



MEETING REPORT

Second annual meeting of the European Food- and Waterborne Diseases and Zoonoses Network

San Anton, Malta, 24–25 September 2009

Summary

On 24 and 25 September 2009, epidemiologists and laboratory experts from across the EU working on food- and waterborne diseases and zoonoses (FWD) met at San Anton in Malta, for the Second Annual Meeting of the European Food- and Waterborne Diseases and Zoonoses (FWD) Network in Europe to discuss the needs for surveillance of six priority diseases: salmonellosis, campylobacteriosis, shiga-toxin producing/ verotoxigenic *Escherichia coli* (STEC/VTEC) infections, listeriosis, shigellosis, and yersiniosis. Non-EU network members and representatives from important stakeholders such as the European Commission (Directorate-General for Health and Consumers), the European Food Safety Authority (EFSA) and the World Health Organization (WHO) (Regional Office for Europe) were also invited to the meeting.

The participants discussed the latest developments in, and future needs of, the FWD Network. A variety of topics were presented, ranging from burden of disease activities to the EFSA baseline study on *Listeria*. The experts also had the opportunity to present the status of surveillance of FWD in their countries, developments in laboratory methods, disease trends and recent outbreak investigations. The meeting again provided an excellent opportunity for exchanging experiences and strengthening international collaboration between different partners in the control and prevention of FWD within Europe.

This year's disease-specific working groups were asked to discuss specific reporting variables, the need to harmonise surveillance and the means to achieve it, the method and frequency of reporting for automatic quarterly reports on *Salmonella* and VTEC and an annual enhanced surveillance report on six priority diseases. Experts were also asked to discuss the terms of reference for the users in the new Epidemic Intelligence System (EPIS) for the urgent inquiry network, information flow in the epidemic intelligence forum and criteria for sharing information in EPIS with stakeholders.

ECDC will bring forward issues that need agreement at a higher administrative level as well as EPIS user nominations and work towards implementing the suggested improvements and new developments.

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Stockholm, April 2010

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Background

The European Centre for Disease Prevention and Control (ECDC) is an Agency of the European Union ¹ with a mandate to operate the dedicated surveillance networks (DSNs) and to identify, assess, and communicate current and emerging threats to human health from communicable diseases.

Since October of 2007, the responsibilities of Enter-net, the international surveillance network for enteric infections, were transferred to ECDC. In November 2007, a transition workshop on food- and waterborne (FWD) disease surveillance in the EU was held to discuss the challenges and new opportunities for further development of FWD surveillance and response at the EU level and to improve upon the past achievements of Enter-net.

The first annual meeting of the EU FWD network was held at ECDC, Stockholm, in October 2008. Experts discussed and learned about surveillance matters in relation to six priority FWD diseases. Some of the main conclusions reached in this meeting were:

- There is a need to have human data integrated with animal and food data. In particular, molecular typing data.
- Future meetings should continue to include country-specific presentations.
- Further discussion on methods (between microbiologists), through meetings and other opportunities, should occur, with a separate forum suggested.
- The need to continue having disease-specific working groups was highlighted.
- Additional support and capacity-building is needed for several EU countries.
- Participation by non-EU countries in network activities is welcomed and should be maintained.

Purpose of the meeting

The purpose of the second annual FWD Network meeting was to discuss the current status and development of activities already proposed and the future needs for surveillance and outbreak-related activities for the six priority FWD at the EU level, including the current development of a molecular typing for *Salmonella* and STEC/VTEC, needs for a FWD surveillance strategy for the EU, and to share country-specific developments and experiences in the area of FWD.

The meeting comprised plenary lectures and working groups (see agenda in Annex 1). On day one, specific presentations focusing on laboratory methods and epidemiology were given in two parallel sessions. Key presentations in these parallel sessions included the latest results of external quality assurance (EQA) schemes on *Salmonella* and VTEC, source attribution and the EFSA-ECDC *Listeria* baseline survey 2010.

The coordination group for the FWD Network held a meeting the day before, on 23 September 2009. The presentations, the background papers, the working group presentations and minutes as well as the meeting report, including the meeting report from the coordination group, are available at the following restricted ECDC website: <http://external.ecdc.europa.eu/fwd/>. Login details are available to network participants upon request to fwd@ecdc.europa.eu.

