MEETING REPORT

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

Dublin, 22–23 June 2010

Summary

On 22 and 23 June 2010, epidemiologists and laboratory experts from across the EU working on food- and waterborne diseases and zoonoses met in Dublin, Ireland, for the Third Annual Meeting of the European Food- and Waterborne Diseases and Zoonoses (FWD) Network. Twenty-five EU/EEA countries and seven non-EU network members participated in this edition. There were also representatives from important stakeholders such as the European Commission (Directorate-General for Health and Consumers), the European Food Safety Authority (EFSA), the World Health Organization (WHO) and the EU reference laboratory for *Listeria*, as well as invited speakers.

The focus in 2010 was on three of the priority diseases – salmonellosis, Shiga toxin/verotoxin-producing *E. coli* (STEC/VTEC) infection and listeriosis. The meeting provided opportunities for discussions on the current status of FWD surveillance and outbreak-related activities at the EU level and to share country-specific experiences in the area of FWD. The European Centre for Disease Prevention and Control (ECDC) FWD team provided updates on their ongoing activities and countries gave oral or poster presentations on important issues of FWD in their countries. There was a special focus on microbiological typing methods and international foodborne outbreaks, both through invited speakers and working groups. Working groups were organised on topics related to communication and reporting in international foodborne alert systems; national reference laboratory services and harmonisation of laboratory methods for *Salmonella*, STEC/VTEC and *Listeria*; and enhanced surveillance – trends and surveillance indicators for salmonellosis, STEC/VTEC infections and listeriosis.

The meeting provided an excellent opportunity for exchanging experiences and strengthening international collaboration between different partners in the control and prevention of FWD within Europe.

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

Stockholm, March 2011

Background

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

In October 2007, the responsibilities of Enter-net, the dedicated surveillance network for enteric infections, were transferred to ECDC. In November 2007, a transition workshop on food- and waterborne disease (FWD) 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 and the second annual meeting in San Anton, Malta, in September 2009. The reports of these meetings, which covered all six priority diseases, are available on the ECDC website (www.ecdc.europa.eu).

Purpose of the meeting

The purpose of the third annual FWD Network meeting was to discuss the current status and development of ongoing activities within FWD and the future needs for surveillance and outbreak-related activities for three of the six priority FWD at the EU level, and also to share country-specific developments and experiences in this area.

The meeting was comprised of plenary lectures and working groups (see Annex 1). The meeting programme was developed in consultation with the FWD Network coordination group. The scope covered three of the priority diseases – salmonellosis, Shiga toxin/verotoxin-producing *E. coli* (STEC/VTEC) infection and listeriosis, with a special focus on microbiological typing methods and international foodborne outbreaks, both through invited speakers and working groups. Working groups were organised on topics related to communication and reporting in international foodborne alert systems; national reference laboratory services and harmonisation of laboratory methods for *Salmonella*, STEC/VTEC and *Listeria*; and enhanced surveillance – trends and surveillance indicators for salmonellosis, STEC/VTEC infections and listeriosis. In this edition of the meeting, the working groups were mixed, including epidemiologists and microbiologists, as requested in the previous meeting.

Presentations marked with * are available on the FWD network restricted website.

Invited speakers

The invited speakers provided a good ground for further discussion on molecular typing as well as reporting during international outbreaks.

The first invited speakers were Marc Lecuit and Sylvain Brisse*, from the Pasteur Institute, France. They gave an overview of the trends of listeriosis in France followed by the phylogenicity of *Listeria monocytogenes* and different typing methods that can be used depending on questions to be answered. They stated that serotyping should always be the basic typing; multilocus sequence typing (MLST) can be used for understanding the evolutionary relationship; multiple-locus variable-number tandem repeat analysis (MVLA) for a rough epidemiological screening; and pulsed field gel electrophoresis (PFGE) for high discriminatory power in epidemiological investigations.

Leena Räsänen*, from the Food Hygiene, Alert Systems and Training (E2) Unit of the Directorate-General for Health and Consumers at the European Commission, gave an update on their activities. Since 2004, eight baseline studies have been conducted in the EU, the majority focusing on *Salmonella*. The studies have been the basis for setting up national salmonella-control programmes and reduction targets to be achieved by specific dates. Salmonella-related market restrictions have also been implemented.

