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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

SURVEILLANCE REPORT

Annual epidemiological report on communicable diseases in Europe

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Foreword

Monitoring and analysing trends in infectious diseases across Europe is one of the core functions of ECDC. Gathering high quality, comparable EU-wide data enables ECDC to identify trends that may be missed when just looking at national data in isolation. By providing relevant public health data, information and reports to decision-makers, professionals and healthcare workers, it also enables the EU Institutions, and indeed national governments, to develop better policies and actions that may reduce the incidence and prevalence of these diseases in Europe. There is clear added value in having Europe-wide data, such as that presented in this report.

Of course, differences between countries' data need to be treated with caution. For example, in some instances, differences in the incidence of new cases reported are due to the fact that some countries have more proactive screening or case finding policies than others. This certainly seems to be the case with *Chlamydia* infection. In other instances, differences are due to factors outside the control of health authorities. Nonetheless, sometimes differences are indicators that disease prevention policies are being more successful in some countries than others.

ECDC is not a political body. It is not our role to tell countries how to run their public health systems. But it is our job to let EU and national health policy makers have the facts – even if these facts may occasionally be uncomfortable for some.

This is the fourth Annual Epidemiological Report that ECDC has produced. Steadily, every year, ECDC and its national counterparts in the Member States are improving the quality and comparability of the data we collect. Since 2006, data on all the key infectious diseases monitored at EU level has been fed into a single, unified database known as The European Surveillance System (TESSy). We are therefore able to look at EU-wide trends over the last few years based on a standard, comparable, EU-wide data set.

Some of the trends in this year's report are positive. In general, EU citizens enjoy a high level of protection against infectious diseases. Nonetheless, as in previous years, we continue to face challenges: the growing resistance of microbes to the most widely used antibiotics; disease outbreaks in healthcare settings such as hospitals and care homes; rising rates of sexually transmitted infections, particularly HIV and chlamydia; as well as a significant burden of illness and death caused by respiratory tract infections (tuberculosis, influenza and Legionnaires' disease).

In the fight against each of these public health challenges, there is plenty of good practice and innovation in Europe. The role of ECDC is to help policy-makers identify this good practice. To do this, they need reliable and independent public health evidence on the impact of prevention measures. Having high quality, comparable disease surveillance data is fundamental in this quest. That is what we seek to provide in this report. I hope you will find it useful.

Marc Sprenger
Director

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List of abbreviations and acronyms

AIDS	Acquired immune deficiency syndrome
AMR	Antimicrobial resistance
ARI	Acute respiratory infection
CCHF	Crimean–Congo haemorrhagic fever
CJD	Creutzfeldt–Jakob disease
CRI	Congenital rubella infection
DDD	Defined daily dose
EARSS	European Antimicrobial Resistance Surveillance System
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EFSA	European Food Safety Authority
EFTA	European Free Trade Association
EISS	European Influenza Surveillance Scheme
ESAC	European Surveillance of Antimicrobial Consumption
EU	European Union
EuroTB	Surveillance of Tuberculosis in Europe
EUVAC.NET	Surveillance Community Network for Vaccine Preventable Infectious Diseases
EWGLINET	European Working Group for Legionella Infections
HCAI	Healthcare-associated infection
HELICS	Hospitals in Europe Link for Infection Control through Surveillance
Hib	Haemophilus influenzae type b
HIV	Human immunodeficiency virus
HPAI	Highly pathogenic avian influenza
HPRO	Hip prosthesis
HUS	Haemolytic and uremic syndrome
ICU	Intensive care units
IDU	Injecting drug users
IHR	International Health Regulations
ILI	Influenza-like illness
IPD	Invasive pneumococcal disease
IPSE	Improving Patient Safety in Europe
LPAI	Low pathogenic avian influenza
MDR	Multidrug resistance
MMR	Measles mumps & rubella
MRSA	Meticillin-resistant Staphylococcus aureus
MSM	Men who have sex with men
PCV7	Heptavalent pneumococcal conjugate vaccine
PNSP	Streptococcus pneumoniae
SARS	Severe acute respiratory syndrome
SARS-CoV	SARS-associated corona virus
SSI	Surgical site infection
STEC	Shiga-toxin producing Escherichia coli
STI	Sexually transmitted infection
TALD	Travel-associate Legionnaires' disease
TB	Tuberculosis
TESSy	The European Surveillance System
vCJD	Variant Creutzfeldt–Jakob disease
VHF	Viral haemorrhagic fevers
VPD	Vaccine-preventable disease
VTEC	Verocytotoxin-producing Escherichia coli
WHO	World Health Organization
WHO EURO	WHO European Regional Office
WNV	West Nile virus
XDR	Extensively drug resistant

Country codes

AT Austria
BE Belgium
BG Bulgaria
CY Cyprus
CZ Czech Republic
DE Germany
DK Denmark
EE Estonia
EL Greece
ES Spain
FI Finland
FR France
HU Hungary
IE Ireland
IS Iceland
IT Italy
LT Lithuania
LU Luxembourg
LV Latvia
MT Malta
NL The Netherlands
NO Norway
PL Poland
PT Portugal
RO Romania
SE Sweden
SI Slovenia
SK Slovakia
UK United Kingdom

Summary and conclusions

Summary

This report presents the analysis of data reported for 2008 by the 27 EU Member States and three EEA/EFTA countries: Iceland, Liechtenstein and Norway. The main aim of this report is to provide some indication, based on the available data, of where the main burden of communicable diseases now lies in the European Union. In these areas, more concerted action is required in order to decrease the present and potential future burden on society, on public health and healthcare systems, and to reduce human suffering. These data contribute to ECDC's task of providing the evidence-base for action, to help identify and share practices, and to suggest methods for follow-up of interventions.

Although there has been much progress in improving the quality and comparability of the data, the reader is still cautioned against making direct comparisons of the notification rates between countries. Surveillance systems differ widely, and the relationship between reported or notified and actual incidence varies from country to country for many diseases.

For the first time the annual Analysis of Threats monitored in the EU is being reported separately[i].

Antimicrobial resistance and healthcare-associated infections

The most important disease threat in Europe remains that posed by the micro-organisms that have become resistant to antimicrobials . In 2008, 900 laboratories serving more than 1500 hospitals reported their antimicrobial resistance (AMR) data for seven major indicator micro-organisms. This showed a Europe-wide increase of resistance to all antibiotic classes under surveillance for the most common Gram-negative bacteria responsible for bacteraemia and urinary tract infections, *Escherichia coli*. A decrease in the proportion of methicillin-resistant *Staphylococcus aureus* (MRSA) was reported by some countries, although the MRSA proportions remained above 25 % in one third of the countries. The growing threat of multidrug resistance (resistance to a variety of antibiotics in common use), which is being observed more frequently in some Gram-negative bacteria such as *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*, continues to cause concern.

During the same year, surveillance data on 306 621 surgical interventions from 1422 hospitals and data from 654 hospitals on 9129 episodes of Intensive Care Unit (ICU)-acquired pneumonia and 4077 episodes of ICU-acquired bloodstream infections were reported. The decreasing trends previously observed for surgical site infections following hip prosthesis were confirmed in 2008. The distribution of micro-organisms associated with infections acquired in intensive care units showed a high proportion of third-generation cephalosporin-resistant Enterobacteriaceae, and in particular among *Klebsiella* spp. and *Enterobacter* spp.

Environmental and vector-borne diseases

The outbreak of Q fever reported in the Netherlands between March and December 2007 resurged in 2008. The main cases occurred during the summer period and peaked during weeks 25–28 (mid-June–mid-July). Other European countries such as Germany have also reported changing trends for Q fever and an increase in cases in 2008, though to a smaller extent.

Of the communicable diseases in this group with more serious consequences, such as those with potentially haemorrhagic features, Crimean–Congo haemorrhagic fever (CCHF) has extended beyond the traditional endemic areas in the Balkan region. Greece reported its first human case of CCHF in June 2008 from the northern part of the country close to a known endemic area. On the other hand, the enhanced surveillance activities introduced in Italy after the previous year's outbreak of 217 laboratory-confirmed cases of chikungunya fever showed that autochthonous chikungunya fever did not recur, as the few cases that were reported in the EU/EEA were all imported.

Food- and waterborne diseases and zoonoses

Many of the food-borne diseases remain heavily underreported due to the variation in the severity of the clinical picture they produce. Campylobacteriosis remained the most commonly reported cause of gastrointestinal disease in the EU and EEA/EFTA with a rate in 2008 (44.1 per 100 000 population) more or less similar to the previous year's. This is a typical example of a disease that is underestimated, as this infection is particularly known to cause asymptomatic or mild disease leading to a high degree of under-notification.

The overall notification rate of VTEC/STEC infection has also remained relatively unchanged over the last few years (at 0.66 per 100 000). However, the number of reported cases that developed haemolytic uraemic syndrome increased by 42 % in 2008 when compared with the previous year. As for salmonellosis and shigellosis, children under five years old had the highest notification rate of VTEC/STEC infection (4.72 cases per 100 000 population), most likely due to the more severe clinical presentation in this age group and the greater likelihood of hospital admission with each infection.

There has been a steady decrease of salmonellosis over the last three years, although *Salmonella* continued to be the cause of a number of food-borne outbreaks at international, national and sub-national levels in 2008. Due to a data reporting change, this report shows a higher rate of typhoid fever than in the previous years, but

i ECDC. Annual Threat Report 2009. European Centre for Disease Prevention and Control, Stockholm;2101. Available from: http://www.ecdc.europa.eu/en/publications/surveillance_reports/Pages/index.aspx

this is an artefact of improved completeness of reporting rather than a true increase. The vast majority of the typhoid cases are still imported by travellers returning from endemic areas.

In 2008, the overall notification rate of hepatitis A (3.34 per 100 000 population) was slightly higher than in 2007 (2.75 per 100 000 population). The notification rate in Latvia increased from 0.66 in 2007 to 123 per 100 000 population, mainly as a result of a community-wide outbreak that started among intravenous drug users and persons with low income living in conditions with substandard hygiene, but that later extended to the wider community. Similarly, an outbreak of hepatitis A in the Czech Republic initially affected injecting drug users, and subsequently spread to the general population.

HIV, sexually transmitted infections, hepatitis B and C

HIV infection remains one of the main public health threats posed by communicable diseases in Europe. HIV continued to increase of 33 % in the number of reported cases of HIV infection, from 4.2 per 100 000 in 2000 (13 265 cases) to 5.6 per 100 000 (18 019 cases) in 2008. This trend is more worrying when one takes into account that in the EU/EEA a sizable proportion (an estimated 30 %) do not even know they have HIV. The data show that the highest proportion of HIV cases was diagnosed in men who have sex with men (40 %) but with the proportion of heterosexual HIV transmission (29 %) increasing in several countries in Europe. A considerable proportion of newly diagnosed HIV infections in the EU occurred in immigrants from countries with a generalised HIV epidemic (mainly in sub-Saharan Africa). In contrast, despite certain limitations with the data, the number of AIDS diagnoses appears to have decreased, except in the Baltic States.

Chlamydia remains the most frequently reported sexually transmitted infection in the EU/EEA with 335 329 confirmed cases reported (150 per 100 000 population). The true incidence of chlamydia is likely to be higher as this infection is particularly prone to underreporting. It has continued to increase over the past 10 years. This remains a disease of young adults with the notification rate among those aged between 15 and 24 years being 976 per 100 000 population; young women being affected more often than young men.

Although the trend of hepatitis C notifications is relatively stable and the hepatitis B rates seem to have decreased compared with previous years, there are persistent limitations to these data. The interpretation of these trends is hampered by rather large differences between surveillance systems, recent changes in reporting, significant numbers of undiagnosed cases, possible differences in case definitions used (i.e. different use and/or interpretation of hepatitis B markers) and incomplete reporting in some countries. Further, some countries do not distinguish between reports of acute and chronic cases of hepatitis B and C and this, together with the high rate of asymptomatic cases, leads to a mix of data that cannot readily be compared between countries. ECDC is working to improve the enhanced surveillance of these viral infections, including improving the harmonisation of hepatitis B and C surveillance at the European level.

Respiratory tract infections

Each winter, hundreds of thousands of people in the EU become seriously ill and die as a result of seasonal influenza. The 2008/09 influenza season in Europe started in week 48/2008, lasted about 10 weeks in each affected country and ended in week 16/2009, after the peak activity had crossed the continent from west to east and then south-east. The 2008/09 season was first dominated by influenza A(H3N2) and then to a lesser extent by influenza B, with the A(H3N2) accounting for most virus detections overall. The majority of circulating influenza B viruses did not match the B component included in the 2008/09 northern hemisphere influenza vaccine. This is, however, unlikely to have been of particular public health significance given the relatively low prevalence of B viruses observed during this season. In week 19/2009, at the end of the 'normal season', the first pandemic influenza A(H1N1) virus was detected in a sentinel specimen. This was followed by the spring/summer wave of the pandemic.

In 2008, there were again outbreaks of highly pathogenic avian influenza and low-pathogenic avian influenza reported in birds in the EU but these were fewer than in 2007. No human cases associated with these outbreaks were reported.

The notification rate of Legionnaires' disease (legionellosis) in the EU and EEA/EFTA countries remains stable at 1.2 per 100 000 population. The peak of reported cases in July observed in previous years was more prolonged in 2008, extending from June to September. The number of reported cases of travel-associated Legionnaires' disease was lower than in 2007, as was the number of travel-associated clusters.

There has been a sustained mean annual decline in the number of TB cases over the past five years, although 28 EU and EEA/EFTA countries still reported 82 611 TB cases (notification rate of 16.7 per 100 000 population) in 2008. In the EU TB is more common among migrants, the homeless, poor people in inner cities, prisoners, people living with HIV, and drug users, but the 2008 data confirm a heterogeneous picture, with three broad epidemiological categories:

- low-incidence countries, with cases increasingly aggregating in the foreign-origin population and occasionally reporting increasing notifications;
- countries with relatively moderate to high notification rates that are declining, with low levels of MDR TB; and
- countries with relatively high notification rates and with a high proportion of MDR TB cases, but again with declining overall TB rates.

Furthermore, the proportion of combined drug-resistant tuberculosis (MDR TB) cases increased from 4 % to 6 % between 2007 and 2008, mostly due to incomplete or ill-designed treatment regimes. The treatment outcome success rate for these MDR TB cases also remains extremely low at 30.9 % for the 2006 cohort. Although the quality, representativeness and completeness of second-line resistance data can still be improved, the numbers confirm that XDR TB is now established within the EU borders.

Vaccine-preventable diseases

Several of the vaccine-preventable diseases with more serious outcomes (such as polio, diphtheria or tetanus) are now almost eradicated from the EU/EEA. Another success story in almost all EU countries is the impact of the Hib vaccine included in their national immunisation schedules. For the remainder of vaccine-preventable diseases, problems remain with achieving better coverage in the hard-to-reach groups of the population. Also, unwarranted doubts about vaccine safety have set back targets for several of these infections, causing localised outbreaks that should have been completely preventable.

One such disease is measles. The total number of measles cases in EU and EFTA countries was considerably higher in 2008 than in 2007. This was due to large outbreaks in several countries, with the highest number of cases in Switzerland, Italy, Austria, Germany France and the UK. Strong political commitment is needed to reverse this worrying trend.

In contrast, the number of reported and laboratory-confirmed rubella cases decreased between 2007 and 2008. Despite an overall dramatic decrease in the number of cases of congenital rubella infection after the introduction of vaccination, sporadic cases do still occur in Europe. Sub-optimal coverage with the measles–mumps–rubella vaccine can create pockets of susceptible individuals, followed by an increase of those diseases, including congenital rubella infection.

The overall notification rate of invasive pneumococcal disease (IPD) was 5.2 per 100 000 population in 2008, among the highest rate of all vaccine-preventable diseases. There is a wide heterogeneity of IPD surveillance systems in the EU, particularly in the type of surveillance systems in place, their coverage and the case definition used; while in some countries there are no surveillance systems in place. More enhanced surveillance, also involving laboratory surveillance, is being introduced in the EU by ECDC to better monitor the trends in serotypes, especially in those not covered by the vaccine.

Conclusions

This summary of the 2008 data and trends suggests that the priorities for communicable disease prevention and control in the EU have not changed substantially over the last few years. For certain diseases there has been some reduction in the incidence and number of cases through concerted prevention and control action by Member States (even though levels may remain high in specific population segments and risk groups). However, several communicable disease problems remain, with the principal ones being:

- antimicrobial resistance;
- healthcare-associated infections;
- sexually transmitted infections, especially caused by HIV and Chlamydia;
- respiratory tract infections caused by influenza (pandemic potential as well as annual seasonal epidemics), tuberculosis and pneumococcal infections.

For some of these diseases further joint actions (e.g. through vaccination and similar control measures) could lead to the EU, and eventually Europe, being declared ‘free’ of the disease, as is the case for several vaccine-preventable diseases. However, EU Member States are still far from reaching the goals already set by the disease elimination programmes, especially as concerns measles where the declining trend has reversed. Similarly, improving the sensitivity and specificity of rubella surveillance is paramount in view of the WHO 2010 elimination goal. For pneumococcal infections, concerns continue to be raised over the possibility that, after introduction of the vaccine, serotypes covered by the pneumococcal conjugated vaccine may be replaced by serotypes not covered, as has already been observed in the United States.

The data from 2008 continue to maintain that antimicrobial resistance constitutes an increasingly important public health hazard in Europe. The problem calls for international cooperation – as well as concerted efforts at the national level – in order to contain and prevent the occurrence of antimicrobial resistance. Likewise, healthcare-associated infections are a growing problem that needs consistent prevention and control policies. Policy makers will benefit from having the more reliable data that is expected to result from the efforts to improve surveillance systems that are mainly based in hospital or long-term care facilities.

Although the overall trend of TB is a downward one, those of MDR TB and HIV with TB continue to increase. Similarly, the overall HIV trend is increasing. In both cases these two infections demand serious attention to maintain strict national and international prevention and control activities, including further investment in surveillance. The reporting of TB/HIV co-morbidity remains incomplete although there are new plans to improve this situation.

Influenza continued to show how unpredictable the seasonal epidemics can be, with a relatively severe season dominated by A(H3N2) virus that led onto an A(H1N1) pandemic originating in the Americas.

Table A. Overview of overall recent trend, EU notification rate and main age groups affected, for communicable diseases reported at the EU level for 2008

Disease	General trend	EU notification rate cases per 100 000 (2008)	Main age groups affected (2008)
Respiratory tract infections			
Influenza	⟷	No data	0–14
Avian influenza	Insufficient data	0	Insufficient data
Legionnaires' disease (legionellosis)	↑	1.2	≥ 65
Tuberculosis	↓	16.7	25–44
HIV, sexually transmitted infections and blood-borne viral infections			
Chlamydia infection	↑	149.9	15–24
Gonorrhoea	↓	8.6	15–24, 25–44
Hepatitis B	↓	1.3	25–44
Hepatitis C	↑	9.0	25–44
HIV	↑	5.7	25–44
AIDS	↓	1.1	40–49
Syphilis	⟷	4.2	25–44
Food- and waterborne diseases and zoonoses			
Anthrax	↓	< 0.01	Insufficient data
Botulism	⟷	< 0.1	25–44
Brucellosis	↓	0.2	45–64, 25–44
Campylobacteriosis	↑	44.1	0–4
Cholera	↓	< 0.01	Insufficient data
Cryptosporidiosis	⟷	2.4	0–4
Echinocccosis	⟷	0.2	25–44, ≥ 65
Vero/Shiga toxin-producing Escherichia coli (VTEC/STEC)	⟷	0.7	0–4
Giardiasis	↓	59.6	0–4
Hepatitis A	↓	3.3	5–14
Leptospirosis	⟷	0.2	45–64
Listeriosis	⟷	0.3	≥ 65
Salmonellosis	↓	29.8	0–4
Shigellosis	⟷	1.8	0–4
Toxoplasmosis	↓	0.8	15–24
Trichinellosis	⟷	0.1	25–44
Tularaemia	⟷	0.2	45–64
Typhoid/paratyphoid fever	⟷	0.3	0–4, 5–44
Variant CJD	Insufficient data	< 0.01	Insufficient data
Yersiniosis	↑	2.7	0–4
Emerging and vector-borne diseases			
Malaria	⟷	1.2	25–44
Plague	Insufficient data	0	Insufficient data
Q Fever	⟷	0.4	45–64
Severe acute respiratory syndrome (SARS)	Insufficient data	0	Insufficient data
Smallpox	Not applicable	0	Insufficient data
Chikungunya fever	Insufficient data	< 0.01	45–64
Dengue fever	Insufficient data	0.1	25–44
Hantavirus infection	Insufficient data	1.4	25–44, 45–64
West Nile fever	Insufficient data	< 0.01	Insufficient data
Yellow fever	Insufficient data	0	Insufficient data
Vaccine-preventable diseases			
Diphtheria	↓	< 0.01	5–14, 45–64
Invasive infection caused by Haemophilus influenzae	↓	0.5	≥ 65, 0–4
Invasive meningococcal disease	↓	0.9	0–4
Invasive pneumococcal infection	↓	5.2	≥ 65, 0–4
Measles	⟷	0.9	0–4
Mumps	↓	2.8	5–14
Pertussis	⟷	5.3	5–14
Poliomyelitis	Insufficient data	0	Insufficient data
Rabies	↓	< 0.01	Insufficient data
Rubella	↓	0.6	0–4
Tetanus	↓	< 0.1	≥ 65
Antimicrobial resistance and healthcare-associated infections			
Antimicrobial resistance	↑	Not applicable	Insufficient data
Healthcare-associated infections	↑	Not applicable	Insufficient data

1 Introduction

1.1 Background

This report aims to give an overview of the situation of communicable diseases in Europe, using data on the 47 communicable diseases and two health issues for which surveillance is mandatory in the EU and three EEA/EFTA countries. The analysis is based on: data collected for 2008 from the surveillance systems of the Member States and uploaded into The European Surveillance System (TESSy); selected data and reports made available by the Dedicated Surveillance Networks (DSNs); and various technical and scientific reports and publications related to the epidemiological situation of communicable diseases in 2008.

This Annual Epidemiological Report is primarily intended for epidemiologists, scientists, policymakers and their key advisors to enable them to make better evidence-based decisions, using the available data to enhance prevention and control programmes and plans dealing with these diseases.

1.2 Structure of the report

This year, the report follows a slightly modified style from previous editions in order to focus more on the surveillance data. Information on health threats is now published separately as the *Annual Threat Report 2009*. Similarly, in-depth reviews of the current situation of a particular disease or disease group are no longer included in this volume, but will be published individually.

The current report comprises:

Summary and conclusions—a synthesis of the main findings in the disease-specific chapters and the implications for European public health..

This chapter provides the background and methods, describing the main data sources and their limitations, as well as the analytical methods used.

Chapter 2 presents an overview of the epidemiological situation in 2008 for each of the 47 communicable diseases and two health issues under mandatory EU-wide surveillance (Commission Decisions 2000/96/EC, 2003/534/EC and 2007/875/EC). Tables and graphs are used to summarise the key findings and to illustrate/emphasise the text. References are listed after each chapter or sub-chapter.

1.3 Description of methods

This *Epidemiological Report on Communicable Diseases in Europe* has continued to show improvements in the harmonisation of systems, definitions, protocols and data at the EU level. Nevertheless, the basic epidemiological data provided by the Member States still show a number of inconsistencies. There are several examples where the quality and comparability of the data are clearly not ideal and more work is planned to see how best to improve this situation. In addition under-reporting may be considerable in some countries and especially so for certain diseases like the sexually transmitted infections. Therefore, comparing numbers and reported rates between countries may be misleading given these major differences in reporting systems and reporting behaviour.

Data collection

The data were uploaded and validated by the Member States using ECDC's online system for the collection of surveillance data (TESSy) and additional data validation was conducted by ECDC staff. The deadline for updates and corrections to the data was 5 March 2010.

Several different sets of data were used, depending on the disease:

- Data that had been submitted for the enhanced surveillance of TB, HIV and STIs.
- For the diseases included in the 2008 *Zoonoses Report*[i] (salmonellosis, campylobacteriosis, listeriosis, tuberculosis due to *Mycobacterium bovis*, brucellosis, rabies, infection with verotoxigenic *Escherichia coli*, yersiniosis, trichinellosis, echinococcosis, Q fever) and for influenza, data that had already been submitted, but any updates by individual Member States were taken into account.
- As the 2008 data collection for enhanced surveillance of invasive bacterial diseases (*Haemophilus influenzae* and meningococcal disease) was planned to be carried out in April 2010, only the common set of variables was requested for this report.
- Data already collected by the dedicated surveillance networks: EARSS (for antimicrobial resistance), EuroCJD (for variant Creutzfeldt–Jakob disease), IPSE (for healthcare-associated infections), EUVACNET (for measles, mumps, pertussis, rubella), EWGLINET (for legionellosis).
- For all other diseases, datasets were collected specifically for this report (anthrax, arenaviruses, botulism, chikungunya fever, Crimean–Congo haemorrhagic fever, cholera, cryptosporidiosis, Dengue haemorrhagic fever (only severe), diphtheria, Ebola or Marburg fever, giardiasis, hantavirus infections, hepatitis A, leptospirosis, malaria, plague, pneumococcal infections, poliomyelitis, Q fever, Rift Valley fever, severe acute respiratory syndrome, shigellosis, smallpox, tetanus, toxoplasmosis, tularaemia, viral haemorrhagic fevers (other), West Nile fever, yellow fever).

Variables submitted for this report are described in TESSy metadataset 15. For each disease, either case-based or aggregated data are submitted but case-based data are preferred. In certain cases some Member States

i European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and Foodborne Outbreaks in The European Union in 2008, EFSA Journal; 2010 8(1):1496.

updated their data, usually to eliminate reporting delays or to confirm provisional reports, and this may have caused some minor discrepancies with the numbers published in previous reports. ECDC is working to eliminate these discrepancies for future reports.

The ECDC data managers helped the Member States to validate their submissions. All data were made available to the Member States in online overview tables. In some cases, Member States preferred not to report any data at all on a particular disease, or preferred to report zero cases, even when previous reports had quoted some figures for that disease in that particular country.

Data source

For each disease presented in this report there is an important section that describes the surveillance system or data source. The correct interpretation of the surveillance data relies heavily on this information being up-to-date and accurate. This information was verified by the Members States and updated where necessary.

Overall inclusion criteria and summary tables

For all analyses, only confirmed cases were taken into account for most of the diseases. For some diseases where the case categories were not available, total numbers of cases were used in the analyses. The total number of reported cases (independent of case classification) is also shown in the general overview table. This comprehensive table at the start of the analysis for each disease presents an overview of the number of cases and the disease-specific notification rates (considered to be a preferred term to 'incidence rate' as true estimates of incidence require further studies and information than can be supplied by the routine surveillance system). This is shown for all countries that provided information throughout the whole of 2008, with some 2006 and 2007 data. Notification rates are calculated by dividing the number of confirmed cases by the official estimate of the population for that year multiplied by 100 000. If 'zero' cases are reported, then the notification rate would similarly be zero. This table suffers from the limitation that some countries report figures that were collected by sentinel systems or by voluntary notification systems that are known not to be nationally representative, while others have more complete national data. These figures would then be listed alongside figures collected from other countries that may have national mandatory notification systems, or even active surveillance and case-finding practices for that particular disease.

Wherever ECDC was informed of such a situation then this is annotated in the text (or in a footnote) and that country's figure has not been used to estimate the overall rates. The report type indicates the way a country reports the data ('C' = Case-based reporting; 'A' = Aggregate data reported; '—' = Not reported; 'U' = Unspecified).

Population data used

EUROSTAT was the source of all the population denominator data. These data were extracted from the EUROSTAT database under 'Population by sex and age on 1 January of each year' for all diseases, except for HIV/AIDS, where population data are based on mid-year estimates (http://epp.eurostat.ec.europa.eu). Totals per year and per country are available for all countries for 2008. For the age- and gender-dependent rates, age- and gender-specific population data from EUROSTAT were again used: the 'Population by sex and age as on 1 January of each year' dataset for 2008. The EUROSTAT age-specific population data were aggregated into the following age groups used in the analysis: 0–4, 5–14, 15–24, 25–44, 45–64 and ≥ 65 years. The main limitations of these data and information are documented in the primary source itself and the usual limitations with regard to the use of secondary sources apply.

Age and gender distribution

For most diseases age–sex rates are available and shown in a figure. It must be noted that the data thus presented is based only on those cases for which both age group and gender were reported. When overall male-to-female ratios are estimated these are based on all cases for which gender was reported. Likewise, rates by age group are calculated for all cases with that information. Therefore, the data presented in the figure will not always reflect the overall picture as discussed in the text.

Where notification rates are presented by age group, only those Member States that provided the age data were included. The numerator consists of all the cases within the given age group from those countries that provided this variable, while the denominator is the sum of the populations within the respective age group, of all these countries that did have cases and provided age-specific information (including those with zero cases reported).

For most diseases, gender-specific notification rates are presented, including the total for the EU/EEA region and with a possible male-to-female ratio or sub-division by country where relevant. Again, only those countries that did provide gender-specific information (including those with zero cases reported) were included in the numerator and denominator.

Distribution by season

This section presents the distribution of the total number of cases per month for each disease for 2008 and also, whenever possible or sensible, a comparison with the same distribution for 2006 and 2007, to show the seasonal trend. Only those countries that provided seasonal data were included. The 'month' variable is in fact the 'DateUsedForStatistics', which is the date that the country chooses as its preferred date for reporting—this could be either date of onset of disease, date of diagnosis, date of notification, or any other date the country uses in its report.

2 Epidemiology of communicable diseases in Europe, 2008

This Chapter is sub-divided into the following main disease groups:

2.1 Respiratory tract infections
Seasonal/pandemic influenza and human infection with avian influenza virus, Legionnaires' disease, tuberculosis.

2.2 STI, including HIV and blood-borne viruses
Chlamydia, gonorrhoea, hepatitis B, hepatitis C, HIV and syphilis.

2.3 Food- and waterborne diseases and zoonoses
Anthrax, botulism, brucellosis, campylobacteriosis, cholera, cryptosporidiosis, echinococcosis, infection with VTEC/STEC, giardiasis, hepatitis A, leptospirosis, listeriosis, salmonellosis, shigellosis, toxoplasmosis, trichinellosis, tularaemia, typhoid/paratyphoid, variant Creutzfeldt-Jakob disease and yersiniosis.

2.4 Emerging and vector-borne diseases
Malaria, plague, Q fever, SARS, smallpox, viral haemorrhagic fevers (including hantavirus, Crimean–Congo haemorrhagic fever, dengue fever, Rift Valley fever, Ebola and Marburg infections and chikungunya fever), West Nile fever and yellow fever.

2.5 Vaccine-preventable diseases
Diphtheria, invasive *haemophilus influenzae* disease, invasive meningococcal disease, invasive pneumococcal disease, measles, mumps, pertussis, poliomyelitis, rabies, rubella and tetanus.

2.6 Antimicrobial resistance and healthcare-associated infections
Antimicrobial resistance and healthcare-associated infections.

For the figures quoted in this report, those below 10 are presented to two significant figures, while numbers above 10 are given as integers only. However, the overall European notification rates are presented in full. For more general information about each communicable disease please refer to Health Topics A–Z on the ECDC website (www.ecdc.europa.eu).

An alphabetical list of diseases and special health issues is given overleaf, for ease of reference.

Alphabetical list of diseases and special health issues

AIDS 44
Anthrax 51
Antimicrobial resistance 167
Antimicrobial use 173
Avian influenza 19
Botulism 53
Brucellosis 56
Campylobacteriosis 59
Chikungunya fever 127
Chlamydia 31
Cholera 63
Crimean-Congo haemorrhagic fever 124
Cryptosporidiosis 66
Dengue fever 125
Diphtheria 133
Echinococcosis 69
Escherichia coli infection 72
Giardiasis 75
Gonorrhoea 35
Hantavirus 122
Healthcare-associated infections 174
Hepatitis A 78
Hepatitis B 38
Hepatitis C 41
HIV 44
Influenza 15
Invasive *Haemophilus influenzae* disease 136
Invasive meningococcal disease 139
Invasive pneumococcal disease 142
Legionellosis 20
Leptospirosis 81
Listeriosis 84
Lymphogranuloma venereum 33
Malaria 111
Marburg virus infection 126
Measles 145
Mumps 148
Pertussis 152
Plague 115
Polio 155
Q fever 117
Rabies 157
Rift Valley fever 126
Rubella 159
Salmonellosis 87
SARS 120
Shigellosis 91
Smallpox 121
STEC/VTEC, infection with 72
Syphilis 48
Tetanus 163
Toxoplasmosis 94
Trichinellosis 97
Tuberculosis 23
Tularaemia 100
Typhoid/paratyphoid fever 103
Variant Creutzfeldt–Jakob disease 106
Viral haemorrhagic fevers 122
VTEC/STEC, infection with 72
West Nile fever 129
Yellow fever 131
Yersiniosis 107

2.1 Respiratory tract infections

Seasonal/pandemic influenza and human infection with avian influenza virus, legionellosis, tuberculosis.

Influenza

- The 2008/09 influenza season started in western Europe in early December 2008, reached central and northern Europe in January 2009 and progressed east and south-east shortly thereafter.
- In most countries, the magnitude of the 2008/09 influenza winter wave was within the range of the previous seasons.
- The 2008/09 season was biphasic; first dominated by influenza A(H3N2), then by influenza B, although influenza A(H3N2) accounted for most virus detections overall.
- The majority of circulating influenza B viruses did not match the B component included in the 2008/09 northern hemisphere influenza vaccine. This is, however, unlikely to have been of particular public health significance given the relatively low prevalence of B viruses observed during this season.
- In week 19/2009, at the end of the 'normal season' the first pandemic influenza A(H1N1) virus was detected in a sentinel specimen.

Epidemiological situation from week 40/2008 to week 20/2009

Sentinel surveillance of influenza-like illness and acute respiratory infection

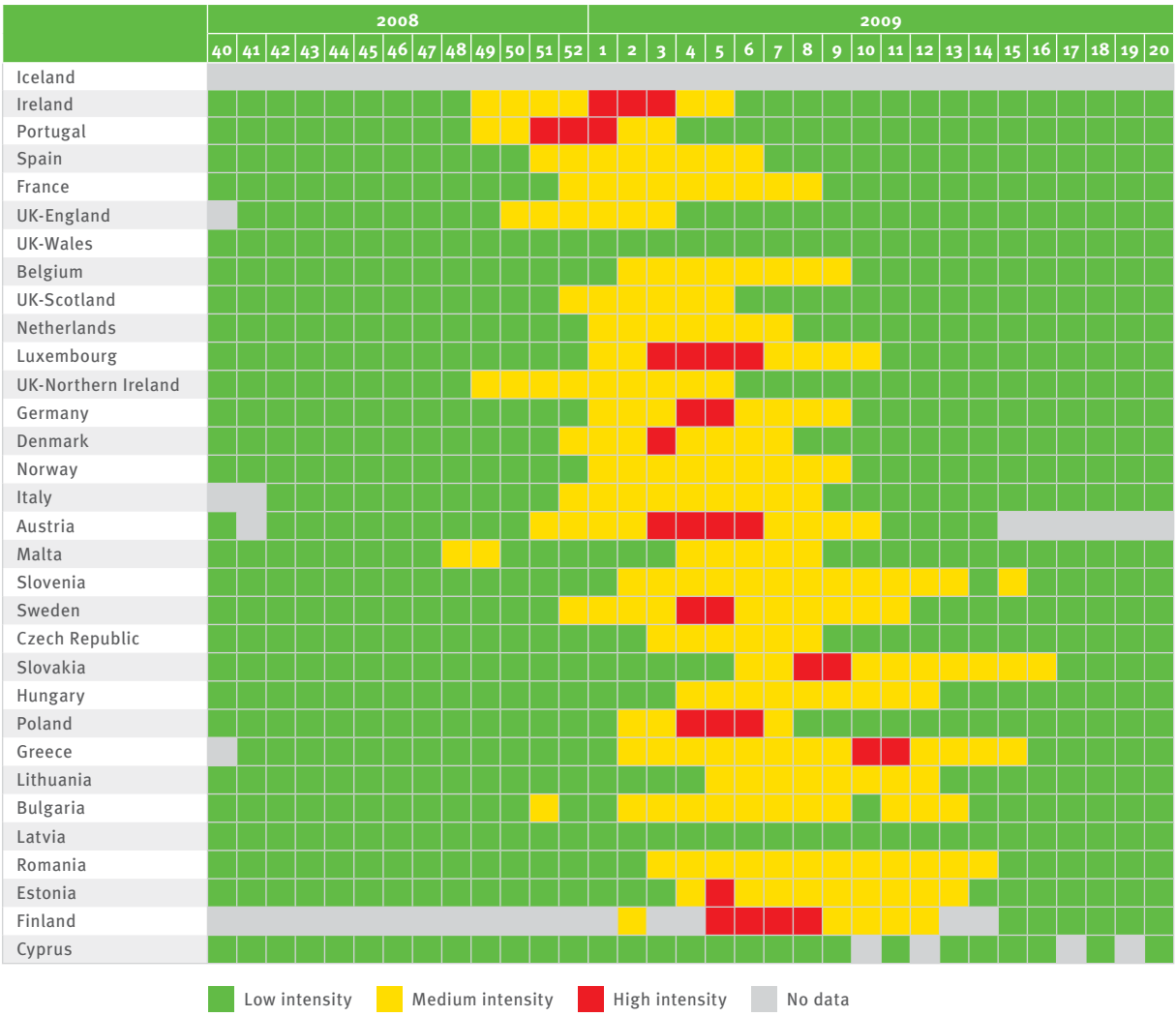
Weekly consultation rates for influenza-like illness (ILI) and acute respiratory infection (ARI) in relation to historical baseline values, semi-quantitatively define the intensity of influenza activity in each EU/EEA Member State. Considering an influenza season to be the period during which at least one country reports medium or high intensity influenza activity, the 2008/09 season in Europe lasted from week 48/2008 to week 16/2009 (Table 2.1.1). Looking at the periods of high intensity, the season peaked between week 51/2008 and week 11/2009. The season started in western Europe in early December 2008, reached central and northern Europe in January 2009 and progressed east and south-east shortly thereafter. In 16 of 23 countries where a historical comparison was possible, the magnitude of the 2008/09 influenza winter wave was within the range of previous seasons. However, Austria, the Czech Republic, Greece, Ireland, the Netherlands, Poland and parts of the UK (England and Wales) registered higher ILI/ARI rates in 2008/09 than in recent winter seasons.

Of 28 countries uploading weekly influenza data, 25 reported medium intensity for three to 13 weeks (median: 8) and 12 reported high intensity for one to four weeks (median: 2.5). Cyprus, Latvia and one part of the UK (Wales) did not report any influenza activity above baseline levels throughout the season.

Of the 20 countries reporting age-specific ILI/ARI rates, most observed the highest intensity levels among children below 15 years of age. However, Ireland, Norway and the UK reported the highest intensity levels not in children, but in those aged between 15 and 64 years, with England, Northern Ireland and Wales also reporting peaks in those aged over 64 years. Virological surveillance based on sentinel and non-sentinel specimens.

During the 2008/09 influenza season, sentinel physicians in Europe collected 30069 respiratory specimens of which 10353 (34.4 %) tested positive for influenza virus. Of these, 81.4 % were type A (mostly subtypes H3 and H3N2), and 18.6 % were type B (Figure 2.2.1). The weekly proportion of influenza-positive sentinel samples peaked at 50.1 % in week 3/2009 and at 35.9 % in week 11/2009 (Figure 2.1.2). The distribution of weekly sentinel samples by influenza type and subtype reveals two distinct peaks, the first attributable to A(H3N2) in week 4/2009, and the second to influenza B in week 12/2009 (Figure 2.1.3). In week 19/2009, the first pandemic influenza A(H1N1) virus was detected in a sentinel specimen.