Invited speakers

Invited speakers at this annual meeting provided a good ground on a variety of FWD related topics. These included the following presentations:

- 'Estimating the incidence and burden of gastrointestinal infections in the community' by Gerhard Falkenhorst (Statens Serum Institut (SSI), Denmark).
- 'Current approaches to food-borne illness source attribution in the United States' by Barbara Mahon (Centers for Disease Control and Prevention, USA).
- 'An EU-wide survey on *Listeria monocytogenes* in ready-to-eat food' by Pia Makela (European Food Safety Authority).
- 'Results first EQA scheme for typing of *Salmonella* spp. for FWD labs (March 2009)' by Kristen Mooijman (Rijksinstituut voor Volksgezondheid en Milieu (RIVM), Netherlands).
- 'First external quality assurance programme for sero- & virulence typing of verocytotoxin-producing *E. coli* (VTEC)' by Fleming Scheutz (SSI, Denmark).
- 'International emergence and trends of *S. Typhimurium* DT193' by Wolfgang Rabsch (Robert Koch Institut, Germany).

¹ Established by Regulation (EC) No 853/2004 of the European Parliament and of the Council of 21 April 2004 establishing a European centre for disease prevention and control.

Main sessions

Session 1: Current status of FWD surveillance and outbreak-related activities at the EU level

The first presentation in this session was from Med-Vet-Net on the development of new tools to assess the burden and true incidence of these diseases, by combining data from different sources into a burden estimate and by use of seroepidemiology. Results were available for salmonellosis and will later be available for *Campylobacter* regarding seroepidemiology.

A summary was given on the latest activities and developments carried out by the ECDC FWD group and the plans for 2010. Johanna Takkinen made a short presentation on shigellosis as a potential re-emerging disease in the EU. Several topics on laboratory surveillance were presented. The survey amongst national reference laboratories for the six priority diseases had been completed by 17 EU countries so far. The results of the survey will contribute to identifying EQAs and training needs and move towards harmonisation of laboratory methodology. Johanna Takkinen also provided an update on the current development of molecular surveillance for FWD diseases at the European level. The update included different options for ECDC to integrate molecular typing into EU level surveillance, a consensus process on molecular typing methods involving disease experts and national surveillance coordinators, and the next planned steps in implementation of the PFGE-based typing system.

An overview of the status of different surveillance issues was given, including reports to come and further clarifications of some case definitions. The urgent inquiries posted in 2008 were presented with an analysis of response rates, pathogens involved and transmission routes, and an outline of where there is room for improvement. The participants were also briefed about the procedures for response at the EU level. This was followed by a demonstration of the future web-based Epidemic Intelligence Information System (EPIS). Moreover, a discussion paper on the available options for nomination procedures for EPIS was included for the participants' information.

Session 2: Parallel sessions (Laboratory/Epidemiology)

Specific topics about laboratory and epidemiology issues were presented in these two parallel sessions. The main topic of discussion in the laboratory session was the results on the first ECDC-funded EQA schemes for *Salmonella* and VTEC. The results were good overall. Some strains of both pathogens had been difficult to analyse correctly, in particular the antimicrobial testing of some *Salmonella* strains. The epidemiology session focused mainly on source attribution, i.e. a methodology to quantify food-borne illnesses caused by consumption of a particular food group. In addition, there was a detailed introduction to the EU-wide EFSA study to start in 2010 on *Listeria* in ready-to-eat food products.

Session 3: Disease-specific country presentations

Presentations were grouped by diseases (see Annex 3).

Several participants presented brief updates on developments in surveillance, laboratory methodologies, recent trends, outbreaks, and the integration of laboratory and epidemiological data, related to the six priority diseases. Each presentation was followed by questions about the subject and short discussions among the participants.

Sessions 4 and 5: Disease-specific working groups on improving FWD surveillance, outbreak detection and response

The participants signed up for one of the six disease-specific working groups on the first day. The main topics for discussion were the same for each group but detailed discussion topics focused on a specific pathogen. The groups received a number of background documents to stimulate the discussion. The background documents included general surveillance issues such as the disease-specific surveillance objectives and harmonisation of particular reporting variables, and the proposed content of the regular *Salmonella* and VTEC reports from The European Surveillance System (TESSy).

