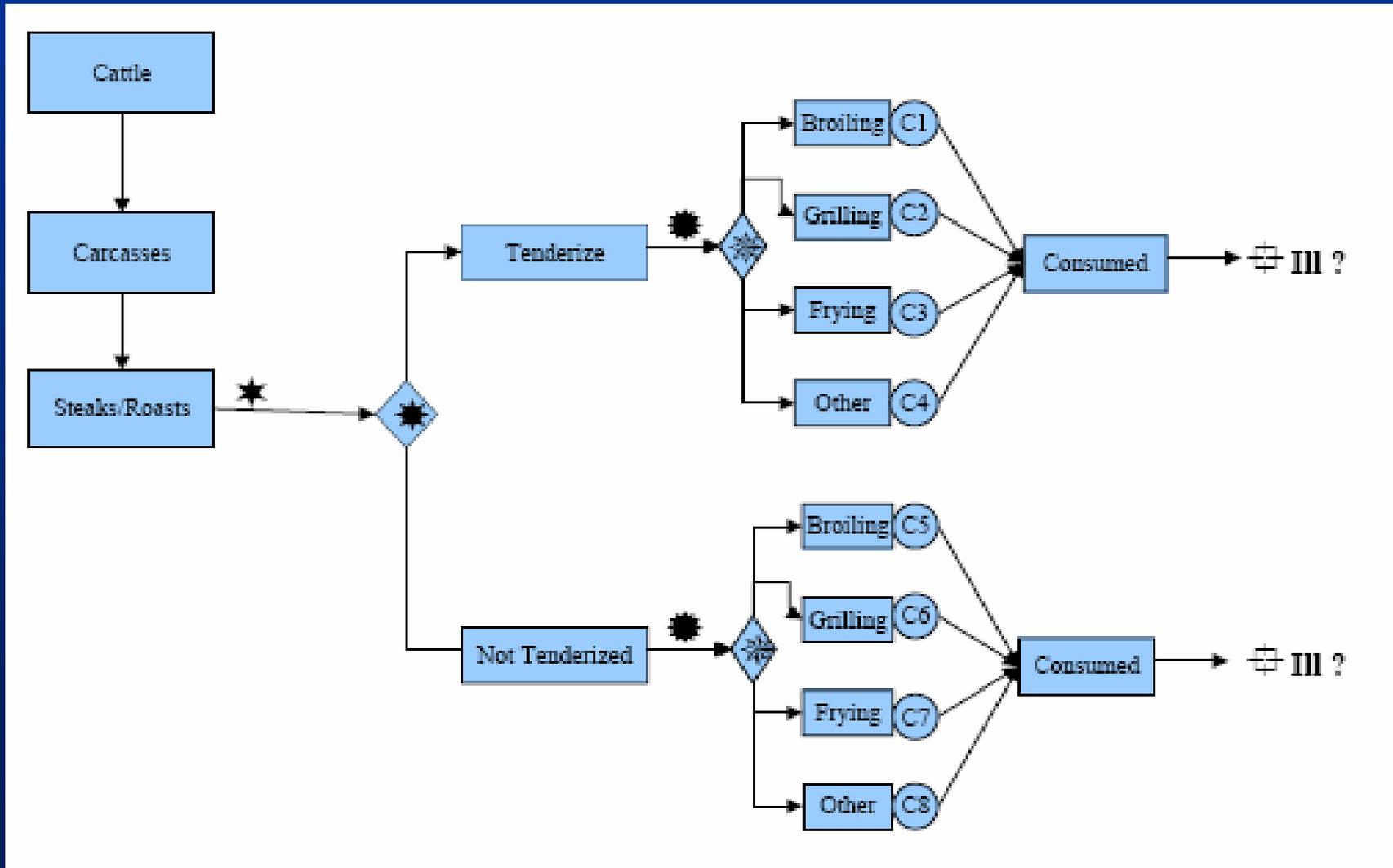
March, 2002





# Question

- Do non-intact blade-tenderized beef steaks pose a greater risk to the consumer from *E. coli* O157:H7 compared to intact beef steaks?