Table 2.1.1. Intensity of influenza activity in the EU, Iceland and Norway during the 2008/09 season, by country (ordered by geographical longitude) and week of reporting



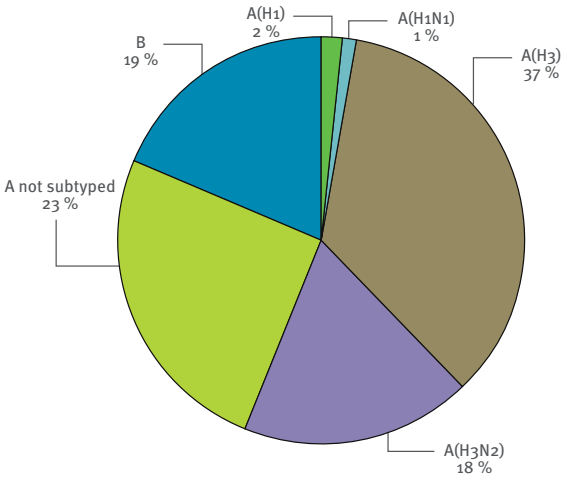
Of 310 genetically characterised influenza viruses from specimens submitted by the sentinel networks, 274 (88.4 %) were found to be A/Brisbane/10/2007 (H3N2)-like, 16 (5.2 %) were A/Brisbane/59/2007 (H1N1)-like, 14 (4.5 %) were A/California/7/2009 (H1N1)v-like, four (1.3 %) were B/England/393/2008-like (B/Victoria/2/87 lineage) and two (0.6 %) were B/England/145/2008-like (B/Yamagata/16/88 lineage). Table 2.1.2 presents the antigenic characterisation results. The circulating influenza A(H3N2) and A(H1N1) viruses were shown to be antigenically closely related to the corresponding components included in the 2008/09 northern hemisphere influenza vaccine, whereas most of the isolated B viruses were Victoria lineage viruses and did not match the B vaccine component (a Yamagata lineage virus).

All A(H3N2) viruses tested were resistant to M2 inhibitors but susceptible to neuraminidase inhibitors (Table 2.1.3). Most of the A(H1N1) viruses tested were resistant to oseltamivir, but not to zanamivir or M2 inhibitors. All A(H1N1)v viruses tested were susceptible to neuraminidase inhibitors but resistant to M2 inhibitors, and all B viruses tested were susceptible to neuraminidase inhibitors.

Discussion

The 2008/09 influenza season in Europe started in week 48/2008, lasted about 10 weeks in each affected country and ended in week 16/2009 after peak activity had crossed the continent from west to east. A similar spatial trend has already been described for some of the previous seasons[1]. Virologically, the 2008/09 season was biphasic, first dominated by influenza A(H3N2), then by influenza B, although influenza A(H3N2) accounted for most virus detections overall. This contrasted with the United States where the 2008/09 season was dominated by oseltamivir-resistant influenza A(H1N1) virus[2], as experienced in Europe the year before[3]. Influenza A(H3N2) viruses are said to cause more severe disease in terms of hospitalisation rates and mortality than influenza A(H1N1) viruses[4,5]. While most European countries

Figure 2.1.1. Distribution of sentinel specimens by influenza type and subtype, week 40/2008–20/2009 (n = 12 499*)



* Not displaying two specimens of influenza A that could not be subtyped.

Figure 2.1.2. Proportion of influenza-positive sentinel samples by week of reporting, week 40/2008–20/2009

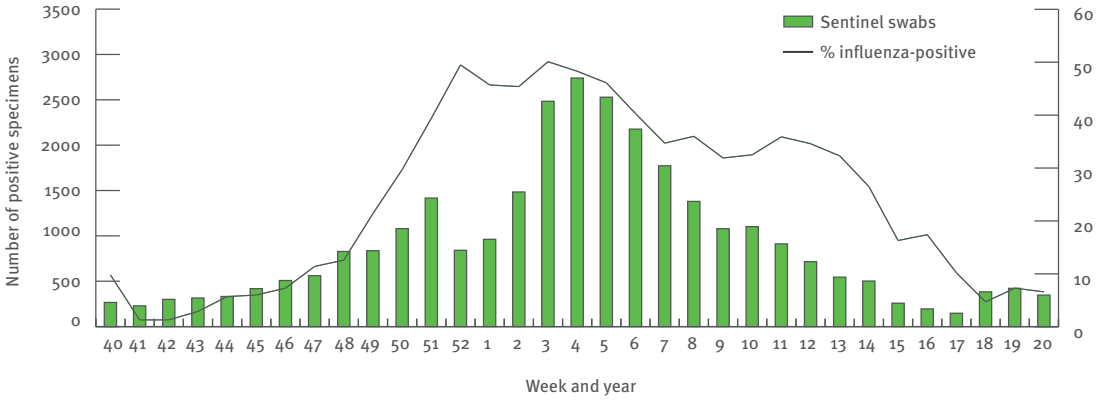


Figure 2.1.3. Proportion of influenza-positive sentinel samples by week of reporting, type and subtype, week 40/2008–20/2009

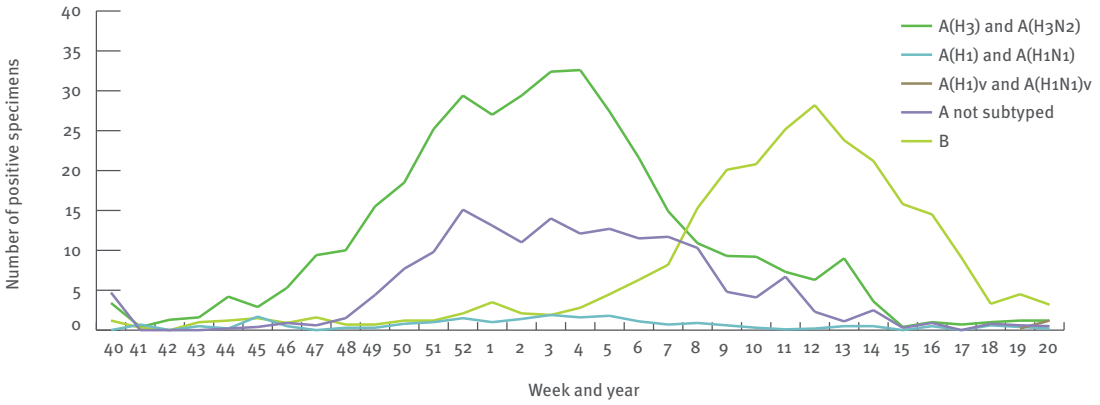


Table 2.1.2. Antigenic influenza virus characterisations, week 40/2008–20/2009, based on sentinel and non-sentinel samples (n = 5 437)

	n	%	Matches vaccine strain[a]
A/Brisbane/10/2007 (H3N2)-like	3 972	73.1	Yes
A/Brisbane/59/2007 (H1N1)-like	202	3.7	Yes
A/California/7/2009 (H1N1)v -like	2	0	
B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage)	1 128	20.7	No
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	89	1.6	No
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	44	0.8	Yes
Total	**5 437**		

(a) As recommended by WHO.

Table 2.1.3. Antiviral resistance by influenza virus type and subtype, week 40/2008–20/2009, based on sentinel and non-sentinel samples

Virus type and subtype	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir			
	n tested	n resistant (%)	n tested	n resistant (%)	n tested	n resistant (%)
A(H3N2)	653	0	612	0	644	644 (100)
A(H1N1)	259	255 (98)	259	0	124	1 (1)
A(H1N1)v	12	0	12	0	5	5 (100)
B	117	0	113	0	not applicable	not applicable

Source: EISS Weekly Electronic Bulletin, week 20/2009.

did not see higher primary care consultation rates during the 2008/09 influenza season than preceding seasons, there are a number of published articles reporting significant additional mortality associated with the winter epidemics[6,7].

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Avian influenza

- There were no reported human cases of avian influenza in 2008 in the EU/EEA.

Epidemiological situation in 2008

In 2008, there were again outbreaks of highly pathogenic avian influenza (HPAI) and low pathogenic avian influenza (LPAI) reported in birds in the EU but these were fewer than in 2007. However, no human cases associated with these outbreaks were reported this year. In addition, it should be noted that the terms 'high pathogenicity' and 'low pathogenicity' refer to the virus behaviour in birds and does not necessarily reflect how humans are affected. Only HPAI A(H5N1) poses a major risk to human health[1]. Cases and clusters of HPAI A(H5N1) in humans are closely monitored by WHO and in January 2010 WHO published a global review of clusters of human cases of A(H5N1) for the period 2003–09[2]. Reassuringly, this report found no increase in the number or size of clusters over that period, i.e. while A(H5N1) viruses remain entrenched in birds in a number of countries (all outside the EU) and continue to change virologically, there are no indications that the viruses have become more transmissible to, or among, humans.

Highly pathogenic avian influenza A(H5N1) and A(H7N7) in birds

The reported outbreaks of HPAI types A(H5N1) and A(H7N7) in the EU and EEA in 2008 are summarised in Table 2.1.4. Only four countries reported HPAI A(H5N1) cases over this period to the World Organisation for Animal Health (OIE). There were eight reports in total, six of which were the result of veterinary investigations of ill domestic poultry. One of these countries (UK) also reported two outbreaks of HPAI A(H7N7) cases.

It is important to note that most of the reported cases in birds are as a result of passive or sentinel surveillance activities and, therefore cases are probably underreported. Passive surveillance involves sampling dead wild birds, while sentinel surveillance is conducted by testing birds caught and released. The future trend, at least in EU countries and by different initiatives started by the European Commission's Directorate-General for Research, is to convert this passive and sentinel surveillance into a more active system of routine monitoring and to sustain the existing sentinel surveillance system among domestic[3] and wild birds[4], in order to better detect these viruses in the environment. This in turn will enable the prediction of potential outbreaks that have immediate implications for humans.

Low pathogenic avian influenza in birds

During 2008, four countries reported outbreaks of LPAI in birds. Belgium reported an outbreak of A(H5N2) in December, Germany reported several outbreaks of A(H5N3) in October and December, Portugal reported an outbreak of A(H5N3) in January and Denmark reported an outbreak of A(H7N1) in April. All of these outbreaks affected only birds, with no reports of infections in humans.

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Table 2.1.4. Reported outbreaks of HPAI A(H5N1) and A(H7N7) in the EU, 2008

Avian influenza type	Country	Type of birds (number of affected wild birds)	Month of reporting
A(H5N1)	Germany	Farm birds	October
	Poland	Farm birds	April
	Romania	Farm birds	March
	United Kingdom	Wild birds (3)	January
		Farm birds	May
		Wild birds (10)	September
A(H7N7)	United Kingdom	Farm birds	June
		Farm birds	August

Source: World Organisation for Animal Health (www.oie.int).

Legionnaires' disease (legionellosis)

- The notification rate in the EU and EEA/EFTA countries remains stable at 1.2 per 100 000 population.
- The peak of reported cases in July observed in previous years was more prolonged in 2008, extending from June to September.
- The number of reported cases of travel-associated Legionnaires' disease decreased compared with 2007 and so did the number of travel-associated clusters.

Epidemiological situation in 2008

Of the 5 789 cases of Legionnaires' disease reported across 28 EU and EEA/EFTA countries in 2008, 5 611 cases were confirmed. Data were not available from two countries (Czech Republic and Liechtenstein). The overall notification rate was 1.2 per 100 000 population (Table 2.1.5) which was similar to the previous two years' rates. The individual country rates varied little between < 0.1 and 2 cases per 100 000 population; only three countries reported a rate over 2 (Denmark, Slovenia and Spain).

Age and gender distribution

Cases of Legionnaires' disease are mainly reported in persons from the older age groups: in 2008, 4 565 (80 %) were 45 years old or older. The male-to-female ratio is 2.9. The notification rates increased with age, from < 0.1 per 100 000 in the under 25 year-olds to 2.9 per 100 000 in persons aged 65 years and above (4.6 per 100 000 in males and 1.7 per 100 000 in females) (Figure 2.1.4).

Seasonality

A clear trend in the monthly reports can be observed across all countries, with cases increasing in May, peaking during summer and then decreasing gradually throughout the winter months. In 2008, the period June to September accounted for 2 449 cases, representing almost 50 % of the reported cases for which month of report was known (Figure 2.1.5).

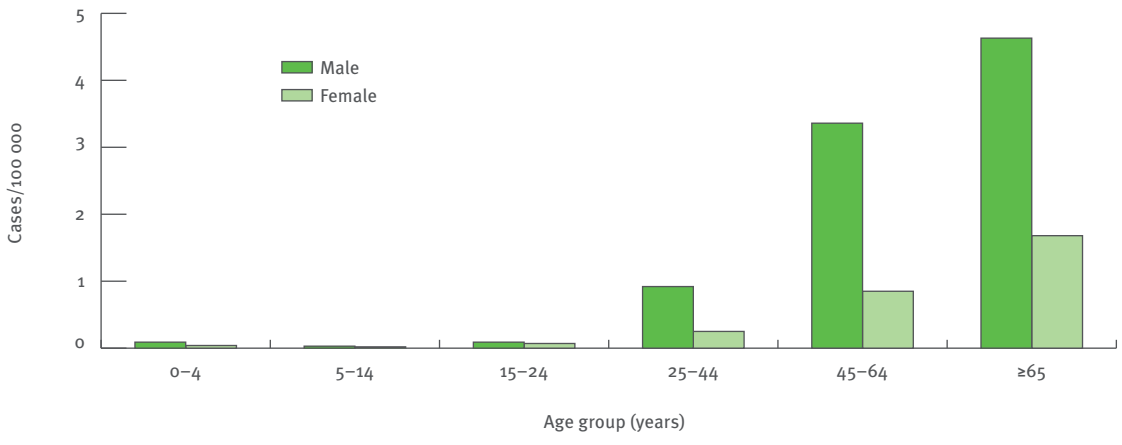
Enhanced surveillance in 2008

EWGLINET was the EU's dedicated surveillance network collecting data on cases of Legionnaires' disease in the EU and travel-associated Legionnaires' disease (TALD). In 2008, 19 of 35 countries participating in the EWGLINET scheme reported a total of 853 individual TALD cases resulting in 108 TALD clusters (252 cluster cases) being identified. The number of reported individual cases has shown an increasing trend since the inception of EWGLINET but in 2008 the reported number of cases decreased compared with 2007 (946 cases). The number of TALD clusters detected in 2008 decreased from 113 such clusters in 2007.

Discussion

The notification rate of reported Legionnaires' disease across the EU and EEA/EFTA remained stable in 2008. Seasonality, age and gender distributions of cases are similar to those observed in previous years. The decrease

Figure 2.1.4. Notification rates of Legionnaires' disease by age and gender, in EU and EEA/EFTA countries, 2008 (n = 5 372)



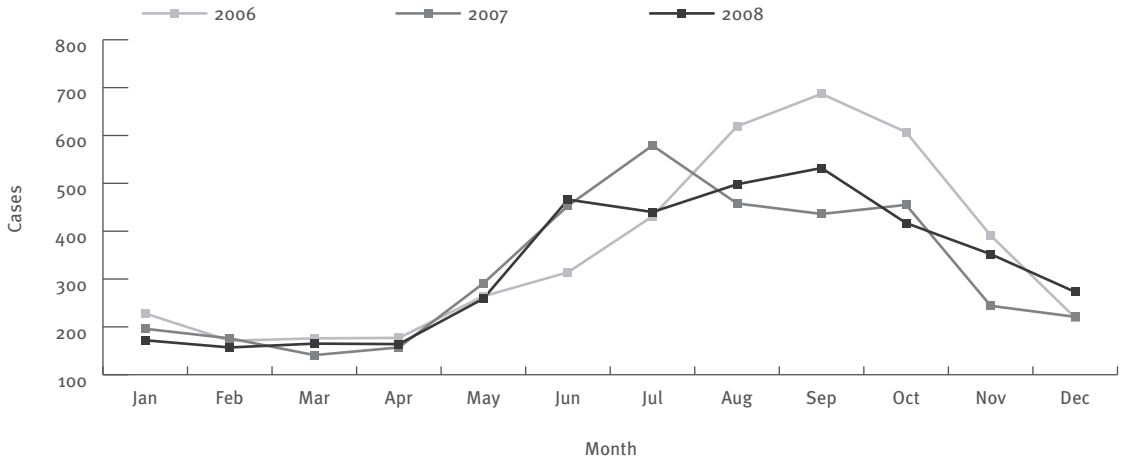
Source: Country reports: Austria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.1.5. Number and notification rate of Legionnaires' disease cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	100	95	1.14	96	1.16	64	0.78
Belgium	A	138	138	1.29	77	0.73	131	1.25
Bulgaria	A	1	1	0.08	1	0.01	2	0.03
Cyprus	C	9	9	1.14	1	0.13	1	0.13
Czech Republic	—	—	—	—	—	—	12	0.12
Denmark	C	130	130	2.37	126	2.31	90	1.66
Estonia	C	7	7	0.52	3	0.22	4	0.30
Finland	C	30	28	0.53	31	0.59	13	0.25
France	C	1 244	1 205	1.88	1 336	2.10	1 385	2.19
Germany	C	522	522	0.63	529	0.64	571	0.69
Greece	C	32	29	0.26	24	0.21	33	0.30
Hungary	C	27	22	0.22	12	0.12	6	0.06
Ireland	C	11[(a)]	10	0.23	14	0.32	12	0.29
Italy	C	1 103	1 043	1.75	936	1.58	814	1.39
Latvia	A	5	5	0.22	2	0.09	2	0.09
Lithuania	A	2	2	0.06	2	0.06	0	0.00
Luxembourg	C	4	4	0.83	5	1.05	7	1.49
Malta	C	3	3	0.73	17	4.17	5	1.23
Netherlands	C	337	309	1.88	286	1.75	379	2.32
Poland	C	15	6	0.02	5	0.01	18	0.05
Portugal	A	102	102	0.96	78	0.74	89	0.84
Romania	A	4	4	0.21	1	0.00	—	—
Slovakia	C	5	5	0.09	2	0.04	4	0.07
Slovenia	C	48	44	2.19	32	1.59	39	1.95
Spain	C	1 318	1 300	2.87	1 012	2.28	955	2.18
Sweden	C	153	153	1.67	127	1.39	105	1.16
United Kingdom	C	396	392	0.64	485	0.80	584	0.97
EU total		5 746	5 568	1.21	5 240	1.08	5 325	1.13
Iceland	C	2	2	0.63	4	1.30	1	0.33
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	41	41	0.87	35	0.75	27	0.58
EU/EEA total		5 789	5 611	1.20	5 279	1.08	5 353	1.12

Source: Country reports.
*A: Aggregated data report; C: Case-based report; —: No report, U: Unspecified.
(a) In addition, one case of Pontiac fever was reported (not included).

Figure 2.1.5. Seasonal distribution of Legionnaires' disease cases in the EU and EEA/EFTA, 2006–08



Source: Country Reports: Austria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Luxembourg, Malta, Netherlands, Poland, Slovakia, Spain, Sweden, United Kingdom, Iceland and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA_LABNET_REFLAB	Cp	O	A	C	Y	Y	Y	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-LEGIONELLOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-LEGIONELLOSIS	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-LEGIONELLOSIS	O	Co	A	C	Y	N	Y	Y	Y

of TALD cases and the decreasing trend in TALD clusters could possibly indicate that the EWGLINET guidelines for the control of Legionnaires' disease are being widely applied to some good effect. Close observation is required over the coming years to determine whether this decrease continues.

Tuberculosis

- In 2008, 28 EU and EEA/EFTA countries reported 82 611 tuberculosis (TB) cases with an overall notification rate of 16.7 per 100 000 population (range: 1.9 in Iceland to 115.1 cases per 100 000 in Romania); 47 541 of these cases were confirmed by laboratory testing (9.6 per 100 000).
- There has been a sustained mean annual decline over the past five years (3.3 %). The overall notification rate was 1.2 % lower than that for 2007 (for the 28 reporting countries), which is the lowest annual percentage decrease for four years.
- Sustained increases in paediatric notification over the past years in selected countries may suggest an increase in transmission rates.
- Despite an improvement in the quality and completeness of treatment outcome monitoring data, these outcome indicators remain sub-optimal with only three countries having achieved the treatment success rate target of 85 % or higher[i] set by the StopTB Partnership.
- Successful outcome after 24 months of treatment for MDR TB is extremely low at 30.9 %; much below acceptable levels.
- MDR TB remains a threat to the EU/EEA population with the proportion of combined MDR TB cases having increased from 4 % to 6 % between 2007 and 2008. Quality and representativeness of the data remains sub-optimal. XDR TB cases have been reported by 13 countries for the first time. That 90 cases were reported in 2008 indicates that increased vigilance of resistance to second-line drugs is warranted.

Epidemiological situation in 2008

For 2008, a total of 82 611 TB cases (of which 47 541 were laboratory confirmed) were reported by 26 EU countries (all except Austria) and two EEA countries (Iceland and Norway) (Table 2.1.6), showing a decrease of 1 494 cases compared with 2007. Over 80 % of cases occurred in the eight countries that reported 3 000 cases or more each (Bulgaria, France, Germany, Italy, Poland, Romania, Spain and United Kingdom).

The overall notification rate in 2008 for confirmed cases was 9.6 per 100 000 (16.7 per 100 000 for all reported cases), with rates for all reported cases being lower than 20 per 100 000 in 21 countries and higher than 20 per 100 000 in Romania (115.1), the Baltic States—Lithuania (66.8), Latvia (47.1), Estonia (33.1)—Bulgaria (41.2) and Portugal (28.7). The overall notification rate for all reported cases was 1.2 % lower than that in 2007 (for the 28 reporting countries), reflecting a net downward trend in 17 countries.

Age and gender distribution

The overall male-to-female ratio for all notified TB cases was 1.8 in 2008; but this was not the case for children (age group 5–14 years, ratio 0.97; and age group 0–4 years, ratio 0.89) (Figure 2.1.6). Males predominated among TB cases in nearly all countries, this feature being more marked among nationals than among cases of foreign origin (overall male-to-female ratio was 2 for nationals, compared with 1.4 for foreign cases).

Among previously untreated TB cases, the notification rate was highest in the age groups 25–44 and 45–64 years of age, together accounting for more than 50 % of all new cases (36.4 % and 28.9 %, respectively; Figure 2.1.6). The middle-aged (45–64 years old) and the elderly (› 64 years old) together represented more than half of the cases of national origin but only 27.5 % of foreign cases. Most cases of foreign origin were reported among younger adults, especially in the 25–44 year age group (53.2 %). Paediatric cases (‹ 15 years old) accounted for 4.2 % of all notified TB cases, and made up 4.4 % of all national-origin cases and 3.4 % of all foreign-origin cases. Although most countries have experienced a decline or stabilisation, the incidence of paediatric cases remained high in a number of countries (Bulgaria, Latvia, Lithuania and Romania, 15.3–32.2 per 100 000 under 15 year olds) and continued to increase in that age group in Bulgaria (from 11.8 to 22.3 per 100 000 between 2000 and 2008) and in Lithuania (from 15.8 to 19.3 per 100 000 between 2007 and 2008). Furthermore, although rates are low in a number of countries (‹ 10 per 100 000), some increase in paediatric notifications were also recorded in Cyprus, Italy, Norway, Spain and the United Kingdom. France, Italy, the Netherlands, Spain and the United Kingdom (all low-incidence countries) showed an elevated proportion of paediatric cases among cases of national origin (between 5.6 % and 14.4 % of all national-origin cases), which may be a reflection of children born to foreign-born parents and/or living in a foreign-born household in some countries. However, no data are available to support this hypothesis.

Seasonality

The data on seasonality are not relevant for TB as the process of diagnosis may take up to two months and notification rules on the preferred time of notification differ among countries. Overall, 12 countries (43 %) reported neither the month of notification nor of diagnosis.

i In previously untreated culture-confirmed pulmonary TB cases.

Table 2.1.6. **Number and notification rate of reported cases of tuberculosis in the EU and EEA/EFTA, 2006–08**

Country	Report type*	All cases 2008		Confirmed cases[a] 2008		2007		2006	
		Total number and notification rate per 100 000 population		Total number and notification rate per 100 000 population		Notification rate per 100 000 population (all reported cases)		Notification rate per 100 000 population (all reported cases)	
		Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Austria	C	—	—	—	—	874	10.5	906	11.0
Belgium	C	1 006	9.4	816	7.6	1 020	9.6	1 117	10.6
Bulgaria	C	3 151	41.2	1 361	17.8	3 038	39.7	3 232	42.0
Cyprus	C	50	6.3	36	4.6	42	5.4	37	4.8
Czech Republic	C	868	8.4	561	5.4	846	8.2	951	9.3
Denmark	C	367	6.7	283	5.2	391	7.2	387	7.1
Estonia	C	444	33.1	347	25.9	488	36.4	456	33.9
Finland	C	350	6.6	248	4.7	348	6.6	297	5.6
France	C	5 812	9.1	2 296	3.6	5 588	8.8	5 336	8.4
Germany	C	4 543	5.5	3 148	3.8	4 998	6.1	5 378	6.5
Greece	C	669	6.0	252	2.2	659	5.9	681	6.1
Hungary	C	1 606	16.0	766	7.6	1 682	16.7	1 855	18.4
Ireland	C	470	10.7	209	4.7	480	11.0	463	10.9
Italy	C	4 418	7.4	1 529	2.6	4 525	7.6	4 503	7.6
Latvia	C	1 070	47.1	838	36.9	1 255	55.1	1 328	58.0
Lithuania	C	2 250	66.8	1 616	48.0	2 408	71.3	2 559	75.4
Luxembourg	C	28	5.8	—	—	39	8.1	33	7.0
Malta	C	53	13.0	25	6.1	38	9.3	30	7.4
Netherlands	C	997	6.1	729	4.4	1 000	6.1	1 015	6.2
Poland	C	8 081	21.2	5 094	13.4	8 614	22.6	8 587	22.5
Portugal	C	2 995	28.7	2 007	18.9	3 139	29.8	3 425	32.4
Romania	C	24 786	115.1	14 762	68.6	24 844	115.3	26 935	124.8
Slovakia	C	633	11.7	383	7.1	682	12.6	730	13.5
Slovenia	C	213	10.6	201	9.9	218	10.8	215	10.7
Spain	C	8 214	18.1	4 493	9.9	7 768	17.3	8 029	18.2
Sweden	C	552	6.0	436	4.7	481	5.3	497	5.5
United Kingdom	C	8 655	14.1	4 872	8.0	8 314	13.6	8 298	13.7
EU total		**82 281**	**16.8**	**47 308**	**9.7**	**83 779**	**16.9**	**87 280**	**17.7**
Iceland	C	6	1.9	5	1.6	14	4.5	13	4.3
Liechtenstein	C	—	—	—	—	5	14.2	—	—
Norway	C	324	6.8	228	4.8	307	6.5	290	6.2
Total		**82 611**	**16.7**	**47 541**	**9.6**	**84 105**	**16.8**	**87 583**	**17.5**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report, U: Unspecified.
(a) Confirmed only on the laboratory criteria, i.e. culture positive or smear and nucleic acid tests positive.
Note: for several countries these data are to be considered as provisional.

Enhanced surveillance in 2008

In 2008, 78.8 % of the reported TB cases were previously untreated, with a wide variation between countries (range: 34.0–95.1 %). This proportion has not changed markedly in recent years, but the total number of new cases has, however, decreased progressively and is most likely the cause for the decline observed in TB notification rates in the EU/EEA countries.

Pulmonary TB accounted for 78.7 % of all TB cases and 43.3 % of these cases were sputum smear-positive. Among paediatric cases (‹ 15 years), 57.0 % were pulmonary cases and 40.5 % extra-pulmonary.

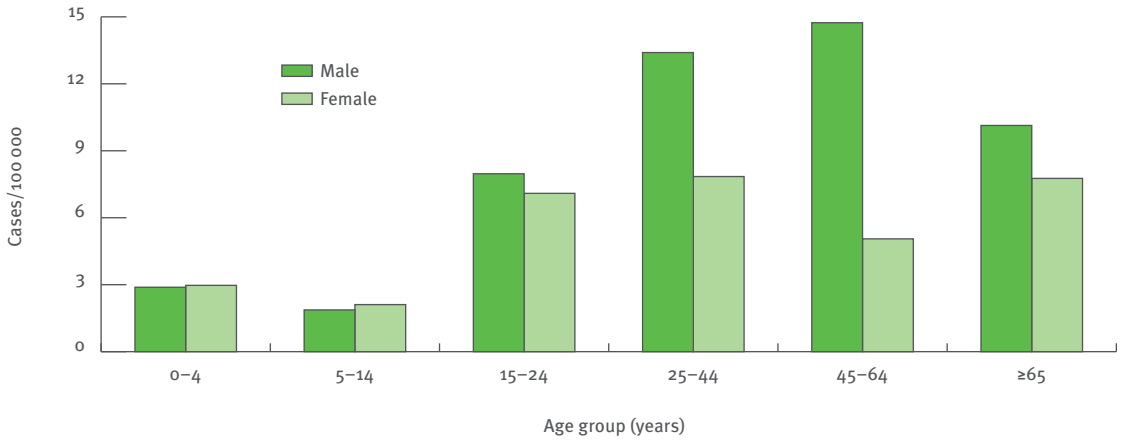
Of the cases reported in 2008, 57.5 % were culture-confirmed, but the level differed widely across countries (range: 34.6 %–94.4 %) and data were not complete for eight countries (i.e. ‹ 50 % of cases culture confirmed). The overall proportion has remained stable since 2005, with the exception of a few countries where the proportion of culture confirmation has declined compared with 2007 (France: 45.4 % to 39.5 %; Ireland: 65.6 % to 44.5 %; and Italy: 40.7 % to 34.6 %). Between 2005 and 2008, a substantial improvement in culture confirmation was seen in a number of countries.

Species identification showed *M. tuberculosis* in 84.7 % of culture-positive cases in 2008 in 26 countries, *M. bovis* (0.2 %) was reported by eight countries and *M. africanum* (0.2 %) by eight countries Data on the other members of *M. tuberculosis* complex were not analysed for 2008.

TB cases of foreign origin

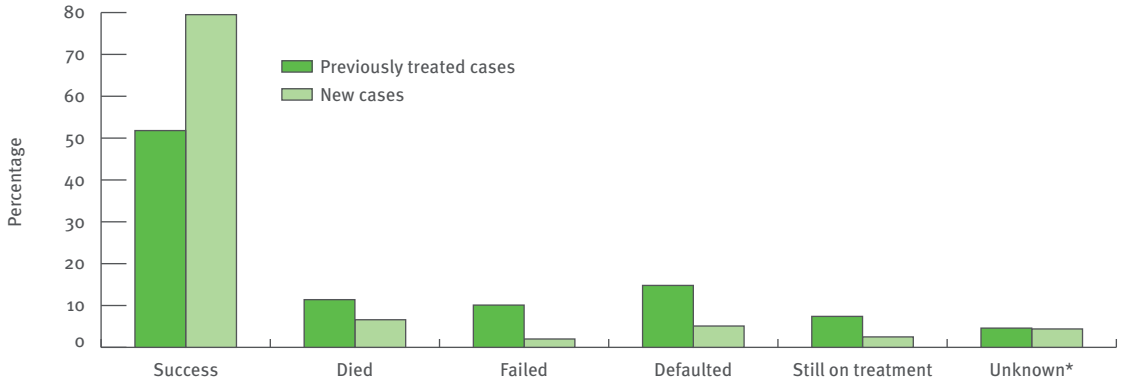
In 2008, 22.4 % of the reported TB cases were in individuals of foreign origin (Table 2.1.7), the proportion ranging from 21.3 % to 88 % in 17 countries. The overall proportion was much higher (33.8 %) when excluding

Figure 2.1.6. Notification rates of tuberculosis cases by age and gender in EU and EEA/EFTA countries, 2008 (n = 82 433)



Source. Country Reports: Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Figure 2.1.7. Treatment outcome for new and previously treated culture-confirmed pulmonary tuberculosis cases, EU and EEA/EFTA, 2006 (n = 36 377)



* Includes lost to follow up and transferred.
Source: Country reports: Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden and United Kingdom.

data from Bulgaria and Romania. Since 2001 there has been a steady decline in the number of notified cases of national origin in most countries, while case notifications of foreign origin have generally increased. Since 2003, Italy, Malta, Sweden and the United Kingdom have reported a continued increase in the number of notified cases of foreign origin.

Tuberculosis and HIV infection

Aggregated data on HIV serostatus among TB cases reported in 2006 or later were available for 18 countries, of which only eight reported data in 2008. Overall for the EU/EEA, the proportion of reported TB cases that were also HIV-seropositive was 3.1 % in 2008; a slight increase compared with 2006 (2.6 %) and 2007 (3.0 %). This could be a reflection of increased HIV testing and better reporting within countries. Among the eight countries with complete data, the proportion of TB cases with positive HIV serostatus in 2008 was highest in Portugal (14.6 %), Estonia (9.9 %) and Malta (9.4 %), and ranged between 4 and 7 % in Cyprus, Belgium and Latvia. Two countries reported no HIV-positive TB cases. The proportion of HIV-seropositive cases has increased since 2006 in Latvia (from 3.4 % to 6.7 %), Malta (from 6.7 % to 9.4 %) and Portugal (from 13.8 % to 14.6 %). Estonia reported a decline in the proportion of seropositive cases from 11.1 % in 2007 to 9.9 % in 2008.

Multidrug-resistant tuberculosis

Some 1717 cases of multidrug-resistant (MDR) TB were identified out of the 28 404 cases for which drug-susceptibility testing results were reported (25 countries).

Table 2.1.7. Total tuberculosis cases in EU and EEA/EFTA countries, by origin of the case, 2008 (n = 80 309)

Country	National		Foreign		Unknown		Total
	N	(%)	N	(%)	N	(%)	N
Austria	–	–	–	–	–	–	–
Belgium	530	(52.7)	476	(47.3)	0	(0.0)	1 006
Bulgaria	3 145	(99.8)	6	(0.2)	0	(0.0)	3 151
Cyprus	6	(12.0)	44	(88.0)	0	(0.0)	50
Czech Republic	683	(78.7)	185	(21.3)	0	(0.0)	868
Denmark	146	(39.8)	221	(60.2)	0	(0.0)	367
Estonia	359	(80.9)	81	(18.2)	4	(0.9)	444
Finland	295	(84.3)	54	(15.4)	1	(0.3)	350
France	2 708	(46.6)	2 665	(45.9)	439	(7.6)	5 812
Germany	2 455	(54.0)	1 918	(42.2)	170	(3.7)	4 543
Greece	414	(61.9)	250	(37.4)	5	(0.7)	669
Hungary	1 535	(95.6)	47	(2.9)	24	(1.5)	1 606
Ireland	265	(56.4)	186	(39.6)	19	(4.0)	470
Italy	2 102	(47.6)	2 026	(45.9)	290	(6.6)	4 418
Latvia	1 002	(93.6)	56	(5.2)	12	(1.1)	1 070
Lithuania	2 201	(97.8)	49	(2.2)	0	(0.0)	2 250
Luxembourg	–	–	–	–	28	(100.0)	28
Malta	11	(20.8)	42	(79.2)	0	(0.0)	53
Netherlands	304	(30.5)	688	(69.0)	5	(0.5)	997
Poland	8 029	(99.4)	52	(0.6)	0	(0.0)	8 081
Portugal	2 549	(85.1)	411	(13.7)	35	(1.2)	2 995
Romania	24 786	(100.0)	0	(0.0)	0	(0.0)	24 786
Slovakia	624	(98.6)	9	(1.4)	0	(0.0)	633
Slovenia	157	(73.7)	56	(26.3)	0	(0.0)	213
Spain	5 143	(62.6)	2 495	(30.4)	576	(7.0)	8 214
Sweden	87	(15.8)	448	(81.2)	17	(3.1)	552
United Kingdom	2 229	(25.8)	5 751	(66.4)	675	(7.8)	8 655
EU total	**61 765**	**(75.1)**	**18 216**	**(22.1)**	**2 300**	**(2.8)**	**82 281**
Norway	55	(17.0)	267	(82.4)	2	(0.6)	324
Liechtenstein	–	–	–	–	–	–	–
Iceland	2	(33.3)	4	(66.7)	0	(0.0)	6
Total EU/EEA	**61 822**	**(74.8)**	**18 487**	**(22.4)**	**2 302**	**(2.8)**	**82 611**

The overall proportion of MDR among all TB cases was 6.0 %, ranging from 0 %–21.3 % (Table 2.1.8). Among previously untreated cases, the proportion of MDR cases was 2.8 % and among previously treated cases, 23.2 %. In Estonia, the number of previously untreated MDR TB ('primary MDR TB') has decreased compared with 2007, while the level of previously treated MDR TB ('acquired MDR TB') has continued to increase since 2006. Latvia reported an increase in previously untreated MDR cases and a slight increase in the number of previously treated MDR cases. Since 2005, the numbers of previously untreated and treated MDR cases in Lithuania have declined, though the total amount remains high (more than 100 cases).

Thirteen countries reported complete data on XDR TB. In 2008, 90 XDR TB cases were reported, with the proportion of XDR cases increasing from 6.1 % of MDR cases in 2007 to 7.3 %. Compared with 2007, Estonia reported a decline in the total number and proportion of XDR cases (from 15 % to 12.2 %), and Latvia reported more than a doubling in the number of XDR cases (from 6 to 19 cases). XDR TB cases made up 14.7 % of Latvia's MDR TB cases and that country had the second highest total number of XDR TB cases in 2008 after Romania (19 and 54 cases, respectively).

Treatment outcome

Twenty-two countries reported treatment outcome monitoring data for the culture-confirmed pulmonary TB cases reported in 2007. The overall treatment success rate for all culture-confirmed pulmonary cases was 73.6 %, with two countries reporting › 85 % treatment success (Portugal and Slovakia).

Among previously untreated cases (Figure 2.1.7), 79.5 % had a successful outcome, 6.6 % died, 2.0 % failed treatment, 5.1 % defaulted from treatment, 2.5 % were still on treatment, and 4.4 % were transferred or had an unknown outcome. Among countries with more than 20 previously untreated laboratory-confirmed pulmonary cases, success rates varied widely from 50.8 % in Hungary to 86.6 % and 85.5 % in Portugal and Slovakia, respectively. Three countries achieved treatment success for 85 % or more of this category of cases: Iceland, 85.7 %; Portugal, 86.6 %; and Slovakia, 85.5 %.

Table 2.1.8. Number of multidrug-resistant tuberculosis cases in EU and EEA/EFTA countries, 2008 (n = 1717)

Country	Cases with sensitivity test results (isoniazid & rifampicin)	Number of MDR TB cases (number of XDR TB cases)	MDR percentage from tested cases
Austria	—	—	—
Belgium	773	22 (2)	2.8
Bulgaria*	938	32 (0)	3.4
Cyprus	36	1 (0)	2.8
Czech Republic	520	11 (1)	2.1
Denmark	281	0 (0)	0.0
Estonia	347	74 (9)	21.3
Finland	247	1 (0)	0.4
France*	1 556	27 (—)	1.7
Germany	2 963	45 (—)	1.5
Greece	—	—	—
Hungary*	611	16 (—)	2.6
Ireland*	146	3 (—)	2.1
Italy*	1 932	71 (—)	3.7
Latvia	828	129 (19)	15.6
Lithuania*	1 616	276 (—)	17.1
Luxembourg	—	—	—
Malta*	25	0 (0)	0.0
Netherlands	728	13 (—)	1.8
Poland	—	—	—
Portugal	1 641	28 (—)	1.7
Romania*	5 547	816 (54)	14.7
Slovakia	383	4 (0)	1.0
Slovenia	195	2 (—)	1.0
Spain*	1 628	76 (3)	4.7
Sweden	423	12 (1)	2.8
United Kingdom	4 808	53 (1)	1.1
EU total	**28 172**	**1 712 (90)**	**6.1**
Iceland	5	1 (0)	20.0
Liechtenstein	—	—	—
Norway	227	4 (0)	1.8
Total	**28 404**	**1 717 (90)**	**6.0**

—: No data.
* Data considered to be incomplete.

Treatment success rates below 75 % were associated with a high loss to follow-up (defaulted and transferred or unknown: 6.6 %–23.2 %). Five countries reported a decrease of more than five percentage points in treatment success rates compared with the 2006 treatment cohort (Denmark, Estonia, Lithuania, the Netherlands and Norway). Of these, Denmark, the Netherlands and Norway did, however, report treatment success in more than 85 % of new pulmonary culture-confirmed cases reported in the 2006 treatment cohort.

Among previously treated cases, the overall success rate (51.8 %) was lower than among new cases.

Fifteen countries reported the treatment outcome at 24 months for all laboratory-confirmed MDR TB cases; 11 of these provided complete data. The overall treatment success among these cases was 30.9 % and ranged between 19.8 % and 100 %, indicating a wide variation between countries with regards to successfully treating MDR TB.

Discussion

As for previous years, the 2008 data confirm the heterogeneous epidemiological picture of TB in the EU/EEA. For discussion purposes it is useful to define three broad epidemiological areas:

- low-incidence countries (as defined in the *Tuberculosis Surveillance in Europe 2008*[2]), with cases increasingly aggregating in the foreign-origin population and occasionally reporting increasing notifications;
- countries with relatively moderate to high notification rates that are declining, with low levels of MDR TB; and
- countries with relatively high notification rates and with a high proportion of MDR TB cases, but again with declining overall TB rates.

