Defining the Responsibilities of Stakeholders within a National Strategy for Food Safety and Control

Danilo Lo Fo Wong, MSc, PhD

Danish Zoonosis Centre
Dept. of Microbiology and Risk Assessment
National Food Institute
Technical University of Denmark

International Symposium on Food Safety, 12 - 13 January 2007, Hong Kong

Contaminants
- Chemicals
- Toxins
- Residues
- Micro-organisms

Food safety throughout the production chain

Pre-harvest
Transport
Harvest
Processing
Retail
Consumers

FPD Surveillance from feed-to-food
To form the basis for qualified feedback to stakeholders
- Numerous possible routes for introduction and transmission of foodborne pathogens
- Each link in the chain is responsible for the quality and safety of its products
- Coordination of control activities
- Communication between many stakeholders
  - Producers
  - Consumers
  - Government

Main pieces of the food safety puzzle

1. Ministry of Agriculture
2. Ministry of Public Health
3. Food industry
4. Consumers

Ministry of Agriculture
- Take care of the interests of the food producing industry
- Initiating, implementing and maintaining food safety programs
  - Legislative
  - Technical
  - Practical
  - Information
  - Producers
  - Veterinarians
  - Food safety professionals

Ministry of Public Health
- Take care of the interests of the general public
- Initiating, implementing and maintaining public health programs
  - Legislative
  - Technical
  - Practical
  - Information
  - Public
  - Medical doctors
  - Health care workers
Food industry
- Responsible for quality and safety of their products
- Monitoring programs at various levels of production
  - Certification programs
  - Process control
  - Final product control
  - HACCP-based control programs
- Contribution to national surveillance programs
- Collaboration with (local) government in case of outbreak investigation

Consumers
- Influence through demand and willingness-to-pay
- Consumer organisations
  - Consumer interests
  - Seldom involved in data generation
  - Driving force behind food safety initiatives
- Media plays an important role

Major stakeholders in microbial food safety
- Ministry of Agriculture
- Ministry of Health
- Veterinary Authorities
- Food Authorities
- Public Health Authorities
- Nat. Veterinary Reference Lab
- Nat. Human Reference Lab
- Industry
- Nat. Food Reference Lab
- Non-governmental Organizations

Integration – communication
- Ministry of Agriculture
- Ministry of Health
- Veterinary Authorities
- Food Authorities
- Public Health Authorities
- Nat. Veterinary Reference Lab
- Nat. Human Reference Lab
- Nat. Food Reference Lab
- Non-governmental Organizations
- Industry

Collaboration & coordination
- Ministry of Agriculture
- Ministry of Health
- Veterinary Authorities
- Food Authorities
- Public Health Authorities
- Nat. Veterinary Reference Lab
- Nat. Human Reference Lab
- Nat. Food Reference Lab
- Industry
- Non-governmental Organizations

Co-ordinating body
- Coordinate multi-disciplinary and multi-sectorial control and response
- Levels of collaboration/coordination:
  - microbiology – epidemiology – risk assessor
  - feed - veterinary – food - medical
  - government – industry – consumers
- Comparative analysis of data from different sources
  - animal – food - human

Integration = communication

Co-ordinating body
Main pieces of the food safety puzzle

1. Ministry of Agriculture
2. Ministry of Public Health
3. Food industry
4. Consumers
5. Co-ordinating body

Tasks for a co-ordinating body

- Coordinate activities between institutions, authorities, industry and consumer organisations
- Perform timely and comprehensive analysis of surveillance data
- Disseminate information to all stakeholders
- Outbreak detection, investigation and response
- Evaluate effectiveness of control programs and intervention strategies
- Conduct epidemiological research and risk assessment

EXAMPLES OF INFORMATION OBTAINED THROUGH NATIONAL INTEGRATED FOOD SAFETY PROGRAMS

Temporal patterns - Salmonella prevalence in pork and humans

AMR resistance in Campylobacter jejuni from farm-to-fork
Danilo Lo Fo Wong
dwo@food.dtu.dk
+45 72 34 70 82

Automatic outbreak alert system

S. Infantis

S. Java

Tracing sources of infection

- Integrated outbreak investigation and response
- multi-disciplinary
  - microbiology – epidemiology
  - veterinary – human
- multi-sector
  - government - industry
- Strain bank
  - routine surveillance
  - previous outbreaks
  - epidemiological data

Attributing human cases to food animal reservoirs
Comparison of the number of reported human cases caused by different Salmonella subtypes with the distribution of Salmonella subtypes isolated from the various animal food sources

Estimated major sources of human salmonellosis in Denmark

Trends in sources for human salmonellosis

Conclusion

The attribution method allows us to:
- evaluate the trends and dynamics of sources to human salmonellosis
- support risk managers in their decision of allocating resources
- document a need for or effect of surveillance programs
4 C's of Integrated Food Safety Programs

- **Communication**
  - Regular meetings
  - Direct and informal contact

- **Collaboration**
  - Data exchange
  - During outbreaks

- **Coordination**
  - Control activities

- **Central database**
  - Monitoring trends
  - Outbreak detection
  - Comprehensive analysis
  - Program evaluation

Optimal use of data that already is being generated

**INITIATIVES TOWARDS INTERNATIONAL INTEGRATED FOOD SAFETY PROGRAMS**

**EU Member States**

- Animal, food and feed monitoring
- Foodborne outbreaks
- Communicable diseases

**WHO Global Salm-Surv**

**Steering Committee 2006**

**Goals:**
- Strengthen foodborne disease surveillance systems;
- Improve collaboration among microbiologists and epidemiologists;
- Foster collaboration across sectors.

Currently: ~ 900 members from 142 countries

**WHO Global Salm-Surv**

- Regional Training Courses
- External Quality Assurance System (EQAS)
- Reference Services
- Country data bank
- Electronic Discussion Group
- Web Site: www.who.int/salmsurv/
Thank you for your attention.