Reporting of parasitic zoonoses in the European Union

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Rome, 24 May 2011

Outline

• Zoonoses data collection
  – Tasks of the EFSA Unit on Biological Monitoring
  – Reporting according to the Zoonoses Directive
• European Union Summary Reports
  – 2009 EUSR
  – Mandate on Meat Inspection
• Conclusions

Zoonoses Data Collection

• The Unit on Biological Monitoring runs the annual collection and analyses of data for food, feed and animals on:
  – Zoonoses,
  – Antimicrobial resistance,
  – Microbiological contaminants and
  – Food-borne outbreaks
• The data are submitted to EFSA by the Member States (MSs) and other reporting countries in accordance with Directive 2003/99/EC on the monitoring of zoonoses and zoonotic agents
• EFSA took over this task in 2005
• MSs have an obligation to report each year

Zoonoses Data Collection

• According to the Directive, the data collection is mandatory for 8 zoonoses:
  – Salmonella (+ antimicrobial resistance)
  – Campylobacter (+ antimicrobial resistance)
  – Listeria monocytogenes
  – Brucella
  – Tuberculosis due to Mycobacterium bovis
  – Verotoxigenic Escherichia coli
  – Trichinella
  – Echinococcus

And also for food-borne outbreaks

Zoonoses Data Collection

• For other zoonoses the monitoring is requested according to the epidemiological situation in each MS:
  – Viral zoonoses
  – Bacterial zoonoses
  – Parasitic zoonoses
    • Anisakiasis
    • Cryptosporidiosis
    • Cysticercosis
    • Toxoplasmosis
• Additionally 3 microbiological contaminants

The Unit on Biological Monitoring

• Under “Science” and “Risk assessment and scientific assistance”
• At the moment 15 persons
• Two main tasks:
  1. Annual data collection and reporting on zoonoses in EU (EUSR) (Directive 2003/99/EC), and
  2. Analyses of Community-wide baseline surveys (BS) on zoonotic agents (Regulation EC 2160/2003).

1. Annual data collection and reporting on zoonoses in EU (EUSR) (Directive 2003/99/EC), and

2. Analyses of Community-wide baseline surveys (BS) on zoonotic agents (Regulation EC 2160/2003).
analyses of the zoonoses data

- In most cases the data received is not directly comparable between the MSs, but it is often between the years within one country.
- Analyses of trends over the years (in MS/EU). They provide information:
  - on developments at the European Union
  - re-emerging zoonoses
  - impact of control measures/programmes
- Spatial distributions (maps)
- Identification of sources of human infections (which foodstuffs/animal species)

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zoonoses data collection

data collection at MS level

National reporting officer coordinates the data collection from several national/regional institutions

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web application

- Reporting Period: from 1 April to 31 May
- Preparation of the Annual Report:
  - Data Collection: April – May
  - Data Validation: June
  - Data Analysis: July – August
  - Draft Annual Report: September
  - Consultation: October
  - Final Annual Report: November – December
  - Publication: January

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European Union Summary Reports (EUSRs)

- Prepared in collaboration between EFSA and the European Centre for Disease Prevention and Control (ECDC)
- Two annual reports currently:
  - EUSR on zoonoses and food-borne outbreaks in EU
  - EUSR on antimicrobial resistance in EU
- The only reports on integrated analyses of data on food safety at a supra-national level in the world
- Cover feed-animals-food-humans

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The zoonoses EUSRs include:

- An in-depth analysis for the most common zoonoses and zoonotic agents,
  - where a substantial amount of data is available each year
  - where there is the need to follow trends to verify the progress made in control eradication programmes

- A lighter overview for zoonoses
  - where less data is available
  - where no major annual development in the European Union are expected to take place in the short term
  - Data are only reported every third year for zoonoses
  - where annual data is often scarce

Most common zoonoses and zoonotic agents:
- Salmonella
- Campylobacter
- Listeria monocytogenes
- Trichinella
- Echinococcus
- Toxoplasma

Other important but less common zoonoses:
- Tuberculosis due to M. bovis
- Brucella
- VTEC

Zoonoses where less data is available and no major annual developments are expected:
- Yersinia
- Coxiella burnetii (Q fever)
- Cysticercus
- Francisella