Jet de Valk*, France, and Linda Verhoef*, the Netherlands, presented on the investigations of the international hepatitis A outbreak linked to semi-dried tomatoes. Dr de Valk presented the French case-control study that revealed a link to a single batch of semi-dried tomatoes imported from a non-EU country and the following chain of events including communication through several international alerting systems. Dr Verhoef presented how the scattered hepatitis A cases in the Netherlands could be combined into one cluster through molecular surveillance

[1] Established by Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 2004 establishing a European centre for disease prevention and control.

(sequencing) and the difficulties in linking viral outbreaks (especially for viruses with long incubation period) to a food source without virus-positive food samples.

Mark Achtman, from the University College Cork, in Ireland, presented on the use of MLST for *Salmonella*. MLST typing has greater resolution than serotyping. It also groups strains differently as it is based on genetic relationships and allows the establishment of evolutionary links between the strains. MLST is also better adapted for high throughput. For fine-scale epidemiology, a second typing method would still be needed and MLST + single nucleotide polymorphism (SNP) typing would be the best combination, according to Prof Achtman.

Briefing on ECDC activities in FWD

ECDC made two short briefings* on the Centre's ongoing activities regarding FWD. The first briefing included:

- the urgent inquiries sent in 2009 and the introduction of EPIS;
- the toolbox project on investigation and response to FWD outbreaks with an EU dimension;
- some preliminary results from the laboratory survey in national reference laboratories;
- short overview of plans for molecular surveillance;
- the *Listeria* typing study; and
- information about the launch of a tender on guidance for prevention and control of norovirus outbreaks in childcare facilities and schools.

The second briefing included:

- the surveillance aims for FWD until 2013;
- the outline of the enhanced surveillance report for the six priority diseases;
- main conclusions from the Community Summary Report on Zoonoses in 2008;
- plans for the 2009 report, including the 2009 report on antimicrobial resistance;
- proposals for changes in the quarterly reports of salmonellosis and VTEC infections; and
- preliminary outputs of the EFSA working group on '*Salmonella* Typhimurium-like' strains (1,4,[5],12:i:-).

Working groups on national reference laboratory services and harmonisation of laboratory methods

The meeting participants could choose one of the three pathogen-specific working groups. The questions for discussion were based on the draft document *Minimum requirements for national reference laboratory (NRL) services** and some results from the laboratory survey performed in 2009*. *The Minimum requirements for NRL services* document was drafted based on the preliminary laboratory survey results (to be published in 2011) discussed in the coordination group meeting in May 2010. The objective of the working groups was to set a minimum level of some of the NRL tasks that all countries could agree on achieving and then to discuss how to overcome some of the problems identified in the laboratory survey and which methods or protocols need further harmonisation at the EU level. Most groups, however, were only able to cover the first task within the time provided.

Salmonella

The session started with a presentation by Wilma Jacobs*, from RIVM, on the results from the second external quality assurance (EQA) round. The rest of the session was devoted to discuss the draft proposal of *Minimum requirements for NRL services* from the perspective of salmonella microbiology and diagnostics. Proposed changes to the document were on adding the aim to link epidemiological and laboratory data, the importance for the NRLs to receive a representative sample of isolates, if not all isolates could be sent, and storage time and conditions. It was also agreed that all NRLs should have the capacity to type all serotypes, except the most uncommon, or if not possible, to have access to these services from somewhere else, and that EUCAST methods and criteria should be adopted for antimicrobial susceptibility testing.

STEC/VTEC

The session started with a presentation by Flemming Scheutz, from SSI, on the status of the second EQA round. The rest of the session was devoted to discuss the proposal of *Minimum requirements for NRL services* from the perspective of VTEC microbiology and diagnostics. It was proposed that ECDC should explore whether some countries did in fact not have a working relationship between the NRL and the public health institute or whether this was just a misinterpretation from the questionnaire. Proposed changes to the document were that all isolates suspected to be associated to national or international outbreaks should be submitted to the NRL, in addition of one O-group to the minimum of O-groups to be able to type, and ability or access to ability to detect sorbitol-fermenting O157 or non-verocytotoxin-producing *E.coli* in outbreaks with haemolytic uraemic syndrome (HUS). It was also discussed that antimicrobial susceptibility testing (AST) is not warranted for VTEC on clinical grounds and that VTEC should therefore be removed from the list of diseases for which antimicrobials should be routinely tested. The working group also proposed that the NRLs should meet the agreed minimum requirements by the end of June 2012.