# Results

- Contamination with *E. coli* O157:H7
  - 2.6 per 10 million servings for intact
  - 3.7 per 10 million servings for non-intact
- Risk of illness
  - 1 illness per 15.9 million servings for intact
  - 1 illness per 14.2 million servings for non-intact



# Conclusion

- The risk of illness from *E. coli* O157:H7 in non-intact beef steaks is not significantly higher than intact beef steaks



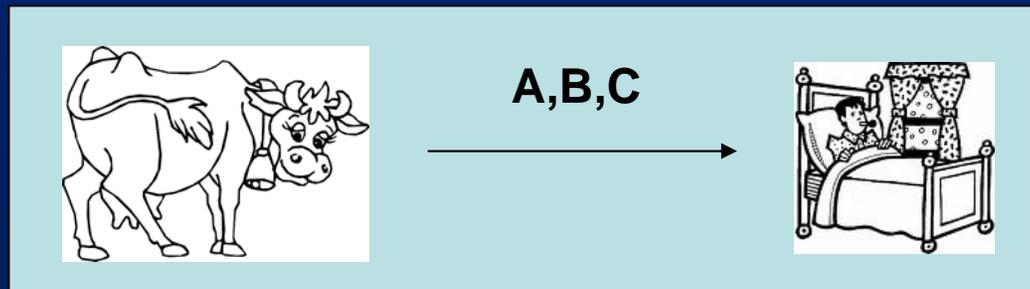
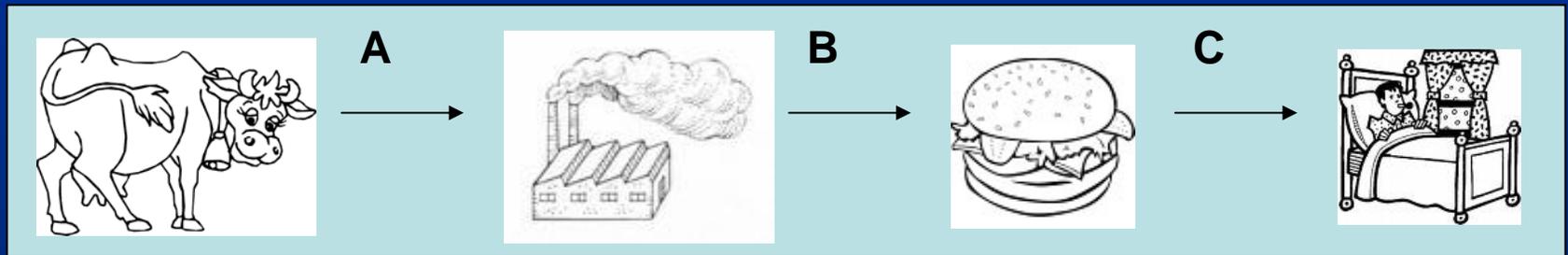
# *E. coli* O157:H7 Pre-harvest Risk Assessment



# Objectives

- Develop a screening tool to allow more rapid assessment of pre-harvest risk management options
- Determine if pre-harvest intervention is a cost effective food safety strategy under most optimistic assumptions

# Proposed Model





# Estimated Completion

- Fall 2008



# Updated Comparative Risk Assessment for *E. coli* O157:H7 Intact and Non-intact Beef



# Objectives

- Estimate the risk of illness from *E. coli* O157:H7 in non-intact vs. intact beef steaks



# Proposed Model

- Updated 2002 model to include data for
  - Translocation and distribution of *E. coli* O157:H7 in beef from mechanical and chemical tenderization
  - Growth of *E. coli* O157:H7 in non-intact at various temperatures
  - Effect of cooking on *E. coli* O157:H7 in non-intact steaks
  - Effect of sanitation on removal of *E. coli* O157:H7 from blades/needles used to tenderize beef



# Estimated Completion

- Fall 2009



# Summary

- FSIS is conducting a risk assessment on pre-harvest interventions for reducing *E. coli* O157:H7 in beef
- FSIS plans to update its comparative risk assessment for *E. coli* O157:H7 in intact and non-intact beef
- All FSIS risk assessments available on the web:  
[www.fsis.usda.gov/science/risk\\_assessments](http://www.fsis.usda.gov/science/risk_assessments)