Despite the heterogeneity among the 30 Member States in terms of TB epidemiology, it is noteworthy that 80 % of cases are attributable to just eight countries, of which five are low-incidence countries. The EU/EEA as a whole continues to experience a decline of the

TB epidemic. However, the percentage annual decline in cases between 2007 and 2008 (1.2 %) is the smallest recorded over the past four years. Furthermore, the downward trend in incidence is mainly attributable to the decline recorded by high/intermediate incidence countries (defined by using an incidence threshold of 20 per 100 000).

Treatment outcome monitoring shows a marginal improvement in the completeness and number of countries reporting outcomes for the 2007 cohort. However, no real improvement in the percentage of cases successfully treated can be observed over the past five years, with 79.5 % of previously untreated (new) culture-confirmed pulmonary cases having been successfully treated and the percentage dropping to 51.8 % in previously treated (retreatment) cases. It is important to note that for the 2007 treatment cohort, only three countries have achieved the treatment success rate target of 85 % or higher among previously untreated culture-confirmed pulmonary TB cases that was set by the Stop TB partnership. Among the 2006 treatment cohort, seven countries had reached the target[1].

The outcome for MDR TB cases at 24 months has been reported for the first time by fifteen countries. In this subset of data, the success rate remains extremely low at 30.9 % for the 2006 cohort.

Although the completeness of data can still be improved, the 2008 data collection has recorded an improvement in the quality of the reported information on MDR TB. MDR TB remains a threat to the EU/EEA with an increase from 4.0 % to 6.0 % of the proportion of combined MDR TB. Furthermore, the increase of acquired MDR TB (MDR TB in previously treated cases) in countries that had seen a reversal of the trend in previous years could indicate a worsening of programmatic MDR TB control[4].

This is the first time data on XDR TB is presented. Although the quality, representativeness and completeness of second-line resistance data still can be improved, the numbers confirm that XDR TB is now established within the EU borders.

As for previous years, the reporting of TB/HIV co-morbidity remains incomplete, not allowing a thorough assessment of the dual epidemic. Available data, however, indicate that there is no substantial increase in the co-infection epidemic.

Finally, it should be noted that a systematic and objective assessment of the surveillance coverage, and hence of the level of underreporting, is not yet feasible at the European level with the available data. Although the overall case detection/reporting in the EU/EEA is believed to be high, a formal evaluation of the latter has yet to be attempted. This should be considered when interpreting the reported data.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Belgium	BE-TUBERCULOSIS	Cp	Co	A	C	Y	Y	N	N	-
Bulgaria	BG-MOH	Cp	Co	A	C	Y	N	Y	N	-
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-TUBERCULOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-TBC	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-TUBERCULOSIS	Cp	Co	P	C	Y	Y	N	N	Y
Iceland	IS-TUBERCULOSIS	Cp	Co	A	C	Y	Y	Y	N	Y
Ireland	IE-TB	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-TB	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-TB_REGISTER	-	-	-	-	-	-	-	-	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-NTR	-	Co	P	C	Y	Y	N	N	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL_CR	Cp	Co	P	C	Y	Y	Y	N	Y
Portugal	PT-TUBERCULOSIS	Cp	Co	P	C	N	Y	N	Y	Y
Romania	RO-NTBSy	Cp	Co	P	C	N	Y	N	Y	Y
Slovakia	SK-NRT	Cp	Co	-	C	Y	Y	Y	N	Y
Slovenia	SI-TUBERCULOSIS	Cp	Co	A	C	Y	Y	N	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SweTBReg	Cp	Co	P	C	Y	Y	Y	N	Y
United Kingdom	UK-TUBERCULOSIS	Cp	Co	A	C	Y	N	Y	Y	Y

2.2 Sexually transmitted infections, including HIV and blood-borne viruses

Chlamydia, gonorrhoea, hepatitis B, hepatitis C, HIV and syphilis.

Chlamydia trachomatis infection

- Chlamydia is the most frequently reported sexually transmitted infection and reportable disease in Europe. In 2008, 335 329 reported cases of chlamydia were confirmed in 23 EU and EEA/EFTA Member States; a rate of 150 per 100 000 population. The true incidence of chlamydia is likely to be higher as this infection is liable to underreporting or asymptomatic disease.
- Two thirds of all chlamydia cases were reported in young persons. The notification rate among those between 15 and 24 years of age is 976 per 100 000 population; young women are affected more often than young men.
- Compared with previous years, the absolute numbers appear to have increased substantially. The overall reporting rate increased by 49 % between 2006 and 2008. However, this is most likely due to improved case detection within improved chlamydia screening programmes in a number of countries and increasing general awareness of the infection.

Epidemiological situation in 2008

In 2008, 23 of the EU and EEA/EFTA Member States reported 336 024 cases, 335 329 of which were confirmed (149.89 per 100 000). Almost 95 % of the confirmed *Chlamydia* infections were reported by just six countries (the United Kingdom, Sweden, Denmark, Norway, Netherlands and Finland). The highest notification rates were reported by Iceland (581 per 100 000), Denmark (532 per 100 000) Norway (496 per 100 000) and Sweden (457 per 100 000) (Table 2.2.1). The overall notification rate appears to have increased (by 7 %) from 112.35 in 2006 to 120.08 in 2007 and again by 25 % to 149.89 in 2008. This increase is most likely due to improved case detection and awareness in several countries. For example, the United Kingdom reported almost 80 000 cases more in 2008 than in 2007. However, the UK now includes chlamydia data collected at locations other than sexually transmitted infection (STI) clinics, such as screening venues and other health services. These have all been reported together for the first time in 2008, accounting for at least part of the increase in reported cases.

National surveillance systems for STIs (chlamydia, gonorrhoea and syphilis) consist of a mixture of voluntary, sentinel or selected laboratory systems, and frequently do not represent true national coverage. Comparison between countries is further hampered by differences in the reporting systems, the diagnostic methods used, the amount of testing and screening for chlamydia and the proportion of underreporting. The availability of a screening programme in dedicated STI services or targeted at (sub)-groups of the population, e.g. pregnant women, may significantly affect the reported number of *Chlamydia* infections. This means that the true incidence and prevalence is likely to be higher than the rates here reported.

Age and gender distribution

Data on age were available for 327 682 of the reported confirmed cases (98 % of all cases). More than two thirds of the cases (for which data on age were available) were reported in the age group 15–24 years (221 494 cases), which also had the highest age-specific rate (976 per 100 000). The countries with the highest age-specific rates among the 15–24 year-olds were Denmark, Norway, Iceland, Sweden and the United Kingdom, ranging from 3 317 per 100 000 in Denmark to 1 651 per 100 000 in the United Kingdom. Compared with previous years the overall notification rate for this age group has substantially increased. This could partly be due to increased testing activities and screening programmes. Chlamydia in the age group 25–44 years accounted for 99 686 cases with a notification rate of 203 per 100 000.

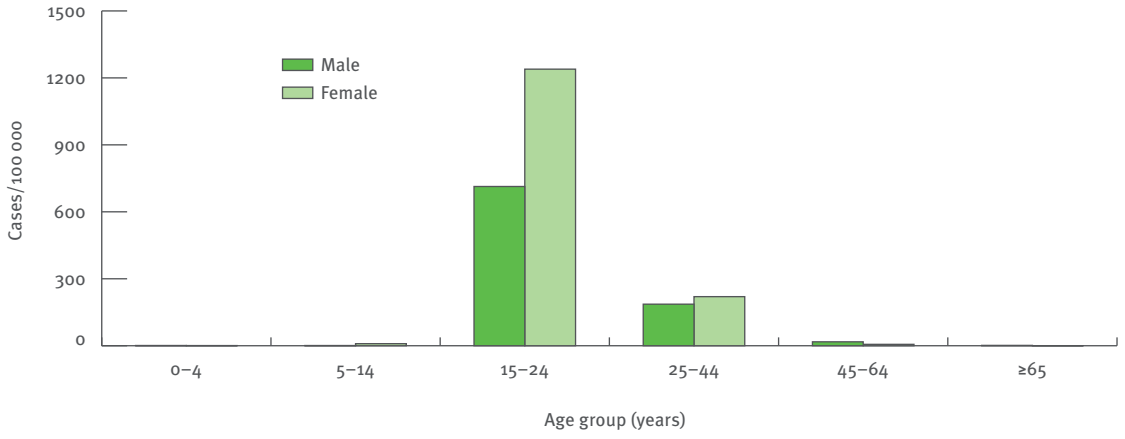
Information on gender was available for 334 000 cases. Only for 1 871 cases 'gender' was reported as unknown. Some 136 629 cases were reported in males and 197 371

Table 2.2.1. Number and notification rate of reported cases of *Chlamydia* infection in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria[a]	A	742	742	—	822	—	131	—
Belgium	C	2 601	2 601	24	2 480	23	2 060	20
Bulgaria	—	—	—	—	—	—	—	—
Cyprus	C	1	1	0.13	0	0.00	6	0.78
Czech Republic	—	—	—	—	—	—	—	—
Denmark	C	29 116	29 116	532	25 795	474	24 866	458
Estonia	C	2 200	2 200	164	2 480	185	2 528	188
Finland	C	13 871	13 871	262	13 969	265	13 868	264
France[a]	—	—	—	—	4 620		—	—
Germany	—	—	—	—	—	—	—	—
Greece	A	71	71	0.63	—	—	—	—
Hungary	A	754	754	7.5	699	6.9	598	5.9
Ireland	A	6 290	6 290	143	5 023	116	3 144	75
Italy	—	—	—	—	—	—	—	—
Latvia	C	704	704	31	711	31	820	36
Lithuania	C	403	403	12	403	12	556	16
Luxembourg	C	4	4	0.83	0	0.00	1	0.21
Malta	C	107	107	26	72	18	45	11
Netherlands	C	9 449	9 449	58	7 821	48	7 140	44
Poland	A	695	0	0.00	0	0.00	0	0.00
Portugal	—	—	—	—	—	—	—	—
Romania	A	127	127	0.59	115	0.53	238	1.1
Slovakia	C	105	105	1.9	78	1.5	61	1.1
Slovenia	C	127	127	6.3	201	10	144	7.2
Spain[a]	C	402	402	—	223	—	139	—
Sweden	C	41 974	41 974	457	47 081	517	32 518	359
United Kingdom	A	200 959	200 959	329	121 791	200	113 713	188
EU total		**310 702**	**310 007**	**141.74[b]**	**233 562**	**111.02[b]**	**202 445**	**102.63[b]**
Iceland	C	1 834	1 834	581	1 814	590	3 457	1152.75
Liechtenstein	—	—	—	—	—	—		—
Norway	C	23 488	23 488	496	22 847	488	21 259	458
Total		**336 024**	**335 329**	**149.89[b]**	**258 223**	**120.08[b]**	**227 161**	**112.35[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Data not representative for the whole country.
(b) Rates calculated excluding the Austrian, French and Spanish data.

Figure 2.2.1. Notification rates of reported cases of *Chlamydia* infection by age and gender in EU and EEA/EFTA countries, 2008 (n = 326 186)



Source: Country reports: Belgium, Cyprus, Denmark, Estonia, Finland, Greece, Hungary, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Romania, Slovakia, Slovenia, Sweden, United Kingdom, Iceland and Norway.

in females, with rates of 125 and 173 per 100 000, respectively, giving the male-to-female ratio as 0.72. It should be noted that there is a known ascertainment bias due to the higher index of suspicion and more screening opportunities for young women.

Seasonality

Only 15 countries reported cases by month, accounting for slightly more than one third of all reported cases. No seasonal trends could be observed in the reported *Chlamydia* infections for 2008, although – similar to the data for previous years – there were slightly higher numbers reported from August to October.

Lymphogranuloma venereum

Lymphogranuloma venereum (LGV) is a systemic sexually transmitted disease caused by a variety of the bacterium *Chlamydia trachomatis*. It rarely occurs in the western world[1]. However, in recent years outbreaks have been reported from several European countries among men who have sex with men[2,3]. Only four countries reported confirmed LGV cases in 2008: Belgium (12 cases), Denmark (29 cases), the Netherlands (100 cases) and the United Kingdom (211 cases). All cases have been diagnosed in men. The latter three countries reported almost all the European cases of LGV in 2006 and 2007 (United Kingdom 140 cases in 2006, 179 cases in 2007; the Netherlands 43 cases in 2006, 70 cases in 2007; Denmark 2 cases in 2006, 6 cases in 2007). Ireland reported two cases in 2007. The total number of reported LGV cases has increased from 183 in 2006 to 261 in 2007 and 314 in 2008.

Enhanced surveillance for sexually transmitted infections

The coordination of the European network on STI surveillance has been integrated into ECDC as from 1 January 2009. The data collection exercise on the 1990–2009 data has been finalised but the data analyses and reporting are still on-going and a report will be published later in 2010.

Discussion

In many European countries, the incidence rates of chlamydia have increased substantially over the past 10 years. However, in many European countries it is not a notifiable disease. Opportunistic screening for asymptomatic chlamydia, contact tracing and mandatory notification by law, like in Sweden, may still account for the high notification rates in Scandinavian countries compared with other European countries. Notification rates are more likely to reflect screening and testing practices rather than true incidence. The substantial increase in notification rates and absolute numbers of confirmed cases reported in the United Kingdom show that screening programmes yield more diagnoses of *Chlamydia* infections.

Chlamydia mainly affects young people between 15 and 24 years of age: two thirds of the infections are reported to be within this age group. Infections do not appear to be restricted to a particular risk group, affecting young people generally, especially young women. In order to control the *Chlamydia* infection disease burden in Europe, comprehensive control programmes should be targeted to reach the most-at-risk populations, i.e. young people. Control programmes are crucial for early detection and treatment of all infected individuals and their sexual partners.

Only a few countries have reported confirmed cases of LGV. Even though absolute numbers are low, the incidence in these countries has increased. The spread of LGV should be carefully monitored because of its role as a co-factor for the transmission of HIV among men who have sex with men.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-STISentinella	V	Se	A	A	Y	N	N	N	N
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-HCV/CHLAMYDIA	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	-	O	P	A	Y	N	Y	N	N
Hungary	HU-STD SURVEILLANCE	Cp	Se	P	A	N	Y	N	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-AGGR_STI	Cp	Co	P	A	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-STI	V	Se	P	C	N	Y	N	N	Y
Norway	NO-MSIS_CHLAMYDIA)	Cp	Co	A	C	Y	N	N	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SPOSUR	Cp	Co	P	C	N	Y	N	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	GB-GUM-COM	Cp	O	P	A	N	N	N	Y	-

Gonorrhoea

- In 2008, a total of 26 880 confirmed cases of gonorrhoea were reported by 28 EU and EEA/EFTA countries, giving a rate of 8.6 per 100 000 population.
- Although gonorrhoea is more commonly reported in men (71 % of all cases reported in 2008), this difference is less marked in the under 25 year-olds where young men are slightly more affected than young women.
- Almost half of all gonorrhoea cases were reported in people younger than 25 years.
- Compared with previous years, the number of cases has slightly decreased in many countries, although no consistent patterns can be observed across countries. The overall rate decreased by 12 % between 2006 and 2008.

Epidemiological situation in 2008

In 2008, a total of 28 468 cases of gonorrhoea (26 880 confirmed) were reported in 28 EU and EEA/EFTA countries resulting in a notification rate of 8.6 per 100 000 population (Table 2.2.2). No data were available from Germany or Lichtenstein. Almost 60 % of all notified gonorrhoea cases were reported from the United Kingdom. The overall trend over the last few years appears to be slightly declining in the EU.

There is wide variation in notification rate, ranging from less than 1 case per 100 000 in Cyprus, Italy, Portugal and Poland to more than 20 cases per 100 000 in Latvia and the United Kingdom (21 and 27 respectively). National surveillance systems for all STIs are heterogeneous, with a mixture of voluntary or mandatory reporting, sentinel or national coverage, clinical or laboratory reporting. Major variations in surveillance systems across countries in terms of coverage, completeness and representativeness hamper meaningful comparisons.

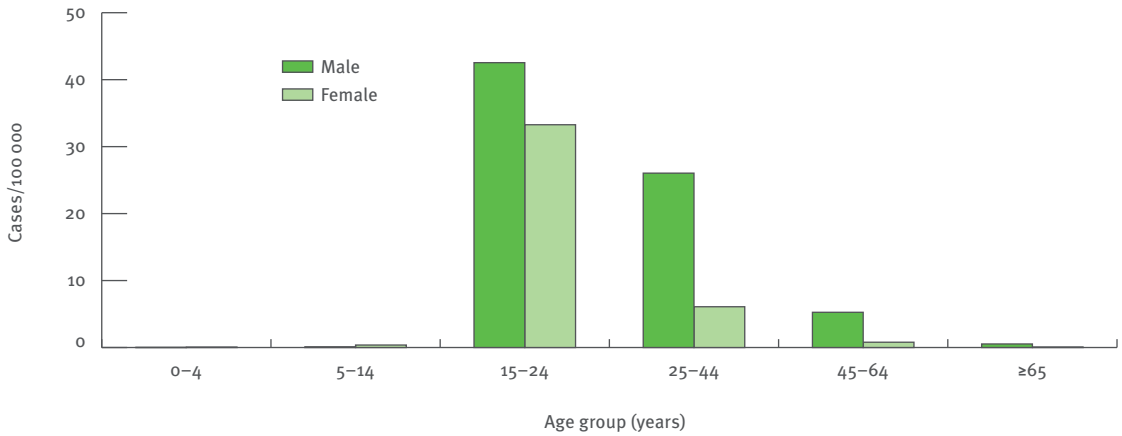
Age and gender distribution

Data on age and gender were available for 25 877 of the confirmed cases. More than 90 % of cases were reported in the age groups 15–24 and 25–44 years (11 921 and 11 840 cases respectively; 46 % each), with the highest notification rate in the 15–24 year age group (38.02 per 100 000), followed by the 25–44 age group (16.15 per 100 000).

Age-specific reporting rates are also highest in the age group 15–24 years for both men and women: 42.54 and 33.27 respectively (Figure 2.2.2). The highest rates in the 15–24 year age group for both men and women were reported by the United Kingdom (112 and 101, respectively) followed by Latvia (74 and 43). A high rate among men aged 15–24 years was also reported by Lithuania (69 per 100 000).

Men account for 71 % of all gonorrhoea cases with an overall rate of 10.5 per 100 000 compared with 4.1 per 100 000 women. The male-to-female ratio was 2.59. A high male-to-female ratio was observed in all countries except in Austria and Estonia where 82 % and 62 % of the cases, respectively, were reported in women.

Figure 2.2.2. Notification rates of gonorrhoea cases by age and gender in EU and EEA/EFTA countries, 2008 (n = 25 877)



Source: Country reports: Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom, Iceland and Norway.

Table 2.2.2. Number and notification rate of reported gonorrhoea cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria[a][b]	C	263	263	—	131	—	171	—
Belgium	C	718	718	6.7	585	5.5	535	5.1
Bulgaria	A	178	0	0.00	0	0.00	0	0.00
Cyprus	C	2	2	0.25	5	0.64	8	1.0
Czech Republic	C	805	805	7.8	1 129	11	1 075	10
Denmark	C	409	409	7.5	352	6.5	414	7.6
Estonia	C	146	146	11	174	13	280	21
Finland	C	200	200	3.8	195	3.7	236	4.5
France[b]	C	235	235	—	217	—	196	—
Germany	—	—	—	—	—	—	—	—
Greece	A	208	208	1.9	201	1.8	190	1.7
Hungary	A	892	892	8.9	1 041	10	916	9.1
Ireland	A	444	444	10	417	9.7	431	10
Italy	C	154	154	0.26	152	0.26	258	0.44
Latvia	C	487	487	21	669	29	746	33
Lithuania	C	533	533	16	471	14	437	13
Luxembourg	C	18	18	3.7	1	0.21	4	0.85
Malta	C	49	49	12	53	13	32	7.9
Netherlands	C	1 973	1 973	12	1 830	11	1 778	11
Poland	A	285	285	0.75	330	0.87	395	1.0
Portugal	C	67	56	0.53	69	0.65	50	0.47
Romania	A	631	631	2.9	815	3.8	1 348	6.2
Slovakia	C	152	152	2.8	81	1.5	66	1.2
Slovenia	C	43	43	2.1	39	1.9	34	1.7
Spain	A	1 897[c]	498(d)	—	504	—	365	—
Sweden	C	724	724	7.9	642	7.0	677	7.5
United Kingdom	A	16 629	16 629	27	18 642	31	18 863	31
EU total	**0**	**28 142**	**26 554**	**8.58[e]**	**28 752**	**9.41[e]**	**29 505**	**9.74[e]**
Iceland	C	25	25	7.9	24	7.8	62	21
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	301	301	6.4	238	5.1	236	5.1
Total		**28 468**	**26 880**	**8.55[e]**	**29 014**	**9.34[e]**	**29 803**	**9.67[e]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Data not representative for the whole of Austria.
(b) Sentinel surveillance system based on voluntary clinical reporting; notification rate per 100 000 cannot be calculated.
(c) Statutory surveillance system.
(d) Sentinel surveillance system based on a limited number of selected laboratories; notification rate per 100 000 cannot be calculated.
(e) Rate calculated excluding the Austrian, French, and Spanish data.

Seasonality

Data on seasonality were available from 20 countries. No seasonal trends could be observed in the reported gonorrhoea cases in 2008, although – similar to the data of previous years - there were slightly higher numbers reported from July to October.

Enhanced surveillance for STI

The coordination of the European network on STI surveillance has been integrated into ECDC as from 1 January 2009. The data collection exercise on the 1990–2009 data has been finalised but the data analyses and reporting are still on-going and a report will be published later in 2010.

Discussion

The number of reported gonorrhoea cases has decreased in many European countries, although no consistent trend can be observed. The overall notification rate has decreased by 12 % from 9.7 per 100 000 in 2006 to 8.6 in 2008. However, it is too early to conclude on a trend given the differences in reporting systems, reporting behaviour and probable underreporting. Data presented here must be interpreted with caution because the proportion of gonorrhoea cases that is actually diagnosed and reported is likely to differ greatly across countries.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-STISentinella	V	Se	A	C	Y	N	N	N	N
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-STI	Cp	Co	P	A	-	-	Y	Y	-
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-STD	Cp	Co	P	C	Y	Y	Y	Y	Y
Denmark	DK-STI_CLINICAL	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-GONOCOCC	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-STI	V	Se	A	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	A	Y	Y	Y	N	N
Hungary	HU-STD SURVEILLANCE	Cp	Se	P	A	N	Y	N	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-AGGR_STI	Cp	Co	P	A	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-STI	V	Se	P	C	N	Y	N	N	Y
Norway	NO-MSIS_B	Cp	Co	P	C	Y	Y	Y	-	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	N	N	-
Portugal	PT-GONOCOCCAL	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SPOSUR	Cp	Co	P	C	N	Y	N	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Spain	ES-STATUTORY_DISEASES_STI_AGGR	Cp	Co	P	A	N	Y	N	N	-
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-GUM	Cp	O	P	A	N	N	N	Y	-

Hepatitis B virus infection

- In 2008, 6369 confirmed cases of hepatitis B virus infection were reported by 28 EU and EEA/EFTA Member States, a rate of 1.29 per 100000 population.
- The most affected age groups are those between 25 and 44 years old with 46 % of cases (2.3 cases per 100000), followed by the 15–24 year-olds (2.02 cases per 100000). Among females, the notification rate is, however, highest in the 15–24 year-old age group.
- In 2007 the number of cases was seen to have decreased compared with earlier years and this was also observed in 2008.

Epidemiological situation in 2008

In 2008, 28 EU and EEA/EFTA Member States reported 6511 cases of hepatitis B virus infection (Czech Republic and Liechtenstein did not report). Of these, 6369 were confirmed, giving an overall notification rate of 1.29 per 100000 population (Table 2.2.3).

The highest notification rates were observed in Bulgaria (8.17 cases per 100000), Latvia (6.16 per 100000), Luxembourg (4.34 per 100000) and Estonia (3.95 per 100000). Among countries that reported cases consistently for the last three years, the number of hepatitis B cases decreased by 8 % in 2007 compared with 2006, and by a further 13 % in 2008. A decreasing trend was especially evident in Austria, Belgium, Bulgaria, Germany, Italy, Poland and Romania. In contrast, increasing trends of hepatitis B virus infection over the three years of reporting were seen in Finland and Spain. Due to the differences between reporting systems and between countries, comparisons should be made with caution.

Age and gender distribution

In 2008, 4076 confirmed cases of hepatitis B were reported among males (1.88 per 100000) and 1938 among females (0.85 per 100000), with a male-to-female ratio of 2.2. The majority of the hepatitis B cases were reported in the age group 25–44 years (46 % of the total) (Figure 2.2.3) that also had the highest rate at 2.3 per 100000 followed by the 15–24 year-olds (2.0 per 100000). The notification rate among females was highest in the 15–24 year age group, while among men it was highest in the 25–44 year age group. The highest rates among young people aged 15–24 years were reported by Iceland (37 per 100000), Bulgaria (24 per 100000) and Latvia (14 per 100000).

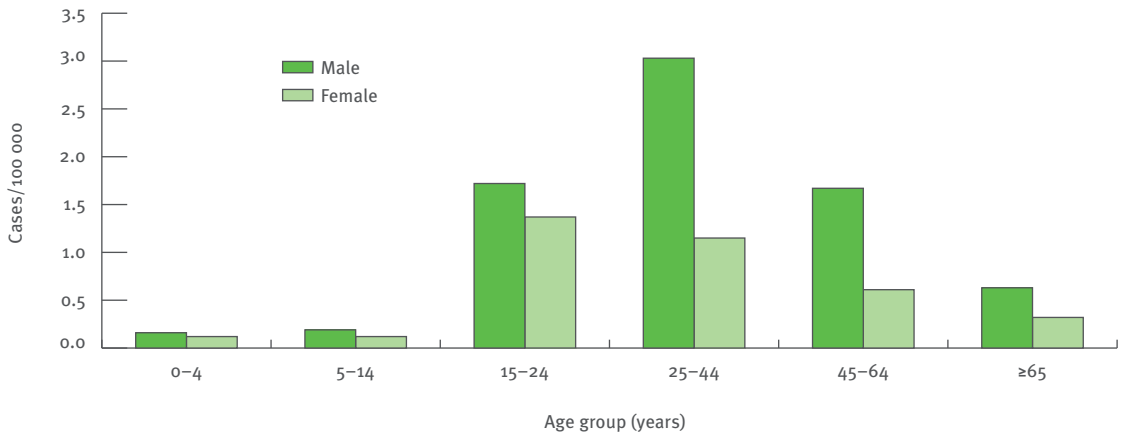
Seasonality

No seasonal pattern can be observed for hepatitis B virus infection.

Discussion

Hepatitis B virus infection bears the characteristics of both a sexually transmitted and a blood-borne disease. However, the distribution patterns and proportions of risk groups affected may differ widely across the EU. Children born to infected mothers are at a higher risk of

Figure 2.2.3. Notification rates of hepatitis B cases in EU and EEA/EFTA countries, by age and gender, 2008 (n = 5279)



Source: Country reports: Austria, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.2.3. Number and notification rate of hepatitis B cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	43	3	0.04	19	0.23	0	0.00
Belgium	A	122	122	1.1	138	1.3	401	3.8
Bulgaria	A	624	624	8.2	751	9.8	773	10
Cyprus	C	7	7	0.89	13	1.7	7	0.91
Czech Republic	C	—	—	—	—	—	306	3.0
Denmark	C	180	180	3.3	278	5.1	20	0.37
Estonia	C	53	53	4.0	44	3.3	45	3.4
Finland	C	49	49	0.92	24	0.45	0	0.00
France	C	145	145	0.23	156	0.25	182	0.29
Germany	C	822	822	1.0	1 008	1.2	1 179	1.4
Greece	C	80	77	0.69	77	0.69	67	0.60
Hungary	C	88	88	0.88	81	0.80	83	0.82
Ireland	C	82	82	1.9	52	1.2	94	2.2
Italy	C	855	855	1.4	1 097	1.9	1 068	1.8
Latvia	A	140	140	6.2	165	7.2	167	7.3
Lithuania	A	90	90	2.7	84	2.5	0	0.00
Luxembourg	C	21	21	4.3	14	2.9	9	1.9
Malta	C	4	4	0.97	2	0.49	2	0.49
Netherlands	C	225	225	1.4	224	1.4	263	1.6
Poland	A	262	165	0.43	269	0.71	362	0.95
Portugal	C	53	52	0.49	64	0.60	40	0.38
Romania	C	718	718	3.3	927	4.3	1 279	5.9
Slovakia	C	112	111	2.1	103	1.9	123	2.3
Slovenia	C	17	17	0.85	16	0.80	26	1.3
Spain	C	758	758	1.7	645	1.5	496	1.1
Sweden	C	177	177	1.9	201	2.2	162	1.8
United Kingdom	C	620	620	1.0	—	—	—	—
EU total	—	**6 347**	**6 205**	**1.27**	**6 452**	**1.52**	**7 154**	**1.65**
Iceland	C	61	61	19	47	15	11	3.7
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	103	103	2.17	120	2.6	149	3.2
Total	—	**6 511**	**6 369**	**1.29**	**6 619**	**1.54**	**7 314**	**1.67**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

becoming infected and these cases are also more likely to be reported. Newborns and infants are also at risk of acquiring infection from chronically infected household members. While universal vaccination programmes in many countries have reduced the risk of hepatitis B infection among young injecting drug users, older populations may still be at risk in some countries. The higher incidence among younger age groups of females compared with men is similar to that which is observed for many other sexually transmitted infections.

Interpretation of the trends is hampered by differences between surveillance systems, recent changes in reporting, low numbers in some countries, undiagnosed cases, possible differences in case definitions used (i.e. different use and/or interpretation of hepatitis B markers) and incomplete reporting in some countries. Also, some countries do not distinguish between reports of acute and chronic cases of hepatitis B and this, together with the high rate of asymptomatic cases, leads to a mix of data that cannot readily be compared between countries.

Establishing enhanced surveillance of hepatitis B virus infection will be essential to provide the necessary information with which to monitor the trends of disease, to recognise and interpret real differences in epidemiology and to evaluate prevention and control programmes. Furthermore, the harmonisation of hepatitis B and hepatitis C surveillance at the European level is needed to improve the understanding of the epidemiology of these blood-borne viruses.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-HBV/GIARDIASIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	N	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-HEPATITISB	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-HEPATITISB	O	Co	P	C	Y	N	Y	N	Y

Hepatitis C virus infection

- In 2008, 29 927 confirmed cases of hepatitis C were reported by 27 EU and EEA/EFTA Member States, with an overall rate of 8.97 per 100 000 population.
- There are limitations to the hepatitis C data, resulting mainly from the inability of routine tests to distinguish between acute and chronic infection. Nevertheless, available data suggest that hepatitis C virus infection is the most common type of viral hepatitis reported in EU and EEA/EFTA countries.
- The most commonly affected age group is the 25–44 year-olds (8.6 cases per 100 000); with twice as many males infected as females overall.

Epidemiological situation in 2008

In 2008, 30 200 cases of hepatitis C virus (HCV) infection were reported by 27 EU and EEA/EFTA Member States, of which 29 927 were confirmed, giving an overall notification rate of 8.97 per 100 000 population. No data were available from France, Italy and Liechtenstein (Table 2.2.4).

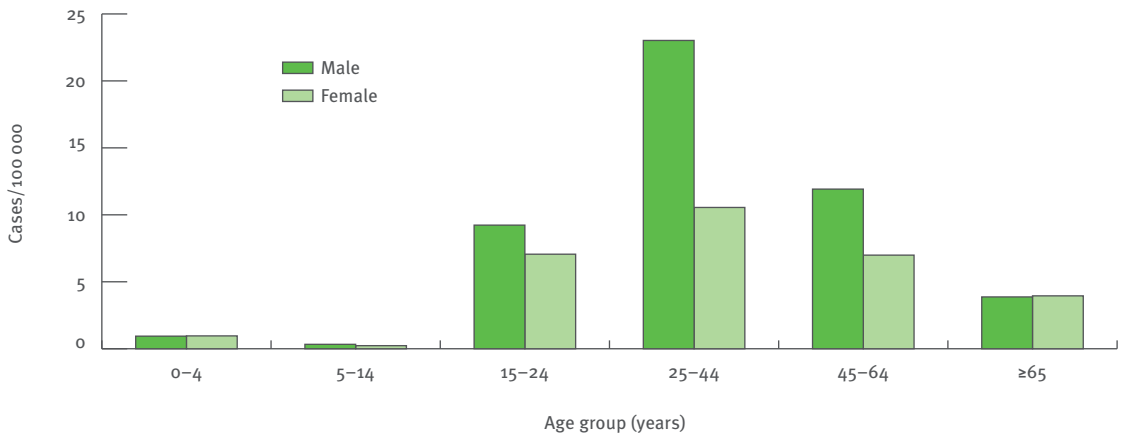
Notification rates vary widely, ranging from less than one per 100 000 in Austria, Belgium, Cyprus, Greece, Hungary, Malta, the Netherlands, Portugal, Romania and Slovenia; to the highest notification rates in Ireland (35 per 100 000), Iceland (29 per 100 000), Sweden (27 per 100 000), Finland (22 per 100 000) and the United Kingdom (17 per 100 000). However, comparisons between countries are of limited value as surveillance systems, testing and screening practices and reporting behaviour vary widely: Finland, the United Kingdom and Germany, for example, include all cases newly recognised, irrespective of the clinical presentation (screening, chronic, acute, etc.), while many other countries like Denmark and the Netherlands only report those cases confirmed as having an acute infection. Due to these differences in the reporting systems between countries, comparisons should be made with caution.

Age and gender distribution

In 2008, 18 684 confirmed cases of hepatitis C virus infection were reported in men (62 %) and 10 630 in women (35 %), with rates of 11.8 and 6.4 per 100 000, respectively (male-to-female ratio 1.84). Slightly more than half of the hepatitis C cases were reported in the age group 25–44 years (53 % of the total) with a rate of 8.6 per 100 000. In contrast to hepatitis B, the 25–44 age group is the largest affected group for both men and women (Figure 2.2.4). The highest rates in that age group were observed in Norway (156 per 100 000), Ireland (77 per 100 000), Iceland (61 per 100 000), Finland (43 per 100 000), Sweden (40 per 100 000) and the United Kingdom (37 per 100 000). The highest rates in young adults aged 15–24 years were reported in Finland (357 cases; 54 per 100 000), Norway (360 cases; 53 per 100 000) and Sweden (405 cases; 34 per 100 000).

As with hepatitis B, there are a number of children born to infected mothers that are at a higher risk of becoming infected (and are also at risk of acquiring infection from

Figure 2.2.4. Notification rates of hepatitis C cases in EU and EEA/EFTA countries, by age and gender, 2008 (n = 29 018)



Source: Country reports: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom, Iceland and Norway.

Table 2.2.4. Number and notification rate of hepatitis C virus infection cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	271	1	< 0.1	4	0.05	0	0.00
Belgium	A	43	43	0.40	434	4.1	739	7.0
Bulgaria	A	89	89	1.2	98	1.3	121	1.6
Cyprus	C	2	2	0.25	9	1.2	5	0.65
Czech Republic	C	974	974	9.4	980	9.5	1 022	10
Denmark	C	294	294	5.4	366	6.7	348	6.4
Estonia	C	64	64	4.8	36	2.7	57	4.2
Finland	C	1 143	1 143	22	1 164	22	0	0.00
France	—	—	—	—	—	—	—	—
Germany	C	6 195	6 195	7.5	6 858	8.3	7 509	9.1
Greece	C	18	17	0.15	11	0.10	10	0.09
Hungary	C	34	34	0.34	22	0.22	29	0.29
Ireland	C	1 524	1 524	35	1 561	36	1 226	29
Italy	—	—	—	—	308	0.52	322	0.55
Latvia	A	116	116	5.1	103	4.5	105	4.6
Lithuania	A	43	43	1.3	46	1.4	0	0.00
Luxembourg	C	58	58	12	58	12	12	2.6
Malta	C	1	1	0.24	1	0.25	11	2.7
Netherlands	C	45	45	0.27	44	0.27	30	0.18
Poland	A	2 353	2 353	6.2	2 753	7.2	2 949	7.7
Portugal	C	46	44	0.41	56	0.53	82	0.78
Romania	C	101	101	0.47	90	0.42	84	0.39
Slovakia	C	315	315	5.8	336	6.2	31	0.58
Slovenia	C	8	8	0.40	14	0.70	6	0.30
Spain	C	[129]	129	—	214	—	422	—
Sweden	C	2 522	2 522	27	2 096	23	1 976	22
United Kingdom	C	10 325	10 325	17	9 533	16	10 417	17
EU total		**26 713**	**26 440**	**8.04**	**27 195**	**7.02**	**27 513**	**7.12**
Iceland	C	93	93	29	81	26	45	15
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	3 394	3 394	72	0	0.00	48	1.0
Total		**30 200**	**29 927**	**8.97**	**27 276**	**6.95**	**27 606**	**7.06**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified

other household contacts) and these are more likely to be diagnosed and reported and therefore to appear in the distribution below.

Seasonality

No seasonal pattern can be observed for hepatitis C virus infection.

Discussion

Hepatitis C virus infection is mainly a blood-borne infection, with a high rate of establishing chronic infection, which is the main determinant of the populations affected by the disease. Significant proportions of older population cohorts within the EU/EEA region may have been infected by nosocomial or blood-product-associated routes several decades ago, prior to comprehensive application of universal precautions and blood screening. Currently hepatitis C transmission in Europe is closely associated with sharing infected equipment among injecting drug users. Sexual transmission is known to occur, but is estimated to have little general epidemiological impact outside very specific settings[1].

Most European countries have implemented surveillance systems for hepatitis C, but due to their differences, particularly in system structures, reporting practices, data collection methods and case definitions in use, the surveillance data are difficult to compare across countries. Similarly, interpretation of the trends is hampered by differences in surveillance systems (in terms of completeness and representativeness), changing reporting systems, low numbers in some countries, undiagnosed cases and incomplete reporting in some countries. Also, there is difficulty in interpreting whether test results refer to acute or chronic cases of hepatitis C.

Establishing enhanced surveillance of hepatitis C virus infection will be essential to provide the necessary information with which to monitor the trends of disease, to recognise and interpret real differences in epidemiology and to evaluate prevention and control programmes.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-HCV/CHLAMYDIA	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-HEPATITISC	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-HEPATITISC	O	Co	A	C	Y	N	Y	N	Y

Furthermore, the harmonisation of hepatitis B and hepatitis C surveillance at the European level is needed to improve the understanding of the epidemiology of these blood-borne viruses.

References

1. Esteban JI, Sauleda S, Quer J. The changing epidemiology of hepatitis C virus infection in Europe. J Hepatol. 2008 Jan;48(1):148-62. Epub 2007 Nov 5.

HIV/AIDS

- HIV infection remains of major public health importance in Europe with a steady number of cases of HIV infection reported. In contrast, the number of AIDS cases diagnosed (not adjusted for reporting delays) has continued to decline, although in several eastern European countries the number of AIDS cases continues to increase.
- In 2008, 25 656 diagnosed cases of HIV infection were reported by 27 Member States (excluding Austria, Denmark and Liechtenstein), a rate of 5.7 per 100 000 population.
- The highest proportion of the total number of HIV cases was reported among men who have sex with men (40 %) followed by individuals infected heterosexually (29 %) and injecting drug users (6 %).
- Among the 23 EU/EFTA countries that have consistently reported HIV data since 2000, the rate of reported cases of HIV infection has increased 33 % from 4.2 per 100 000 in 2000 (13 265 cases) to 5.6 per 100 000 (18 019 cases) in 2008.

Epidemiological situation in 2008 for HIV infection

In 2008, 25 656 HIV cases were diagnosed and reported by 27 EU and EEA/EFTA Member States (excluding Austria, Denmark and Liechtenstein), a rate of 5.7 per 100 000 population (Table 2.2.5).

The three countries with the highest rates are Estonia (41 per 100 000; 545 cases), Latvia (16 per 100 000; 358 cases) and the United Kingdom (12 per 100 000; 7 298 cases). The lowest rates were reported by Slovakia (1.0 per 100 000; 53 cases) and Romania (0.8 per 100 000; 179 cases). The number of confirmed HIV cases reported for 2008 is 7 % lower than that reported for 2007. However, there is an element of reporting delay in national HIV/AIDS surveillance systems in several countries, which will update their historical numbers in the next year.

