Which factors may explain the trend in listeriosis cases?

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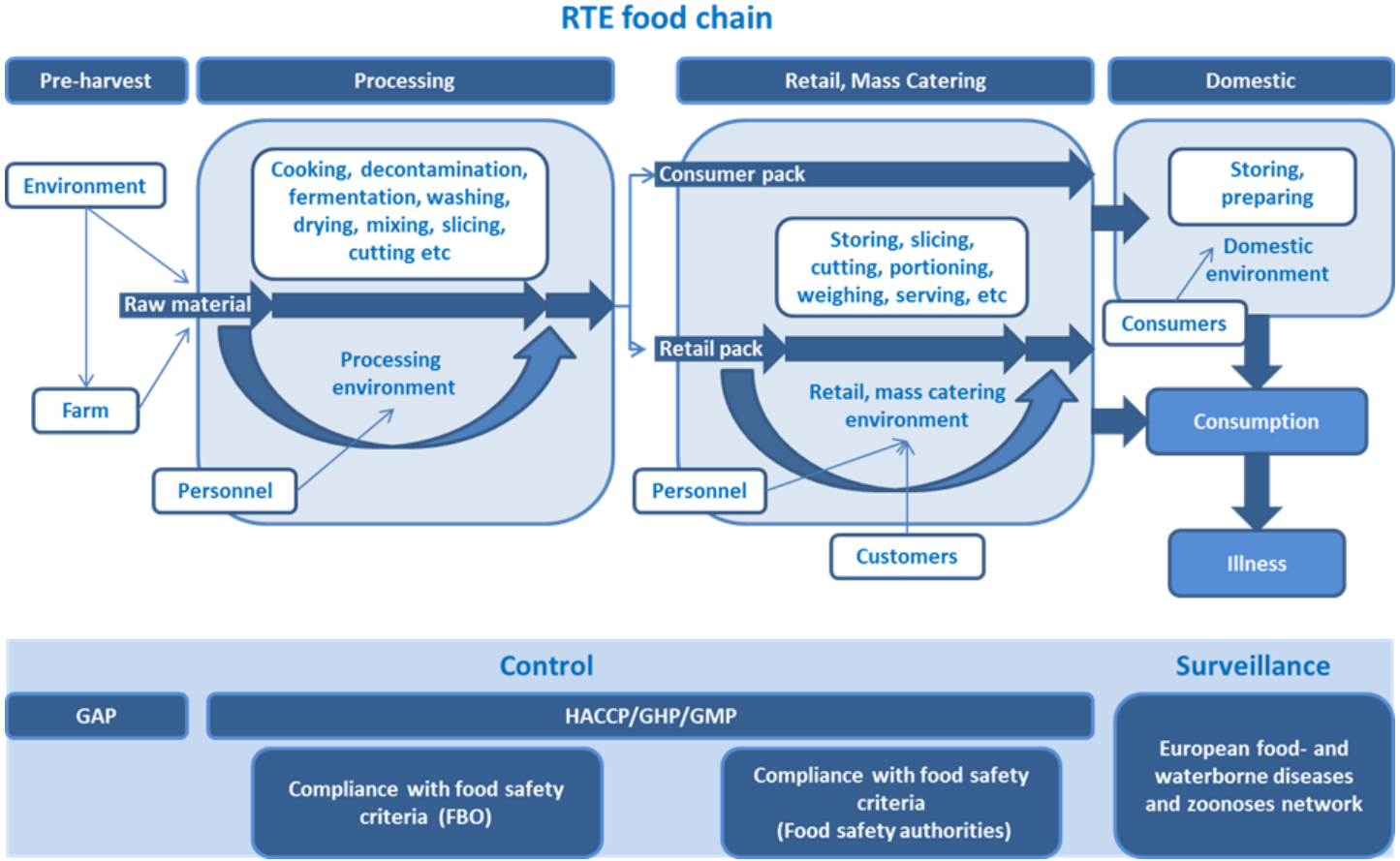
efsa
European Food Safety Authority

L. MONOCYTOGENES IN THE RTE FOOD CHAIN



APPROACH TO ToR

Baseline survey, consumption data and reports

Other scientific information (literature, data)

Conceptual model factors affecting *L. monocytogenes* in the food chain and listeriosis in humans

Review of sensitivity analyses in published QMRA´s

Time Series Analyses listeriosis incidence

Potential factors behind trend
- Formulate hypotheses as assessment questions
- Evaluate impact on listeriosis
  - Empirical data
  - Modelling
- Select indicators linked to factor
- Evidence for indicator change

ToR 1

Updated evidence for
- Hazard identification
- Hazard characterization
- Exposure assessment
- Risk characterization

gQMRA

Empirical evidence

ToR 2

Evaluation of epidemiological trend and hypotheses
- Outcomes TSA
- Importance analyses
- Uncertainty analysis
- Synthesis of evidence on support for different hypotheses