Listeria

The session was devoted to discuss the proposal *Minimum requirements for NRL services* from the perspective of *Listeria* microbiology and diagnostics. Since listeriosis is both rare and severe, it was considered important that all isolates are sent to the NRLs. The necessity of cooperation between the human health and the food safety authorities and laboratories was also highlighted. Additional proposals to the document were made regarding storage times, requirements for identification and confirmation of *Listeria* (culture and biochemistry) and serotyping (molecular serotyping). PFGE was agreed to be the golden standard for additional typing and should be performed following the PulseNet protocol with two enzymes. NRLs should be able to perform AST for *Listeria* but it is not needed as routine test since antimicrobial resistance currently is not an issue. It was proposed, however, that EUCAST should develop guidelines for antimicrobials relevant for this bacterium. There was also a need identified for external quality assurance schemes regarding confirmation of *Listeria*.

Country presentations

There were in total nine oral country presentations and nine poster presentations. The topics covered a wide variety of subjects, ranging from development and/or application of different molecular typing methods for *Salmonella*, VTEC and *Listeria*, intersectoral and laboratory specific network cooperation, investigation of national and international outbreaks, emerging pathogens and surveillance trends.

Presentations on surveillance included one by Estonia* on the epidemiology of salmonellosis and campylobacteriosis in 2005–2009 and one by Germany* on listeriosis surveillance. The emergence of monophasic *S.* Typhimurium 4,[5],12:i:- was described both by Germany* on behalf of the European Working Group and by Greece*. Norway* gave a presentation on the emergence of sorbitol-fermenting VTEC O157 and Canada presented on rising trends of *S.* Enteritidis. Hungary* and Italy* each gave a presentation on the national investigations of the multinational *S.* Goldcoast outbreak, and Austria* presented the methods behind the identification of the multinational listeriosis outbreak. Slovakia highlighted the need for intersectoral collaboration in investigations of sporadic infections of rare salmonella serotypes.

Presentations on molecular typing included one by Finland* on PFGE and MLVA typing on *S.* Typhimurium strains, one by Belgium on multiplex PCR-based insertion-sequence-printing method for VTEC O157 subtyping, one by France on CRISPOL typing of *S.* Typhimurium, and one by Denmark* on surveillance of *Listeria* cases by the use of PFGE and MLVA. The advantages of using molecular methods in outbreak investigations were further described by New Zealand* on MLVA to confirm a dispersed outbreak of *S.* Typhimurium. Several laboratory networks were presented, by Ireland on laboratory surveillance of VTEC, by Turkey on a lab-based surveillance network for enteric pathogens and by Canada* on PulseNet Canada as a model network of networks.

The full title of the presentations and all author names are available in Annex 1.

Outbreak investigation toolbox

The contractors of the project 'Toolbox for investigation and response to Food- and Waterborne Disease Outbreaks with an EU dimension', Karin Nygård and Steen Ethelberg, informed the group about the objectives and outputs of

the projects. The toolbox will contain 11 deliverables, e.g. criteria for investigation of outbreaks, checklist for telephone conferences between ECDC and Member States, case definitions, trawling questionnaire tool with accompanying questionnaire database, software for descriptive data analysis, considerations for environmental and microbiological studies etc. Since the aim of the tools is to be useful to the Member States, countries were asked to provide input during the project.

Working groups on communication and reporting during international outbreaks

Today there are several alerting systems at national, EU and international level for reporting human outbreaks and contaminated food. In order to give an overview of these and of when to report to which system, six working groups were set up with real examples of international foodborne outbreaks as case-studies. Some of the feedback from these was that the flow of information at the international level, i.e. where it goes and how it is further shared, is not always understood at the national level and who the focal points are for the major reporting systems are not always known. It was also highlighted that different reporting systems also have different levels of confidentiality and it is sometimes preferred to call your contacts directly. A common molecular database, like PulseNet Europe, was seen as missing in order to link the information from the different systems. The apparent threshold in some countries to launch urgent inquiries in EPIS must be addressed, as there is now an unequal reporting across countries. It was also mentioned that a discussion paper on the levels of evidence needed in order to act during FWD outbreaks would be useful, preferably coordinated or written by ECDC.