A review and identification of requirements to support surveillance was performed by each disease-specific working group. Particular needs discussed were common agreements on various aspects including suitable molecular typing techniques, standardisation of laboratory methods or sampling protocols, and training needs.

In addition, experts were asked to discuss issues related to the use of EPIS for urgent inquiries, such as the terms of reference, the criteria for sharing information with stakeholders like the European Commission's Rapid Alert

System for Food and Feed (RASFF) and EFSA, when an urgent inquiry should be considered as a verified alert and how it relates to other alert mechanisms like the Early Warning and Response System (EWRS) and WHO's International Food Safety Authorities Network (INFOSAN).

The presentations of the working groups as well as the minutes are available at the restricted ECDC website.

Session 6: EPIS demonstration

Annick Lenglet gave a practical and comprehensive demonstration on the use of EPIS. She explained the basic procedures in the use of the EPIS platform using graphical examples. These included common situations such as taking part in disease-specific discussions and ad hoc forums, launching an urgent inquiry (UI), and integration of UI to the epidemic intelligence forum.

Main conclusions

General conclusions

- The current development of molecular surveillance hosted by ECDC was well accepted and it should be in place and running as soon as possible.
- The use of EPIS platform as a tool for UI was welcomed. However, it should be used in addition to EWRS.
- ECDC should map the training needs in different areas for Member States as a priority, e.g laboratory EQAs or inter-laboratory training.
- The proposal for creating disease-specific expert groups for next year was welcomed.

Conclusions from the working groups

General FWD surveillance issues

Surveillance objectives, variables and activities

- The current status of several variables for case-based reporting and the addition of new variables to TESSy was reviewed. These included 'Hospitalisation' and 'Suspected vehicle' for all six diseases and 'Pregnancy-associated' to be added for listeriosis.
- There was a group consensus on the interpretation of the EU case definition for listeriosis as follows: a confirmed fetus, stillborn or newborn up to one week of age results in two confirmed cases being reported: a mother and a baby if the baby is at least 20 weeks of gestation.
- Development, standardisation and harmonisation of laboratory and molecular typing methods were seen as an important means to improve surveillance. Molecular sub-typing for *Campylobacter* was, however, seen as unrealistic at present due to lack of cost-effective methods.
- For listeriosis, there was an agreement on a joint study with EFSA on typing *Listeria* isolated from humans and ready-to-eat products. However, it was recommended that a separate working group should be established to discuss further the details.
- The creation of disease-specific groups to work on specific topics was warmly welcomed. Priority activities for these groups were decided according to disease-specific surveillance needs.

Surveillance reports and outputs

- Quarterly reports on *Salmonella* and STEC/VTEC infections should be produced. Reports should contain basic data. Cases of *S. Typhi* and *S. Paratyphi* should also be included. In addition, information on outbreaks that have occurred during the reporting period could be added. There was not a complete agreement among the network members about the relevance of including maps and AMR data for short reporting periods.
- Annual enhanced reports for six priority diseases. The majority of network members agreed that the production of this report would be very beneficial. However, issues such as comparability and quality of data reported may significantly affect an enhanced analysis and the interpretation of results. Therefore, it is essential to include descriptions of the national surveillance systems in the report. Other factors that ECDC should consider carefully are data ownership, the creation of an editorial group to review the report and to define the deadlines.
- Some members of the network felt that nominated disease-specific experts should have access to the complete TESSy data available for the diseases in their area of expertise. They could then provide input and make a better contribution to exploring different approaches for data analysis. This is in line with the agreed policy on data access and use and will be implemented in the near future.

Urgent inquiries and EPIS

- The proposed terms of reference were generally accepted. However, different terms of reference should be considered for non-EU members.
- No specific criterion is needed to launch a UI but criteria that can be considered should be included in order to encourage countries to post UIs, e.g. a potential threat to other Member States, or large regional outbreaks with an unknown source.
- The escalation from UI to epidemic intelligence forum was regarded with caution as it could have unforeseen implications. Some participants were in favour of no escalation process, in their opinion information should remain informal.
- There was general agreement with sharing information with EFSA and RASFF once an UI has escalated to the level of epidemic intelligence forum. Some groups felt that INFOSAN should only be informed when the reporting Member States have requested it or, for example, in cases when the food source originated in non-EU countries.