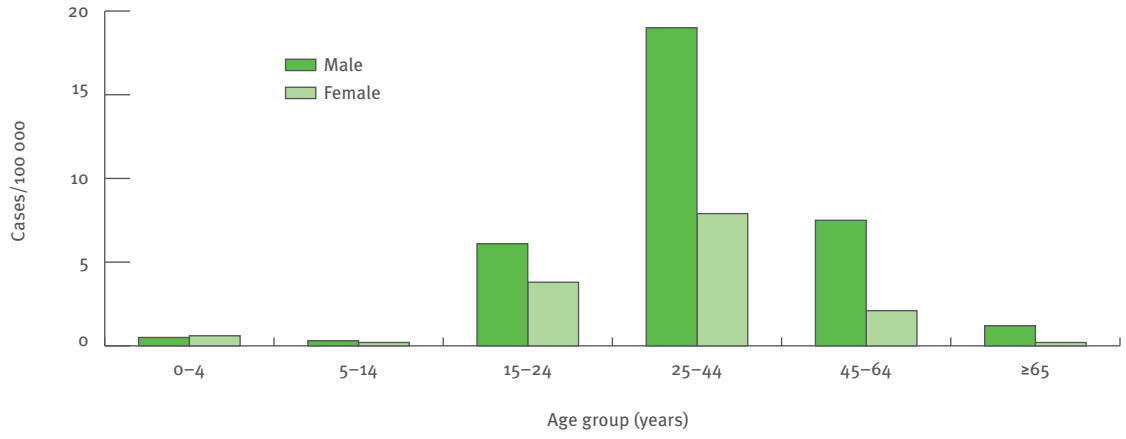
Age and gender distribution of HIV infection

In 2008, 17 983 HIV cases were reported in men and 7 556 in women, a rate of 8.6 and 3.3 per 100 000, respectively (male-to-female ratio 2.4). The majority of the newly diagnosed cases of HIV infection were reported in the age group 25–44 years (66 %); 21 % were reported in the age group 45–64 years and 11 % in the 15–24 year age group. Large differences in rates by gender are found for the age group 25–44 years: 19 per 100 000 in men and 7.9 per 100 000 in women and similarly in the age group 45–64 years (Figure 2.2.5). The overall rates per 100 000 for men and women follow a similar pattern in the other age groups, except in the under 15 year-olds.

AIDS diagnoses

In 2008, a total of 5 218 cases of AIDS were diagnosed in the EU and EEA/EFTA countries (no data from Denmark, Sweden or Liechtenstein), representing a rate of 1.1 cases per 100 000 population The highest rates were reported by Estonia (4.6 per 100 000; 61 cases), Latvia (4.4 per 100 000; 99 cases), Portugal (3.6 per 100 000;

Figure 2.2.5. Notification rates of newly diagnosed cases of HIV infection in the EU and EEA/EFTA, by age and gender, 2008 (n = 25 539)



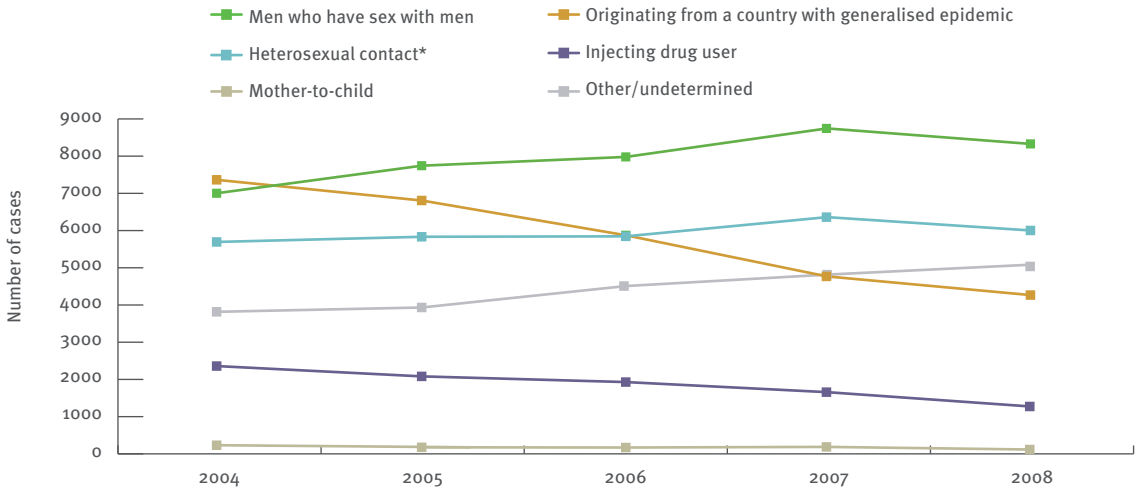
Source: Country reports: Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.2.5. Number and notification rate of HIV infections diagnosed in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008		2007		2006	
		Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
				Cases	Rate	Cases	Rate
Austria[a]	—	—	—	—	—	—	—
Belgium	C	1 079	10	1 052	9.9	995	9.4
Bulgaria	C	122	1.6	126	1.6	92	1.2
Cyprus	C	37	4.7	46	5.9	35	4.5
Czech Republic	C	148	1.4	121	1.2	91	0.9
Denmark	C	—	—	306	5.6	245	4.5
Estonia	C	545	41	633	47	668	50
Finland	C	154	2.9	190	3.6	191	3.6
France	C	4 068	6.4	5 592	8.8	5 645	8.9
Germany	C	2 806	3.4	2 774	3.4	2 663	3.2
Greece	C	543	4.8	536	4.8	482	4.3
Hungary	C	145	1.4	119	1.2	81	0.8
Ireland	C	405	9.2	391	9.0	353	8.3
Italy[b]	A	1 958	—	1 607	—	1 556	—
Latvia	C	358	16	350	15	299	13
Lithuania	C	95	2.8	106	3.1	100	3
Luxembourg	C	47	9.7	38	7.9	44	9.3
Malta	C	28	6.8	14	3.4	26	6.4
Netherlands[c]	C	1 361	8.3	1 300	7.9	1 177	7.2
Poland	C	804	2.1	714	1.9	749	2
Portugal	C	1 124	11	1 551	15	1 665	16
Romania	C	179	0.8	185	0.9	217	1
Slovakia	C	53	1	39	0.7	27	0.5
Slovenia	C	48	2.4	37	1.8	33	1.6
Spain[d]	C	1 583	—	1 498	—	1 534	—
Sweden	C	359	3.9	444	4.9	365	4
United Kingdom	C	7 298	12	7 495	12	7 608	13
EU total[e]		**25 347**	**5.7[e]**	**27 264**	**6.3[e]**	**26 941**	**6.2[e]**
Iceland	C	10	3.2	13	4.2	11	3.6
Liechtenstein	—	—	—	—	—	—	—
Norway	C	299	6.3	248	5.3	276	5.9
Total[e]		**25 656**	**5.7[e]**	**27 525**	**6.3[e]**	**27 228**	**6.2[e]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
Note: The figures published here may, for some countries, be provisional data due to reporting delays and therefore liable to change.
(a) HIV is not notifiable in Austria.
(b) HIV reporting undertaken in 11 of the 20 Italian Regions in 2008, covering 47.6 % of the total population.
(c) The Dutch data here reflect reporting year rather than year of diagnosis.
(d) HIV data from 12 autonomous regions of Spain in 2008, covering 44 % of the total population.
(e) Rates calculated excluding the Italian and Spanish data.

Figure 2.2.6. Trend in reported HIV infections by transmission mode and origin (only countries reporting this data for the whole period included)



Source: Country reports: Belgium, Bulgaria, Cyprus, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

387 cases), and Spain (2.9 per 100 000; 1170 cases). The steady decrease in the number of reported AIDS cases diagnosed in recent years in the EU has continued in 2008, apart from the Baltic States. Since 2000, the number of reported AIDS cases diagnosed in those 27 countries that have consistently reported, has declined by more than 50 %, from 10 868 cases (2.7 per 100 000) to 5 218 cases (1.1 per 100 000) in 2008 due to treatment effect and reporting delay.

Enhanced surveillance in 2008

Among the 25 656 cases reported by 27 of 30 countries, 4 807 (19 %) were reported to originate from countries with a generalised HIV epidemic. Data on transmission mode (when HIV diagnoses in individuals from countries with generalised epidemics are excluded) indicate that sex between men is the predominant mode of transmission in EU and EEA/EFTA countries, accounting for 40 % of the HIV diagnoses in 2008. This is followed by heterosexual contact, accounting for 29 % of the HIV diagnoses. Only 6 % were reported among injecting drug users. Transmission mode was unknown for 5 083 cases (24 %). The remaining cases (1 %) included 116 cases of HIV infected through mother-to-child transmission and 45 cases by other routes (nosocomial infection, transfusion or use of other blood products).

Trends in HIV reporting

Among the 23 EU and EEA/EFTA countries that have consistently reported HIV data since 2000, the rate of diagnosed cases of HIV has increased from 4.2 per 100 000 in 2000 (13 265 cases) to 5.6 per 100 000 (18 019 cases) in 2008. Rates of diagnosed cases of HIV have doubled in Bulgaria, Czech Republic, Hungary, the Netherlands, Slovakia, Slovenia; rates have increased by more than 50 % in Germany, Norway, Lithuania and the United Kingdom and rates have decreased by more than 20 % in Latvia, Portugal and Romania.

Since 2004, 26 EU and EEA/EFTA countries have consistently reported data on transmission mode. Excluding those cases from countries with generalised epidemics, the following trends in transmission mode are observed (Figure 2.2.6):

- The number of HIV diagnoses among men having sex with men has increased by 19 % from 7 003 in 2004 to 8 329 in 2008.
- The number of heterosexually acquired cases remained stable at around 6 000 cases.
- The number of HIV diagnoses among injecting drug users has declined by 46 % from 2 359 in 2004 to 1 273 in 2008.
- The number of cases with unknown risk factors has increased 33 % from 3 817 in 2004 to 5 083 in 2008.
- The number of diagnosed HIV cases infected through mother-to-child transmission decreased by 50 % from 232 in 2004 to 116 in 2008.
- The number of heterosexual cases from countries with generalised epidemics decreased by 42 % from 7 364 cases in 2004 to 4 267 cases in 2008.

Trends need to be interpreted with caution as the numbers of HIV diagnoses reported for the more recent years (e.g. 2007/2008) will most likely increase in the coming years due to the known reporting delay.

Discussion

HIV infection remains of major public health importance in Europe with a continued increase in the number of diagnosed HIV cases in those countries consistently reporting. In contrast, despite certain limitations with the data, the number of AIDS diagnoses appears to have decreased, except in the Baltic States.

In EU and EEA/EFTA countries the highest proportion of the total number of HIV cases was diagnosed in men who have sex with men. National prevention programmes aimed at reducing HIV transmission within Europe should have a strong focus on this group. In addition, heterosexual HIV transmission is important and is increasing in several countries in Europe. Migrant populations should also be targeted in national prevention programmes and access to treatment and care services ensured. Among injecting drug users, there seems to be a general decline in the number of HIV diagnoses. However, this is still the predominant transmission mode in the Baltic States.

In central European countries, levels of HIV remain low and stable, although there is evidence of increasing sexual (both heterosexual and homosexual) transmission in many of them. The nature of the epidemic in this sub-region is diverse, with sexual transmission between men dominating in some countries and heterosexual transmission dominating in other countries.

Enhanced surveillance of HIV and AIDS in Europe is essential to provide the information that is necessary to monitor the epidemic and evaluate the public health response to control the transmission of infections. In order to achieve this aim, countries in Europe need to ensure that surveillance data are of high quality, and need to provide, in particular, complete case reports with HIV and AIDS surveillance data. Achieving full coverage of reporting in the EU and wider WHO European Region is of paramount importance.

References

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. HIV/AIDS surveillance in Europe 2008. Stockholm: ECDC;2009.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Belgium	BE-HIV/AIDS	V	Co	A	C	Y	Y	Y	N	Y
Bulgaria	BG-HIV	Cp	Co	P	C	Y	N	N	N	Y
Cyprus	CY-HIV/AIDS	Cp	Co	A	C	N	N	N	Y	Y
Czech Republic	CZ-HIV/AIDS	Cp	Co	A	C	Y	Y	Y	N	Y
Estonia	EE-HIV	Cp	Co	P	C	Y	Y	Y	N	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MNOID-HIV	Cp	Co	P	C	Y	Y	Y	N	Y
Germany	DE-SURVNET@RKI7.3-HIV	Cp	Co	P	C	Y	Y	Y	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-HIV/AIDS	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-HIV/AIDS	V	Co	P	C	Y	Y	Y	N	Y
Italy	IT-COA-ISS	Cp	Se	P	-	Y	N	Y	-	N
Latvia	LV-HIV/AIDS	V	Co	P	C	N	Y	Y	N	Y
Lithuania	LT-AIDS_CENTRE	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-HIV	V	Co	P	C	Y	Y	N	N	Y
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	N	-
Netherlands	NL-HIV/AIDS	V	Co	P	C	N	Y	Y	N	Y
Norway	NO-MSIS_B	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-HIV	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-HIV/AIDS	Cp	Co	P	C	Y	Y	N	N	Y
Romania	RO-RSS	Cp	Co	P	C	N	Y	Y	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-HIVSUR-HIV	Cp	Co	P	C	N	Y	N	N	Y
Spain	ES-HIV	Cp	Co	P	C	Y	Y	N	N	N
Sweden	SE-SweHIVReg	Cp	Co	P	C	Y	Y	Y	N	Y
United Kingdom	UK-HIV	V	Co	A	C	Y	Y	Y	Y	Y

Syphilis

- In 2008, 16 928 confirmed cases of syphilis were reported by 29 EU and EEA/EFTA Member States resulting in an overall rate of 4.13 per 100 000 population.
- Almost three quarters of the cases were diagnosed in men; this may be influenced by the ongoing epidemic in Europe among men who have sex with men.
- Syphilis is reported to mainly affect the 25–44 year-olds (9.2 cases per 100 000) but the notification rate is also high in the age group 15–24 years (6.5 per 100 000).
- In 2008, 67 confirmed cases of congenital syphilis were reported by ten countries. It is very likely that the true incidence of congenital syphilis is underestimated.

Epidemiological situation in 2008

For 2008, 19 063 cases of syphilis were reported by 27 EU and two EEA/EFTA Member States and 16 928 of these cases were confirmed. No data were available for Liechtenstein.

The overall notification rate was 4.13 per 100 000 population (Table 2.2.6). There is a wide variation in notification rates ranging from less than one case per 100 000 in Iceland and Portugal to notification rates higher than 10 per 100 000 (Romania, 19; Latvia, 10).

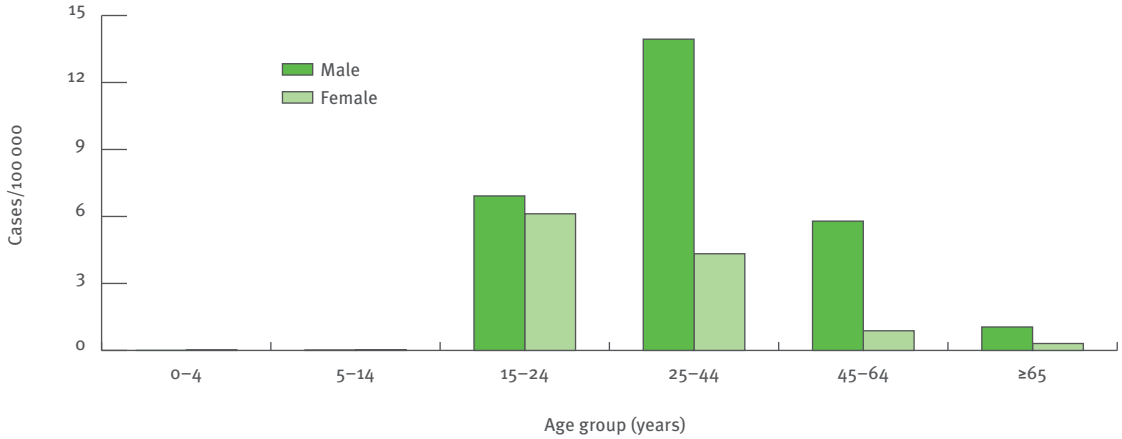
Age and gender distribution

Information on gender was available for 16 874 confirmed cases of syphilis, of which 12 491 (74 %) were reported in males and 4 383 (26 %) in females with rates of 6.51 and 2.18 per 100 000, respectively (male-to-female ratio 2.99). The highest rates for both men and women were reported by Romania (18 and 19 per 100 000, respectively) followed by Latvia (11 and 9.2 per 100 000) and Lithuania (12 and 7. 9 per 100 000).

Information on age was available for 15 337 confirmed cases. The majority (60 %) was reported in the age group 25–44 years (9 193 cases, 9.2 per 100 000), 19 % of cases were reported in the age group 45–65 years (2 984 cases, 3.3 per 100 000) and 18 % in the age group 15–24 years (2 771 cases, 6.5 per 100 000).

The age-specific rates for men are higher overall than for women (Figure 2.2.7). Among men the highest age-specific rate is found in the age group 25–44 years (7 043 cases, 13.9 per 100 000) and for women in the age group 15–24 years (1 268 cases, 6.1 per 100 000). The highest age-specific rates among men were reported by Romania for the age group 25–44 years (33 per 100 000) followed by age group 15–24 years (25 per 100 000); Latvia and Lithuania also reported high rates among 25–44 year-old men (23 and 22 per 100 000, respectively). The highest rates among women were reported by Romania for the age group 15–24 years (52 per 100 000) followed by the age group 25–44 years (33 per 100 000); high rates were also reported by Lithuania and Latvia for the 15–24 year age group (21 and 14 per 100 000, respectively).

Figure 2.2.7. Notification rates of syphilis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 15 320)



Source: Country reports: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom and Norway.

Table 2.2.6. Number and notification rate of reported cases of syphilis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria[a]	C	61	61	—	61	—	25	—
Belgium	C	480	480	4.5	403	3.8	288	2.74
Bulgaria	A	419	419	5.5	440	5.7	490	6.35
Cyprus	C	14	14	1.8	10	1.3	13	1.70
Czech Republic	C	329	329	3.2	203	2.0	77	0.75
Denmark	C	151	151	2.8	92	1.7	77	1.42
Estonia	C	71	71	5.3	75	5.6	125	9.30
Finland	C	215	215	4.1	188	3.6	131	2.49
France[a]	C	557	557	—	599	—	478	—
Germany	C	3 172	3 172	3.9	3 278	4.0	3 159	3.83
Greece	A	155	155	1.4	197	1.8	141	1.27
Hungary	A	549	549	5.5	393	3.9	559	5.55
Ireland	C	119	119	2.7	62	1.4	60	1.43
Italy	C	767	767	1.3	794	1.3	743	1.26
Latvia	C	233	233	10	301	13	483	21.05
Lithuania	C	326	326	9.7	275	8.1	336	9.87
Luxembourg	C	12	12	2.5	14	2.94	11	2.34
Malta	C	16	16	3.9	12	2.9	12	2.96
Netherlands	C	793	793	4.8	657	4.0	806	4.93
Poland	A	929	929	2.4	851	2.2	933	2.45
Portugal	C	101	95	0.89	109	1.0	121	1.14
Romania	A	4 006	4 006	19	4 245	20	5 661	26.20
Slovakia	C	225	225	4.2	152	2.8	89	1.65
Slovenia	C	65	65	3.2	28	1.4	15	0.75
Spain	A	2 545[b]	416[c]	—	358	—	809	—
Sweden	C	171	171	1.9	239	2.6	172	1.90
United Kingdom	A	2 524	2 524	4.1	2 633	4.3	2 683	4.44
EU total		**19 005**	**16 870**	**4.17[d]**	**16 669**	**4.13[d]**	**18 497**	**4.55[d]**
Iceland	C	2	2	0.63	1	0.33	4	1.3
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	56	56	1.2	61	1.3	67	1.4
Total		**19 063**	**16 928**	**4.13[d]**	**16 731**	**4.09[d]**	**18 568**	**4.51[d]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report, U: Unspecified.
(a) Sentinel surveillance system without national coverage.
(b) Statutory surveillance system.
(c) Sentinel surveillance system based on a limited number of selected laboratories.
(d) Rates calculated excluding the Austrian, French and Spanish data.

Seasonality

Data on seasonality were available from 21 reporting countries. As expected, no seasonal trends were apparent.

Congenital syphilis

In 2008, 17 EU/EEA countries reported congenital syphilis: eight countries reported zero cases and 10 countries reported 69 cases, of which 44 were confirmed. The majority of the confirmed cases were reported from Portugal (14 cases), Spain (10) and Romania (nine). The United Kingdom reported four cases; Lithuania and Slovakia two cases; Greece, Hungary and Latvia one case each. In 2007, 54 confirmed cases of congenital syphilis were reported by 13 countries (four with zero reports); in 2006 the total number was 46. For the period 2006–08 the majority of confirmed cases were reported by Portugal and Spain. It must be noted that many countries do not report congenital syphilis cases and it is quite likely that the true incidence is underestimated.

Enhanced surveillance for sexually transmitted infections

The coordination of the European network on STI surveillance has been integrated into ECDC as from 1 January 2009. The data collection exercise on the 1990–2008 data has been finalised but the data analyses and reporting are still on-going and a report will be published later in 2010.

Discussion

Until the mid-1990s, syphilis incidence rates were very low in western European countries. However, over the past ten years a number of countries have experienced a rise in the rate of syphilis cases. Initially occurring predominantly among men who have sex with men,

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-STISentinella	V	Se	A	C	Y	N	N	N	N
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-STI	Cp	Co	P	A	-	-	Y	Y	-
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-STD	Cp	Co	P	C	Y	Y	Y	Y	Y
Denmark	DK-STI_CLINICAL	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-STI	V	Se	A	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.3	Cp	Co	P	C	Y	Y	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	O	P	A	Y	Y	Y	Y	N
Hungary	HU-STD SURVEILLANCE	Cp	Se	P	A	N	Y	N	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-SYPHILIS	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-STI	V	Se	P	C	N	Y	N	N	Y
Norway	NO-MSIS_B	Cp	Co	P	C	Y	Y	Y	-	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-SYPHILIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SPOSUR	Cp	Co	P	C	N	Y	N	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Spain	ES-STATUTORY_DISEASES_STI_AGGR	Cp	Co	P	A	N	Y	N	N	-
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-GUM	Cp	O	P	A	N	N	N	Y	-

subsequent outbreaks have been recorded among subgroups including commercial sex workers and their clients, migrant communities and among heterosexual adults.

In central European countries high rates of syphilis were observed in the early 1990s. The increases were related to the behaviour and socioeconomic changes in this region. A decrease in incidence was then observed in the following years. This could have reflected a true decrease but could possibly be linked to underreporting.

From 2006 to 2007 the total number of confirmed cases of syphilis infections had decreased by 10 %. Confirmed cases and notification rate per 100 000 population did not differ greatly between 2007 and 2008. The sustainability of surveillance of syphilis across countries in Europe is needed to ensure that surveillance data is of a high quality. Furthermore, a harmonisation at the European level is needed to improve comparability of trends. Special attention should be given to the surveillance of congenital syphilis. These data are important for the evaluation of strategies for prevention of mother-to-child transmission.

2.3 Food- and waterborne diseases and zoonoses

Anthrax, botulism, brucellosis, campylobacteriosis, cholera, cryptosporidiosis, echinococcosis, infection with VTEC/STEC, giardiasis, hepatitis A, leptospirosis, listeriosis, salmonellosis, shigellosis, toxoplasmosis, trichinellosis, tularaemia, typhoid/paratyphoid, variant Creutzfeldt-Jakob disease and yersiniosis.

Anthrax

- Anthrax remains a very uncommon disease in the European Union.

Epidemiological situation in 2008

In 2008, 29 EU and EEA/EFTA countries provided data (only Liechtenstein did not report). A total of three cases of anthrax were reported (all confirmed) by Greece, United Kingdom and Bulgaria. Compared with previous years (2006: 16 cases; 2007: five cases), the number of reported cases continued to decrease.

Age and gender distribution

Two of the cases were male. The gender of the Bulgarian case was unknown. One case was 25–44 years of age, one case was 45–64 years of age and one case was over 65 years old.

Seasonality

The cases occurred in August, September, and October 2008.

Discussion

As in previous years, in the normal environment, anthrax remains a very rare disease in the European Union. Cases continue to be sporadic and are often related to occupational exposure.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-ANTRAX	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-ANTHRAX	Cp	Co	A	C	Y	N	Y	Y	Y

Botulism

- The notification rate of botulism in 2008 for the EU is very low (0.02 per 100 000) and the number of cases decreased by 14 % compared with the previous year, 2007.
- As in 2007, the highest number of cases was reported among the age group 24–44 years.
- The notification rate is higher among men than among women (1.6:1).

Epidemiological situation in 2008

In 2008, 157 cases of botulism were reported, with 29 EU and EEA/EFTA countries contributing data (all except Liechtenstein) (Table 2.3.1). Of these 157 cases, 112 were confirmed, which represents a slight decrease (14 %) from 2007, when 130 confirmed cases were reported. The overall EU and EEA/EFTA notification rate was 0.02 per 100 000. Poland, Romania and Italy contributed almost half of all the confirmed cases.

Age and gender distribution

Data on gender and age was available for 110 cases. The highest number of cases (n = 39) was reported for the age group 25–44 years (Figure 2.3.1). The notification rate was higher among males than among females in all age groups except among four year-olds or younger (0.03 per 100 000 for females versus 0.01 for males). The male-to-female ratio was 1.68 in 2008.

Importation status was only specified for 43 cases. Out of these, only one case in the Netherlands was notified as imported.

Seasonality

Using data from the 26 EU and EEA/EFTA countries that provided this data for 2006, 2007 and 2008 (all except Finland, Lithuania, Czech Republic and Liechtenstein), an unexpected peak is observed in August 2008 (Figure 2.3.2). However, as this 'August peak' has not been seen in previous years, it is probably not epidemiologically relevant.

Discussion

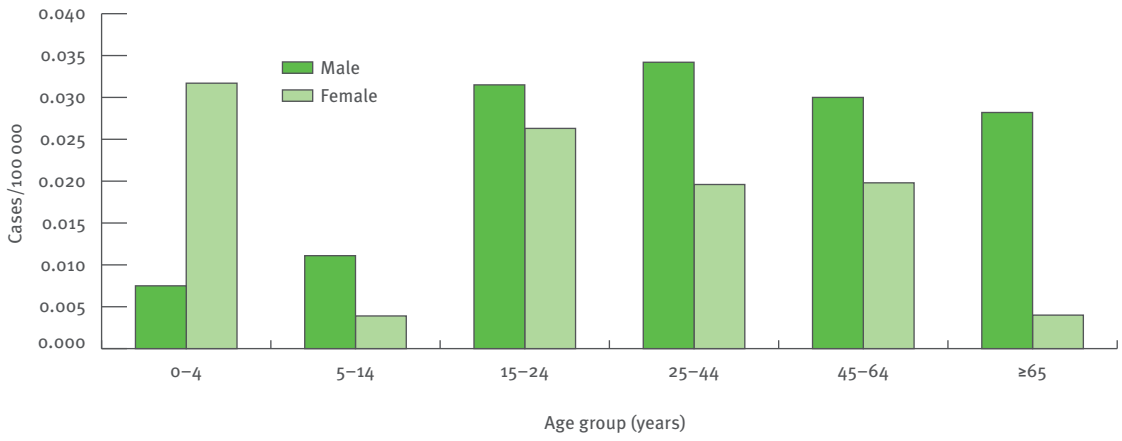
At least three different incidents were reported and investigated in 2008, associated with the three different types of exposure: food-borne botulism in France[1], possible intestinal botulism in Denmark[2] and wound botulism in injecting drug users in Ireland[3]. The latter is a reminder to be alert about emerging risks and changes in trends regarding modes of transmission.

The gender distribution among children of four years old or younger is the opposite of that in all other age groups where males are predominant, but the reason for this is unknown.

References

1. King LA; French Multidisciplinary Outbreak Investigation Team. Two severe cases of botulism associated with industrially produced chicken enchiladas, France, August 2008. Euro Surveill. 2008 Sep 11;13(37). pii: 18978.
2. Paerregaard A, Angen O, Lisby M, Mølbak K, Clausen ME, Christensen JJ. Denmark: botulism in an infant or infant botulism? Euro Surveill. 2008 Dec 18;13(51). pii: 19072.
3. Barry J, Ward M, Cotter S, Macdiarmada J, Hannan M, Sweeney B, et al. Botulism in injecting drug users, Dublin, Ireland, November-December 2008. Euro Surveill. 2009 Jan 8;14(1). pii: 19082.

Figure 2.3.1. Notification rates of botulism in the EU and EEA/EFTA, by age and gender, 2008 (n = 110)



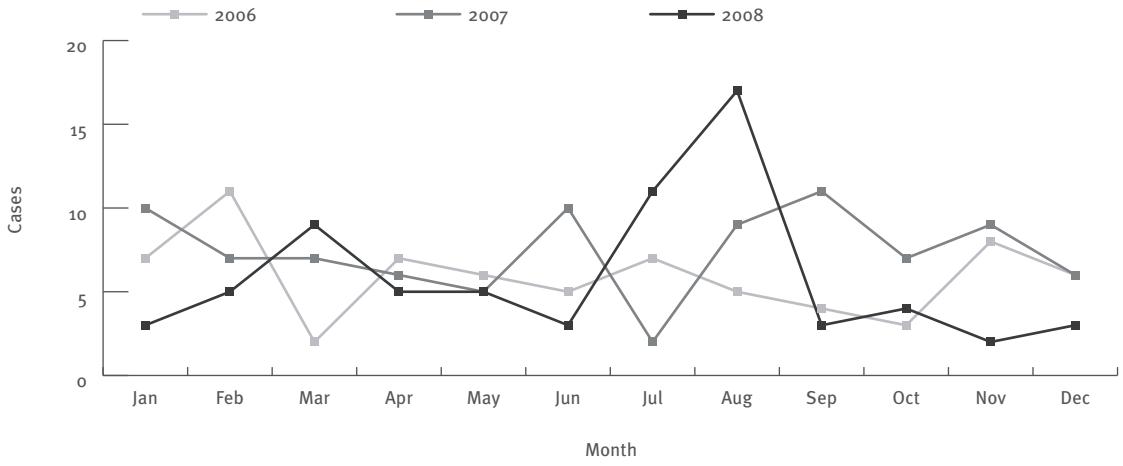
Source: Country reports: Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Spain and United Kingdom. Austria, Belgium, Bulgaria, Cyprus, Estonia, Finland, Greece, Malta, Slovakia, Slovenia, Sweden, Iceland and Norway reported zero cases.

Table 2.3.1. Number and notification rate of botulism cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	0	0	0.00	0	0.00	5	< 0.1
Belgium	C	0	0	0.00	0	0.00	0	0.00
Bulgaria	C	0	0	0.00	0	0.00	8	0.10
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	1	1	< 0.1	1	< 0.1	0	0.00
Denmark	C	1	1	< 0.1	0	0.00	0	0.00
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	0	0	0.00	0	0.00	—	—
France	C	9	8	< 0.1	10	< 0.1	4	< 0.1
Germany	C	10	10	< 0.1	9	< 0.1	7	< 0.1
Greece	C	0	0	0.00	1	< 0.1	1	< 0.1
Hungary	C	3	1	< 0.1	5	< 0.1	6	< 0.1
Ireland	C	7	5	0.11	0	0.00	1	< 0.1
Italy	C	23	23	< 0.1	16	< 0.1	12	< 0.1
Latvia	A	2	1	< 0.1	0	0.00	0	0.00
Lithuania	A	2	2	< 0.1	4	0.12	3	< 0.1
Luxembourg	C	1	1	0.21	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	7	1	< 0.1	1	< 0.1	1	< 0.1
Poland	C	46	22	< 0.1	24	< 0.1	22	< 0.1
Portugal	C	4	4	< 0.1	10	< 0.1	9	< 0.1
Romania	C	32	26	0.12	31	0.14	14	< 0.1
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	0	0	0.00	0	0.00	0	0.00
Spain	C	[5]	[5]	< 0.1	4	< 0.1	2	0.00
Sweden	C	0	0	0.00	0	0.00	2	< 0.1
United Kingdom	C	4	1	0.00	14	< 0.1	10	< 0.1
EU total	—	**157**	**112**	**0.02**	**130**	**< 0.1**	**107**	**< 0.1**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	0	0	0.00	0	0.00	0	< 0.1
Total	—	**157**	**112**	**0.02**	**130**	**< 0.1**	**107**	**< 0.1**

Source: Country reports.*A: Aggregated data report; C: Case-based report; —: No report, U: Unspecified.

Figure 2.3.2. Seasonal distribution of botulism cases in the EU and EEA/EFTA, 2006–08



Data source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-BOTULISM	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	N	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-BOTULISM	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-BOTULISM	Cp	Co	P	C	Y	N	Y	Y	Y

Brucellosis

- In 2008, the notification rate of brucellosis in the EU and EEA/EFTA was 0.15 cases per 100 000 population.
- Greece was the country with the highest notification rate (2.7 cases per 100 000), mostly related to a large food-borne outbreak.
- As in previous years, the majority of reported cases occurred in southern European countries (87.5 % of confirmed cases reported by Greece, Spain, Portugal and Italy).

Epidemiological situation in 2008

In 2008, 735 confirmed cases of brucellosis were reported by 18 EU and EEA/EFTA countries, while a further 11 countries reported zero cases. The overall notification rate was 0.15 cases per 100 000, slightly higher than in 2007 (Table 2.3.2). This increase was mainly due to a large increase in the number of cases reported by Greece in 2008 (304 compared with 101 cases in 2007).

Although there was a decrease in the notification rates in Portugal, Italy and Spain in 2008, southern European countries (Greece, Spain, Portugal and Italy) continue to account for the majority (87.5 %) of the total number of cases (Table 2.3.2).

Reported cases of brucellosis in northern countries such as Germany, Sweden, Czech Republic and the UK were mainly imported while in more southern countries the majority of reported cases were domestic. Contact with farm animals and cheese consumption were the most commonly reported modes of transmission of brucellosis infection.

Age and gender distribution

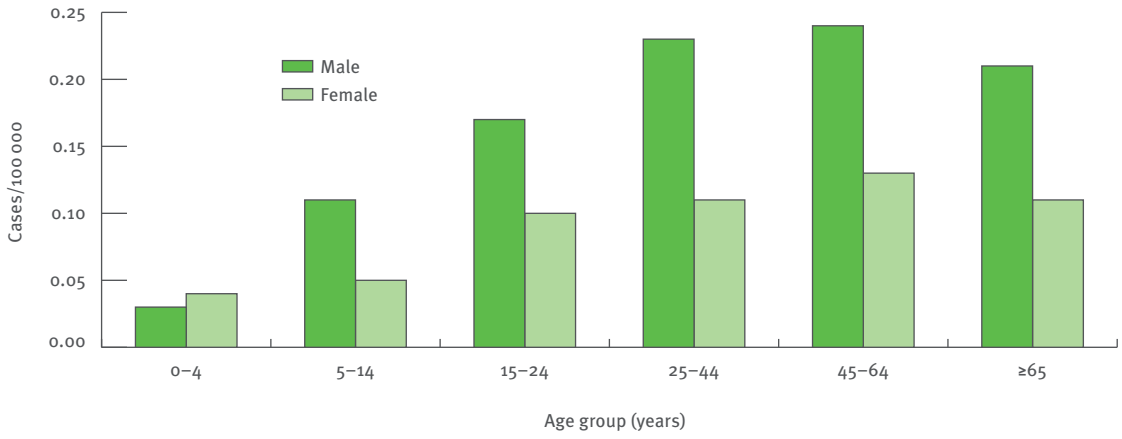
Twelve countries provided specific data on age and gender distribution of reported cases. The gender distribution of the 724 confirmed cases for which this information was reported, was 463 (64 %) males, 260 (36 %) females and 1 case was reported as gender 'unknown' (0.1 %). The male-to-female ratio decreased from 2.2:1 in 2007 to 1.87 in 2008.

In 2008, the highest notification rate for both males and females occurred in the age group 45–64 years with 0.24 and 0.13 cases per 100 000, respectively, followed by the age group 25–44 years with 0.23 and 0.12 cases per 100 000, respectively (Figure 2.3.3). Notification rates were higher for males than females in every age group except for 0–4 year-old children where the rate among females was 0.04 cases per 100 000 compared with 0.03 cases per 100 000 among males. This contrasts with the age–gender distribution for 2007 where males had the highest rates across all age groups.

Seasonality

In 2008, brucellosis cases were reported throughout the whole year (Figure 2.3.4). However, a higher number of cases were reported in the late spring and early summer months (May–July) and decreased from August onwards.

Figure 2.3.3. Notification rates of brucellosis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 723)



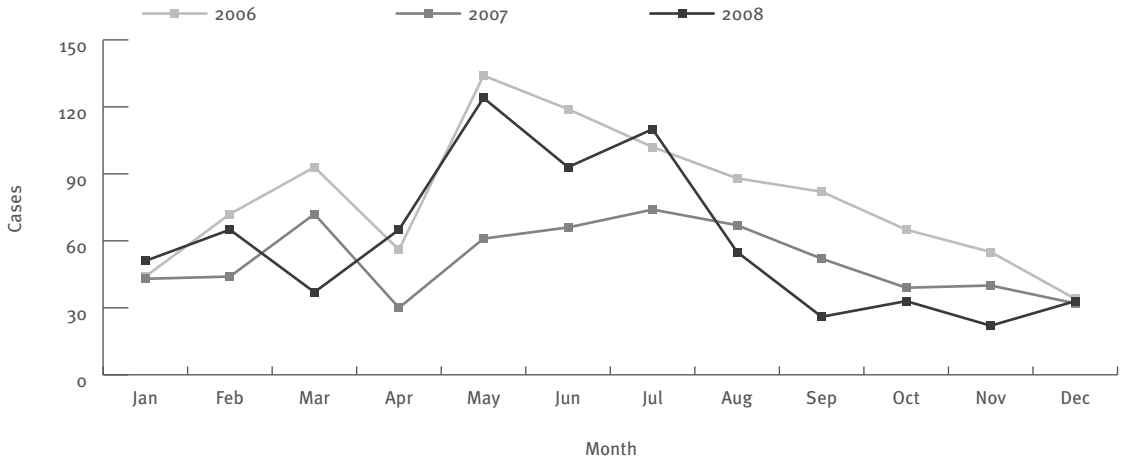
Source: Country reports: Austria, Czech Republic, France, Germany, Greece, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

Table 2.3.2. Number and notification rate of human brucellosis cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	5	5	< 0.1	0	0.00	1	< 0.1
Belgium	A	1	1	< 0.1	3	< 0.1	2	< 0.1
Bulgaria	A	19	8	0.10	9	0.12	3	< 0.1
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	1	1	< 0.1	0	0.00	0	0.00
Denmark	—	—	—	—	—	—	—	—
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	0	0	0.00	2	< 0.1	0	0.00
France	C	21	21	< 0.1	14	< 0.1	24	< 0.1
Germany	C	24	24	< 0.1	21	< 0.1	37	< 0.1
Greece	C	344	304	2.7	101	0.90	121	1.1
Hungary	C	0	0	0.00	1	< 0.1	—	—
Ireland	C	3	2	< 0.1	7	0.16	4	0.10
Italy	C	163	163	0.27	179	0.30	456	0.78
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	A	0	0	0.00	0	0.00	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	8	3	< 0.1	2	< 0.1	6	< 0.1
Poland	C	4	1	0.00	1	0.00	0	0.00
Portugal	C	56	56	0.53	74	0.70	76	0.72
Romania	C	2	2	< 0.1	2	< 0.1	1	< 0.1
Slovakia	C	1	1	< 0.1	0	0.00	0	0.00
Slovenia	C	2	2	0.10	1	< 0.1	0	0.00
Spain	C	168	120	0.26	201	0.45	196	0.45
Sweden	C	8	8	< 0.1	8	< 0.1	4	< 0.1
United Kingdom	C	13	13	< 0.1	13	< 0.1	20	< 0.1
EU total		**843**	**735**	**0.15**	**639**	**0.13**	**952**	**0.20**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	C	0	0	0.00	0	0.00	—	—
Norway	C	0	0	0.00	0	0.00	3	< 0.1
Total		**843**	**735**	**0.15**	**639**	**0.13**	**954**	**0.20**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.3.4. Seasonal distribution brucellosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-BRUCELLOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-BRUCELLOSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-BRUCELLOSIS	O	Co	A	C	Y	N	Y	Y	Y

Discussion

In 2008, the notification rate of brucellosis cases was slightly higher than in 2007. Greece accounted for 41 % of reported cases in the EU, mainly due to a large food-borne outbreak of brucellosis that affected 111 people. This outbreak was associated with consumption of soft cheese made from unpasteurised milk from sheep and goats. Contaminated unpasteurised milk and dairy products such as cheese have been documented as common vehicles of transmission in several food-borne outbreaks of brucellosis in countries such as Spain, Greece and Italy.