Microbial contaminants:
- Enterobacter sakazakii
- Histamine, staphylococcal enterotoxins

EUSR 2009 - Human cases in EU, 2009

Campylobacteriosis and salmonellosis continued to be the most often reported zoonoses in humans in EU

EUSR 2009 - Parasites in EU, 2009

Reporting countries (animals-food):
- Trichinella: All MSs; Non-MSs: CH, NO
- Echinococcus: 25 MSs; Non-MSs: CH, NO
- Toxoplasma: 18 MSs; Non-MSs: CH, NO
- Cysticercus: 2 MSs
- Anisakis: 1 MS
- Sarcocystis: No data reported

EUSR 2009 - Trichinella in humans and pigs in EU, 2007-2009

Same MSs having the highest incidence and prevalence
- Humans
- Pigs (very seldom found: 0.0002%)

EUSR 2009 - Trichinella in other animals in EU, 2007-2009

More frequently reported in wild boar
- Farmed wild boar
- Hunted wild boar (0.2% at EU level)
Norway - - 1 0 1 0 1 0
Slovakia 794 136 59 0 2 0 14 0
Romania - - 342 51 - - - -
Portugal 13 2 - - - - 18 0
Poland 4 0 - - - - 17 0
Estonia - - 146 20 - - 45 27
Denmark 261 0 - - 28 0 329 2
Belgium 265 0 - - - - 35 0
Austria - - - - - - 10 0
Echinococcus in animals in EU, 2007-2009
EUSR 2009

Switzerland - - -
Slovakia 1 0 0
Poland 250 10 4.0
Netherlands 41 0 0
Luxembourg 23 4 17.4
Dogs
Total (9 MSs in 2009) 1,714 266 (15.5%) 1,141 139 (12.2%) 1,349 215 (15.9%)
Sweden - - - - - 1
Latvia 48 4 54 19 78 7
Foxes, E. multilocularis (often in central EU)

Other bacterial causative agents
Other causative agents

Echinococcus in animals in EU, 2007-2009
EUSR 2009

Country Species spp. 426,504 0 2,942,912 0 773 0 252,873 0 3,807 0
E. g.
E. spp. 17,308 0 - - 126,608 0 136,705 0 - -
E. spp. 507,200 0 18,972,880 0 - - - - - -
E. spp. 268,056 0 - - - - 25,687 0 - -
E. spp. 1,730,438 0.2 6,093,180 <0.1 27,055 2.5 306,048 11.3 21,313 <0.1
E. g.
spp. 619,617 <0.1 5,537,389 0 4,967 0 121,547 <0.1 - -

Increasing numbers of MSs have provided data on Toxoplasma in animals, which may indicate recognition of the important public health burden of this parasite.
There is still a lack of information on the context of the testing and therefore the data cannot be regarded as comparable between MSs and reporting years.

Toxoplasma in animals in EU, 2007-2009
EUSR 2009

Foxes, Bears, Raccoon dogs, Other wildlife

Food-borne outbreaks in EU, 2007-2009
EUSR 2009
EUSR 2009
Food-borne outbreaks in EU, 2009

<table>
<thead>
<tr>
<th>Country</th>
<th>Total outbreaks</th>
<th>Poss. outbreaks</th>
<th>N</th>
<th>Human cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Germany</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hungary</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Poland</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Romania</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Spain</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>EU Total</td>
<td>51</td>
<td>11</td>
<td>28</td>
<td>0</td>
</tr>
</tbody>
</table>

- High hospitalisation rate: 45.3% of cases in verified FBOs

Food vehicle
Known in 37 verified outbreaks:
- 7 FBOs linked to wild boar meat
- 30 FBOs linked to pig meat and product thereof

Origin of the problem
- In 31 FBOs the meat was not inspected and tested for Trichinella

EUSR 2009
Food-borne outbreaks in EU, 2009

Mandate on meat inspection

Background
In November 2008 CVOs agreed on conclusions on modernisation of sanitary inspection in slaughterhouses based on the recommendations issued during a seminar organised by the French Presidency. They were considered in the Commission Report.

Council Conclusions on the Commission report (November 2009) invite the Commission to prepare concrete proposals allowing the effective implementation of modernised sanitary inspection in slaughterhouses while making full use of the principle of ‘risk-based approach’.