Overall, the participants felt the meeting was a success with many lessons learned and useful and concrete suggestions provided from working group discussions that will enable improvements to FWD surveillance in the EU.

Annex 1. Agenda

Thursday, 24 September 2009

- 08:00 Registration
 08:30 – 08:45 Welcome
Hon. Dr. Joe Cassar, Parliamentary Secretary for Health, Malta
Andrew Amato-Gauci (ECDC)

Session 1: Current status of FWD surveillance and outbreak-related activities at the EU level

Chair: Andrew Amato-Gauci

- 08:45 – 09:15 Invited Speaker: FWD Burden of Disease Activities (Results from Med-Vet-Net)
 • Traditional ways (e.g. multipliers)
 • Seroepidemiology
Gerhard Falkenhorst
- 09:15 – 09:45 Update on the Food- and Waterborne Diseases and Zoonoses Programme at ECDC
 • Update on status
 • Key Issue: Shigellosis: A re-emerging pathogen
Johanna Takkinen
- 09:45 - 10:00 Laboratory surveillance
 • Strategy
 • Update on molecular typing database (PFGE consultancy)
 • Update on ECDC FWD Lab Survey: General overview
Johanna Takkinen/Angela Lahuerta-Marin
- 10:00 – 10:10 Reimbursement procedures
ECDC Missions and Meetings representative
- 10:10 – 10:30 *Coffee Break*
- 10:30 – 10:50 FWD surveillance: updates
 • Update on FWD general surveillance topics, reports, overview of countries' reporting for FWD, and future plans
Nadia Ciampa
- 10:50 – 11:10 Update on urgent enquiries and updates on 'FWD guiding principles for response at EU level'
 • Summary of urgent enquiries in 2008
 • Urgent enquiries' procedural changes
 • Findings from ECDC simulation exercise using 'FWD guiding principles for response'
 • Plans for improving procedures for response to FWD-related events
Nadia Ciampa/Annick Lenglet
- 11:10 – 11:30 Epidemic Intelligence Information System (EPIS) status update and plans (brief overview and demonstration)
Annick Lenglet
- 11:30 – 12:50 *Lunch*

Session 2: Parallel sessions (Lab/Epi)

Chair: Johanna Takkinen

- 12:50 – 13:30 Laboratory session
Chair: Anja Siitonen
 • External Quality Assurance (EQA) Status Update and future EQA needs:
 – Salmonella (Kirsten Mooijman) (20 min)
 – VTEC (Flemming Scheutz) (15 min)
- 12:50 – 13:30 Epidemiology session
Chair: Wilfrid van Pelt
 • Source attribution:
 – Current approaches to food-borne illness Source attribution in the United States (Barbara Mahon) (20 min)
 – EFSA Listeria baseline study (Pia Mäkelä) (15 min)

Session 3: Disease-specific country presentations

- 13:30 – 15:30 Country reports
Chair: Flemming Scheutz
- Salmonellosis country reports
 - VTEC country reports
 - Campylobacteriosis country reports
- 15:30 – 16:00 *Coffee break*
- 16:00 – 18:00 Country reports continued
Chair: Martin Cormican
- Listeriosis country reports
 - Shigellosis country reports
 - Yersiniosis country reports

Friday, 25 September 2009

- 08:30 Welcome to Day 2 of meeting
Chair: Johanna Takkinen
- 08:30 – 9:00 Invited speaker presentation: International emergence and trends of *S. Typhimurium* DT 193
Wolfgang Rabsch
- 9:00 – 9:15 Brief overview of disease-specific working group discussions
Chair: Johanna Takkinen

Session 4: Disease-specific working groups on improving FWD surveillance and outbreak detection & response (*Salmonella, VTEC, Campylobacter, Shigella, Listeria, Yersinia*)

Facilitators: Johanna Takkinen, Nadia Ciampa, Angela Lahuerta-Marin, Annick Lenglet, Carmen Varela Santos, Renata Mikolajczyk