There was an apparent increase in the frequency of reported brucellosis in women from 193 cases in 2007 to 260 in 2008. However, as in previous years, the highest numbers of reported cases were among males aged 25 and over. This could indicate occupational exposure of livestock-related professions such as farmers, farm animal veterinarians and abattoir workers.

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and Foodborne Outbreaks in The European Union in 2008, EFSA Journal; 2010 8(1):1496.
2. Ramos J, Bernal E, Esguevillas T, Lopez-Garcia P, Gaztambide M, Gutierrez F. Non-imported brucellosis outbreak from unpasteurized raw milk in Moroccan immigrants in Spain. Epidemiol. Infect. (2008), 136, 1552–1555.
3. Farina F, Fuser R, Rossi M, Scotton P. Brucellosis outbreak in Treviso province caused by infected cheese from an endemic area. Infez. Med. (2008), 16 (3), 154-157.

Campylobacteriosis

- The notification rate (44.1 per 100 000) of confirmed human cases of *Campylobacter* species infection was slightly lower (3 %) than in 2007.
- The age distribution showed a bimodal pattern with highest incidence among those under five years old and a smaller peak among the 25–44 year-olds.
- The notification rate was generally higher among men than women (male-to-female ratio: 1.2:1), except for the age groups 15–44 in which a slightly higher incidence was observed for women.
- As described in previous years, campylobacteriosis shows a characteristic seasonality, with the highest numbers reported in the summer; from June to September.

Epidemiological situation in 2008

In 2008, 193 814 cases (193 554 confirmed) were reported by 25 EU and EEA/EFTA countries (Table 2.3.3) (Greece and Portugal did not report). Compared with 2007 (203 736 cases), the number of confirmed cases in 2008 decreased slightly by 5 %, but still exceeded the number of confirmed cases in 2006 (178 933 cases). The overall notification rate was 44.1 per 100 000 (slightly down from 46.2 in 2007), with the highest notification rates reported in the Czech Republic (193 per 100 000), followed by the United Kingdom and Luxembourg (90.9 and 90.7 per 100 000, respectively). Latvia was the only country to report no confirmed cases.

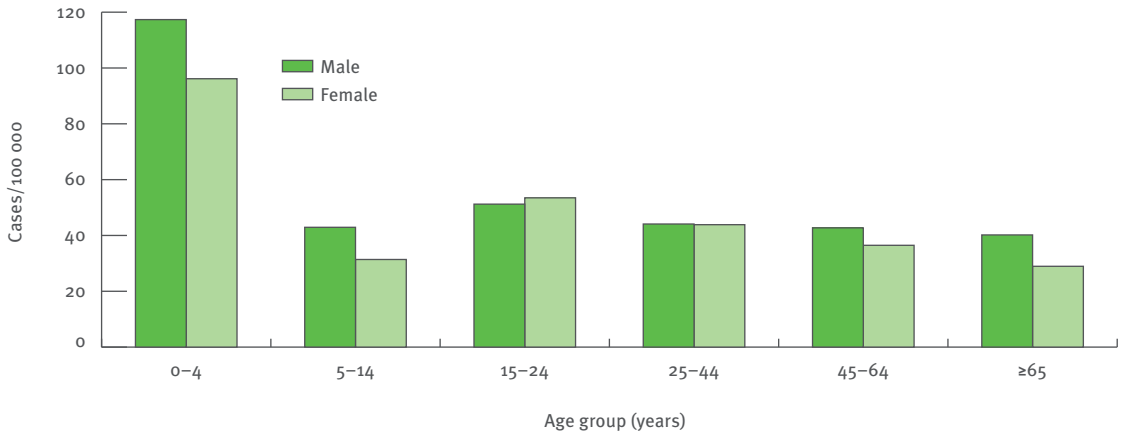
Data on the importation status of reported cases (n = 132 677) were available from 21 EU Member States, Iceland and Norway. As in the previous years, the infection is mainly domestically acquired (92 % of all cases with information on importation status). Seven countries provided complete data (zero unknown) for importation status. Among these countries the proportion of domestic cases varied from 86 % in Estonia to 100 % in Malta and Spain. Three Scandinavian countries (Finland, Sweden, and Norway) reported high proportions of imported cases (77 %, 71 %, and 58 % respectively).

Age and gender distribution

Data on age groups were available from 27 countries. Similar to previous years, the age distribution showed a bimodal pattern with highest incidence in the age group of the under five year-olds (106.2 per 100 000), and a smaller peak in the age group 15–24 years (51.6 cases per 100 000). Twenty-one countries had their highest notification rates among children under five years of age, four countries (Denmark, Sweden, Norway, and Iceland) had highest notification rates in the age group 15–24 years, whereas Finland reported its highest notification rate in adults between 25 and 44 years of age.

Data on gender were available from 28 countries. The male-to-female ratio was 1.16, with an overall notifica-

Figure 2.3.5. Notification rates of campylobacteriosis cases in EU and EEA/EFTA countries, by age and gender, 2008 (n = 191 258)



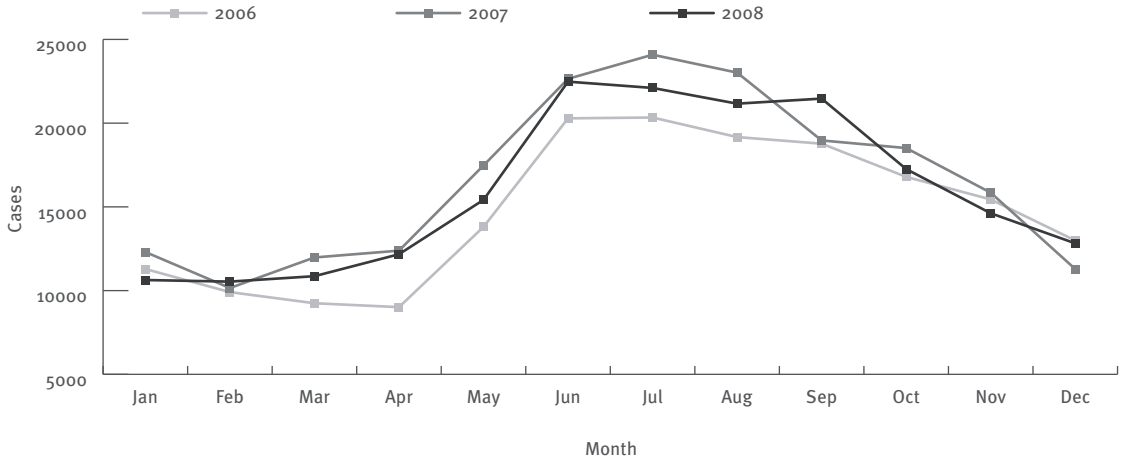
Source: Country reports: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia, Slovenia, Sweden, United Kingdom, Iceland, Liechtenstein, Norway. Latvia reported zero cases.

Table 2.3.3. Number and notification rate of reported cases of campylobacteriosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	4 301	4 280	51	5 822	70	5 020	61
Belgium	C	5 111	5 111	48	5 895	56	5 771	55
Bulgaria	A	19	19	0.25	38	0.49	75	0.97
Cyprus	C	23	23	2.9	17	2.2	2	0.26
Czech Republic	C	20 174	20 067	193	24 137	235	22 571	220
Denmark	C	3 470	3 470	63	3 868	71	3 239	60
Estonia	C	154	154	11	114	8.5	124	9.2
Finland	C	4 453	4 453	84	4 107	78	3 439	65
France	C	3 424	3 424	5.4	3 058	4.8	2 675	4.2
Germany	C	64 731	64 731	79	66 107	80	52 035	63
Greece	—	—	—	—	—	—	—	—
Hungary	C	5 563	5 516	55	5 809	58	6 807	68
Ireland	C	1 752	1 752	40	1 885	44	1 812	43
Italy	C	265	265	0.44	676	1.1	801	1.4
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	C	762	762	23	564	17	0	0.00
Luxembourg	C	439	439	91	345	72	285	61
Malta	C	77	77	19	91	22	54	13
Netherlands[a]	C	3 341	3 341	—	3 289	—	3 186	—
Poland	C	270	270	0.71	192	0.50	156	0.41
Portugal	—	—	—	—	—	—	—	—
Romania	C	2	2	< 0.1	0	0.00	—	—
Slovakia	C	3 143	3 064	57	3 380	63	2 728	51
Slovenia	C	898	898	45	1 127	56	944	47
Spain[b]	C	5 160	5 160	—	5 331	—	5 883	—
Sweden	C	7 692	7 692	84	7 106	78	6 078	67
United Kingdom	C	55 609	55 609	91	57 849	95	52 543	87
EU total		**190 833**	**190 579**	**43.97[c]**	**200 807**	**46.57[c]**	**176 228**	**42.88[c]**
Iceland	C	98	98	31	93	30	117	39
Liechtenstein	C	8	2	5.7	0.00	40	0.00	—
Norway	C	2 875	2 875	61	2 836	61	2 588	56
Total		**193 814**	**193 554**	**44.14[c]**	**203 736**	**46.71[c]**	**178 933**	**43.03[c]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Coverage by the Dutch sentinel system is estimated at about 51 %.
(b) Surveillance system currently estimated to cover 25 % of the total population.
(c) Rates calculated excluding the Dutch and Spanish data.

Figure 2.3.6. Seasonal distribution of campylobacteriosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

tion rate of 48.1 per 100 000 among men, compared with 41.6 per 100 000 among women.

Data on gender by age groups were available for 191 258 cases. The notification rate was highest in male children (age group 0–4 years) with 117.3 per 100 000, while in females of the same age it was slightly less (96.2 per 100 000) (Figure 2.3.5).

Seasonality

Data on seasonality were available from 27 countries. Most cases were reported in the summer months between June and August, acknowledging the well known seasonality of the disease (Figure 2.3.6).

Enhanced surveillance in 2008

Campylobacter species

Data on species are available in the *Zoonoses Report 2008*[1]. As in previous years the most frequently reported *Campylobacter* species in 2008 was *C. jejuni* (40 %), though its proportion slightly decreased from 2007 (44.3 %). *C. coli* accounted for 3 % of *Campylobacter* isolates (2007: 3 %). Other species, including *C. lari* (0.3 %), accounted for 9 % of the isolates. Isolates from 49 % of the 193 554 confirmed campylobacteriosis cases were not speciated or were unknown[1].

Discussion

Campylobacter remained the most frequently reported cause of human gastrointestinal disease in the EU in 2008. Although direct comparisons between different Member States are invalid (due to variations in reporting systems and the presumably high degree of underreporting suspected to occur in some countries), common epidemiological features of the disease with respect to a distinct higher incidence in summer months and the predominance of male cases, particularly in children, are observable. As described for 2007, the *Zoonoses Report 2008* suggests that fresh poultry meat remains the most important food-borne source of *Campylobacter* in the EU. In 2008, a baseline survey on *Campylobacter* in broiler chickens was carried out in 26 EU Member States, Norway, and Switzerland[2]. At Community level, the prevalence of *Campylobacter*-colonised broiler batches was 71.2 % (with a variation of 2.0 % to 100.0 % between countries) and that of *Campylobacter*-contaminated broiler carcasses was 75.8 % (4.9 % to 100.0 %).

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and food-borne outbreaks in the European Union in 2008, EFSA Journal; 2010 8(1):1496.
2. European Food Safety Authority (EFSA). Analysis of the baseline survey on the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses in the EU, 2008. Part A: *Campylobacter* and *Salmonella* prevalence estimates, EFSA Journal 2010; 8(03):1503.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-CAMPYLO	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-ENTERNET	V	Se	P	C	Y	N	N	N	-
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-CAMPYLOBACTERIOSIS	O	Co	P	C	Y	N	Y	Y	Y

Cholera

- Cholera continues to be a very rare disease, imported into the European Union.
- In 2008, all but one case were reported as imported, where this information was available. The domestic case was a laboratory-acquired infection.
- The global incidence of cholera has increased substantially in the last five years[1]. This is most likely the reason for the increasing numbers of travel-related cholera cases reported in the EU.

Epidemiological situation in 2008

The number of cholera cases reported in the EU and EEA/EFTA countries in 2008 increased for the third year in a row. In 2008, 26 cholera cases were reported from all EU and EEA/EFTA Member States except Liechtenstein; all of them were confirmed (Table 2.3.4). These cases were notified by six European countries, but more than half of the cases were reported from the United Kingdom (16 cases) which accounted for most of the increase in reported cases compared with previous years.

Twenty-one cases were reported as imported: from Pakistan (eight cases), Indonesia (three), Egypt (two), Asia unspecified (two), Laos (one), the Philippines (one), Tanzania (one), Tunisia (one), Zimbabwe (one) and Greece (a non-O1/non-O139 case, which will no longer be reported as cholera according to the revised EU case definition). One domestic case was reported from Austria, being a laboratory-acquired infection[2]. For the remaining four cases, importation status was unknown.

Age and gender distribution

In 2008, cases were reported in all age groups. Around sixty percent were adults over 25 years of age but the incidence was highest among the 0–4 year-olds (Figure 2.3.7). The cholera cases were evenly distributed by gender; fourteen male and twelve female cases were reported (male-to-female ratio of 1.22). The gender distribution varied across age groups but the number of cases in the groups was too small to draw any conclusions.

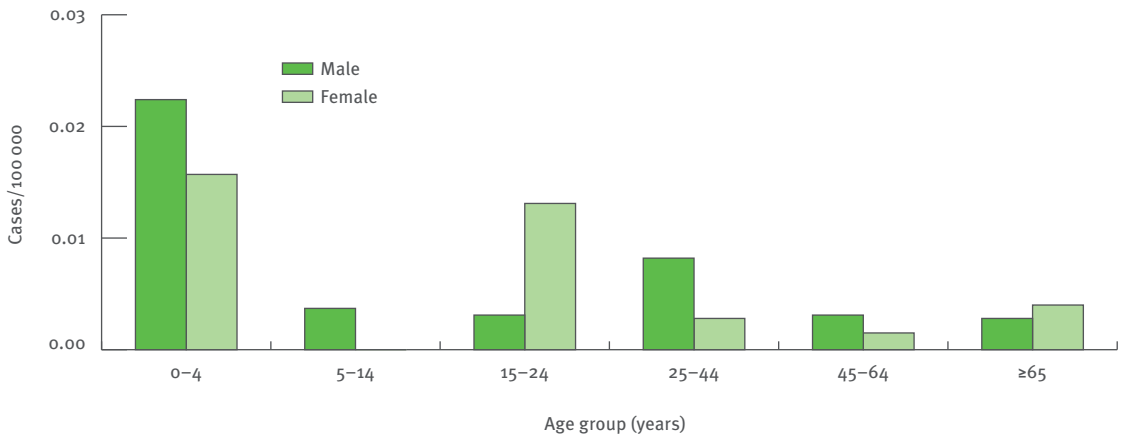
Seasonality

As most of the cases were imported, the seasonality trend reflects travel habits as much as disease trends. Due to the low number of cases reported over the past few years, no real conclusions can be drawn regarding seasonal trends other then the tendency for more cases to be reported in summer, with August as the month tending to have most cases reported (Figure 2.3.8).

Discussion

The number of cholera cases reported in the EU and EEA/EFTA countries increased for the third consecutive year. While cholera remains an imported disease in the EU and EEA/EFTA, the global incidence of cholera has also increased in the last five years[1,2]. From 2004 to 2008, there was a 24 % increase in the number of cases reported worldwide. This global increase is most likely the reason for the increasing numbers reported in the EU. The highest proportion of cholera cases is usually seen in adults over 25 years of age, which could be

Figure 2.3.7. Notification rates of cholera cases in EU and EEA/EFTA countries, by age and gender, 2008 (n = 25)



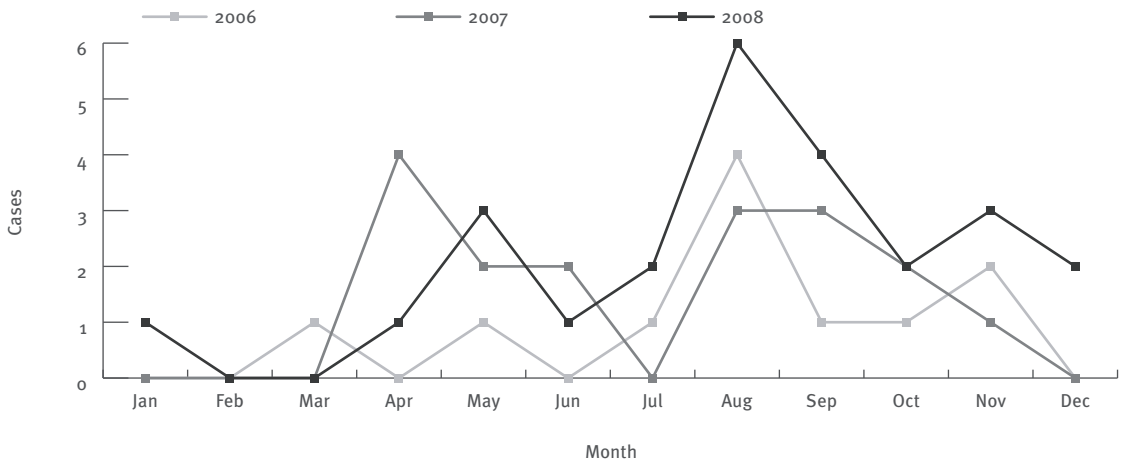
Source: Country reports: Austria, Denmark, Finland, France, Netherlands, United Kingdom. All other EU countries, Norway and Iceland reported zero cases.

Table 2.3.4. Number and notification rate of cholera cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	1	1	<0.1	0	0.00	0	0.00
Belgium	C	0	0	0.00	0	0.00	0	0.00
Bulgaria	C	0	0	0.00	0	0.00	0	0.00
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	0	0	0.00	0	0.00	0	0.00
Denmark	C	1	1	<0.1	0	0.00	—	—
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	1	1	<0.1	0	0.00	0	0.00
France	C	2	2	<0.1	4	<0.1	2	<0.1
Germany	C	0	0	0.00	2	<0.1	1	<0.1
Greece	C	0	0	0.00	0	0.00	0	0.00
Hungary	C	0	0	0.00	0	0.00	0	0.00
Ireland	C	0	0	0.00	0	0.00	0	0.00
Italy	C	0	0	0.00	0	0.00	0	0.00
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	C	0	0	0.00	0	0.00	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	5	5	<0.1	3	<0.1	3	<0.1
Poland	C	0	0	0.00	0	0.00	0	0.00
Portugal	C	0	0	0.00	0	0.00	0	0.00
Romania	C	0	0	0.00	0	0.00	0	0.00
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	0	0	0.00	1	<0.1	0	0.00
Spain	C	°	°	0.00	2	<0.1	0	0.00
Sweden	C	0	0	0.00	0	0.00	1	<0.1
United Kingdom	C	16	16	<0.1	4	<0.1	1	<0.1
EU total		**26**	**26**	**0.005**	**16**	**0.003**	**8**	**0.002**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	0	0	0.00	1	<0.1	1	<0.1
Total		**26**	**26**	**0.005**	**17**	**0.003**	**9**	**0.002**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report.

Figure 2.3.8. Seasonal distribution of cholera cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Denmark, Finland, France, Netherlands, United Kingdom. All other EU countries, Norway and Iceland reported zero cases.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-CHOLERA	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-CHOLERA	O	Co	P	C	Y	N	Y	Y	Y

associated with a larger number of people in this age group that travel to countries where cholera is endemic. This year, however, a substantial proportion of the cases were children or young adults.

In 2008, one of the biggest cholera outbreaks ever recorded in recent history also started in mid-August in Zimbabwe. By June 2009, when the outbreaks ceased, there had been over 98 000 cases reported and over 4 200 deaths[3,4]. The outbreak also spread to neighbouring countries.

References

1. WHO 2009. Cholera: global surveillance summary, 2008 Wkly Epidemiol Rec. No. 31, 2009, 84, 309–324.
2. Huhulescu S, Leitner E, Feierl G, Allerberger F. Laboratory-acquired Vibrio cholerae O1 infection in Austria, 2008. Clin Microbiol Infect 2009 Sep 3.
3. Mason PR. Zimbabwe experiences the worst epidemic of cholera in Africa. J Infect Dev Ctries. 2009 Mar 1;3(2):148-51.
4. WHO. Cholera in Zimbabwe – update 4. Available from: http://www.who.int/csr/don/2009_06_09/en/

Cryptosporidiosis

- Only about one third of EU and EEA/EFTA countries report cases of cryptosporidiosis while another one third reported zero cases. The overall rate of 2.44 per 100 000 is likely to reflect significant underreporting.
- Cryptosporidiosis mainly affects children under five years of age.
- The seasonal trends, as in previous years, suggest a peak in late summer/early autumn, indicating that there is behavioural exposure of the general public to *Cryptosporidium* at this time of year, mainly involving the younger children.

Epidemiological situation in 2008

In 2008, 7 032 cases (out of which 7 027 were confirmed) were reported by 11 EU and EEA/EFTA countries, while a further 10 countries reported zero cases. The highest notification rate was reported in Ireland (9.4 per 100 000 population) followed by the United Kingdom (8.1 per 100 000) and Belgium (3.7 per 100 000) (Table 2.3.5). The overall notification rate was 2.44 per 100 000 population.

Age and gender distribution

Of the 6 980 cases with age data available, a trend of declining rate with age could be observed (Figure 2.3.9). The highest notification rates were among the 0–4 year-olds (15 per 100 000) followed by the 5–14 year-olds (7 per 100 000). Of the 6 931 cases for which data on gender were available, no difference was observed in notification rates between males and females (both at 2.8 per 100 000, ratio: 0.99).

Seasonality

The overall monthly case distribution suggests a peak in late summer and autumn (Figure 2.3.10). This distribution was observed in most countries. However, in Ireland the highest number of cases was reported in April/May (around 80 cases per month).

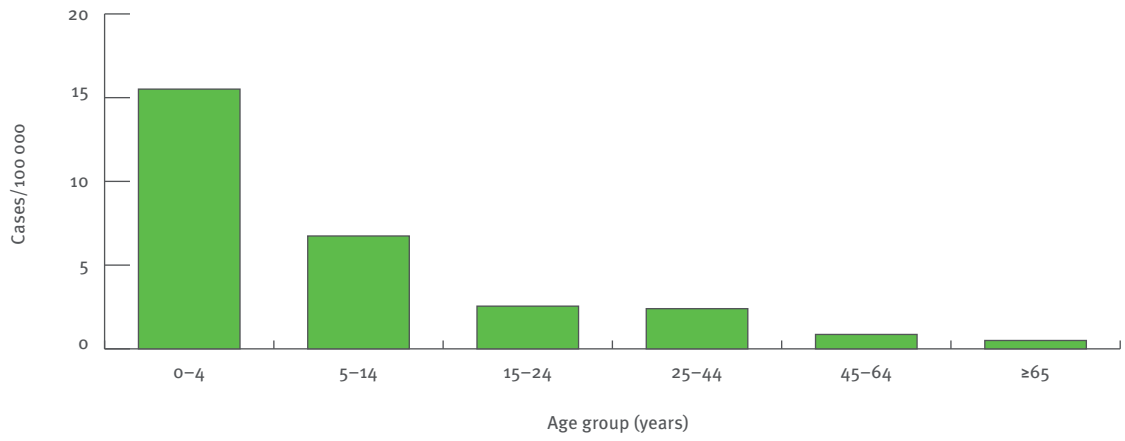
Discussion

Cryptosporidiosis remains an underreported disease despite the increased coverage in terms of the number of reporting countries. Nine countries do not report data and ten countries reported zero cases. Finland had a food-borne outbreak of cryptosporidiosis with 72 symptomatic persons[1]. Only four of these were positively tested for *Cryptosporidium* in the laboratory. This illustrates that underreporting can also be due to difficulties with laboratory diagnosis.

References

1. Pönka A, Kotilainen H, Rimhanen-Finne R, Hokkanen P, Hänninen ML, Kaarna A, et al. A foodborne outbreak due to Cryptosporidium parvum in Helsinki, November 2008. Euro Surveill. 2009 Jul 16;14(28). pii: 19269.

Figure 2.3.9. Notification rates of cryptosporidiosis cases the EU and EEA/EFTA, by age, 2008 (n = 6 980)



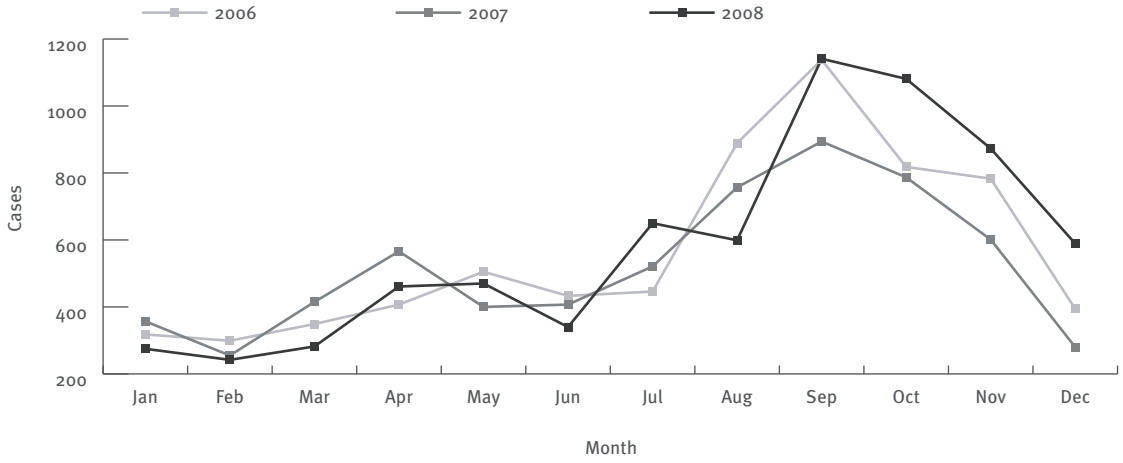
Source: Country reports: Austria, Belgium, Finland, Germany, Hungary, Ireland, Poland, Slovenia, Spain, Sweden and UK. Bulgaria, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Luxembourg, Malta, Romania and Slovakia reported zero cases.

Table 2.3.5. Number and notification rate of reported cases of cryptosporidiosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria[a]	C	16	13	0.2	9	0.11	14	0.17
Belgium	C	396	396	3.7	259	2.4	402	3.8
Bulgaria	C	0	0	0.00	0	0.00	4	< 0.1
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	0	0	0.00	—	—	0	0.00
Denmark	—	—	—	—	—	—	—	—
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	11	11	0.21	11	0.21	0	0.00
France	—	—	—	—	—	—	—	—
Germany	C	1 014	1 014	1.2	1 459	1.8	1 204	1.5
Greece	—	—	—	—	—	—	—	—
Hungary	C	10	10	0.10	6	0.06	0	0.00
Ireland	C	414	412	9.4	611	14	366	8.7
Italy	—	—	—	—	—	—	—	—
Latvia	C	0	0	0.00	0	0.00	0	0
Lithuania	C	0	0	0.00	0	0.00	0	0
Luxembourg	C	0	0	0.00	0	0.00	2	0.43
Malta	C	0	0	0.00	0	0.00	1	0.25
Netherlands	—	—	—	—	—	—	—	—
Poland	A	1	1	0.00	0	0.00	0	0.00
Portugal	—	—	—	—	—	—	—	—
Romania	C	0	0	0.00	—	—	—	—
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	6	6	0.30	1	0.00	9	0.45
Spain[b]	C	75	75	—	136	—	262	—
Sweden	C	148	148	1.6	110	1.2	103	1.1
United Kingdom	C	4 941	4 941	8.1	3 653	6.0	4 428	7.3
EU total		**7 032**	**7 027**	**2.44**	**6 255**	**2.42**	**6 795**	**2.49**
Iceland	—	—	—	—	—	—	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—
Total		**7 032**	**7 027**	**2.44**	**6 255**	**2.42**	**6 795**	**2.49**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Cryptosporidiosis is not a reportable disease in Austria; true prevalence is understood to be much higher.
(b) Surveillance system currently estimated to cover 25 % of the total population.

Figure 2.3.10. Seasonal distribution of cryptosporidiosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Belgium, Finland, Germany, Hungary, Ireland, Poland, Slovenia, Spain, Sweden and UK. Bulgaria, Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Luxembourg, Malta, Romania and Slovakia reported zero cases.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-CRYPTOSPORIDIOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-CRYPTOSPORIDIOSIS	O	Co	P	C	Y	N	Y	Y	Y

Echinococcosis

- Echinococcosis is still a rare disease in most EU and EEA/EFTA countries, with an overall rate of less than one per 100 000.
- Bulgaria reported the highest number of cases (386) and the highest notification rate (5 per 100 000).

Epidemiological situation in 2008

In 2008, 27 EU and EEA/EFTA countries reported a total of 911 echinococcosis cases of which 904 (99 %) were confirmed (Table 2.3.6). The overall notification rate was 0.2 per 100 000, although this rate includes disease caused by both *Echinococcus granulosus* and *E. multilocularis*. The highest notification rate was reported by Bulgaria (5.1 per 100 000) with 42 % of all the reported cases, followed by Lithuania (1.0 per 100 000). All other countries reported rates lower than one per 100 000.

Age and gender distribution

Data on age groups were available from 20 countries representing 87 % (n = 785) of confirmed cases. The notification rate increased with age (Figure 2.3.11), reaching a stable rate across the age groups over 25 years (around 0.2 per 100 000). This is most likely related to the long incubation period, which can vary from 12 months to several years before developing symptomatic disease.

There was no difference between the notification rates of reported cases for men and women (0.13 and 0.11 per 100 000 population, respectively, ratio: 1.22) for the 518 reports with this information.

Seasonality

Data by month were available from 26 countries (n = 785). Echinococcosis does not show any seasonal trend, which is to be expected as a result of the long incubation period.

Discussion

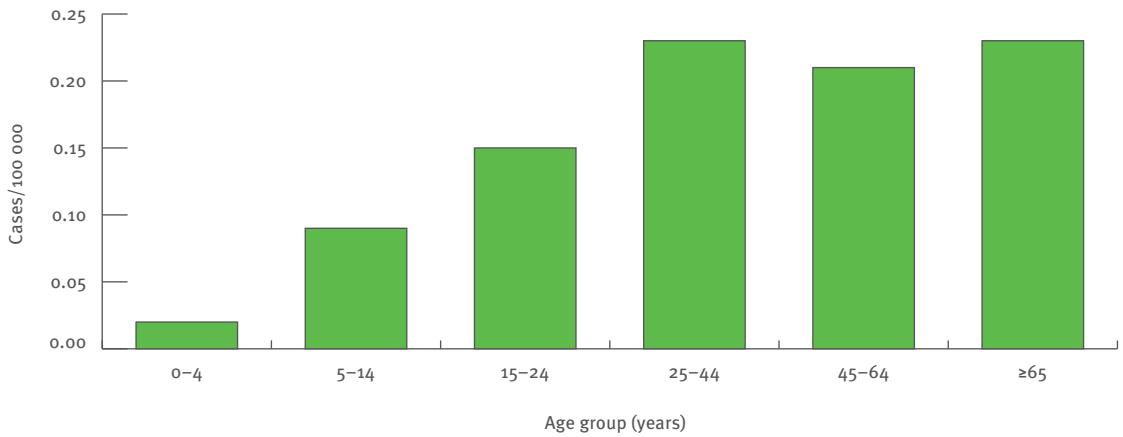
Echinococcosis remains a rare disease in most of the EU countries (except Bulgaria). Data from the *Zoonoses Report*[1] for 2008 shows that in humans, *E. granulosus* accounts for 72 % (n = 639) of all cases, while *E. multilocularis* represents only 6.0 % (n = 50).

The age distribution suggests an age cohort effect; showing higher risk of infection when those who are now adults were young. It is the result of the usually long incubation period (12 months to 15 years), though the highly variable incubation period does not allow further conclusions to be made from this data.

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and food-borne outbreaks in the European Union in 2008, EFSA Journal; 2010 8(1):1496.

Figure 2.3.11. Notification rates of echinicoccosis cases in EU and EEA/EFTA countries, by age, 2008 (n = 785)



Source: Country reports: Austria, Bulgaria, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and UK. Belgium, Luxembourg, Liechtenstein and Malta reported zero cases.

Table 2.3.6. Number and notification rate of reported cases of echinococcosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	10	6	< 0.1	16	0.19	26	0.31
Belgium	C	0	0	0.00	1	< 0.1	6	< 0.1
Bulgaria	A	386	386	5.1	461	6.0	485	6.3
Cyprus	C	1	1	0.13	4	0.51	6	0.78
Czech Republic	C	2	2	0.00	3	< 0.1	2	< 0.1
Denmark	—	—	—	—	—	—	—	—
Estonia	C	1	1	< 0.1	2	0.15	0	0.00
Finland	C	1	1	0.00	1	< 0.1	0	0.00
France	C	7	7	0.00	27	< 0.1	11	< 0.1
Germany	C	102	102	0.12	89	0.11	124	0.15
Greece	C	31	28	0.25	10	< 0.1	5	< 0.1
Hungary	C	7	7	< 0.1	8	< 0.1	6	< 0.1
Ireland	C	2	2	0.00	0	0.00	0	0.00
Italy	—	—	—	—	—	—	0	0.00
Latvia	C	21	21	0.92	12	0.53	22	0.96
Lithuania	A	32	32	0.95	12	0.35	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	12	12	< 0.1	12	< 0.1	31	0.19
Poland	C	28	28	< 0.1	40	0.10	65	0.17
Portugal	C	4	4	0.00	10	< 0.1	9	< 0.1
Romania	A	119	119	0.55	99	0.46	—	—
Slovakia	C	5	5	< 0.1	4	< 0.1	6	0.11
Slovenia	C	7	7	0.35	1	< 0.1	3	0.15
Spain	C	109	109	0.24	131	0.29	123	0.28
Sweden	C	13	13	0.14	24	0.26	7	0.08
United Kingdom	C	9	9	0.00	7	< 0.1	14	< 0.1
EU total		**909**	**902**	**0.21**	**974**	**0.23**	**951**	**0.20**
Iceland	—	—	—	—	—	—	0	0.00
Liechtenstein	C	0	0	0.00	0	0.00	—	—
Norway	C	2	2	0.00	0	0.00	0	0.00
Total		**911**	**904**	**0.21**	**974**	**0.22**	**951**	**0.20**

Source: Country reports.*A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-ECHINOCOCCOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-FRANCEECHINO	V	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.3	Cp	Co	P	C	Y	Y	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-LIMS	-	-	-	-	-	-	-	-	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-ECHINOCOCCOSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-ECHINOCOCCOSIS	V	Co	P	C	Y	N	Y	Y	Y

Vero/shiga toxin-producing *Escherichia coli* (VTEC/STEC) infection

- In 2008, the overall notification rate in Europe was 0.66 cases per 100 000 population, relatively unchanged over the last few years.
- Children under five years old had the highest notification rate: 4.72 cases per 100 000 population.
- The number of reported cases that developed haemolytic uraemic syndrome increased by 42 % in 2008 compared with 2007 (from 103 to 146).

Epidemiological situation in 2008

In 2008, 3 210 confirmed cases of VTEC infection were reported by 27 EU and EEA/EFTA countries. The overall notification rate in 2008 was 0.66 cases per 100 000 population, more or less unchanged over the last few years. Notification rates increased in 14 Member States, with Ireland reporting the highest increase from 2.7 cases per 100 000 in 2007 to 4.8 cases per 100 000 in 2008. The largest decrease in notification rate was in Iceland from 4.2 cases per 100 000 in 2007 to 1.3 cases per 100 000. Notification rates in Bulgaria, Estonia, Latvia, Lithuania and Poland remained the same as in 2007 (Table 2.3.7).

Age and gender distribution

The overall notification rate in the EU was slightly higher in women (0.67 cases per 100 000) than men (0.63 cases per 100 000) giving a female-to-male ratio of 1.06. Ireland showed the largest difference between notification rates by gender: 5.76 cases per 100 000 females and 3.91 cases per 100 000 males.

As in previous years, the highest notification rate occurred among children aged 0–4 years old: 4.72 cases per 100 000 (Figure 2.3.12).

Seasonality

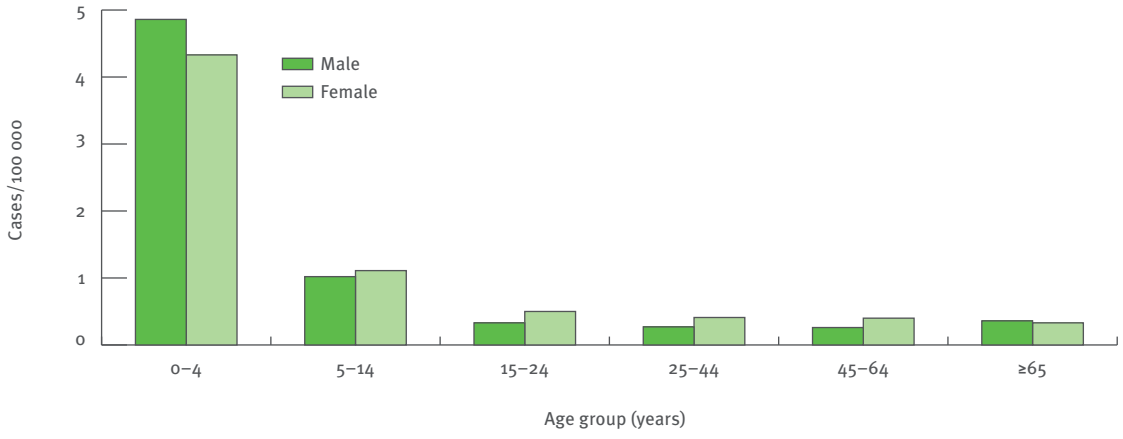
In 2009, reported VTEC cases followed a clear seasonal pattern with a marked peak in the late summer months reaching the highest number of reported cases in September (517). This seasonal distribution was mainly due to the increase in the number of reported cases caused by VTEC serotype O157 during these months.

Enhanced surveillance in 2008

Enhanced datasets are used for cases of VTEC infection occurring in 2008 and contributed to the human disease parts of the *Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents in the European Union*[1]. As in previous years, more than half (53 %) of reported confirmed cases were caused by VTEC serotype O157. The United Kingdom and Ireland accounted for 78 % of the total number of reported VTEC O157 cases. This was followed by 25 % of untyped reported cases, Germany and Sweden accounted for 87 % of the total number of untyped VTEC cases. Other reported serotypes were VTEC O26 (5.3 %) and VTEC O103 (2.8 %).

In 2008, a total of 146 reported cases developed haemolytic uraemic syndrome (HUS), a 42 % increase compared with HUS cases reported in 2007 (103). Of those, 64.5 %

Figure 2.3.12. Notification rate of cases of VTEC infection in the EU and EEA/EFTA, by age and gender, 2008 (n = 3 110)



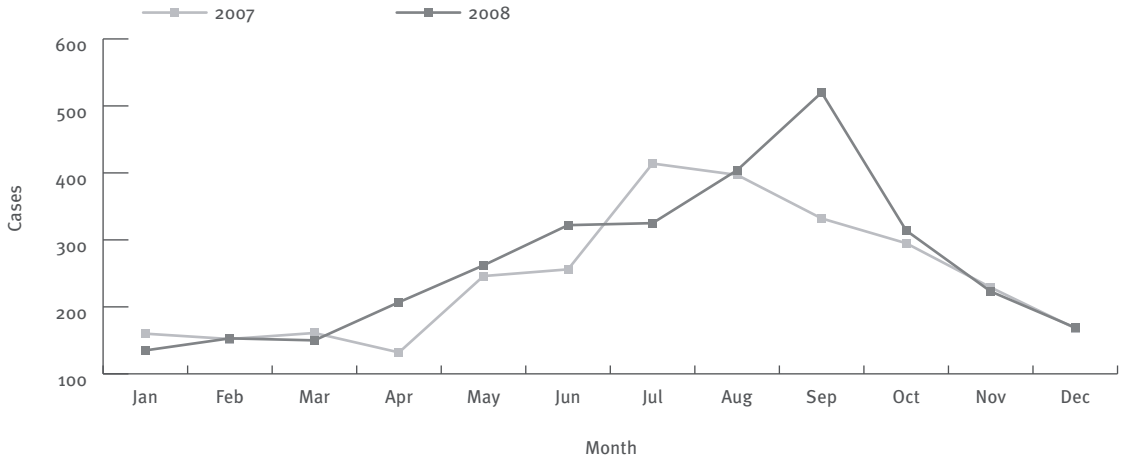
Source: Country reports: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland, Norway.

