



Management of (micro)biological foodborne crisis/outbreaks

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Some 2015* data from EU Member States + CH and NW: outbreaks

	N	Human cases	Hospitalised	Deaths
Strong-evidence outbreaks	422	9837	1120	7
Weak-evidence outbreaks	3940	36037	2772	10
Total	4362	45874	3892	17

- From ECDC/EFSA EU summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2015

Some 2015* data from EU Member States + CH and NW: agents

	N	Human cases	Hospitalised	Deaths
Salmonella	953	6616	1719	3
Bacterial toxins excl. C. botulinum	825	8787	454	3
Campylobacter	387	1440	129	1
Calicivirus	289	13536	352	1
All parasites	52	302	44	0

- From ECDC/EFSA EU summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2015

Some 2015* data from EU Member States + CH and NW: sources (strong evidence only)

	N	Human cases
Meat	122	1975
Mixed buffet	55	1866
Dairy	55	617
Eggs	42	370
Fish, LBM	40	574
Fruit, veg., nuts, ...	19	720

- From ECDC/EFSA EU summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2015

Outbreak investigations in the EU

- Mandatory investigations and reporting by Member States
 - Alert network Food/feed: RASFF
 - Alert Network humans: EWRS
 - Annual overview reports
- EU coordination in case of multi-state outbreak
 - SANTE: risk management, general coordination
 - EFSA: risk assessment
 - ECDC: human cases/public health aspects



European

Multinational FB outbreak investigations

Assessment

ECDC: human data, public health outbreak investigation, ...

EFSA: to assess food/animal data, Consumers' advice, investigation to source

Management

DG SANTE: Based on assessment: measures, trade restrictions, negotiations with third countries

**Joint Rapid
Outbreak
Assessment**

EURL network:
analytical methods,
molecular testing

Techn. support

Techn. support

**Molecular
Typing
database**

TESSy

**Data
sharing**

EWRS

RASFF

MEMBER STATES' BODIES

Elements of food safety crisis management (1)

- **Prevention** by GHPs, GMPs, GAPs, procedures based on the HACCP principles and hazard specific control measures
- **Preparedness:**
 - **Detection tools**
 - **Alert networks (International/Regional/National)**
 - **Structures for exchange of information between different partners (e.g. food safety and public health authorities)**
 - **Tools for outbreak investigations**
 - **Traceability provisions**

More focus on early detection and improved preparedness

- To limit **public health impact** (E. coli crisis: 46 deaths; 782 HUS patients)
- To limit the need for food re-calls, trade restrictions or other **economic consequences** (loss during first two weeks: 812 Million EURO, Exports loss: 600 Million EURO)
- Involvement of **communicators** to assess and **anticipate** possible reactions of press/general public

Elements of food safety crisis management (2)

- ***Outbreak management (stricto sensu)***
 - (rapid) risk assessment
 - Crisis management plan – Standard operational procedures
 - Structure for analysis of data, checking of robustness and detection of gaps
 - Tracing back and forwards of affected food / recall and withdrawal
 - Communication plan to
 - Consumers
 - Trade partners
 - Cross border communication with other competent authorities (embassies etc)