- 9:15 – 11:00 Part 1: Working group discussion – general FWD surveillance issues
- Disease-specific objectives, tasks, variables (45 min)
 - Systematic reports/outputs (60 min)
 - Automated Quarterly Reports: Content
 - Enhanced Surveillance Annual Reports: Process and proposed content
 - General feedback on tables/graphs
- 11:00 – 11:15 *Coffee break*
- 11:15 – 12:30 Part 2: Working group discussion - general FWD outbreak detection and response issues (EPIS & urgent enquiries)
- Criteria for FWD urgent enquiries within EPIS (30 min)
 - Information sharing with international stakeholders (45 min)
- 12:30 – 14:00 *Lunch*

Session 5: Presentation of disease-specific working group discussions

Chair: Hilde Kruse

- 14:00 – 15:30 Presentations by the working groups: (10 min summary, 5 min discussion)
- 15:30 – 16:00 *Coffee break*

Session 6: EPIS demonstration

- 16:00 – 17:00 Demonstration of FWD urgent enquiries within EPIS
Annick Lenglet

Session 7: Closure of the meeting

- 17:00 – 17:30 Conclusions and next steps
Johanna Takkinen

Annex 2. List of participants

Austria	Robert Muchl	<i>Working Group</i>
Austria	Christian Kornschöber	Shigella/Yersinia
Austria	Claudia Mikula	Salmonella
Belgium	Sophie Bertrand	VTEC
Belgium	Thierry De Baere	Salmonella
Belgium	Olivier Van den Berg	Listeria
Belgium/EC	Kris De Smet	Campylobacter
Bosnia and Herzegovina	Zlata Kundurović	Listeria
Bulgaria	Kremena Parmakova	Campylobacter
Bulgaria	Plamen Padeshki	Salmonella
Bulgaria	Petar Petrov (Coord. Group)	Shigella
Cyprus	Panagiota Maikanti - Charalampous	Campylobacter
Cyprus	Marina Poliviou	Salmonella
Czech Republic	Marta Prikazska (Coord. Group)	Salmonella
Czech Republic	Daniela Dedicova	Salmonella
Czech Republic	Renata Karpiskova	Listeria
Denmark	Eva Møller Nielsen	Salmonella
Denmark	Flemming Scheutz (Coord. Group)	VTEC
Denmark	Gerhard Falkenhorst	Campylobacter
Estonia	Jevgenia Epshtein	Salmonella
Estonia	Rita Peetso	Salmonella
Finland	Markku Kuusi	Campylobacter
Finland	Anja Siitonen	Salmonella
Finland	Ruska Rimhanen-Finne	Salmonella
France	Simon Le Hello	Salmonella
France	Alexandre Leclercq	Listeria
France	Henriette de Valk (Coord. Group)	Listeria
France	Elisabeth Carniel	Shigella/Yersinia
Germany	Christina Frank (Coord. Group)	Salmonella
Germany	Andreas Jansen	Campylobacter
Germany	Wolfgang Rabsch (Coord. Group)	Salmonella
Greece	Ioannis Karagiannis	Shigella/Yersinia
Greece	Theologia Sideroglou	Shigella/Yersinia
Hungary	Katalin Krisztalovics	Campylobacter
Hungary	Mária Herpay	VTEC
Hungary	Noémi Nógrády	Salmonella
Ireland	Patricia Garvey	VTEC
Ireland	Anne Carroll	VTEC
Ireland	Martin Cormican (Coord. Group)	Salmonella
Italy	Monica Virginia Gianfranceschi	Listeria
Italy	Ida Luzzi	
Italy	Alfredo Caprioli (Coord. Group)	VTEC
Italy/EFSA	Pia Mäkelä (Coord. Group)	Campylobacter
Italy/WHO	Hilde Kruse	Campylobacter
Japan	Haruo Watanabe	
Japan	Hidemasa Izumiya	
Latvia	Antra Bormane	Salmonella
Latvia	Solvita Selderina	Salmonella
Lithuania	Vilma Jonaitiene	VTEC
Luxembourg	Catherine Ragimbeau	Campylobacter
Malta	Charmaine Gauci	Salmonella
Malta	Christopher Barbara	Salmonella
Malta	Anthony Gatt	Campylobacter
Netherlands	Ingrid Friesema	VTEC
Netherlands	Wilfrid van Pelt	Campylobacter
Netherlands	Willem (Kim) van der Zwaluw	VTEC
Netherlands	Kirsten Mooijman	
Norway	Line Vold	VTEC
Norway	Astrid Louise Wester	Campylobacter
Norway	Karin Nygard (Coord. Group)	Listeria
Poland	Malgorzata Sadkowska Todys	Salmonella