Table 2.3.7. Number and notification rate of cases of VTEC infection in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	69	69	0.83	82	0.99	41	0.50
Belgium	C	103	103	0.97	47	0.44	47	0.45
Bulgaria	C	0	0	0.00	0	0.00	0	0.00
Cyprus	C	2	2	0.25	0	0.00	0	0.00
Czech Republic		—	—	—	—	—	—	—
Denmark	C	161	161	2.9	156	2.9	146	2.7
Estonia	C	3	3	0.22	3	0.22	8	0.60
Finland	C	8	8	0.15	12	0.23	14	0.27
France	C	85	85	0.13	58	0.09	67	0.11
Germany	C	876	876	1.1	870	1.1	1 236	1.5
Greece	C	0	0	0.00	1	< 0.1	1	< 0.1
Hungary	C	0	0	0.00	1	< 0.1	3	< 0.1
Ireland	C	225	213	4.8	115	2.7	153	3.6
Italy	C	36	26	0.04	27	< 0.1	17	< 0.1
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	A	0	0	0.00	0	0.00	0	0.00
Luxembourg		—	—	—	1	0.21	2	0.43
Malta	C	8	8	2.0	4	0.98	5	1.2
Netherlands	C	92	92	0.56	88	0.54	42	0.26
Poland	C	5	3	< 0.1	2	< 0.1	4	< 0.1
Portugal		—	—	—	—	—	—	—
Romania	C	4	4	< 0.1	0	0.00	—	—
Slovakia	C	8	8	0.15	6	0.11	8	0.15
Slovenia	C	7	7	0.35	4	0.20	30	1.5
Spain	C	24	24	< 0.1	19	< 0.1	13	< 0.1
Sweden	C	304	304	3.3	262	2.9	265	2.9
United Kingdom	C	1 164	1 164	1.9	1 149	1.9	1 301	2.2
EU total	**—**	**3 184**	**3 160**	**0.66**	**2 907**	**0.61**	**3 403**	**0.75**
Iceland	C	4	4	1.3	13	4.2	1	0.33
Liechtenstein	C	0	0	0.00	—	—	—	—
Norway	C	22	22	0.46	26	0.56	50	1.1
Total	**—**	**3 210**	**3 186**	**0.66**	**2 946**	**0.61**	**3 454**	**0.76**

Source: Country reports.*A: Aggregated data report; C: Case-based report; —: No report, U: Unspecified.

Figure 2.3.13. Seasonal distribution of cases of VTEC infection in the EU and EEA/EFTA, 2007–08



Source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-EHEC	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-VTEC	Cp	Co	P	C	Y	Y	N	N	Y
Italy	IT-ENTERNET	V	Se	P	C	Y	N	N	N	-
Latvia	LV-LABORATORY	Cp	Co	P	C	Y	N	N	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-LNS-Microbio	V	Co	P	C	Y	N	Y	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-ENTEROHAEMORHAGIC_ECOLI	Cp	Co	A	C	Y	Y	N	N	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-NRL	V	Se	P	C	Y	Y	Y	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-ENTEROHAEMORHAGIC_ECOLI	O	Co	A	C	Y	N	Y	Y	Y

occurred in children aged 0–4 years old and more than half were associated with VTEC O157 (53.7 %).

Discussion

VTEC O157 was the most commonly reported serotype and it was associated with more than half of the reported cases in 2008. Two countries, the United Kingdom and Ireland, accounted for 78 % of VTEC O157 reported cases. This highlights that the VTEC serotype distribution in Europe may not be homogeneous. Moreover, the methodologies to detect non-O157 VTEC serotypes are not as well developed as for VTEC O157 and it is therefore difficult to include them in routine surveillance.

The number of reported cases that developed HUS increased by 41 % in 2008. The reasons for this increase are unknown but could be linked to the high number of VTEC outbreaks that occurred during 2008. The vehicles of infection mainly associated with these outbreaks were consumption of raw beef products and milk[1,2].

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and Foodborne Outbreaks in The European Union in 2008, EFSA Journal; 2010 8(1):1496.
2. Greenland K, de Jager C, Heuvelink A, van der Zwaluw K, Heck M, Notermans D, et al. Nationwide outbreak of STEC O157 infection in the Netherlands, December 2008-January 2009: continuous risk of consuming raw beef products. Euro Surveill. 2009;14(8):pii=19129. Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19129

Giardiasis

- As observed in previous years, the notification rate of giardiasis varies considerably throughout the EU and EEA/EFTA countries.
- Although the notification rate of giardiasis in Romania has been decreasing since 2007, the rate is still considerably higher than for other EU and EEA/EFTA countries.

Epidemiological situation in 2008

In 2008, a total of 167414 cases were reported by 22 EU and EEA/EFTA countries (Table 2.3.8). Of these, 167328 were confirmed cases. The highest notification rate was observed in Romania (691 per 100000 population, responsible for 89 % of all the reported cases), followed by Bulgaria (28 per 100000), Estonia (20 per 100000) and Sweden (17 per 100000). The overall notification rate was 59.6 per 100000 population. Since 2006, there has been a declining trend in overall reported cases. This decrease is to a large extent due to the lower number of cases reported from Romania.

Data on importation status were available for 5318 cases from six countries. Of these cases, 67 % were reported to be acquired autochthonously, although there were significant differences between the reporting countries. In Norway 202 out of 270 cases (75 %) were reported as being imported. The number of imported cases for Germany was 1498 out of 4763 (31 %).

Age and gender distribution

Of the 164026 confirmed cases of giardiasis for which data on age were available, the highest notification rate was among the 0–4 year-olds (332 per 100000) followed by 5–14 year-olds (195 per 100000) (Figure 2.3.14). Of the 164053 cases with information on gender available, no significant difference in notification rates could be observed between male and female (68 and 67 per 100000, respectively; ratio: 1).

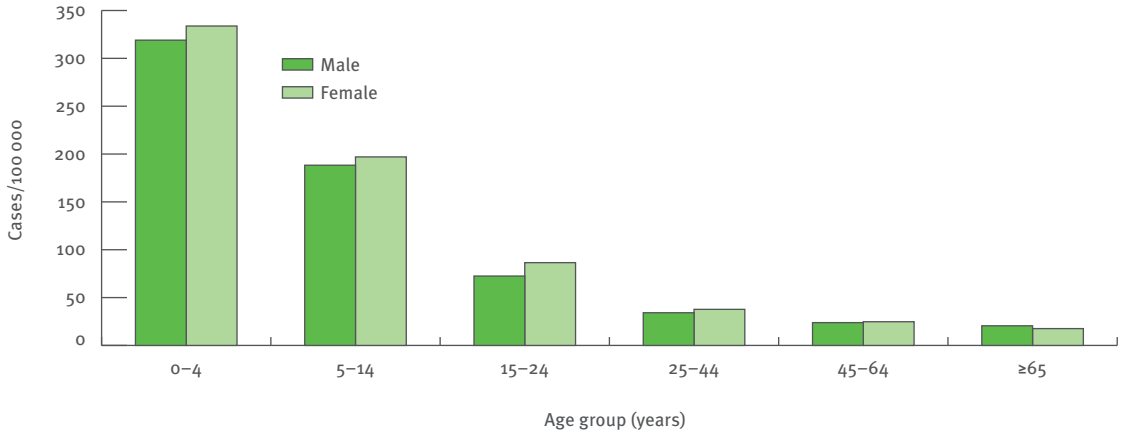
Seasonality

Data on seasonality for 2008 were available for 18455 reported cases from 19 countries, representing only 11 % of the total number of reported cases. No strong seasonal trend could be observed although in previous years there appeared to be a rise in the number of cases in the autumn months. Figure 2.3.15 shows the seasonality of reported cases between 2006 and 2008.

Discussion

The notification rates of giardiasis in European countries vary widely, as does the type and quality of the national surveillance systems. One country, Romania, seems particularly affected by this disease. No major threats or outbreaks of giardiasis were reported in 2008.

Figure 2.3.14 Notification rates of giardiasis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 161734)



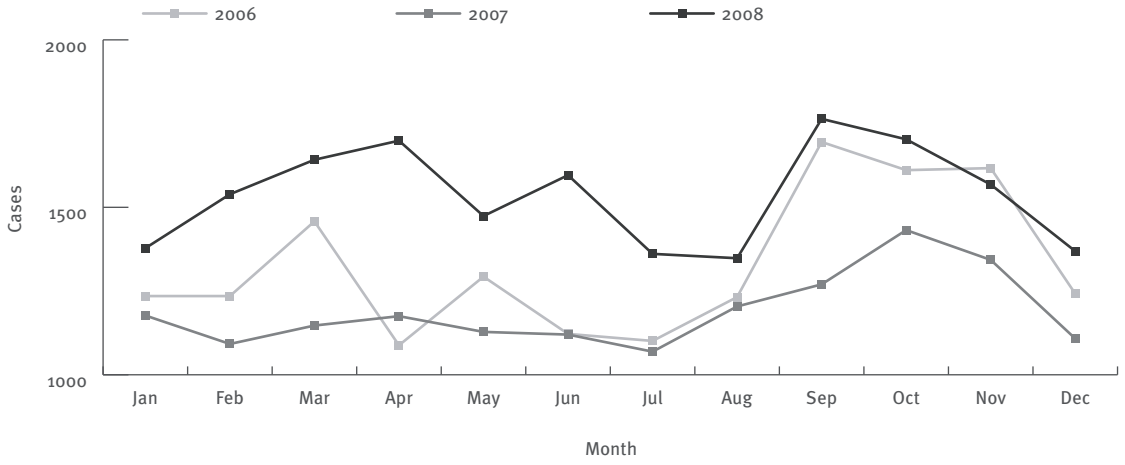
Source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Estonia, Finland, Germany, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.3.8. Number and notification rate of reported cases of giardiasis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	47	47	0.56	66	0.80	84	1.0
Belgium	C	1 213	1 213	11	1 081	10	1 238	12
Bulgaria	A	2 141	2 141	28	0	0.00	2 212	29
Cyprus	C	7	7	0.89	4	0.51	6	0.78
Czech Republic	—	—	—	—	—	—	141	1.4
Denmark	—	—	—	—	—	—	—	—
Estonia	C	264	264	20	418	31	469	35
Finland	C	427	427	8.1	294	5.6	0	0.00
France	—	—	—	—	—	—	—	—
Germany	C	4 763	4 763	5.8	3 651	4.4	3 661	4.4
Greece	—	—	—	—	—	—	—	—
Hungary	C	138	138	1.4	86	0.85	31	0.31
Ireland	C	70	70	1.6	62	1.4	65	1.5
Italy	—	—	—	—	—	—	—	—
Latvia	A	28	28	1.2	34	1.5	9	0.39
Lithuania	A	15	15	0.45	23	0.68	0	0.00
Luxembourg	C	1	1	0.21	0	0.00	0	0.00
Malta	C	2	2	49	10	2.5	11	2.7
Netherlands	—	—	—	—	—	—	—	—
Poland	A	3 182	3 096	8.1	2 981	7.8	2 875	7.5
Portugal	—	—	—	—	—	—	—	—
Romania	A	148 830	148 830	691	158 306	734	176 526	817
Slovakia	C	125	125	2.3	122	2.3	93	1.7
Slovenia	C	14	14	0.70	17	0.85	24	1.2
Spain[a]	C	683	683	—	904	—	909	—
Sweden	C	1 529	1 529	17	1 413	16	1 282	14
United Kingdom	C	3 632	3 632	5.9	3 257	5.4	3 167	5.2
EU total		**167 111**	**167 025**	**60.6[b]**	**172 729**	**62.66[b]**	**192 803**	**67.56[b]**
Iceland	C	33	33	11	46	15	39	13
Liechtenstein	—	—	—	—		—		—
Norway	C	270	270	5.7	290	6.2	294	6.3
Total		**167 414**	**167 328**	**59.6[b]**	**173 065**	**61.66[b]**	**193 136**	**66.52[b]**

Source: Country reports.*A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Surveillance system currently estimated to cover 25 % of the total population.
(b) Rates calculated excluding the Spanish data.

Figure 2.3.15 Seasonal distribution of giardiasis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Estonia, Finland, Germany, Hungary, Ireland, Luxembourg, Malta, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Estonia	EE-HBV/GIARDIASIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	A	N	Y	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	P	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-GIARDIASIS	O	Co	P	C	Y	N	Y	Y	Y

Hepatitis A

- In 2008, the overall notification rate of hepatitis A (3.34 per 100 000 population) was slightly higher than in 2007 (2.75 per 100 000 population). The notification rate in Latvia increased from 0.66 in 2007 to 123 per 100 000 population, mainly as a result of a community-wide outbreak.
- Children aged 5–14 years have the highest notification rates. This is likely to be an underestimate of the true burden in children as younger children under five years old often have asymptomatic hepatitis A infections.
- The second half of the year (late summer and autumn) shows the highest number of reported cases.
- The majority of cases with information on importation status were domestically acquired.

Epidemiological situation in 2008

In 2008, a total of 17 240 cases of hepatitis A (16 791 confirmed cases) were reported by 29 countries in the EU and EEA/EFTA (Liechtenstein did not report) (Table 2.3.9). The overall notification rate was 3.34 per 100 000 population which is higher than the rate in 2007 (2.75 per 100 000). Latvia (123 per 100 000) reported the highest notification rate, followed by the Czech Republic (16 per 100 000), Romania (15 per 100 000), Slovakia (14 per 100 000), and Bulgaria (12 per 100 000). All other countries reported notification rates below 5 per 100 000.

Data on the importation status of reported cases (n = 4 347) was available from nine EU Member States and Norway. The majority of the infections were domestically acquired (78 % of all cases with information on importation status). The highest proportion of autochthonous cases was observed in Hungary (95.2 %), followed by the Netherlands (64.7 %), Germany (63.8 %), and France (56.3 %). In all other reporting countries (Denmark, Estonia, Finland, Malta, Spain and Norway), imported cases dominated (› 50 %).

Age and gender distribution

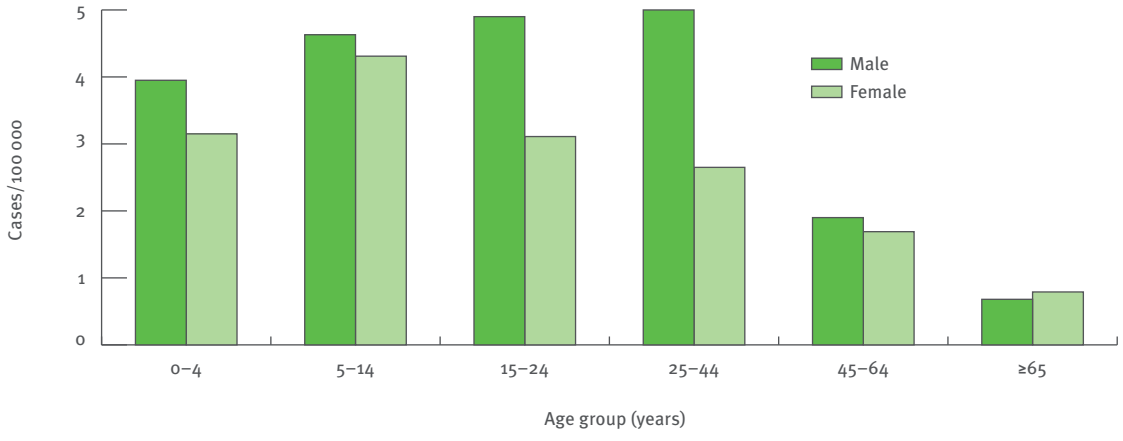
Data on age were available from 27 countries. As in the previous two years, the highest notification rate occurred in children 5–14 years of age (7.5 per 100 000) followed by children under five years old with 5.6 per 100 000.

Data on gender distribution were available for 12 419 cases from 23 of the 29 countries with confirmed cases of hepatitis A. The male-to-female ratio was 1.51, with an overall notification rate of 3.5 per 100 000 among men compared with 2.3 per 100 000 among women. Although men were more frequently reported than women in all age groups ‹ 65 years of age, the ratio considerably varied within the different age groups. The highest predominance of male cases was found in the age groups 0–4 and 15–44 years of age (Figure 2.3.16).

Seasonality

Data on seasonality in 2008 was available for 12 875 cases from 23 countries. In 2008, a peak in reported

Figure 2.3.16. Notification rate of hepatitis A cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 12 390)



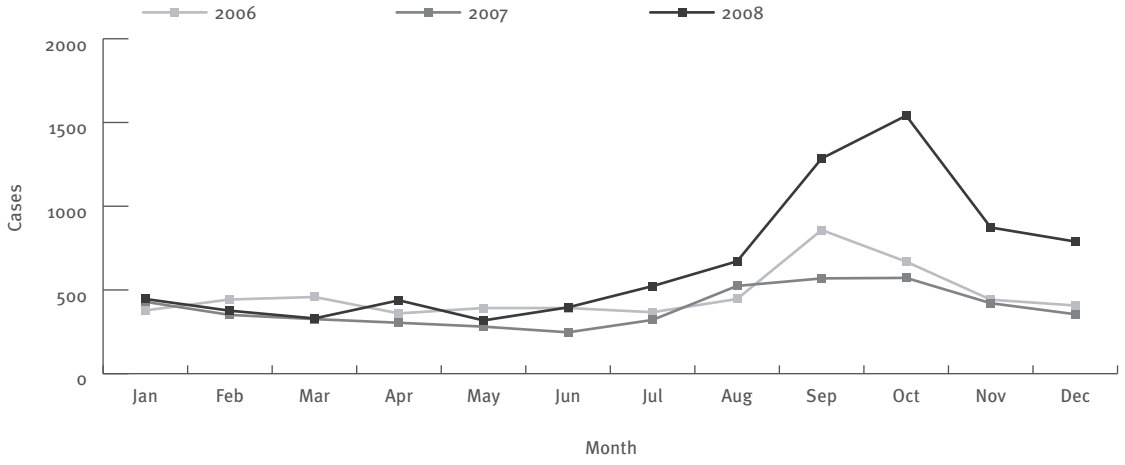
Source: Country reports: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland, and Norway.

Table 2.3.9. Number and notification rate of reported cases of hepatitis A in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	28	4	< 0	5	< 0.1	1	< 0.1
Belgium	C	365	365	3.4	0	0.00	225	2.1
Bulgaria	A	908	907	12	2 790	36	7 266	94
Cyprus	C	4	4	0.51	4	0.51	3	0.39
Czech Republic	C	1 649	1 649	16	126	1.2	131	1.3
Denmark	C	44	44	0.80	306	5.6	42	0.77
Estonia	C	13	13	0.97	10	0.75	5	0.37
Finland	C	22	22	0.42	15	0.28	26	0.49
France	C	1 204	1 204	1.9	1 010	1.6	1 336	2.1
Germany	C	1 072	1 072	1.3	936	1.1	1 226	1.5
Greece	C	128	120	1.1	286	2. 6	123	1.1
Hungary	C	168	168	1.7	251	2.5	286	2.8
Ireland	C	42	41	0.93	29	0.67	38	0.90
Italy	C	1 350	1 350	2.3	1 159	2.0	890	1.5
Latvia	A	2 815	2 798	123	15	0.66	47	2.1
Lithuania	A	20	20	0.59	23	0.68	99	2.9
Luxembourg	C	3	3	0.62	1	0.21	3	0.64
Malta	C	4	4	0.97	3	0.74	7	1.7
Netherlands	C	183	87	0.53	165	1.0	262	1.6
Poland	A	208	189	0.50	36	< 0.1	105	0.28
Portugal	C	21	21	0.20	17	0.16	40	0.38
Romania	A	3 161	3 161	15	4 982	23	5 351	25
Slovakia	C	729	729	14	383	7.1	461	8.6
Slovenia	C	17	17	0.85	15	0.75	10	0.50
Spain	C	2 160	1 877	4.2	698	1.6	1 079	2.5
Sweden	C	78	78	0.85	68	0.75	80	0.88
United Kingdom	C	794	794	1.3	377	0.62	417	0.69
EU total		**17 190**	**16 741**	**3.36**	**13 710**	**2.77**	**19 559**	**3.97**
Iceland	C	1	1	0.32	2	0.65	2	0.67
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	49	49	1.0	29	0.62	41	0.88
Total		**17 240**	**16 791**	**3.34**	**13 741**	**2.75**	**19 602**	**3.93**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report.

Figure 2.3.17. Seasonal distribution of hepatitis A cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-HAV	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-HEPATITISA	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	A	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-HEPATITISA	O	Co	P	C	Y	N	Y	N	Y

cases was observed in September and October (Figure 2.3.17), more marked than in previous years.

Discussion

Although data on the importation status of reported cases was only available for a small proportion of the total cases and from only 10 countries, a sizable proportion of infections in half these countries was reported to be acquired autochthonously. However, travel-associated hepatitis A is clearly also a problem in the EU. An outbreak of hepatitis A has been ongoing in Latvia with 2 817 confirmed cases reported between 20 November 2007 and 31 December 2008. Initially the spread of infection was detected among intravenous drug users and persons with low income living in conditions with substandard hygiene, but in the second half of the year it led to a community-wide increase in the number of cases[1]. Similarly, an outbreak of hepatitis A in the Czech Republic initially affected injecting drug users, and subsequently spread to the general population, affecting more than 1600 people[2].

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Leptospirosis

- In 2008, the notification rate of leptospirosis decreased by 31 % over the previous year and the disease remains a rare infection in the EU.
- Men of working age were primarily affected by leptospirosis, and most infections were contracted in late summer and autumn.
- The majority of cases with information on importation status were reported to be domestically acquired.

Epidemiological situation in 2008

In 2008, 608 cases (599 confirmed cases) were reported by 26 EU countries (Table 2.3.10). This gave an overall notification rate of 0.15 cases per 100 000 population, which is slightly less that reported in 2007 (0.22 per 100 000).

Information on the importation status of reported cases was only available from five countries (Estonia, Germany, Hungary, Netherlands, Poland) and for 116 cases. Of these, 32 cases (28 %) were related to travelling outside their home countries.

Age and gender distribution

Out of the 382 confirmed cases for which gender was known ('unknown gender' as reported for 217 cases), 313 were reported to be male and 69 female (male-to-female ratio of 4.77). Information on age was included for 579 confirmed cases. The notification rate was highest in the age groups 15–24 years, 25–44 years and 45–64 years, with rates of 0.14, 0.19 and 0.24 per 100 000, respectively. In all age groups, notification rates in males were higher than in females (Figure 2.3.18).

Seasonality

Information on seasonality was provided for 589 of 599 confirmed cases in 2008. In line with earlier annual reports, the majority of confirmed cases in 2008 were reported between July and September/October (Figure 2.3.19).

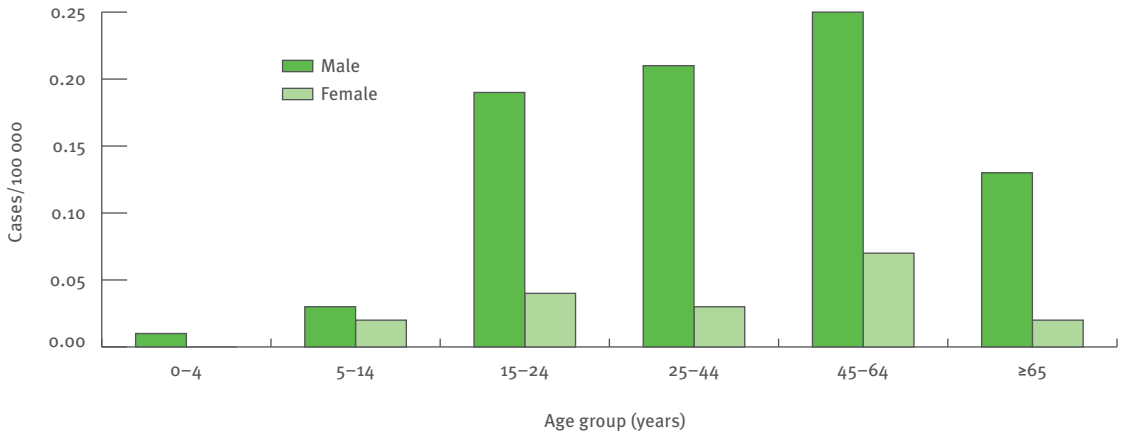
Discussion

Although a significant level of underreporting has to be assumed, leptospirosis remains a relatively rare disease in EU countries. Highest rates are found in working-aged men (25–64 years of age), likely related to occupational exposures. The infection is frequently contracted by contact with contaminated water, e.g. during surface water sports, thus explaining the seasonality observed in 2008 and the previous years. The higher case number in 2007 was partly related to an international outbreak of leptospirosis, affecting Germany, Romania, Poland, and Slovakia[1].

References

1. Desai S, van Treeck U, Lierz M, Espelage W, Zota L, Sarbu A, et al. Resurgence of field fever in a temperate country: an epidemic of leptospirosis among seasonal strawberry harvesters in Germany in 2007. Clin Infect Dis. 2009 Mar 15;48(6):691-7.

Figure 2.3.18. Notification rates of leptospirosis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 369)



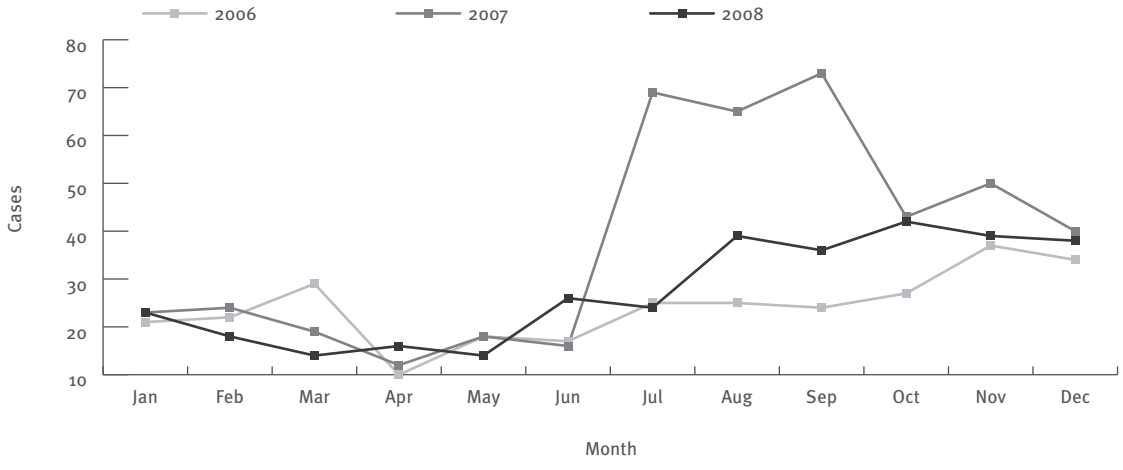
Source: Country reports: Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Table 2.3.10. Number and notification rates of reported cases of leptospirosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	A	11	11	0.13	9	0.11	8	0.10
Belgium	A	5	5	< 0.1	8	< 0.1	21	0.20
Bulgaria	A	9	9	0.12	16	0.21	20	0.26
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	17	17	0.16	24	0.23	18	0.18
Denmark	C	8	8	0.15	8	0.15	5	< 0.1
Estonia	C	2	2	0.15	2	0.15	6	0.45
Finland	C	8	8	0.15	2	< 0.1	0	0.00
France	—	—	—	—	—	—	—	—
Germany	C	66	66	< 0.1	165	0.20	46	< 0.1
Greece	C	13	12	0.11	13	0.12	16	0.14
Hungary	C	15	15	0.15	31	0.31	27	0.27
Ireland	C	29	29	0.66	22	0.51	18	0.43
Italy	C	40	40	< 0.1	45	< 0.1	22	< 0.1
Latvia	A	3	3	0.13	2	< 0.1	5	0.22
Lithuania	A	2	2	< 0.1	6	0.18	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	2	2	0.49	1	0.25	1	0.25
Netherlands	C	37	37	0.23	37	0.23	23	0.14
Poland	C	5	2	< 0.1	7	< 0.1	3	< 0.1
Portugal	C	20	15	0.14	38	0.36	35	0.33
Romania	A	200	200	0.93	296	1.37	386	1.79
Slovakia	C	23	23	0.43	17	0.32	22	0.41
Slovenia	C	6	6	0.30	7	0.35	5	0.25
Spain[a]	C	5	5	—	3	—	3	—
Sweden	C	6	6	< 0.1	1	< 0.1	2	< 0.1
United Kingdom	C	76	76	0.12	81	0.13	56	< 0.1
EU total		**608**	**599**	**0.15[b]**	**841**	**0.22[b]**	**748**	**0.19[b]**
Iceland	—	—	—	—	—	—	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—
Total		**608**	**599**	**0.15[b]**	**841**	**0.22[b]**	**748**	**0.19[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Surveillance system currently estimated to cover 25 % of the total population.
(b) Rates calculated excluding the Spanish data.

Figure 2.3.19. Seasonal distribution of leptospirosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-LEPTOSPIROSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-LEPTOSPIROSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-LEPTOSPIROSIS	O	Co	P	C	Y	N	Y	Y	Y

Listeriosis

- Compared with the previous year (2007), the notification rate of confirmed human cases of *Listeria* infection decreased by 11 %.
- Listeriosis primarily affected elderly people (› 64 years of age) and children (‹ 5 years of age).
- Most listeriosis cases were domestically acquired and peaked between June and October.

Epidemiological situation in 2008

In 2008 1472 cases (1462 confirmed) were reported by 29 countries (Table 2.3.11). Portugal did not report any data while Cyprus, Malta, Romania, Iceland, and Liechtenstein reported zero cases. The overall notification rate was 0.31 per 100 000 population, which is slightly lower than the rates in 2007 (0.35) and 2006 (0.36). The highest notification rates of confirmed cases were seen in the four Scandinavian countries of Denmark, Finland, Norway, and Sweden with 0.93, 0.75, 0.72, and 0.65 per 100 000 population, respectively, followed by Belgium and Estonia (both 0.60 per 100 000 population) All other countries reported less than 0.50 per 100 000.

Only 13 (1 %) of the 862 cases with data on importation status were reported to have been acquired outside their home countries.

Age and gender distribution

Of the 1454 confirmed listeriosis cases with information on age in 2008, the majority (56 %) again occurred among individuals 65 years of age and over (Figure 2.3.20). With 0.94 cases per 100 000, this age group also demonstrated the highest notification rate observed in 2008, followed by children under the age of five (0.35 cases per 100 000).

The male-to-female ratio was 1.28 (0.34 per 100 000 in males and 0.27 per 100 000 in females) for confirmed cases. As described in previous years, this ratio varied between age groups. It is higher for older males (especially in the age group of 65 years or older) while the rates are higher among females in the younger age groups (especially the 25–44-year-olds), probably due to the higher detection of infection in fertile and pregnant women.

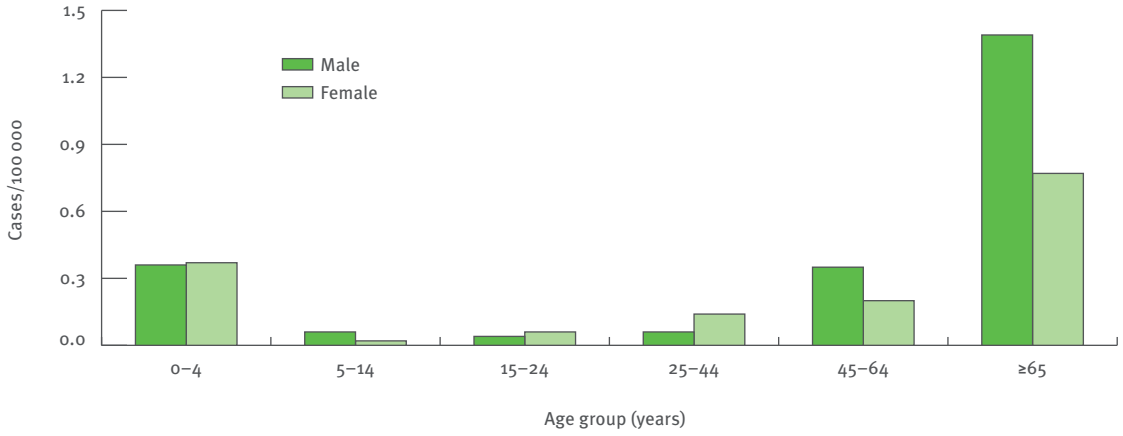
Seasonality

The data from the last two years shows a clear peak of cases between June and October (Figure 2.3.21), consistent with many other food-borne pathogens.

Discussion

As in previous years, a seasonal trend was observed with higher numbers of cases reported in the summer and early autumn. According to the *Zoonoses Report 2008*, 20.5 % of cases (134/653) with known reported outcome died[1]. The Community legislation (Regulation (EC) No

Figure 2.3.20. Notification rate of listeriosis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 1 437)



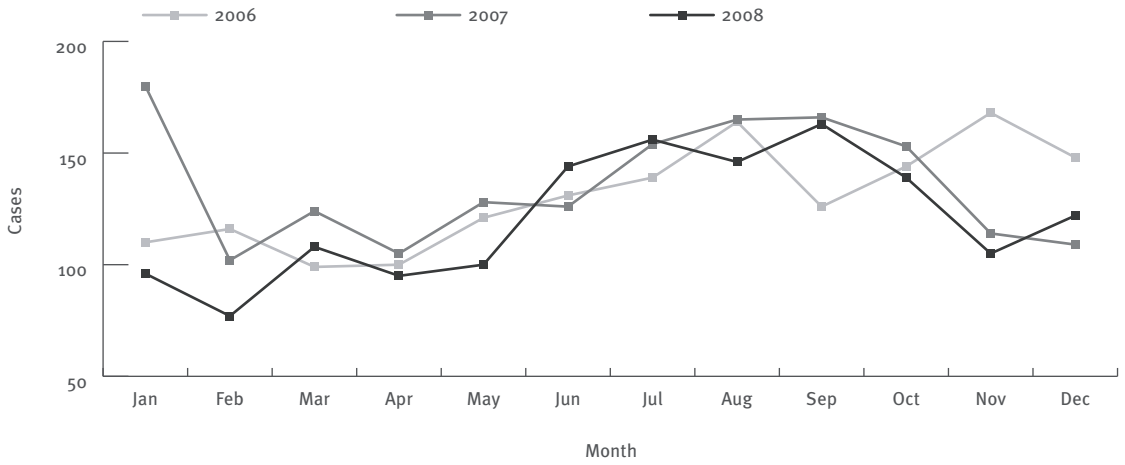
Source: Country reports: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Norway.

Table 2.3.11. Number and notification rate of reported cases of listeriosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	31	31	0.37	20	0.24	10	0.12
Belgium	C	64	64	0.60	57	0.54	67	0.64
Bulgaria	A	5	5	< 0.1	11	0.14	6	< 0.1
Cyprus	C	0	0	0.00	0	0.00	1	0.13
Czech Republic	C	37	37	0.36	51	0.50	78	0.76
Denmark	C	51	51	0.93	58	1.1	56	1.0
Estonia	C	8	8	0.60	3	0.22	1	< 0.1
Finland	C	40	40	0.75	40	0.76	0	0.00
France	C	276	276	0.43	319	0.50	290	0.46
Germany	C	306	306	0.37	356	0.43	508	0.62
Greece	C	1	1	< 0.1	10	< 0.1	7	< 0.1
Hungary	C	19	19	0.19	9	< 0.1	14	0.14
Ireland	C	13	13	0.30	21	0.49	7	0.17
Italy	C	118	118	0.20	89	0.15	59	0.10
Latvia	C	8	8	0.35	5	0.22	2	< 0.1
Lithuania	A	7	7	0.21	4	0.12	0	0.00
Luxembourg	C	1	1	0.21	6	1.26	4	0.85
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	55	45	0.27	68	0.42	64	0.39
Poland	C	33	33	< 0.1	43	0.11	28	< 0.1
Portugal	—	—	—	—	—	—	—	—
Romania	C	0	0	0.00	0	0.00	—	—
Slovakia	C	8	8	0.15	9	0.17	12	0.22
Slovenia	C	3	3	0.15	4	0.20	7	0.35
Spain[a]	C	88	88	—	82	—	79	—
Sweden	C	60	60	0.65	56	0.61	42	0.46
United Kingdom	C	206	206	0.34	260	0.43	209	0.35
EU total		**1 438**	**1 428**	**0.30[b]**	**1 581**	**0.34[b]**	**1 551**	**0.35[b]**
Iceland	C	0	0	0.00	4	1.30	0	0.00
Liechtenstein	C	0	0	0.00	0	0.00	—	—
Norway	C	34	34	0.72	49	1.05	27	0.58
Total		**1 472**	**1 462**	**0.31[b]**	**1 634**	**0.35[b]**	**1 578**	**0.36[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Surveillance system currently estimated to cover 25 % of the total population.
(b) Overall rate excludes data from Spain.

Figure 2.3.21. Seasonal distribution of listeriosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	-
Belgium	BE-LABNET_REFLAB	-	-	-	-	-	-	-	-	-
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-LISTERIOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-LISTERIA_MONOCYTOGENES	V	Co	A	C	Y	N	N	N	Y
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-LISTERIOSIS	V	Co	A	C	Y	N	Y	Y	Y

2073/2005) lays down food safety criteria regarding listeria in ready-to-eat (RTE) foods. The food categories with the highest proportions of non-compliant products in 2007 were once again RTE smoked fish products, RTE meat products and cheeses[1].

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and food-borne outbreaks in the European Union in 2008, EFSA Journal; 2010 8(1):1496.

Salmonellosis

- There has been a steady decrease in the EU notification rates for salmonellosis over the last three years.
- The notification rates were very high in children, in particular in the 0–4 year-olds (161.2 per 100 000 population).
- The seasonal distribution showed a clear peak in cases over the summer months for three consecutive years.
- Although the overall proportion of imported salmonellosis cases was only 14.8 %, there is a wide variety between countries with some countries reporting the majority of salmonellosis cases as travel-related.

Epidemiological situation in 2008

In 2008, a total of 138 469 salmonellosis cases (non-typhoidal[i]) were reported, of which 136 681 were confirmed, by all EU and EEA/EFTA countries (Table 2.3.12). The overall notification rate was 29.75 per 100 000 population, which is a significant decrease over the last three years. Slovakia, Czech Republic and Lithuania reported the highest notification rates (127, 103 and 98 cases per 100 000, respectively). Four countries reported fewer than 10 cases per 100 000 population, namely Greece, Portugal, Romania and Liechtenstein. Over the three-year period, the largest decreases in notification rates were observed in Czech Republic, Austria and Luxembourg, while the highest increases were observed in Malta and Denmark. The large decrease in Luxembourg and large increase in Denmark could be explained by the extensive salmonellosis outbreaks occurring in these countries (in 2006 in Luxembourg and in 2008 in Denmark).

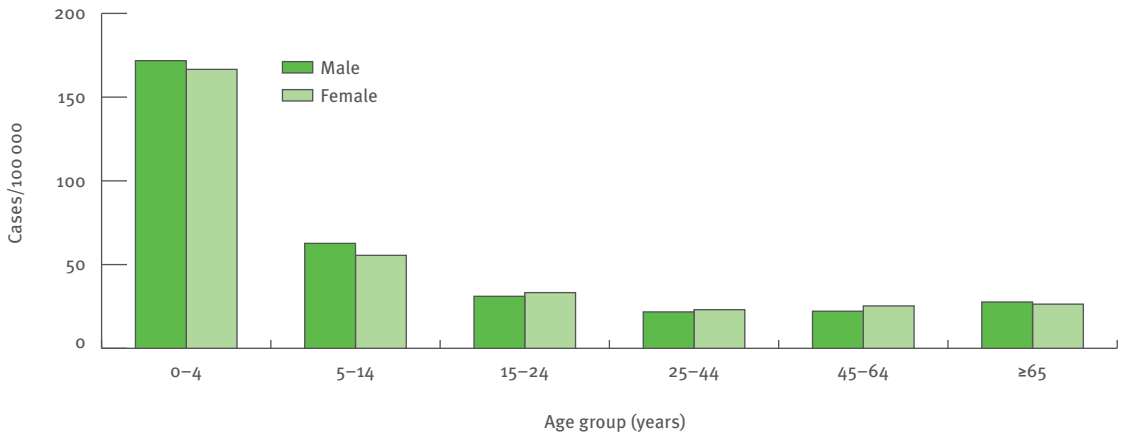
In 2008, the proportion of cases in the EU that were imported was 15 % of all confirmed cases with known importation status (n = 90 982). The proportion of imported cases was highest in the Nordic countries of Finland, Sweden, Iceland and Norway (over 80 %), followed by Ireland and the UK (over 50 %).