Working groups on enhanced surveillance report

ECDC is preparing an enhanced surveillance report for the six priority diseases (salmonellosis, campylobacteriosis, STEC/VTEC infection, listeriosis, yersiniosis and shigellosis) with data from 2006–2009. This report should be a complement to the EFSA/ECDC Community Summary Reports on Zoonoses and the ECDC Annual Epidemiological Reports. The objectives of each disease-specific working group were to review and discuss the proposed analysis plan and the quality and surveillance indicators for the three diseases covered in the meeting.

Salmonellosis

Quality indicators presented by Member State were considered important in order to make correct interpretations of the data. Age, gender and case classification were seen as the best options for this. It was considered more difficult to routinely collect data on severity of disease and three alternative options were proposed on how to get an estimate of severity for salmonellosis. For antimicrobial resistance (AMR), the indicators need to reflect the number of countries providing the information. It was also deemed necessary to harmonise the AST according to EUCAST methods. More indicators on serotypes and quality of serotype information were suggested, including reporting of full antigenic formula. When presenting information on imported cases from the EU and outside the EU, it would be interesting to also present some AMR analysis for these two groups. It was proposed that the same type of detailed analysis per Member State be done every five years (presented as annexes), as it would be done annually at the EU level.

STEC/VTEC infections

The group first reviewed the surveillance objectives for VTEC and proposed some changes, e.g. to re-establish PulseNet Europe, link it with animal and food laboratories and remove the objective of monitoring antimicrobial resistance for VTEC. For the analysis plan, it was proposed to include all variables regarding completeness of data as an annex and that HUS should be the only indicator for severity. The group then made a long list of suggestions on tables to be included in the report, e.g. presentation of O:H antigens instead of only O, combine sero- and virulence typing separately for eae positive and negative, add sorbitol-fermenting O157 as a O-group in the tables, present which countries provide phage type data etc. The fact that mixed infections could not be reported to TESSy was also noticed as a problem.

Listeriosis

The group proposed that descriptions of the national surveillance systems should be provided in the report. There was also a request that ECDC should provide guidance on how to assess the underreporting of diseases at the national level. The most useful indicator of severity for listeriosis was seen to be proportion of pregnancy-associated cases. Since the disease most often leads to hospitalisation, this indicator was seen as less useful, though it was stressed that when comparisons are made to other diseases it would still be useful to present this indicator. Clinical manifestation would also be a good severity indicator; however, this variable is not yet in TESSy. Trend maps with percentage increase or decrease per country was proposed as a suitable way to present some country-specific variables. When analysis is made on top serotypes, all four dominating serotypes should be shown. It was also requested that, in the age-specific analysis, the oldest age group should be split into smaller intervals.

Conclusions and next steps

The country presentations emphasised the value of good collaboration between epidemiologists and microbiologists in foodborne outbreak investigations. They also highlighted the occurrence of multisource and multinational outbreaks, which seems to be on the rise as the international food trade – and also trade with live animals – increase. This presents challenges for the outbreak investigations. Genotyping and monitoring the evolvement of strains is necessary to identify linkages. The good examples of national, bilateral and international laboratory networks presented will surely assist in this. The need for a European molecular typing database, like PulseNet Europe, was once again highlighted and ECDC continues working towards implementation of such a database.

The molecular laboratory methods presented during the meeting had all different advantages and will likely be implemented by several laboratories within the coming years. It is, however, important that also the 'old' methods are supported in terms of centralised databases, trainings and EQAs, since they will most probably be kept in use for many years to come. This is also important because the traditional methods are still being used in the animal and food sector and are essential for comparisons with historical data.

The initiative on the document *Minimum requirements for NRL services* was appreciated in all working groups. The methods agreed upon should, if not performed in each NRL, be available to each NRL through collaboration with other laboratories. Some countries also offered to give bilateral support in terms of providing training at their labs. The document will be revised according to the suggested changes, consolidated with the assistance of the coordination group and put on the extranet for further input from the entire network before being published on the ECDC website. A similar document, or additions to this document, will be produced for discussion in the 2011 annual meeting regarding NRL services for *Campylobacter*, *Yersinia* and *Shigella*.

One of the conclusions from the working groups on communication in international outbreak investigations was that the use of information in the different alerting systems needs to be clarified. The discussions gave important input also to the outbreak investigation toolkit.