Example *Salmonella* Enteritidis Polish eggs outbreak

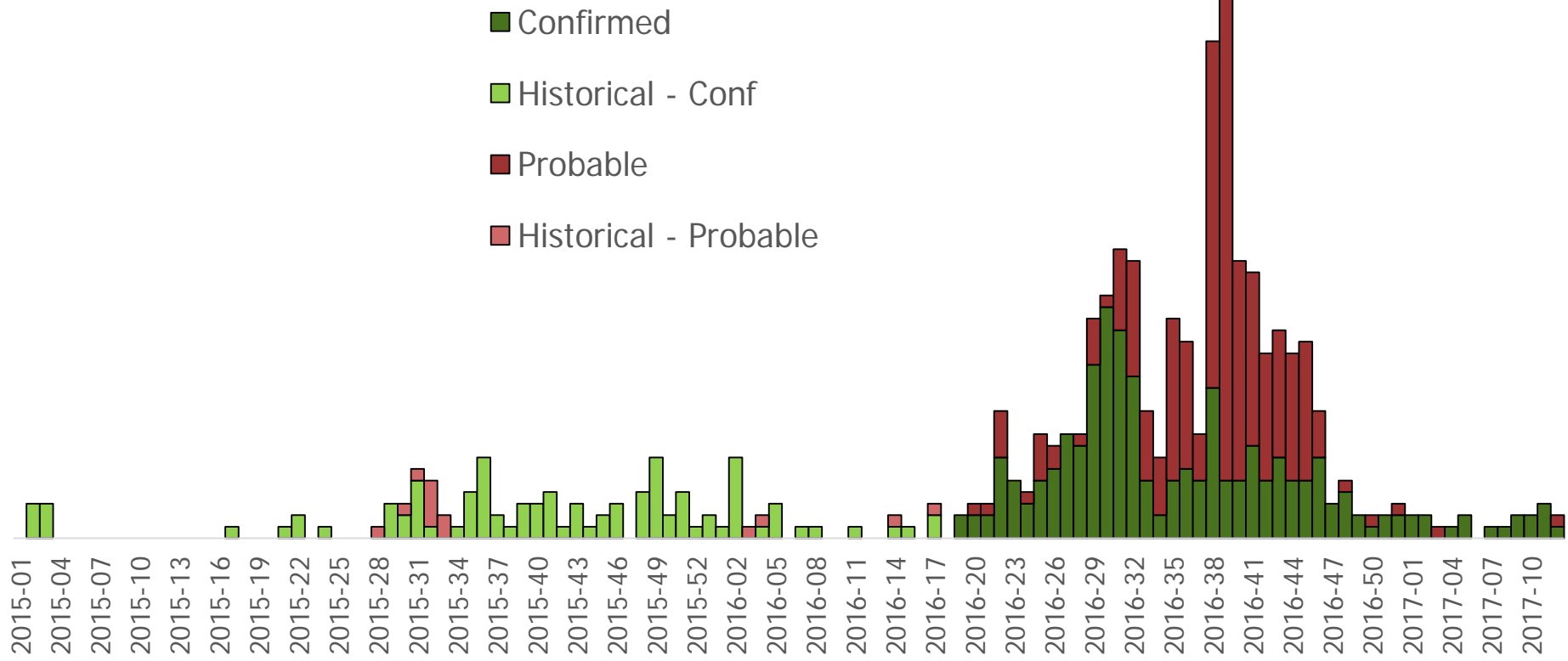


JOINT RAPID OUTBREAK ASSESSMENT

**Multi-country outbreak
of *Salmonella* Enteritidis phage type 8,
MLVA profile 2-9-7-3-2 and 2-9-6-3-2 infections**

First update, 3 March 2017

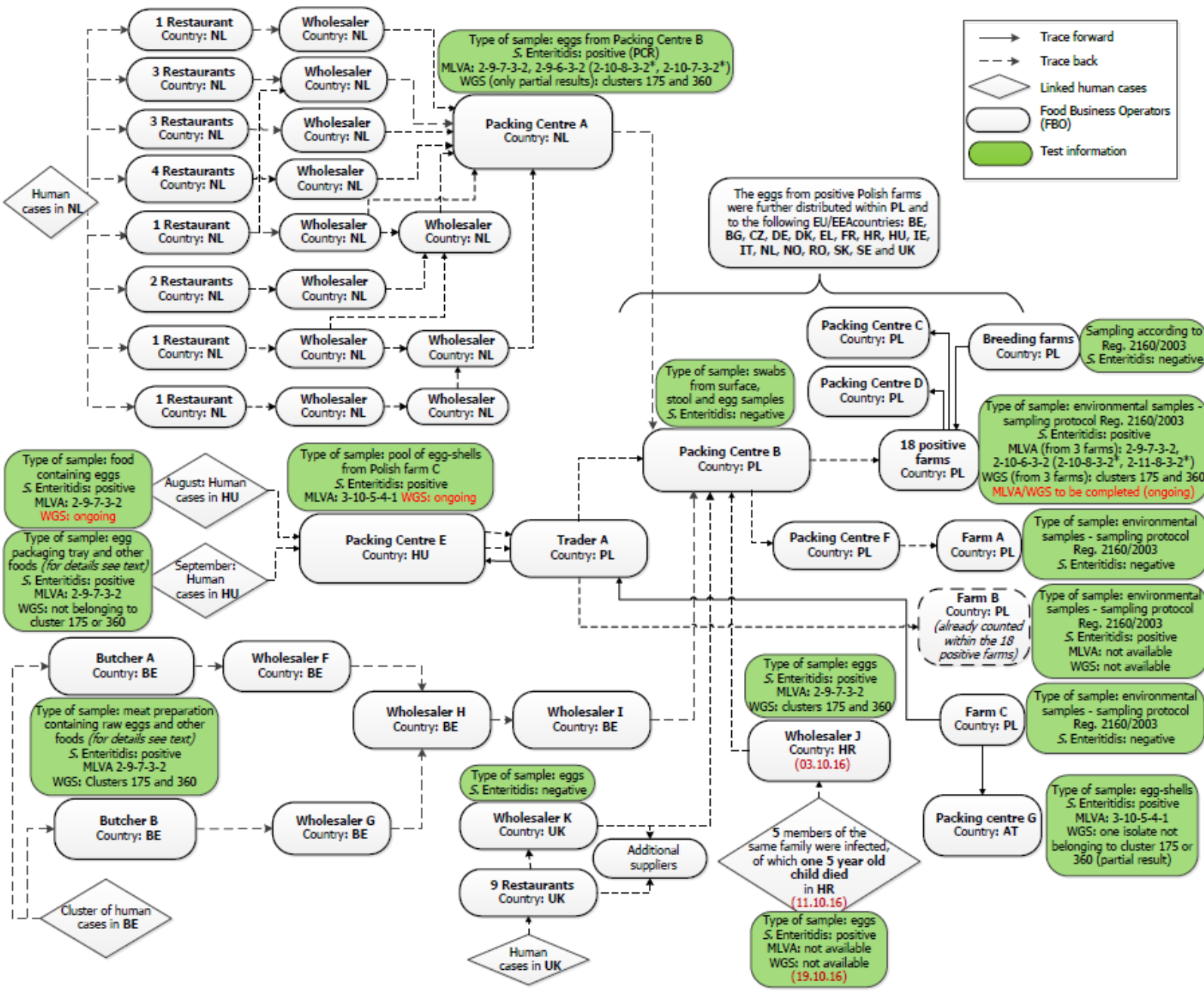
Human cases, as of 05/05/2017



*Week of onset, or week of sampling or week of received date at reference lab level



Figure 5. Graphical representation of traceability and testing information available in RASFF or provided by Member States to EFSA (1.03.17)



Examples of issues to be solved in a communication plan

- ✓ *Outbreak or crisis?*
- ✓ *Robustness of information*
- ✓ *Uncertainty on source*
- ✓ *Coordination*
 - ✓ **at different levels**
 - ✓ **Between risk assessors and risk managers**
 - ✓ **Between public health and food safety authorities**

Some EU initiatives to improve outbreak/crisis preparedness with focus on prevention of crisis and limitation of spreading of outbreaks

- ✓ *Strengthening human (EWRS) and food (RASFF) alert networks*
- ✓ *Molecular Typing database*
- ✓ *EFSA ECDC joint Rapid Outbreak Assessment*
- ✓ *BTSF training on outbreak/crisis preparedness*
- ✓ *Simulation Exercises*
- ✓ *Up-to-date network of crisis managers*

...

Molecular typing database

- *So far based on PFGE and MLVA**
- *Three pathogens: L. monocytogenes, VTEC and Salmonella**
- *Steps towards Whole Genome Sequencing in future*

What is specific/new to (micro)biological crisis/outbreak management?

- *Starting point are mostly human cases (<-> chemical hazards: starting point is often detection in food without human cases)*
- *Illness, hospitalization, possibly mortality from the beginning: time pressure, high sensitivity*
- *(Food) source may not be known at the beginning*