Age and gender distribution

As in previous years, the age-specific notification rate in 2008 was very high in children, in particular in the 0–4 year-old age group (161.2 per 100 000 population) (Figure 2.3.22). The rate in the young children was almost three times higher than in older children and more than five times as high as in the other age groups. This may be due to the higher proportion of symptomatic infection among the young, as well as a higher propensity to take samples by paediatricians. As expected, there were no differences in the overall rates between males and females (32.1 and 31.3 per 100 000, respectively; ratio: 1.03).

i For information on typhoid and paratyphoid cases, see page 103.

Figure 2.3.22. Notification rates of salmonellosis cases, in EU and EEA/EFTA countries, by age and gender, 2008 (n = 111 220)



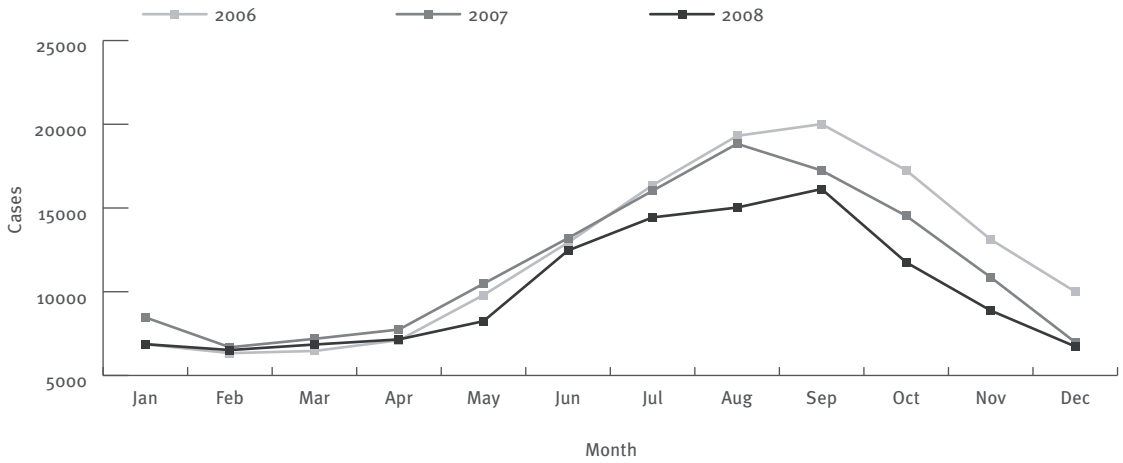
Source: Country reports: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Portugal, Slovakia, Slovenia, Sweden, UK, Iceland, Liechtenstein and Norway. Age-gender division not possible from aggregated reporting (Bulgaria, Poland and Romania).

Table 2.3.12. Number and notification rate of salmonellosis cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	2 312	2 312	28	3 386	41	4 787	58
Belgium	C	3 831	3 831	36	3 915	37	3 630	35
Bulgaria	A	1 622	1 516	20	1 136	15	1 056	14
Cyprus	C	169	169	21	158	20	99	13
Czech Republic	C	10 872	10 707	103	17 655	172	24 186	236
Denmark	C	3 669	3 669	67	1 648	30	1 662	31
Estonia	C	647	647	48	428	32	453	34
Finland	C	3 126	3 126	59	2 738	52	0	0.00
France	C	7 186	7 186	11	5 313	8.4	6 008	9.5
Germany	C	42 909	42 909	52	55 399	67	52 575	64
Greece	C	817	795	7.1	706	6.3	890	8.0
Hungary	C	7 166	6 637	66	6 578	65	9 389	93
Ireland	C	447	447	10	440	10	420	10
Italy	C	6 662	6 662	11	6 731	11	6 272	11
Latvia	C	1 229	1 229	54	619	27	781	34
Lithuania	C	3 308	3 308	98	2 270	67	3 557	105
Luxembourg	C	153	153	32	163	34	308	66
Malta	C	161	161	39	85	21	63	16
Netherlands[a]	C	1 627	1 627	—	1 224	—	1 644	—
Poland	A	9 609	9 148	24	11 155	29	12 502	33
Portugal	C	348	332	3.1	438	4.1	387	3.7
Romania	A	624	624	2.9	620	2.9	645	3.0
Slovakia	C	7 336	6 849	127	8 367	155	8 191	152
Slovenia	C	1 033	1 033	51	1 336	67	1 519	76
Spain[b]	C	3 833	3 833	—	3 842	—	5 117	—
Sweden	C	4 185	4 185	46	3 930	43	4 056	45
United Kingdom	C	11 511	11 511	19	13 557	22	14 124	23
EU total		**136 392**	**134 606**	**29.62[c]**	**153 013**	**34.1[c]**	**164 321**	**36.38[c]**
Iceland	C	134	134	43	93	30	114	38
Liechtenstein	C	2	2	5.7	1	2.8	—	—
Norway	C	1 941	1 941	41	1 649	35	1 813	39
Total		**138 469**	**136 681**	**29.75[c]**	**154 756**	**34.1[c]**	**166 248**	**36.41[c]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Coverage by the Dutch sentinel system is about 64 %.
(b) Surveillance system currently estimated to cover 25 % of the total population.
(c) Rates calculated excluding the Dutch and Spanish data.

Figure 2.3.23. Seasonal distribution of salmonellosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Spain, Sweden, UK, Iceland and Norway.

Seasonality

There is a clear seasonal trend for salmonellosis cases (Figure 2.3.23), with rates increasing over the summer months, peaking in August/September, and then decreasing gradually. When analysing the seasonal data more in detail, it is evident that the seasonal peak is mainly attributed to salmonellosis cases with *Salmonella* Enteritidis[1].

Enhanced surveillance in 2008

As in previous years, the two most common Salmonella serovars in 2008 the EU and EEA/EFTA countries were *S*. Enteritidis and *S*. Typhimurium, representing 56 % and 22 %, respectively, of all known serotypes (Table 2.3.13). The number of cases with *S*. Enteritidis decreased by 23 % compared with 2007, while cases with *S*. Typhimurium increased by 18 %.

Table 2.3.13. Top five Salmonella serovars reported in 2008 and 2007 and percentage change from 2007 to 2008

Serotype	2008	2007	Percentage change
Enteritidis	63 078	81 824	-23
Typhimurium	25 021	21 214	18
Infantis	1 290	1 331	-3
Virchow	899	1 106	-19
Newport	794	761	4

Discussion

Although salmonellosis continues to have a high notification rate in the EU and EEA/EFTA countries (29.75 per 100 000 population), there has been a statistically significant decreasing trend observed during the last three years and even the last five years[1]. This is most likely due to the increasing implementation of control measures against *Salmonella* within the poultry industry. *Salmonella* also continued to be the cause of a number of food-borne outbreaks at international, national and subnational levels in 2008. Among others, a large outbreak of *S*. Agona (163 cases by September 2008) affecting mainly Ireland and the UK, but also five other Member States, occurred in 2008 and was associated with contaminated cooked meat products[2]. In Denmark, the largest salmonellosis outbreak ever recorded occurred in 2008 with *S*. Typhimurium PT U292[3]. By October 2008, 1054 Danish cases had been linked to the outbreak and a few cases had also been identified in other countries after travelling to Denmark. The source was unfortunately not completely established. Besides the well known sources of salmonellosis (pork, chicken and eggs[1]) other sources were reported to cause outbreaks in 2008, e.g. fresh fruit juice[4], reptiles[5], goat's cheese[6] and infant milk formula[7,8].

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-SALMONELLOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-LNS-Microbio	V	Co	P	C	Y	N	Y	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-SALMONELLOSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-SALMONELLOSIS	O	Co	P	C	Y	N	Y	Y	Y

Shigellosis

- In 2008, the rate of notification of shigellosis in Europe was 1.8 cases per 100 000 population.
- Shigellosis continues to be most prevalent in children under five years old.
- Most cases of shigellosis were reported during autumn months with a peak in September.
- The majority of cases with known importation status were imported.

Epidemiological situation in 2008

In 2008, 7258 confirmed shigellosis cases were reported in 29 EU and EEA/EFTA countries. Reported cases decreased by 13.6 % compared with 2007 (8398). This overall decrease was not homogeneous among countries. Reported cases of shigellosis decreased in 13 countries and most markedly in Romania. On the other hand, shigellosis increased in 11 countries, with the Czech Republic reporting the largest increase compared with the previous year.

The overall notification rate also decreased from 2.1 cases per 100 000 population in 2007 to 1.8 cases per 100 000 in 2008. Bulgaria reported the highest notification rate with 14 cases per 100 000 followed by Slovakia and Sweden with 8.3 and 6.5 cases per 100 000, respectively (Table 2.3.14).

Only ten countries provided information on the geographical origin of 1500 cases. Of those, 1174 were imported (78 %) compared with 326 domestically acquired infections. The highest number of travel-associated cases were linked to travel to Egypt (279) followed by India (209) and Morocco (84).

Age and gender distribution

As in 2007, the highest notification rate was among children aged 0–4 years old with 9.04 cases per 100 000. Bulgaria and Slovakia reported the highest notification rates, 153 and 84 cases per 100 000 in this age group.

There was a slight difference in notification rates by gender. Women had a higher rate (2.08 cases per 100 000) compared with men (1.83 cases per 100 000); the male-to-female ratio was 0.88. This is based on 6 748 cases for which this information was provided. Women were the gender group with the higher rate in all age groups except in those aged over 65 years (Figure 2.3.24).

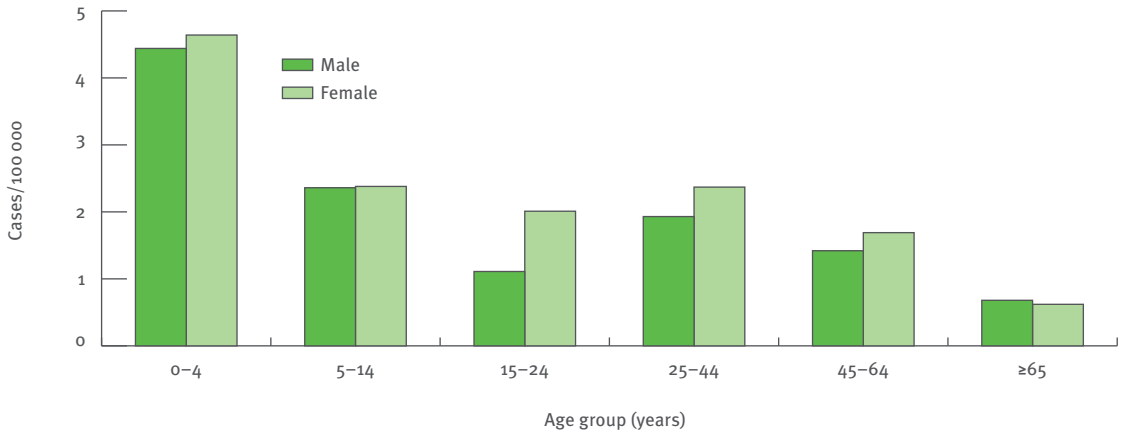
Seasonality

A higher number of cases were reported during late summer, reaching a peak in September (548 reported cases) (Figure 2.3.25).

Discussion

As in previous years, the highest notification rate occurred in children under five years of age. Data show that shigellosis in Europe is mainly imported, with Egypt, India and Morocco reported most frequently as the country of travel.

Figure 2.3.24. Notification rates of shigellosis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 4950)



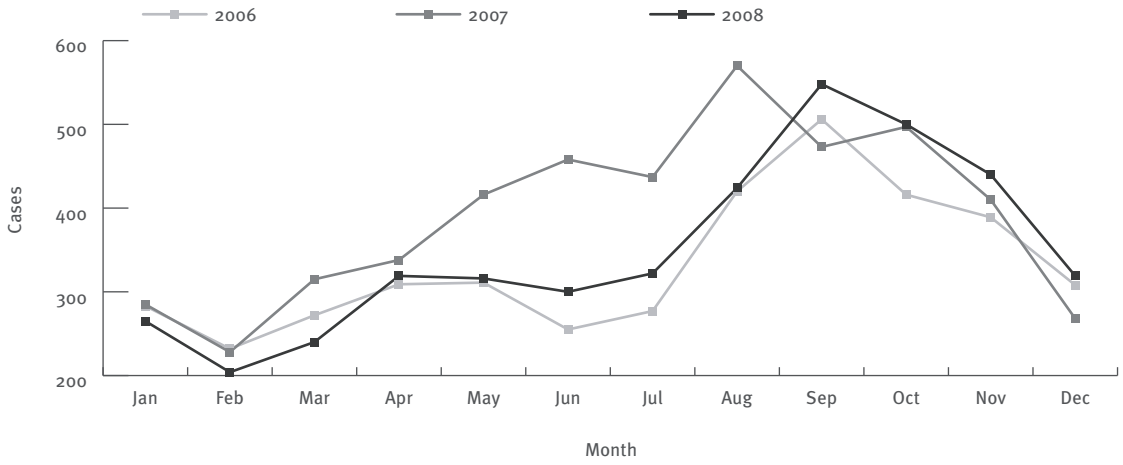
Source: Country reports: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland, Norway.

Table 2.3.14. Number and notification rate of shigellosis cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	120	120	1.4	136	1.6	77	0.93
Belgium	C	418	418	3.9	330	3.1	305	2.9
Bulgaria	A	1 094	1 094	14	1 072	14	879	11.4
Cyprus	C	1	1	0.13	349	3.4	2	0.26
Czech Republic	C	229	227	2.2	0	0.00	276	2.7
Denmark	C	90	90	1.6	—	—	—	—
Estonia	C	69	69	5.1	114	8.5	53	3.9
Finland	C	124	124	2.3	112	2.1	0	0.00
France	C	517	517	0.81	827	1.3	—	—
Germany	C	575	575	0.70	867	1.1	814	1.0
Greece	C	19	19	0.17	49	0.44	26	0.23
Hungary	C	78	43	0.43	62	0.62	73	0.72
Ireland	C	76	63	1.4	43	1.0	53	1.3
Italy	—	—	—	—	—	—	—	—
Latvia	A	106	102	4.5	73	3.2	73	3.2
Lithuania	A	81	81	2.4	150	4.4	0	0.00
Luxembourg	C	9	9	1.9	8	1.7	13	2.8
Malta	C	3	3	0.73	0	0.00	0	0.00
Netherlands	C	356	343	2.1	359	2.2	248	1.5
Poland	A	33	31	< 0.1	53	0.14	30	< 0.1
Portugal	C	7	7	< 0.1	12	0.11	1	0.00
Romania	A	371	371	1.7	733	3.4	559	2.6
Slovakia	C	538	446	8.3	525	9.7	436	8.1
Slovenia	C	44	44	2.2	39	1.9	36	1.8
Spain[a]	C	133	133	—	119	—	148	—
Sweden	C	596	596	6.5	470	5.2	429	4.7
United Kingdom	C	1 595	1 595	2.6	1 746	2.9	1 425	2.4
EU total		**7 282**	**7 121**	**1.78[b]**	**8 248**	**2.10[b]**	**5 956**	**1.80[b]**
Iceland	C	3	3	1.0	2	0.65	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	134	134	2.8	148	3.2	138	3.0
Total		**7 419**	**7 258**	**1.79[b]**	**8 398**	**2.12[b]**	**6 094**	**1.82[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Surveillance system currently estimated to cover 25 % of the total population.
(b) Rates calculated excluding the Spanish data.

Figure 2.3.25. Seasonal distribution of shigellosis cases in EU and EEA/EFTA countries, 2006-08



Source: Country reports: Austria, Finland, Germany, Greece, Hungary, Ireland, Luxembourg, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-SHIGELLOSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-SHIGELLOSIS	O	Co	P	C	Y	N	Y	Y	Y

In 2008, there was an international outbreak caused by *Shigella sonnei* linked to a cultural event in Portugal. Following this event, Sweden, Germany and the Netherlands reported cases caused by a *Shigella* strain that had an indistinguishable PFGE pattern from the strain responsible for the Portuguese outbreak[1]. There were also several food-borne outbreaks caused by *Shigella* spp. in the EU. The largest outbreaks were caused by *Shigella sonnei* in Austria, France and Sweden with a total of 239 cases.

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and Foodborne Outbreaks in The European Union in 2008, EFSA Journal; 2010 8(1):1496.

Toxoplasmosis

- In several EU countries, surveillance for toxoplasmosis is still not carried out.
- As this is usually an asymptomatic infection, most cases of toxoplasmosis remain undiagnosed and unreported. Thus the epidemiological data presented here reflect the surveillance efforts in the country more than true prevalence.
- Toxoplasmosis is diagnosed more among women than men, most likely due to active screening of pregnant women in some countries.

Epidemiological situation in 2008

In 2008, 1788 toxoplasmosis cases (1457 confirmed cases) were reported by 16 EU and EEA/EFTA countries. A further four countries (Cyprus, Malta, Sweden and Iceland) reported zero cases (Table 2.3.15). Lithuania had the highest notification rate (3.5 per 100 000 population) followed by Slovakia (3.2 per 100 000 population). The overall notification rate was 0.76 per 100 000. The data below is a mix of all diagnosed and reported toxoplasmosis cases, or just congenital toxoplasmosis cases or, in some countries, both.

Age and gender distribution

Information on age was available for 916 cases (63 % of all confirmed cases). The highest notification rate was detected in the 15–24 year-olds (0.93 per 100 000 population). Data on gender were available for 1 022 cases (70 % of all confirmed cases).Of these, 30 % were male (308 cases) and 70 % were female (714 cases), giving a male-to-female ratio of 0.47. Higher notification rates among females were most pronounced in the age groups 15–24 and 25–44 years of age (Figure 2.3.26).

Seasonality

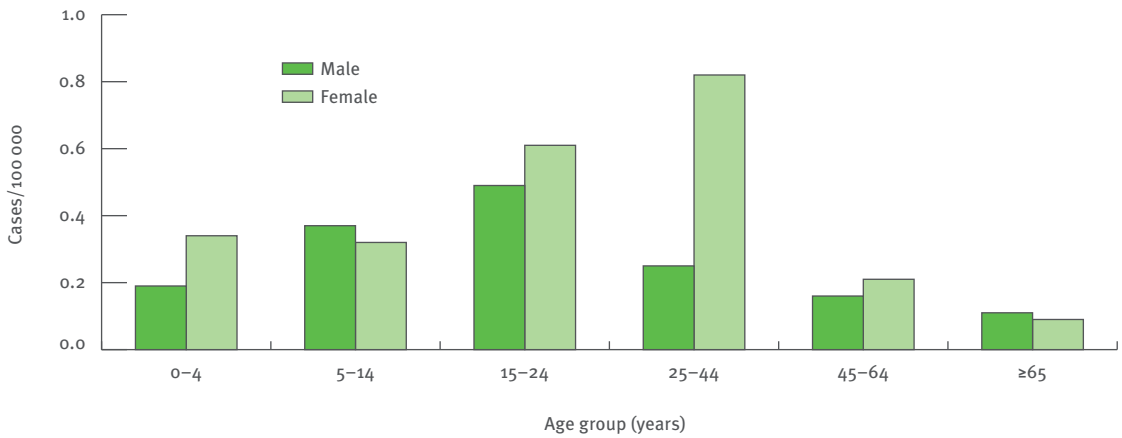
When comparing the seasonal trends of toxoplasmosis for the last three years, no consistent seasonal pattern was observed.

Discussion

Of all 30 EU and EEA/EFTA countries, 11 do not report data for toxoplasmosis and several that do report did not provide detailed information on the cases (specifying whether 'congenital toxoplasmosis' or 'all cases of toxoplasmosis'). As a result it is difficult to obtain a complete overview of the situation. Further, the infection is rarely diagnosed because it is usually asymptomatic, so the current epidemiological picture presented here describes more the degree of effort to seek out cases, rather than the true prevalence of infection.

The high frequency of female cases in the age groups 15–24 and 25–44 years is most likely due to the screening of pregnant women for *Toxoplasma* infection.

Figure 2.3.26. Notification rates of toxoplasmosis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 531)



Source: Country reports: Austria, Bulgaria, Czech Republic, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Romania, Slovakia, Slovenia, Spain, United Kingdom, Cyprus, Malta, Iceland and Sweden reported zero cases.

Table 2.3.15. Number and notification rate of reported cases of toxoplasmosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	1	1	< 0.1	1	< 0.1	—	—
Belgium	—	—	—	—	—	—	—	—
Bulgaria	A	64	64	0.84	113	1.5	3 016	39
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	248	248	2.4	228	2.2	328	3.2
Denmark	—	—	—	—	—	—	—	—
Estonia	C	1	1	< 0.1	1	< 0.1	3	0.22
Finland	C	46	46	0.87	36	0.68	0	0.00
France	—	—	—	—	—	—	—	—
Germany	—	—	—	—	—	—	—	—
Greece	—	—	—	—	—	—	—	—
Hungary	C	84	84	0.84	69	0.69	98	0.97
Ireland	C	49	49	1.1	49	1.1	42	1.0
Italy	—	—	—	—	—	—	—	—
Latvia	A	6	6	0.26	9	0.39	4	0.17
Lithuania	A	117	117	3.5	67	2.0	0	0.00
Luxembourg	C	1	1	0.21	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	—	—	—	—	—	—	—	—
Poland	A	514	183	0.48	423	1.1	438	1.2
Portugal	—	—	—	—	—	—	—	—
Romania	A	327	327	1.5	326	1.5	—	—
Slovakia	C	175	175	3.2	253	4.7	303	5.6
Slovenia	C	21	21	1.0	20	0.99	22	1.1
Spain[a]	C	1	1	—	—	—	41	—
Sweden	C	0	0	0.00	0	0.00	0	0.00
United Kingdom	C	133	133	0.22	149	0.24	127	0.21
EU total		**1 788**	**1 457**	**0.76[b]**	**1 744**	**0.91**	**4 422**	**2.72[b]**
Iceland	C	0	0	0.00	0	0.00	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—
Total		**1 788**	**1 457**	**0.76[b]**	**1 744**	**0.91**	**4 422**	**2.72[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Sentinel surveillance system based on a limited number of selected laboratories and reporting only congenital toxoplasmosis.
(b) Rates calculated excluding the Spanish data.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-TOXOPLASMOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-NOTIFIABLE_DISEASES	Cp	Co	P	A	Y	Y	Y	-	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-TOXOPLASMOSIS	V	Co	P	C	Y	N	Y	Y	Y

Trichinellosis

- In 2008, the notification rate of human trichinellosis (0.13 per 100 000) was only slightly lower than in the previous year.
- Romania accounted for 75 % of the cases in 2008, maintaining an increasing three-year trend (2006–08). These were mainly due to 37 verified trichinellosis outbreaks that occurred in Romania during 2008.

Epidemiological situation in 2008

In 2008, 670 confirmed cases of trichinellosis were reported from 13 EU Member States. Four Member States, namely Romania (75 %), Bulgaria (10 %), Lithuania (4.7 %) and Spain (4 %), accounted for 94 % of the total number of reported cases.

Overall, the notification rate of reported trichinellosis decreased slightly from 0.16 per 100 000 population in 2007 to 0.13 per 100 000 in 2008. However, the incidence of trichinellosis increased in some Member States such as Romania, Lithuania and Latvia (Table 2.3.16). Romania has seen a sharp increase in notification rate over three years, from 1.6 cases per 100 000 population in 2006 to 2.3 cases per 100 000 population in 2008.

Age and gender distribution

In 2008, highest age-specific notification rates (both sexes) were reported in the 25–44 year age group (0.18 per 100 000) followed by the 5–14 year-olds (0.16 cases per 100 000). It should be taken into consideration, however, that this distribution is strongly influenced by the reported cases that occurred in Romania and Bulgaria, being the main reporting countries of trichinellosis in 2008.

There was a slightly higher notification rate among men (0.03 cases per 100 000) than women (0.02 cases per 100 000), giving a male-to-female ratio of 1.45.

Seasonality

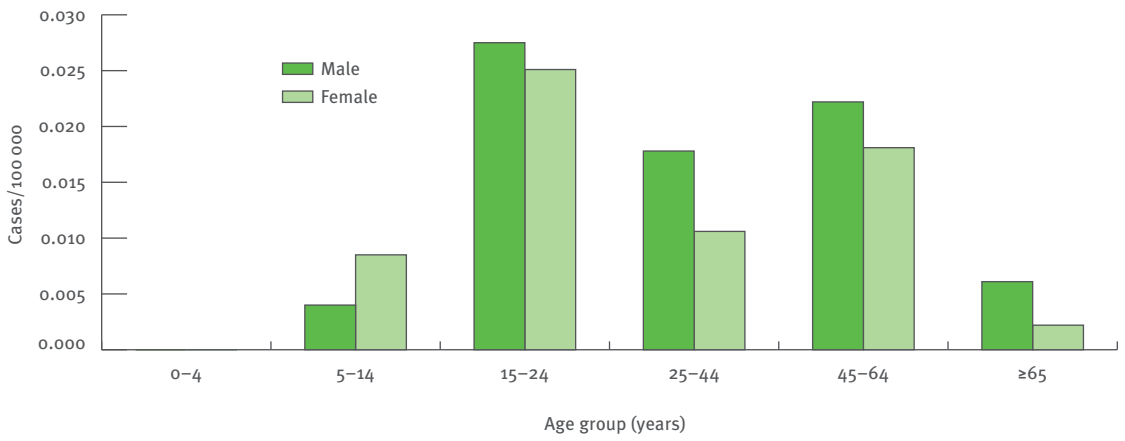
No clear seasonal pattern was observed in the 611 reported cases of trichinellosis with this information, most likely due to the low numbers reported. As in 2007, the highest number of cases was reported in January (188 cases, 31 %) followed by June (129 cases, 21 %).

Discussion

Due to the effectiveness of preventive measures established by veterinary health and food safety authorities, the prevalence of trichinellosis in animals and humans in the EU is relatively low. The average incidence in Europe further decreased in 2008. Departing from this trend, Romania showed a three-year increase in notification rate, accounting for 75 % of the total number of reported cases in 2008. Bulgaria and Lithuania also showed an increase in reported cases in 2008.

January was the month with the highest number of reported cases. Traditional household slaughtering of pigs in rural areas across Bulgaria and Romania in

Figure 2.3.27. Notification rates of trichinellosis cases, in the EU and EEA/EFTA, by age and gender, 2008 (n = 64)



Source: Country reports: France, Germany, Hungary, Latvia, Netherlands, Poland, Slovakia, Slovenia and Spain.

Table 2.3.16. Number and notification rate of reported cases of trichinellosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	0	0	0	0	0	1	< 0.1
Belgium	A	5	5	< 0.1	3	< 0.1	0	0.00
Bulgaria	A	67	67	0.88	62	0.81	180	2.3
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	0	0	0.00	0	0.00	0	0.00
Denmark	—	—	—	—	—	—	0	0.00
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	0	0	0.00	0	0.00	0	0.00
France	C	3	3	< 0.1	1	< 0.1	10	< 0.1
Germany	C	1	1	< 0.1	10	< 0.1	22	< 0.1
Greece	C	0	0	0.00	0	0.00	0	0.00
Hungary	C	5	5	< 0.1	2	< 0.1	—	—
Ireland	C	0	0	0.00	2	< 0.1	0	0.00
Italy	C	0	0	0.00	1	< 0.1	1	< 0.1
Latvia	C	4	4	0.18	4	0.18	11	0.48
Lithuania	A	41	31	0.92	8	0.24	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	1	1	< 0.1	0	0.00	0	0.00
Poland	C	4	4	< 0.1	217	0.57	89	0.23
Portugal	C	0	0	0.00	0	0.00	0	0.00
Romania	A	503	503	2.34	432	2.0	350	1.6
Slovakia	C	18	18	0.33	8	0.15	5	< 0.1
Slovenia	C	1	1	< 0.1	0	0.00	1	< 0.1
Spain	C	27	27	< 0.1	36	< 0.1	18	< 0.1
Sweden	C	0	0	0.00	1	< 0.1	0	0.00
United Kingdom	C	0	0	0.00	0	0.00	0	0.00
EU total	—	**680**	**670**	**0.14**	**787**	**0.16**	**688**	**0.14**
Iceland		—	—	—	—	—	0	0.00
Liechtenstein	C	0	0	0.00	—	—	—	—
Norway	C	0	0	0.00	0	0.00	0	0.00
Total	—	**680**	**670**	**0.13**	**787**	**0.16**	**688**	**0.14**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

January might explain this pattern[1]. A large outbreak occurred in Romania in 2008, where 108 affected people were hospitalised because the consumed pig meat was contaminated with *Trichinella*, and appropriate veterinary control was absent. This highlights the importance of veterinary inspections for control and prevention of this disease in humans.

In 2008, 31 out of the 35 verified outbreaks of trichinellosis in the EU occurred in Romania. In addition, some of the outbreaks in other EU countries were reported to be associated with consumption of contaminated Romanian pork products[2].

References

1. European Food Safety Authority (EFSA), European Centre for Disease Prevention and Control (ECDC). The Community Summary Report on Trends and Sources of Zoonoses and Zoonotic Agents and Foodborne Outbreaks in the European Union in 2008, EFSA Journal; 2010 8(1):1496.
2. Angheben A, Mascarello M, Zavarise G, Gobbi F, MonteiroG, Marocco S, et al. Outbreak of imported trichinellosis in Verona, Italy, January 2008. Euro Surveill. 2008;13(22):pii=18891.Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18891

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-TRICHINOSIS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-TRICHINOSIS	V	Co	P	C	Y	N	Y	Y	Y

Tularaemia

- The reported number of tularaemia cases in 2008 decreased over the previous year, most likely because in 2008 there were no major outbreaks of tularaemia reported in the EU.
- Males over 24 years of age are primarily affected by the disease.

Epidemiological situation in 2008

In 2008, 858 cases (850 confirmed cases) of tularaemia were reported by 25 countries providing data (Table 2.3.17), although 11 countries reported zero confirmed cases. The total number is 30 % lower than the number of cases reported for the previous year. Sweden reported the highest notification rate (4.2 per 100 000 population), followed by Finland (2.2 per 100 000) and Norway (1.4 per 100 000). For all other countries, notification rates were < 0.5 per 100 000. The overall notification rate was 0.18 cases per 100 000.

Age and gender distribution

All fourteen countries that reported confirmed cases also provided information on the age and gender of their cases. Out of the 780 confirmed cases with gender information, 469 (60 %) were males and 308 were females (40 %), resulting in a male-to-female ratio of 1.61. For three cases from Bulgaria, gender was reported as unknown. Similar to previous years, the highest notification rate occurred in the age group 45–64 years for both males and females (Figure 2.3.28).

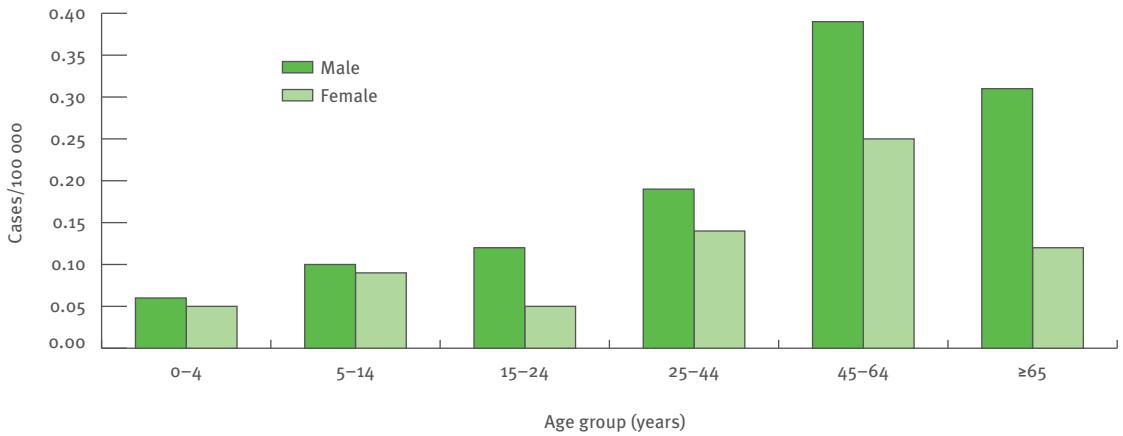
Seasonality

Seasonality data were provided by all 14 countries with confirmed cases. As was observed for 2006 and 2007, the majority of the cases occurred in summer, with a peak in August or September and then a decline in the early autumn months (Figure 2.3.29).

Discussion

Compared with 2007, the number of cases of tularaemia reported in 2008 decreased, primarily due to a decrease in notifications from Spain (from 493 in 2007 to 58 in 2008) and Finland from 403 in 2007 to 116 in 2008). In France, Italy, and Sweden, however, the number of reported cases increased.

Figure 2.3.28. Notification rates of tularaemia cases by age and gender, in the EU and EEA/EFTA, by age and gender, 2008 (n = 840)



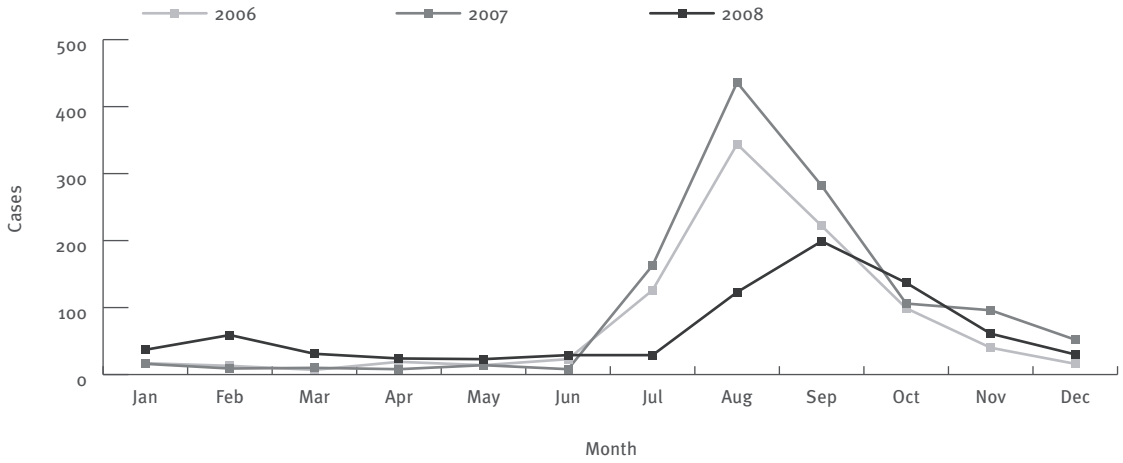
Source: Country reports: Bulgaria, Estonia, Finland, France, Germany, Hungary, Italy, Lithuania, Slovakia, Slovenia, Spain, Sweden, Norway. Belgium, Cyprus, Greece, Ireland, Latvia, Luxembourg, Malta, Poland, Romania, United Kingdom, and Iceland reported zero cases.

Table 2.3.17. Number and notification rate of reported cases of tularaemia in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	8	8	0.10	4	< 0.1	6	< 0.1
Belgium	C	0	0	0.00	—	—	0	0.00
Bulgaria	A	5	3	< 0.1	3	< 0.1	14	0.18
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	—	—	—	—	—	—	79	0.77
Denmark	—	—	—	—	—	—	—	—
Estonia	C	1	1	< 0.1	2	0.15	0	0.00
Finland	C	116	116	2.2	403	7.6	0	0.00
France	C	106	104	0.16	48	< 0.1	24	< 0.1
Germany	C	15	15	< 0.1	20	< 0.1	1	0.00
Greece	C	0	0	0.00	0	0.00	0	0.00
Hungary	C	25	25	0.25	20	0.20	139	1.4
Ireland	C	0	0	0.00	0	0.00	0	0.00
Italy	C	43	43	< 0.1	0	0.00	2	0.00
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	A	2	2	< 0.1	1	< 0.1	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	—	—	—	—	—	—	—	—
Poland	C	4	0	0.00	1	0.00	0	0.00
Portugal	—	—	—	—	—	—	—	—
Romania	C	0	0	0.00	0	0.00	0	0.00
Slovakia	C	25	25	0.46	11	0.20	49	0.91
Slovenia	C	2	2	0.10	1	< 0.1	1	< 0.1
Spain	C	58	58	0.13	493	1.1	1	0.00
Sweden	C	382	382	4.2	174	1.9	241	2.7
United Kingdom	C	0	0	0.00	0	0.00	0	0.00
EU total		**792**	**784**	**0.17**	**1 181**	**0.27**	**557**	**0.12**
Iceland	C	0	0	0.00	—	—	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	66	66	1.4	49	1.05	11	0.24
Total		**858**	**850**	**0.18**	**1 230**	**0.28**	**568**	**0.12**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.3.29. Seasonal distribution of tularaemia cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Finland, France, Hungary, Slovakia, Slovenia, Spain, Sweden, and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-TULARAEMIA	V	Co	P	C	Y	N	Y	Y	Y

Typhoid/paratyphoid fever

- In 2008, 1233 cases of typhoid fever and paratyphoid fever were reported (with each making up about 50 % of the total).
- *Salmonella* Paratyphi B was the most common serotype identified in cases of paratyphoid.
- The notification rate is highest in children below five years of age.
- Almost 80 % of cases are imported, mainly from southern Asian countries.

Epidemiological situation in 2008

In 2008, a total of 1233 human typhoid or paratyphoid cases (all confirmed) were reported by 18 EU Member States and Iceland (Table 2.3.18). This is more than twice the number reported in 2007, but the increase could be due to a change introduced in 2007 in the way these cases are reported to The European Surveillance System[i] that improved the completeness of the laboratory reporting. The overall notification rate in the EU and EEA/EFTA countries was 0.30 per 100 000 population. The UK reported the highest notification rate (0.97 per 100 000 population), followed by Cyprus, Belgium and Sweden (0.63, 0.57 and 0.53 per 100 000, respectively).

As expected, a large proportion (79 %) of cases with known importation status (n = 445) were imported. The three countries that were the most frequently reported as the most probable country of infection were India (145 cases), Pakistan (93) and Bangladesh (31).

Age and gender distribution

The highest notification rate (0.55 per 100 000) was reported for those under five years of age, followed by the 15–24 year-olds (0.44 per 100 000). There was no major difference in the overall notification rates of males and females (0.28 and 0.24 per 100 000, respectively; ratio: 1.18), although males had a higher notification rate among the 25–44 year-olds (Figure 2.3.30).

Seasonality

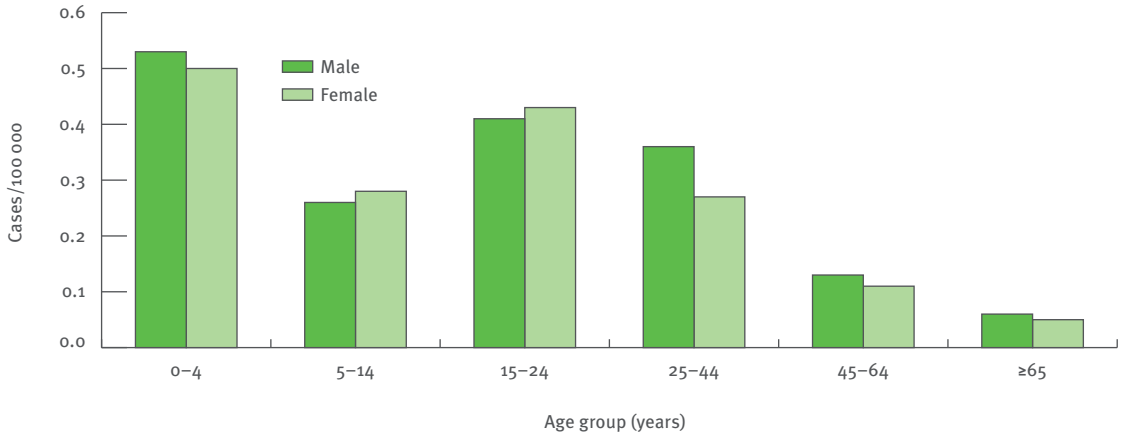
The number of reported cases in 2008 showed a peak in autumn with the highest number of reported cases in September. Similar trends were observed also in 2006 and 2007 (Figure 2.3.31). This is most likely related to travel patterns to high risk countries, with disease manifesting on return.

Enhanced surveillance

In 2008, 571 cases of typhoid fever and 505 of paratyphoid fever were reported. The most common serotype of paratyphoid fever was *S.* Paratyphi B (Table 2.3.19).

i The change meant that rather than being reported as separate diseases, typhoid and paratyphoid cases should now be reported under salmonellosis.