The suggestions from the working groups on the enhanced surveillance report were very relevant and will be used in the outputs of the report. The first draft of the report will be sent for consultation to the coordination group and the second draft to the entire FWD network.

One conclusion that was reached in working groups, both on laboratory services and the enhanced surveillance report, was the need for harmonisation of antimicrobial susceptibility testing according to EUCAST, as the results today are not comparable and standardised methods and criteria are missing for several pathogen/antimicrobial combinations.

ECDC highlighted that the data in TESSy now is available to all TESSy users. Few of the FWD network participants, however, appeared to have tried it out. Presentation on the use of TESSy and how to obtain the data might be needed.

The meeting was overall well appreciated and received high scores in the participants' evaluations. Regarding the form of the meetings, annual meetings were preferred by the majority and there was a draw on whether all six or only three priority diseases should be covered in each meeting. The poster session, which was introduced in this meeting, would need a separate time slot, not coinciding with coffee breaks. ECDC will investigate whether the next annual meeting could be organised together with the veterinary and food experts.

Finally, ECDC would like to thank all the meeting participants for the valuable input to the event and to the development of an international collaboration in surveillance and outbreak investigation of FWD in the EU.

Annex 1. Meeting programme

Monday, 21 June

18:00 Reception at Dublin Castle arranged by the Irish Ministry of Health and Children.

Tuesday, 22 June

08:30 – 09:00 Registration

09:00 – 09:15 Welcome
Tony Holohan, Chief Medical Officer Department of Health and Children
Johanna Takkinen, ECDC

09:15 – 09:45 Invited speakers: Typing methods for *Listeria*
Marc Lecuit & Sylvain Brisse, Pasteur Institute

09:45 – 10:15 Briefing on ECDC FWD activities (1)
ECDC FWD team

10:15 – 10:30 Update from the Food Hygiene, Alert Systems and Training (E2) Unit of the European Commission
Leena Rasanen, European Commission

10:30 – 11:00 Coffee break/Poster session

1. Molecular subtyping of Finnish *Salmonella* Typhimurium strains using PFGE and MLVA methods. *Taru Kauko & Anja Siitonen (FI)*
2. MLVA confirms the causative agent of a dispersed outbreak of *Salmonella* Typhimurium DT42 (DT42) in New Zealand. *Muriel DuFour (NZ)*
3. Monophasic *Salmonella enterica* serovar 4,[5],12:i:- in Greece. *Georgia Mandilara (GR)*
4. Recent rise of *Salmonella* Enteritidis in Canada. *Frank Pollari, Chris Grant, Andrea Nesbitt, Matthew Gilmour et al (CA)*
5. Intersectoral collaboration and investigation: Sporadic infections, caused by rare *Salmonella* serovars. *Dagmar Gavačová (SK)*
6. Epidemiology of salomonellosis and campylobacter infection in Estonia, 2005–2009. *Natalia Kerbo and Jevgenia Epshtein (EE).*
7. Preliminary evaluation of multiplex PCR-based O157 IS-printing method for subtyping of verocytotoxin-producing Escherichia coli O157. *G Buvens, O Soetens, S Lauwers, D Piérard (BE)*
8. Laboratory surveillance of VTEC in Ireland. *Anne Carroll (IE)*
9. National Enteric Pathogens Laboratory-based Surveillance Network in Turkey. *Belkis Levent (TR)*

11:00 – 11:15 Introduction to parallel sessions

11:15 – 12:45 Working groups on Minimum requirements for National Reference Laboratories and methods harmonisation
Chairs:
Martin Cormican – Salmonella
Flemming Scheutz – VTEC
Grzegorz Madajczak – Listeria

12:45 – 13:45 Lunch

13:45 – 14:30 Country presentations (1)
Chair: *Piotr Wysocki, ECDC*

1. Emergence of monophasic *S.*Typhimurium DT193 in human cases in Europe – news of the European working group. *Angelika Fruth (DE)*
2. *Salmonella* Goldcoast outbreak investigation in Hungary. *Judit Krisztina Horvath (HU)*
3. *Salmonella* Goldcoast investigation in Italy. *Gaia Scavia (IT)*

14:30 – 14:45 ECDC tender: Outbreak investigation toolkit
Steen Ethelberg & Karin Nygård