		<i>Working Group</i>
Poland	Waldemar Rastawicki	Shigella/Yersinia
Poland	Grzegorz Madajczak (Coord. Group)	Listeria
Portugal	Jorge Machado	Salmonella
Romania	Lavinia Zota	Salmonella
Romania	Maria Damian	Salmonella
Romania	Cadruta Usein	VTEC
Serbia	Bojana Grgic	Salmonella
Slovakia	Zina Kostanova	
Slovakia	Radoslav Makan	Shigella/Yersinia
Slovakia	Margareta Slacikova	Salmonella
Slovenia	Marija Trkov	VTEC
Slovenia	Tjasa Žohar cretnik	Salmonella
South Africa	Karen Keddy	Shigella/Yersinia
Spain	Elena Martinez	VTEC
Spain	Silvia Herrera	VTEC
Spain	Gloria HERNANDEZ-Pezzi	Salmonella
Spain	Maria Aurora Echeita (Coord. Group)	Salmonella
Sweden	Sofie Ivarsson	Salmonella
Sweden	Sven LÖfdahl	VTEC
Switzerland	Herbert Haechler	Salmonella
Turkey	Nihal Babalioglu	Salmonella
Turkey	Belkis Levent	Salmonella
United Kingdom	Kathie Grant	Listeria
United Kingdom	John Wain	Salmonella
United Kingdom	John Cowden	Campylobacter
United States	Barbara Mahon	
	Local observers: Malta	
Malta	Profs Cuschieri	
Malta	Gertrude Gatt Lanzon	
Malta	Renato Zerafa	
Malta	Tanya Melillo	
Malta	Sandro Sammut	
	ECDC staff	
ECDC	Johanna Takkinen	Salmonella
ECDC	Andrew Amato	Salmonella
ECDC	Angela Lahuerta-Marin	VTEC
ECDC	Nadia Ciampa	Listeria
ECDC	Carmen Varela	Campylobacter
ECDC	Annick Lenglet	Shigella/Yersinia
ECDC	Renata Mikolajczyk	Listeria
ECDC	Milka Docheva	Administrative support
ECDC	Oana Mereuta-Buzatu	Administrative support

Annex 3. List of country presentations

<i>Country</i>	<i>Title</i>	<i>Presenter</i>
Salmonella		
Bulgaria/Finland	Salmonella cases caused by a rare <i>S. Enteritidis</i> PT6c associated with travel to Bulgaria, June-July 2008	Petar Petrov
Finland	Risk factors of domestically acquired Salmonella infections in Finland: Preliminary results from 1st year of data collection	Ruska Rimhanen-Finne
France	Multinational clonal spread of <i>S. enterica</i> serovar Kentuckystrain resistant to ciprofloxacin	Simon Le Hello
Germany	Surveillance data on FWD with special focus on Salmonella-related topics	Christina Frank
Malta	Salmonellosis in Malta	Anthony Gatt
Switzerland	Large outbreak of <i>S. Typhimurium</i> during summer 2008 in Switzerland: unexpected pathogen dynamics	Herbert Hachler
VTEC		
Denmark	Preliminary data on vtx2f in VTEC: More common than previously indicated	Flemming Scheutz
Campylobacter		
Greece	Preliminary results of a very recent outbreak investigation of campylobacteriosis	Ioannis Karagiannis
Slovak Republic	Increasing trend of campylobacteriosis in the Slovak Republic	Zina Kostanova
Listeria		
Czech Republic	Increasing trend of listeriosis prevalence in the Czech Republic	Renata Karpiskova
UK	The benefits of adopting an integrated microbiological and epidemiological approach to investigate the factors driving recent rises in the incidence of listeriosis in the UK	Kathie Grant
Yersinia		
Poland	A dramatic increase of <i>Yersinia enterocolitica</i> serotype O8 infections in Poland	Waldemar Rastawicki
Shigella		
Norway/Denmark/Sweden	Shigella outbreak linked to snow peas	Karin Nygard
Ireland	Brief summary of reference laboratory experience with <i>Shigella</i> spp over the past decade	Martin Cormican
South Africa	Invasive shigellosis in South Africa	Karen Keddy