- *New tool: genome sequencing: more outbreaks detected (easier linking), communication to be reconsidered*

Relation with existing general guidance

"FAO/WHO framework for developing national food safety emergency response plans" and "FAO/WHO guide for application of risk analysis principles and procedures during food safety emergencies" and "Foodborne Disease Outbreaks: Guidelines for Investigation and Control".

Differences with newly proposed work (gaps):

- *General framework covering **all hazards***
- *Does not address in detail the **specific situation** of outbreaks by microbiological hazards (human cases from beginning, uncertainty on source, ...)*
- *No consideration of **new molecular testing tools***
- ***Not a Codex standard***

Relation with existing specific work

"Principles and Guidelines for an exchange of information in food safety emergency situations (CAC/GL 19-1995)"

- *Only considers the specific aspect of exchange of information between trade partners*
- *Would be addressed in new proposal with cross reference to details in CAC/GL 19-1995.*

WHO "Outbreak Communication. Best practices for communicating with the public during an outbreak"

- *General (not only foodborne) and only public health communication*
- *Cross-reference relevant.*

New Codex standard relevant?

- *Specific aspects of (micro)biological outbreak management*
- *New tools/information to be considered (genome sequencing)*
- *Data collection on outbreaks can be considered*
- *Codex standard, integrating all aspects*
- *Transparent development with involvement of all members of Codex*

*Existing FAO/WHO texts provide a sound basis for such work (no need for additional preliminary **scientific** work by FAO/WHO)*

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