14:45 – 15:10 International outbreak investigation: Hepatitis A from semi-dried tomatoes
Jet de Valk (FR) & Linda Verhoef (NL)

15:10 – 15:30 Coffee break

15:30 – 16:30 Case discussion on Communication and reporting in international outbreaks
Facilitators:
Karin Nygård – Group 1
Annick Lenglet – Group 2
Celine Gossner – Group 3
Andrea Ellis – Group 4
Steen Ethelberg – Group 5
Andreas Jansen – Group 6

16:30 – 16:45 Feedback from discussions on communication in international outbreaks

16:45 – 17:30 Country presentations (2)
Chair: *Daniel Palm, ECDC*

1. Surveillance of *Listeria* cases in Denmark by the use of PFGE and MLVA. *Eva Moller-Nielsen (DK)*
2. Listeriosis surveillance in Germany. *Klaus Stark (DE)*
3. Elucidation of the source of an outbreak of food-borne infections with few manifest cases: Multinational listeriosis outbreak 2009/2010. *Ulrich Sagel (AT)*

17:30 Adjourn

19:00 Social event

Wednesday, 23 June

08:45 – 09.15 Welcome day 2; briefing on ECDC FWD activities (2)
ECDC FWD team

09:15 – 09:30 Introduction to working groups

09:30 – 10:50 Working groups on Enhanced surveillance report
Chairs:
Martin Cormican – Salmonella
Flemming Scheutz – VTEC
Grzegorz Madajczak – Listeria

10:50 – 11:10 Coffee break/Poster session
For poster topics, see poster session previous day

11:10 – 11:20 Reimbursement procedures
Teresita Herrera-Viklund, ECDC

11:20 – 12:00 Country presentations (3)
Chair: *Therese Westrell, ECDC*

1. Sorbitol-fermenting E coli O157 outbreak in Norway – an emerging pathogen? *Line Vold (NO)*
2. High-throughput subtyping of *Salmonella* Typhimurium by CRISPOL typing. *François-Xavier Weill (FR)*
3. PulseNet Canada, a Model Network of Networks for Information Sharing. *Chris Grant (CA)*

12:00 – 12:30 Invited speaker: MLST for *Salmonella*
Mark Achtman, University College Cork, Ireland

12:30 – 13:30 Lunch

13:30 – 14:15 Feedback from working groups Day 1 and 2

14:15 – 15:00 Conclusions and next steps

15:00 – 15:10 Closure
Darina O'Flanagan, Director Health Protection Surveillance Centre

15:10 Adjourned and coffee

Annex 2. Participation list

#	Country/ organisation	Family name	First name	Working group
1.	AFSSA-LERQAP	ROUSSEL	Sophie	LIST
2.	Australia	HOGG	Geoff	LIST
3.	Australia	VALCANIS	Mary	SALM
4.	Austria	KORNSCHOBER	Christian	SALM
5.	Austria	MUCHL	Robert	VTEC
6.	Austria	SAGEL	Ulrich	LIST
7.	Belgium	BERTRAND	Sophie	SALM
8.	Belgium	HAMMADI	Samia	LIST
9.	Belgium	PIERARD	Denis	VTEC
10.	Bulgaria	CHRISTOVA	Iva	LIST
11.	Bulgaria	PETROV	Petar	SALM
12.	Bulgaria	STEFANOVA	Venera	SALM
13.	Canada	GRANT	Christopher	
14.	Canada	POLLARI	Frank	VTEC
15.	Czech Republic	DEDICOVA	Daniela	SALM
16.	Czech Republic	KARPISKOVA	Renata	LIST
17.	Czech Republic	PRIKAZSKA	Marta	LIST
18.	Denmark	ETHELBERG	Steen	SALM
19.	Denmark	NIELSEN	Eva Møller	LIST
20.	Denmark	SCHEUTZ	Flemming	VTEC
21.	EC/E2	RASANEN	Leena	
22.	ECDC	DOCHEVA	Milka	
23.	ECDC	GOSSNER	Celine	SALM
24.	ECDC	HERRERA-VIKLUND	Teresita	
25.	ECDC	JANSEN	Andreas	LIST
26.	ECDC	LAHUERTA-MARIN	Angela	VTEC
27.	ECDC	LENGLET	Annick	SALM
28.	ECDC	PURNAT	Tina	SALM
29.	ECDC	TAKKINEN	Johanna	LIST/SALM
30.	ECDC	WESTRELL	Therese	SALM/LIST
31.	ECDC	WYSOCKI	Piotr	SALM
32.	EFSA	MULLIGAN	Kenneth	LIST
33.	Estonia	EPSTEIN	Jevgenia	SALM
34.	Estonia	KERBO	Natalia	SALM
35.	Estonia	PEETSO	Rita	SALM
36.	Finland	KAUKO	Taru	VTEC
37.	Finland	SIITONEN	Anja	SALM
38.	France	DE VALK	Henriette	LIST
39.	France	KING	Lisa	LIST
40.	France	LECUIT	Marc	LIST
41.	France	WEILL	François	SALM
42.	Germany	FRANK	Christina	SALM
43.	Germany	FRUTH	Angelika	VTEC