The Commission shall consult EFSA on certain matters falling within the scope of the Regulation wherever necessary.

Scope
Requests for technical assistance defining harmonised human health epidemiological criteria to carry out risk analysis within the scope of meat inspection

SCOPE:
- Technical assistance on harmonised epidemiological criteria for specific public health hazards in food and animals to be used by risk managers in case they consider the current methods for meat inspection address the relevant risk not adequate
- Where possible, such epidemiological criteria should be based on monitoring activities already laid down in European Union provisions; e.g. Zoonoses Directive

Terms of reference
1. Define harmonised epidemiological criteria for specific hazards already covered by current meat inspection (trichinelliosis, tuberculosis, cysticercosis, …) and for possible additional hazards identified in a scientific opinion on the hazards to be covered by inspection of meat (see Annex 1), which can be used to consider adaptations of meat inspection methodology (e.g. prevalence, status of infection).
2. Provide a summary of comparable data from Member States based on the above defined harmonised epidemiological criteria, if existing, e.g. from ongoing monitoring in humans, food or animals.
3. Recommend methodologies and minimum monitoring/inspection requirements to provide comparable data on such harmonised epidemiological criteria, in particular if comparable data are missing. These criteria should also be achievable in small Member States.
For the following animal species
domestic swine, poultry, bovine animals over six weeks old,
bovine animals under six weeks old, domestic sheep and
goats, farmed game and domestic solipeds

Interpretation of harmonised epidemiological indicator:
prevalence or incidence of the hazard at certain stage of
food chain that correlates to human health risk caused
by the hazard and to possibility/need to amend meat
inspection method.

<table>
<thead>
<tr>
<th>Indicators (animal/food category/other)</th>
<th>Food chain stage</th>
<th>Analytical/diagnostic method</th>
<th>Specimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEI 1 Free-range and backyard pigs (both fattening and breeding pigs)</td>
<td>slaughterhouse</td>
<td>digestion</td>
<td>meat</td>
</tr>
<tr>
<td>HEI 2 Indoor pigs from non-controlled housing conditions (both fattening and breeding pigs)</td>
<td>slaughterhouse</td>
<td>digestion</td>
<td>meat</td>
</tr>
<tr>
<td>HEI 3 Farms with granted controlled housing conditions and Trichinella free status</td>
<td>farm</td>
<td>auditing</td>
<td></td>
</tr>
<tr>
<td>HEI 4 Wildlife: potentially infected susceptible mammal species (e.g. wild boar, raccoon dogs, foxes, bears)</td>
<td>environment</td>
<td>digestion</td>
<td>meat</td>
</tr>
</tbody>
</table>

Trichinella

Cysticercus

<table>
<thead>
<tr>
<th>Indicators (animal/food category/other)</th>
<th>Food chain stage</th>
<th>Analytical/diagnostic method</th>
<th>Specimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEI 1 All pigs (both fattening and breeding pigs)</td>
<td>slaughterhouse</td>
<td>Visual meat inspection + PCR for confirmation</td>
<td>meat</td>
</tr>
</tbody>
</table>

Toxoplasma

<table>
<thead>
<tr>
<th>Indicators (animal/food category/other)</th>
<th>Food chain stage</th>
<th>Analytical/diagnostic method</th>
<th>Specimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEI 1 Farms with granted controlled housing conditions (including control of cats and birds)</td>
<td>farm</td>
<td>serology</td>
<td>blood</td>
</tr>
<tr>
<td>HEI 2 Breeding pigs from controlled housing conditions</td>
<td>slaughterhouse</td>
<td>serology</td>
<td>blood</td>
</tr>
<tr>
<td>HEI 3 All pigs from non-controlled housing conditions</td>
<td>slaughterhouse</td>
<td>serology</td>
<td>blood</td>
</tr>
</tbody>
</table>

Conclusions

- European Union Summary Reports provide an interesting overview of the situation and developments in the EU, but ........
  - Further harmonisation of monitoring and reporting is needed to facilitate a better interpretation and analyses of the data
  - Good collaboration between veterinary/food and public health sectors is crucial for a good quality of zoonoses data to be analysed

Thank you for your attention!
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