Assessment

APPROACH: IDENTIFYING FACTORS TO EXPLAIN TREND

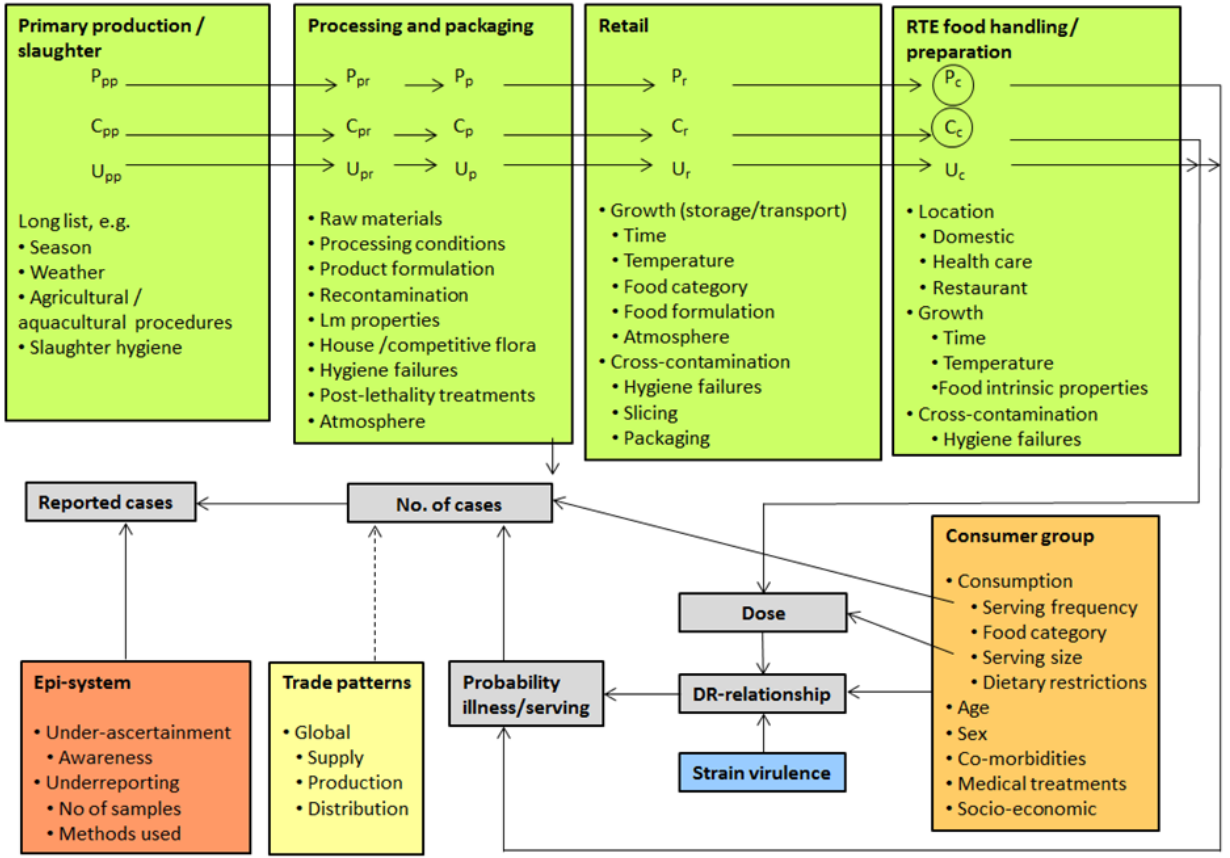
- Develop conceptual model
- Identify potential factors (model, TSA, review of QMRA's, outsourcing activities)
- Formulate assessment questions (AQ's)

APPROACH: IDENTIFYING FACTORS TO EXPLAIN TREND

- Factors related to host, food, surveillance, bacterium
- AQ's evaluated stepwise
  1) Importance analysis
  2) Empirical evidence (or indicator data)
  3) Synthesis of TSA, importance analysis, empirical data, uncertainty

CONCEPTUAL MODEL

Conceptual model of stages, processes and factors influencing listeriosis incidence



ASSESSMENT QUESTIONS (1)

Host related

- AQ1.1: What contribution did any change in the **population size (i.e. the number) of the elderly and/or susceptible people** make to the change in cases of human listeriosis in the EU/EEA in the time period 2008–2015?
- AQ1.2: What contribution did any change in **'underlying condition rate'** make to the change in incidence rates of human listeriosis in the EU/EEA in the time period 2008–2015?

ASSESSMENT QUESTIONS (2)

Food related

- AQ2.1: What contribution did any change in ***L. monocytogenes*** **prevalence in RTE food at retail level** make to the change of human listeriosis incidence rates in the EU/EEA in the time period 2008–2015?
- AQ2.2: What contribution did any change in ***L. monocytogenes*** **concentration in RTE food at retail level** make to the change of human listeriosis incidence rates in the EU/EEA in the time period 2008–2015?

ASSESSMENT QUESTIONS (3)

- AQ2.3: What contribution did any change in **storage conditions (temperature, time) after retail** (i.e. consumer phase) make to the change of human listeriosis incidence rates in the EU/EEA in the time period 2008–2015?
- AQ2.4: What contribution did any change in **consumption (serving size and frequency)** make to the change of human listeriosis incidence rates in the EU/EEA in the time period 2008–2015?

ASSESSMENT QUESTIONS (4)

Surveillance related

- AQ3.1: What contribution did any change of **(improved) surveillance** make to the change of human listeriosis incidence rates in the EU/EEA in the time period 2008–2015?

Bacterium related

- AQ4.1: What contribution did any change in **virulence** make to the change of human listeriosis incidence rates in the group of interest in the EU/EEA in the time period 2008–2015?