#	Country/ organisation	Family name	First name	Working group
44.	Germany	STARK	Klaus	LIST
45.	Greece	MELLOU	Kassiani	LIST
46.	Hungary	HERPAY	Mária	VTEC
47.	Hungary	HORVATH	Judit Krisztina	LIST
48.	Hungary	PÁSZTI	Judit	LIST
49.	Ireland	ACHTMAN	Mark	SALM
50.	Ireland	CARROLL	Anne	VTEC
51.	Ireland	CORMICAN	Martin	SALM
52.	Ireland	GARVEY	Patricia	VTEC
53.	Italy	GIANFRANCESCHI	Monica	LIST
54.	Italy	LUZZI	Ida	SALM
55.	Italy	SCAVIA	Gaia	VTEC
56.	Japan	TERAJIMA	Jun	
57.	Latvia	SELDERINA	Solvita	VTEC
58.	Lithuania	KIRSLIENE	Jurate	SALM
59.	Lithuania	LIAUSEDIENE	Rasa	SALM
60.	Lithuania	ZAGREBNEVIENE	Galina	SALM
61.	Malta	BARBARA	Christopher	
62.	Malta	GATT	Anthony	SALM
63.	Malta	SAMMUT	Sandro	SALM
64.	Netherlands	FRIESEMA	Ingrid	VTEC
65.	Netherlands	HECK	Max	SALM
66.	Netherlands	VERHOEF	Linda	SALM
67.	New Zealand	DUFOUR	Muriel	SALM
68.	Norway	NYGÅRD	Karin	SALM
69.	Norway	VOLD	Line	LIST
70.	Norway	WESTER	Astrid Louise	VTEC
71.	Poland	MADAJCZAK	Grzegorz	LIST
72.	Poland	SADKOWSKA-TODYS	Małgorzata	SALM
73.	Poland	SZYCH	Jolanta	SALM
74.	RIVM, NL	JACOBS-REITSMA	Wilma	SALM
75.	RKI	FRIEDRICH	Alexander	
76.	Romania	DAMIAN	Maria	VTEC
77.	Romania	HUSEIN	Codruta	SALM
78.	Romania	ZOTA	Lavinia	LIST
79.	Slovakia	MAKAN	Radoslav	VTEC
80.	Slovakia	MUSILOVA	Monika	SALM
81.	Slovakia	SLACIKOVA	Margareta	LIST
82.	Slovenia	ČRETNIK	Tjaša Žohar	SALM
83.	Slovenia	GRILC	Eva	LIST
84.	Slovenia	TRKOV	Marija	VTEC
85.	Spain	ECHEITA	Aurora	SALM
86.	Spain	HERNANDEZ	Gloria	VTEC
87.	Spain	VAZQUEZ	Julio	LIST
88.	Sweden	IVARSSON	Sofie	SALM

#	Country/ organisation	Family name	First name	Working group
89.	Sweden	LÖFDAHL	Margareta	LIST
90.	Sweden	LÖFDAHL	Sven	VTEC
91.	Turkey	LEVENT	Belkıs	SALM
92.	United Kingdom	ADAK	Bob	VTEC
93.	United Kingdom	COIA	John	SALM
94.	United Kingdom	GRANT	Kathie	LIST
95.	USA	MAHON	Barbara	SALM
96.	WHO Int.	ELLIS	Andrea	
97.	WHO Int.	KRUSE	Hilde	