Figure 2.3.30. Notification rates of typhoid/paratyphoid cases, in the EU and EEA/EFTA, by age and gender, 2008 (n = 769)



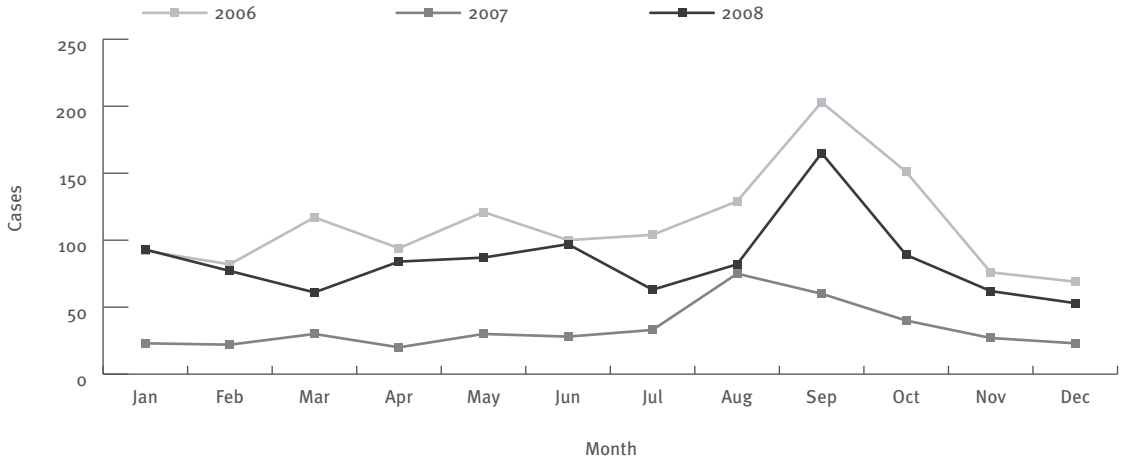
Source: Country reports: Austria, Belgium, Cyprus, Denmark, Finland, Germany, Greece, Hungary, Ireland, Lithuania, Luxembourg, Netherlands, Portugal, Slovenia, Sweden, UK, Iceland. Estonia, Italy, Latvia, Malta, Slovakia, Liechtenstein and Norway all reported zero cases.

Table 2.3.18. Number and notification rate of reported cases of typhoid/paratyphoid fever in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	14	14	0.17	0	0.00	17	0.21
Belgium	C	61	61	0.57	42	0.40	24	0.23
Bulgaria	—	—	—	—	0	0.00	0	0.00
Cyprus	C	5	5	0.63	1	0.13	0	0.00
Czech Republic	C	—	—	—	0	0.00	0	0.00
Denmark	C	19	19	0.35	14	0.26	0	0.00
Estonia	C	0	0	0.00	2	0.15	1	< 0.1
Finland	C	6	6	0.11	20	0.38	0	0.00
France	C	236	236	0.37	167	0.26	165	0.26
Germany	C	155	155	0.19	131	0.16	148	0.18
Greece	C	1	1	< 0.1	18	0.16	15	0.13
Hungary	C	3	3	< 0.1	0	0.00	2	< 0.1
Ireland	C	13	13	0.30	12	0.28	9	0.21
Italy	C	0	0	0.00	0	0.00	219	0.37
Latvia	C	0	0	0.00	1	< 0.1	0	0.00
Lithuania	C	2	2	< 0.1	—	—	0	0.00
Luxembourg	C	1	1	0.21	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	21	21	0.13	21	0.13	80	0.49
Poland	—	—	—	—	—	—	5	< 0.1
Portugal	C	21	21	0.20	44	0.42	41	0.39
Romania	C	3	3	< 0.1	0	0.00	15	< 0.1
Slovakia	C	0	0	0.00	1	< 0.1	3	< 0.1
Slovenia	C	4	4	0.20	4	0.20	8	0.40
Spain[a]	C	21	21	—	33	—	44	—
Sweden	C	49	49	0.53	47	0.52	12	0.13
United Kingdom	C	596	596	0.97	20	< 0.1	547	0.91
EU total		**1 231**	**1 231**	**0.31[b]**	**578**	**0.13[b]**	**1 355**	**0.29[b]**
Iceland	C	2	2	0.63	0	0.00	2	0.67
Liechtenstein	C	0	0	0.00	0	0.00	—	—
Norway	C	0	0	0.00	0	0.00	36	0.78
Total		**1 233**	**1 233**	**0.30[b]**	**578**	**0.13[b]**	**1 393**	**0.30[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Sentinel surveillance system based on a limited number of selected laboratories.
(b) Rates calculated excluding the Spanish data.

Figure 2.3.31. Seasonal distribution of typhoid/paratyphoid cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Luxembourg, Netherlands, Portugal, Spain, Sweden, UK, Iceland.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-SALMONELLOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-LNS-Microbio	V	Co	P	C	Y	N	Y	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Portugal	PT-SALMONELLOSIS	Cp	Co	P	C	N	Y	N	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-SALMONELLOSIS	O	Co	P	C	Y	N	Y	Y	Y

Table 2.3.19. *Salmonella enterica* serotypes of typhoid and paratyphoid cases in 2008

Serotype	2008
Typhi	571
Paratyhpi A	351
Paratyphi B	135
Paratyphi C	0
Paratyphi (unspecified)	19
Total	**1 076**

Discussion

Typhoid and paratyphoid fever remain rare infections in the EU and EEA/EFTA countries. The disease is mainly associated with travel to endemic areas outside of the EU. The strong travel association can explain the difference in the age pattern compared with many other food-borne diseases which normally have a substantially higher notification rates in children than in older age groups.

Variant Creutzfeldt–Jakob disease (vCJD)

- Variant CJD remains a very rare but deadly disease in the EU.
- Surveillance for CJD (all types) needs to continue because of uncertainty about the future trend and in order to monitor different types of exposure that can be linked to disease, including blood transfusion.
- Since the peak in the number of reported cases (and deaths) in 2000, the number of deaths from vCJD in the EU is declining.

Epidemiological situation in 2008

The data presented here are collected by the dedicated surveillance network, EuroCJD[1].

In 2008, a total of three vCJD cases (of which, two were confirmed) died in two EU Member States (Table 2.3.20), which is seven fewer than those reported in 2007. Two cases were reported by Spain, and one case by the UK. The overall mortality rate remains very low at 0.01 per 1000000 population.

Age and gender distribution

The cases were 20, 41, and 64 years of age. Two of the cases were male and one female.

Seasonality

Variant CJD shows no seasonal trends due to the very long incubation period.

Discussion

Countries throughout Europe continue surveillance of vCJD through collaboration within the EuroCJD network[1]. Methods for case classification have been harmonised and risk factors are investigated by a common questionnaire.

The transmission to humans of variant CJD through prions in food has had profound political, humanitarian, social and economic implications. Nevertheless, since the peak in 2000, the numbers of reported deaths from vCJD in the EU has continuously declined.

Surveillance of variant CJD and all types of CJD is crucial because of uncertain incubation periods and in order to monitor different types of exposure that can be linked to the disease[2].

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1. EuroCJD [homepage on the Internet]. Edinburgh: The European and Allied Countries Collaborative Study Group of CJD (EUROCJD). Available from: http://www.eurocjd.ed.ac.uk/EUROINDEX.htm.
2. European Centre for Disease Prevention and Control (ECDC). Recent developments in vCJD highlight remaining uncertainties about this disease. Edition 5, December 2008. Available from http://ecdc.europa.eu/en/Insight_Exec_Sci_update/Files/Executive_ScienceUpdate_December_2008.pdf

Table 2.3.20. Number of vCJD deaths in the EuroCJD reporting countries, 2008

Country	Gender	Diagnosis	Year of death	Age at death	Blood donor	Blood recipient
Spain	M	Confirmed	2008	41	No	No
Spain	F	Confirmed	2008	64	No	No
UK	M	Probable	2008	20	No	No

Note: EuroCJD countries contributing reports of zero deaths: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Greece, Iceland, Ireland, Israel, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Sweden, Switzerland.

Yersiniosis

- The highest burden of yersiniosis is in children under 15 years of age (58 % of reported cases), with the highest notification rate among the younger children under five years old.
- The majority of yersiniosis infections are domestically acquired.
- *Yersinia enterocolitica* is the most commonly reported species causing human yersiniosis.

Epidemiological situation in 2008

In 2008, a total of 8 200 cases (8 182 confirmed cases) of human yersiniosis were reported by 22 EU countries and by Liechtenstein and Norway (Table 2.3.21). This is 7.7 % less than the total number reported in 2007. Cyprus, Malta and Liechtenstein reported zero cases. The overall notification rate was 2.66 per 100 000, which is similar to those for 2006 and 2007. The highest notification rate was reported by Lithuania (15.9 per 100 000 population) followed by Finland (11.5 per 100 000).

The majority of infections in cases with available data on country of origin of infection were domestically acquired (96 %; n = 6 042).

Age and gender distribution

The highest burden of disease was in children under 15 years of age who constituted 57 % of all reported cases with known age (n = 7 876). The notification rate was highest in young children under five years of age followed by the age group 5–14 years (17 per 100 000 and 6.5 per 100 000, respectively) (Figure 2.3.32).

There were slightly more male cases (2.9 per 100 000) than female (2.4 per 100 000) with a male-to-female ratio of 1.22.

Seasonality

Yersiniosis cases showed no clear seasonal pattern. There does, however, appear to be a tendency over the three years (2006–08) towards an increasing number of cases reported in June, September and November (Figure 2.3.33).

Enhanced surveillance in 2008

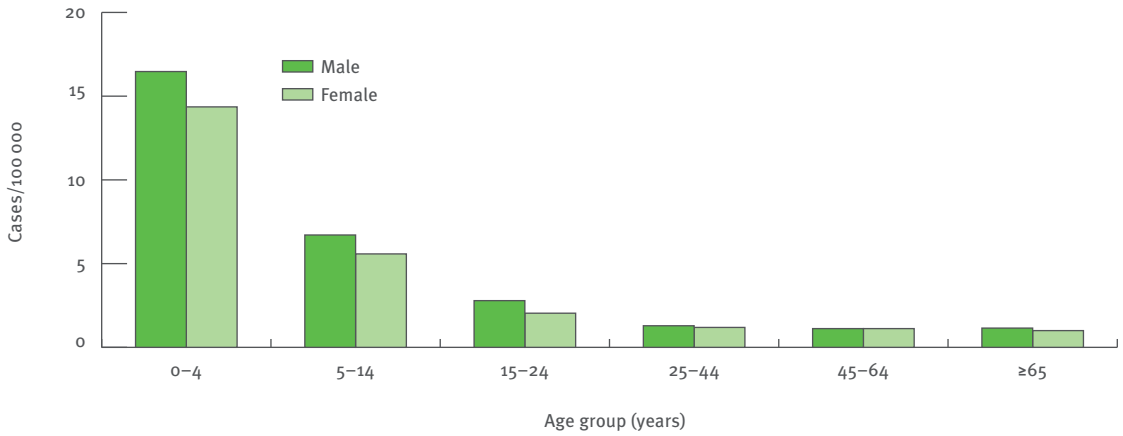
Yersinia enterocolitica was the most common species reported, isolated from 92 % of yersiniosis cases. *Y. pseudotuberculosis* was only isolated from 1.8 % of cases. Other species accounted for 0.2 % and unknown or not speciated, 6.0 %.

Eight countries provided data on serotype. The two most common serotypes were O:3 (biovar 4) and O:9 (biovar 2) (91 % and 7 %, respectively, n = 4 068).

Discussion

The highest burden of yersiniosis is, as expected, among children below 15 years of age. The species most commonly found in human yersiniosis cases, *Y. enterocolitica*, is also frequently found in pigs and pork products in the EU[1]. The same applies for the dominant serotype in humans, O:3.

Figure 2.3.32. Notification rates of yersiniosis cases, in the EU and EEA/EFTA, by age and gender, 2008 (n = 7 316)



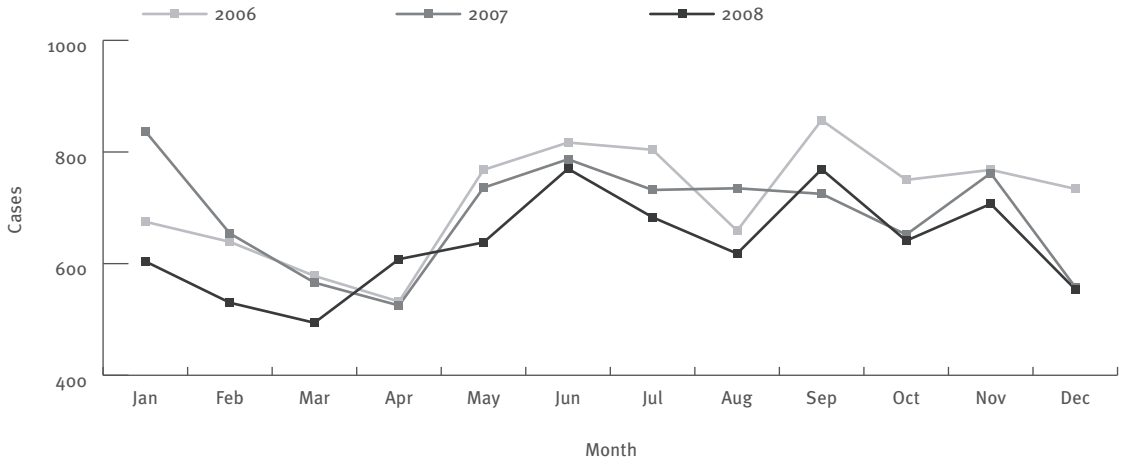
Source: Country reports: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Ireland, Latvia, Luxembourg, Malta, Poland, Romania, Slovakia, Slovenia, Sweden, UK, Liechtenstein and Norway.

Table 2.3.21. Number and notification rate of reported cases of yersiniosis in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	93	93	1.1	142	1.7	158	1.9
Belgium	C	273	273	2.6	248	2.3	264	2.5
Bulgaria	A	10	0	0.00	0.0	0.0	0	0.00
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	557	557	5.4	576	5.6	534	5.2
Denmark	C	331	331	6.0	274	5.0	215	4.0
Estonia	C	42	42	3.1	76	5.7	42	3.1
Finland	C	608	08	12	480	9.1	795	15
France	—	—	—	—	—	—	—	—
Germany	C	4 352	4 352	5.3	4 987	6.1	5 161	6.3
Greece	—	—	—	—	—	—	—	—
Hungary	C	40	40	0.40	55	0.55	38	38
Ireland	C	3	3	< 0.1	6	0.14	1	< 0.1
Italy	—	—	—	—	—	—	0	0.0
Latvia	C	56	50	2.2	41	1.8	92	4.0
Lithuania	A	536	536	16	569	17	0	0.00
Luxembourg	C	17	17	3.5	22	4.6	5	1.1
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	—	—	—	—	—	—	—	—
Poland	C	213	213	0.56	182	48	111	29
Portugal	—	—	—	—	—	—	0	0.00
Romania	C	9	9	0.00	0	0.00	—	—
Slovakia	C	70	68	1.3	71	1.3	82	1.5
Slovenia	C	31	31	1.5	32	1.6	80	4.0
Spain[a]	C	315	315	—	381	—	375	—
Sweden	C	546	546	5.9	567	6.2	558	6.2
United Kingdom	C	48	48	< 0.1	86	0.14	59	0.10
EU total		**8 150**	**8 132**	**2.69[b]**	**8 795**	**2.90[b]**	**8 570**	**2.43[b]**
Iceland	—	—	—	—	—	—	0	0.00
Liechtenstein	C	0	0	0.00	—	—	—	—
Norway	C	50	50	1.1	71	1.5	86	1.9
Total		**8 200**	**8 182**	**2.66[b]**	**8 866**	**2.88[b]**	**8 656**	**2.42[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Surveillance system currently estimated to cover 25 % of the total population.
(b) Rates calculated excluding the Spanish data.

Figure 2.3.33. Seasonal distribution of yersiniosis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Ireland, Latvia, Luxembourg, Poland, Slovakia, Spain, Sweden, UK and Norway. Malta and Romania reported zero cases.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-LAB	Cp	Co	P	C	Y	N	N	N	-
Estonia	EE-YERSINIOSIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-NATIONAL_REFERENCE_CENTRES	V	Co	P	C	Y	N	N	N	-
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-YERSINOSIS	O	Co	P	C	Y	N	Y	Y	Y

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2.4 Emerging and vector-borne diseases

Malaria, plague, Q fever, SARS, smallpox, viral haemorrhagic fevers (including hantavirus, Crimean–Congo haemorrhagic fever, dengue fever, Rift Valley fever, Ebola and Marburg infections and chikungunya fever), West Nile fever, yellow fever.

Malaria

- The notification rate of malaria cases reported by EU and EEA/EFTA countries remains stable).
- Nearly all the reported malaria cases are imported and are reported by EU and EEA/EFTA countries that have strong traditional ties with endemic areas.

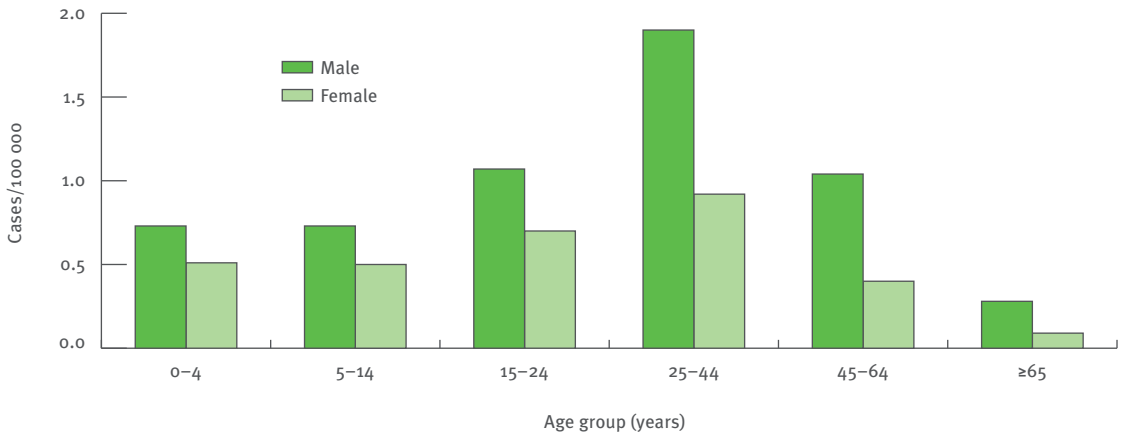
Epidemiological situation in 2008

In 2008, 5 848 confirmed cases of malaria were reported by 25 EU and EEA/EFTA countries in continental Europe[i]. Eighty-one per cent of the cases are reported by four countries (France, Germany, Italy and United Kingdom) (Table 2.4.1). Data were not available for Czech Republic, Denmark, Greece, Iceland or Liechtenstein. The overall notification rate was 1.24 per 100 000 population, slightly higher than the previous two years. The individual country rates varied between < 0.1 and 3.62 cases per 100 000 population (France).

Most of the malaria cases are reported as imported – the definition of imported cases refers to cases imported to continental Europe, and does not include cases reported in overseas departments and territories. All but two cases reported by continental France (mainland and Corsica) were imported, the other two contracted so-called airport malaria. Outside continental Europe, some countries or territories are endemic for malaria (e.g. Mayotte and French Guiana) for which data are not collected at this level. The caseload on these territories is high; The Institut de veille sanitaire informed ECDC that in French Guyana there were 3 264 confirmed cases in 2008, some of which may have been imported from neighbouring countries (Brazil and Suriname), and 195 autochthonous cases in Mayotte.

i The term 'continental Europe' is used to mean EU and EEA/EFTA countries on the European continent, i.e. it excludes overseas territories, protectorates or départements.

Figure 2.4.1. Notification rates of malaria cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 3 396)



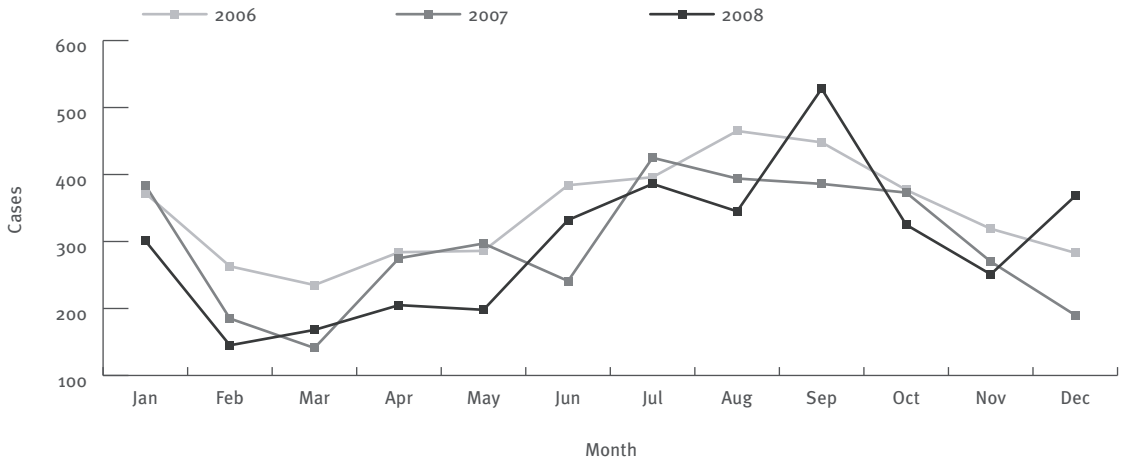
Note. Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.
Source: Country reports: Austria, Belgium, Finland, Germany, Hungary, Ireland, Italy, Malta, Netherlands, Poland, Portugal, Spain, Sweden, United Kingdom and Norway. Bulgaria, Cyprus and Estonia reported zero cases.

Table 2.4.1. Number and notification rate of reported cases of malaria in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	57	57	0.69	34	0.41	50	0.61
Belgium	C	181	181	1.7	193	1.8	195	1.9
Bulgaria	C	0	0	0.00	4	< 0.1	14	0.18
Cyprus	C	0	0	0.00	1	0.13	1	0.13
Czech Republic	—	—	—	—	—	—	16	0.16
Denmark	—	—	—	—	—	—	—	—
Estonia	C	0	0	0.00	5	0.37	6	0.45
Finland	C	42	42	0.79	22	0.42	31	0.59
France	A	2 246	2 246	3.6	—	—	—	—
Germany	C	547	547	0.67	540	0.66	566	0.69
Greece	—	—	—	—	21	0.19	22	0.20
Hungary	C	5	5	< 0.1	7	< 0.1	18	0.18
Ireland	C	82	82	1.9	71	1.65	94	2.2
Italy	C	583	583	0.98	500	0.85	630	1.1
Latvia	A	2	2	< 0.1	3	0.13	4	0.17
Lithuania	A	3	3	< 0.1	4	0.12	0	0.00
Luxembourg	C	2	2	0.41	4	0.84	4	0.85
Malta	C	3	3	0.73	3	0.74	1	0.25
Netherlands	C	230	229	1.4	210	1.3	250	1.5
Poland	C	22	22	< 0.1	11	< 0.1	19	< 0.1
Portugal	C	43	42	0.40	43	0.41	48	0.45
Romania	C	13	13	< 0.1	24	0.11	16	< 0.1
Slovakia	C	2	2	< 0.1	1	< 0.1	10	0.19
Slovenia	C	3	3	0.15	9	0.45	3	0.15
Spain	C	290	290	0.64	385	0.87	338	0.77
Sweden	C	91	91	0.99	89	0.98	93	1.0
United Kingdom	C	1 371	1 371	2.2	1 548	2.6	1 758	2.9
EU total		**5 818**	**5 816**	**1.24**	**3 732**	**0.90**	**4 187**	**0.99**
Iceland	—	—	—	—	1	0.33	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	32	32	0.68	28	0.60	44	0.95
Total		**5 850**	**5 848**	**1.24**	**3 761**	**0.89**	**4 231**	**0.99**

Source: Country reports. * A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
Note. Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.

Figure 2.4.2. Seasonal distribution of malaria cases in the EU and EEA/EFTA, 2006–08



Note. Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.
Source: Country reports: Austria, Belgium, Finland, Germany, Hungary, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom ,Norway.

Information on the probable country of infection was not available, but only a few autochthonous cases of malaria have been reported in continental Europe over the last 10 years[1-5].

Age and gender distribution

The notification rate of malaria is twice as high in males as in females (1.16 and 0.55 per 100 000, respectively), giving a male-to-female ratio of 2.13. Information on age group was available for 59 % of the cases. The age group 25–44 years had the highest rates (1.43 per 100 000, 1.90 in males and 0.92 in females) (Figure 2.4.1). This is consistent with the picture described in 2007 and likely reflects population travel patterns rather than other risk factors.

Seasonality

Information on month of report was available for 61 % of cases. A clear seasonal trend in monthly reports is observed across all countries, with cases increasing during the summer holiday months (June–October) and peaking in September, and with an increase in January and December, possibly related to the winter holiday period (Figure 2.4.2). These observations most likely reflect travel to malaria-endemic countries.

Discussion

Historically, malaria was endemic in Europe, but has been eliminated in most parts of the EU and EEA/EFTA. Cases of autochthonous transmission of malaria have been reported over the last 10 years[1-5], but sustained local transmission has not been identified to date. Two autochthonous cases probably linked to airport proximity were described in 2008[6].

The overall notification rate of reported malaria cases diagnosed in the EU and EEA/EFTA increased in 2008 due to the data reported from France for the first time. In all other countries, the trend has decreased since 2007. Seasonality, age and gender distribution of cases are similar to those observed in previous years. Surveillance of malaria continues to be important both in identifying possible indigenous transmission within EU and EEA/EFTA countries, but also to support assessment of prophylaxis recommendations for travel medicine.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.3	Cp	Co	P	C	Y	Y	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-MALARIA	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-MALARIA	O	Co	A	C	Y	N	Y	Y	Y

Plague (*Yersinia pestis* infection)

- There were no cases of indigenous plague reported in the EU during 2008.

Epidemiological situation in 2008

No cases of plague were reported by 28 EU and EEA/EFTA countries in 2008. No reports were available from Czech Republic or Liechtenstein.

Discussion

The risk of transmission of bubonic plague in the EU is practically non-existent. However, plague is still endemic in several countries in Africa, in the former Soviet Union and the Americas and Asia[1]. The latest suspected plague outbreak reported by WHO was in the Democratic Republic of Congo in November 2006. In North Africa in 2008 an outbreak of bubonic plague was reported in Laghouat, Algeria[2,3].

On 15 June 2007, the International Health Regulations (IHR) (2005) entered into force. Among the provisions specifically related to plague prevention activities that apply to conveyances is a Ship Sanitation Control Exemption Certificate/Ship Sanitation Control Certificate SSCEC/SSCC. These certificates replace the De-ratting Certificate/De-ratting Exemption Certificate (DC/DEC) issued under the former IHR (1969).

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-VHF	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-PLAGUE	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-PLAGUE	O	Co	P	C	Y	N	Y	Y	Y

Q fever

- A total of 1680 confirmed Q fever infections were reported in 2008 from 26 EU and EEA/EFTA countries.
- This 2008 figure is almost three times higher than in 2007 (612 cases) and 2006 (580 cases).
- The largest community outbreak of Q fever ever reported occurred in the Netherlands.

Epidemiological situation in 2008

Twenty-six EU and EEA/EFTA countries reported a total of 1709 cases of Q fever in 2008 (10 countries reported zero cases), of which 1680 were confirmed (Table 2.4.2). The Netherlands reported 60 % of the cases. The overall notification rate was 0.43 per 100 000 population. In the two countries with rates over one per 100 000, Cyprus (3.9 per 100 000) and the Netherlands (6.1 per 100 000), their higher rates were due to outbreaks[1,2].

Ten of the 1443 confirmed cases with information on importation status were imported.

Age and gender distribution

The highest rates were seen in the age group 45–64 years, with notification rates of 0.92 per 100 000 population (Figure 2.4.3). Only 37 of the 1635 cases (2.3 %) for which information was available were reported among children under the age of 15. The overall rate was higher in men than in women (0.73 and 0.39 per 100 000, respectively), with a male-to-female ratio of 1.85.

Seasonality

Information on seasonality was available for 95 % of cases (Figure 2.4.4). The months with the highest number of reported cases were June (20 %) and October (32 %) (342 and 535 cases, respectively) potentially linked to cumulative reports as a result of the outbreak in the Netherlands.

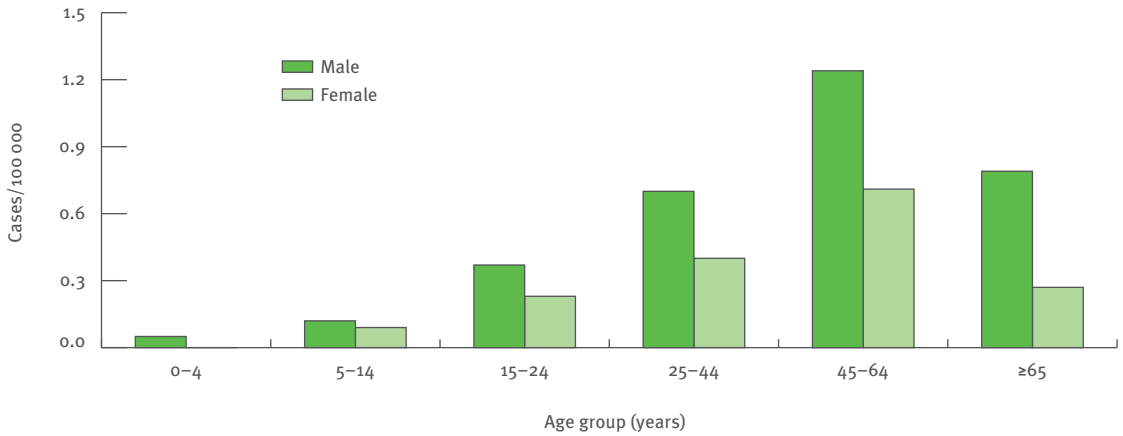
Discussion

The completeness of notifications for Q fever in the EU and EEA/EFTA has improved with reports obtained from 26 countries in 2008 as opposed to 22 in 2007. Nevertheless, Q fever is generally known to be an under-reported disease due to its non-specific clinical features.

An outbreak of Q fever was reported in the Netherlands between March and December 2007 with 168 confirmed cases[1]. In 2008, the main outbreak occurred between May and mid-October with a peak during weeks 25–28 (mid-June–mid-July) according to the date of notification of the cases[2].The outbreak included different clusters with multiple sources mainly affecting the province of Noord Brabant. Other European countries such as Germany have also reported changing trends of Q fever and an increase in cases in 2008 though to a smaller extent than in the Netherlands[3].

In the Netherlands, measures on the veterinary side were taken. Since June 2008, notification of Q fever in goats and sheep (abortion clusters) is mandatory and the exact location of farms with animals that have clinical Q fever is now reported to the municipal health serv-

Figure 2.4.3. Notification rates of Q fever cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 1653)



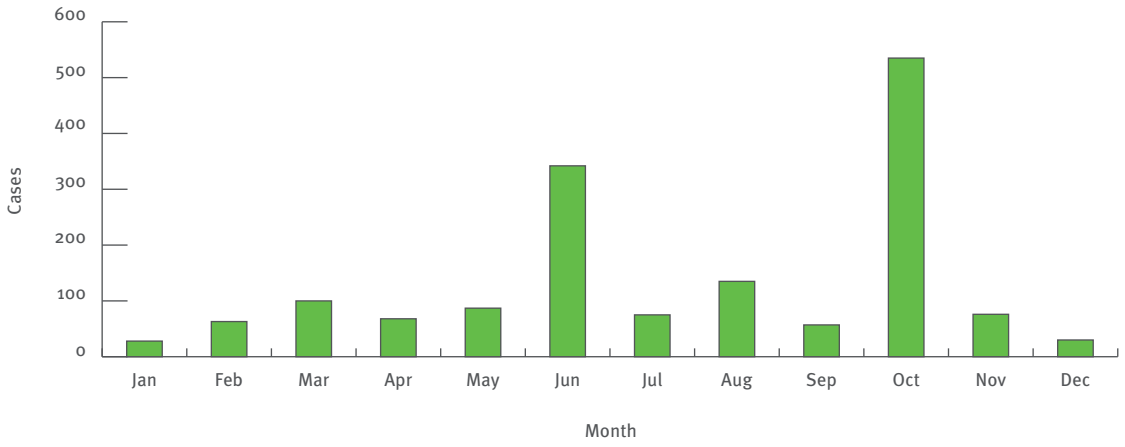
Source: Country reports: Cyprus, Germany, Greece, Hungary, Ireland, Netherlands, Portugal, Spain, Sweden and United Kingdom. Czech Republic, Estonia, Lithuania, Luxembourg, Malta, Slovakia, Slovenia, Iceland, Liechtenstein and Norway reported zero cases.

Table 2.4.2. Number and notification rate of reported cases of Q fever in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria[a]	—	—	—	—	—	—	—	—
Belgium	A	27	27	0.25	14	0.13	8	< 0.1
Bulgaria	A	17	17	0.22	33	0.43	27	0.35
Cyprus	C	31	31	3.9	8	1.0	2	0.26
Czech Republic	C	0	0	0.00	—	—	—	—
Denmark	—	—	—	—	—	—	—	—
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	2	2	< 0.1	2	< 0.1	0	0.00
France[a]	—	—	—	—	—	—	—	—
Germany	C	370	370	0.45	83	0.10	204	0.25
Greece	C	3	3	< 0.1	0	0.00	2	< 0.1
Hungary	C	11	11	0.11	7	< 0.1	12	0.12
Ireland	C	13	10	0.23	4	< 0.1	8	0.19
Italy	—	—	—	—	—	—	0	0.00
Latvia	A	1	1	< 0.1	0	0.00	1	< 0.1
Lithuania	A	0	0	0.00	0	0.00	0	0.00
Luxembourg	C	0	0	0.00	—	—	—	—
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	1 013	1 007	6.1	132	0.81	12	< 0.1
Poland	A	24	4	< 0.1	0	0.00	0	0.00
Portugal	C	12	12	0.11	8	< 0.1	9	< 0.1
Romania	A	3	3	< 0.1	6	< 0.1	0	0.00
Slovakia	C	0	0	0.00	1	< 0.1	0	0.00
Slovenia	C	0	0	0.00	93	4.6	3	0.15
Spain	C	119	119	—	159	0.36	145	0.33
Sweden	C	7	7	< 0.1	0	0.00	1	< 0.1
United Kingdom	A	56	56	< 0.1	62	0.10	146	0.24
EU total		**1 709**	**1 680**	**0.43**	**612**	**0.18**	**580**	**0.14**
Iceland	C	0	0	0.00	—	—	—	—
Liechtenstein	C	0	0	0.00	—	—	—	—
Norway	C	0	0	0.00	0	0.00	—	—
Total		**1 709**	**1 680**	**0.43**	**612**	**0.17**	**580**	**0.14**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) Q fever is not a notifiable disease in Austria or France.

Figure 2.4.4. Seasonal distribution of Q fever cases in the EU and EEA/EFTA, 2008 (n = 1 596)



Source: Country reports:. Bulgaria, Cyprus, Finland, Germany, Greece, Hungary, Ireland, Netherlands, Poland, Portugal, Romania, Spain and Sweden.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-VHF	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	N	Y	Y	N	-
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	-	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-QFEVER	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-Q-FEVER	V	Co	P	C	Y	N	Y	Y	Y

ice. Such measures facilitate the detection of related human cases or clusters.

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2 Schimmer B, Dijkstra F, Vellema P, Schneeberger PM, Hackert V, ter Schegget R, et al. Sustained intensive transmission of Q fever in the south of the Netherlands, 2009. Euro Surveill. 2009;14(19):pii=19210. Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19210
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Severe acute respiratory syndrome (SARS)

- Knowledge about the epidemiology and ecology of SARS-CoV infection remains incomplete.
- It remains very difficult to predict when or whether SARS will re-emerge in epidemic form.
- SARS has been shown to spread rapidly worldwide; therefore surveillance should be maintained during the inter-epidemic period.

Epidemiological situation in 2008

For 2008, despite ongoing surveillance, there were zero reports of the SARS virus infection in humans from 29 EU and EEA/EFTA countries (no report from Liechtenstein). Neither were there any reports of SARS virus infection in humans worldwide.

Discussion

SARS is believed to have been an animal virus that recently crossed the species barrier to infect humans.

Bats have been identified as potential reservoir hosts of coronaviruses associated with SARS (SARSCoV) in different studies[1-4].

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-SARS	Cp	Co	P	C	Y	Y	Y	Y	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-SARS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-SARS	Cp	Co	P	C	Y	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-SARS	V	Co	A	C	Y	N	Y	Y	Y

Smallpox

- There were no reports of smallpox or potential smallpox in the EU and EEA/EFTA countries (or world-wide) in 2008.

Discussion

Smallpox is a systemic infectious disease, unique to humans, caused by either of two virus variants, *Variola major* and *Variola minor*. In 1980, the World Health Organization declared smallpox eradicated from the world.

Smallpox viruses are considered as one of the viruses most likely to be used as a biological weapon and a European clinical guideline has been issued by the European Commission.

Legitimately the virus exists in only two WHO reference laboratories in the world. Any new case of smallpox would have to be the result of human accidental or deliberate release.

Viral haemorrhagic fevers (VHF)

- In 2008, the reporting of VHF has been stratified into these groups of diseases: hantavirus infections, Crimean–Congo haemorrhagic fever, dengue fever, Rift Valley fever, Ebola and Marburg filovirus infection.
- 4536 cases of hantavirus infection have been reported from 20 countries making this the most commonly reported disease with potential haemorrhagic features in the EU and EEA/EFTA.
- Greece reported its first case of Crimean–Congo haemorrhagic fever and there was one imported case of Marburg infection in the Netherlands.
- Some 497 imported cases of dengue fever were notified by EU and EEA/EFTA countries[i].

i Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.

Hantavirus

Epidemiological situation in 2008

In 2008, 4536 reports of confirmed hantavirus infection were received from 21 EU and EEA/EFTA countries. Five countries reported no cases (Table 2.4.3). Data were not available from Cyprus, Czech Republic, Denmark, France, Italy, the Netherlands, Portugal, Iceland or Liechtenstein. The overall notification rate is 1.35 per 100 000 population, varying from 0.01 to 61.48 in Finland (Finland reported 72 % of the cases). Information about the source of infection was not available.

Fifteen cases of hantavirus infection were identified as imported cases.

Age and gender distribution

Hantavirus infections are predominantly reported in adults, with 77 % of the cases in the age groups 25–44 and 45–65 years. A few cases are reported in children (2.01 % of the cases) with a notification rate of 0.07 in the 0–4 year age group and 0.27 per 100 000 population for the 5–14 year-olds.

The highest incidence is observed in the 45–65 year-old group (2.57 per 100 000 population) followed by the 25–44 year-olds (1.88 per 100 000 population) (Figure 2.4.5). The incidence is higher among males (1.89 per 100 000 population) than females (1.25 per 100 000 population) and the male-to-female ratio is 1.51 (Figure 2.4.5).

Seasonality

Cases are reported all year round with a significant decrease from January to March and a rising trend from July to December. Such distribution of the cases reflects the epidemiological situation in Scandinavia (84.4 % of the reported cases are from Finland and Sweden) (Figure 2.4.6).

Discussion

Hantavirus infections are widely distributed across Europe with the exception of some Mediterranean regions[1] and are particularly prevalent in Scandinavia. Haemorrhagic fever with renal syndrome is caused by different viruses, mostly Puumala virus carried by bank voles and Dobrava by yellow necked mice. Extension of the known endemic area may occur during epidemic years as reported in 2005 in several west European countries[2]. Hantavirus infections are still underdiagnosed in some areas. The serological diagnosis does not specify the virus causing the infection.

Table 2.4.3. Number and notification rate of reported cases of hantavirus infection in the EU and EEA/EFTA, 2008

Country	Report type*	Total cases	Confirmed cases	Notification rate per 100 000 population
Austria	C	1	1	< 0.1
Belgium	C	336	336	3.2
Bulgaria	A	4	2	< 0.1
Cyprus	—	—	—	—
Czech Republic	—	—	—	—
Denmark	—	—	—	—
Estonia	C	11	11	0.82
Finland	C	3 259	3 259	61
France	—	—	—	—
Germany	C	243	243	0.30
Greece	C	2	2	< 0.1
Hungary	C	3	3	< 0.1
Ireland	C	0	0	0.00
Italy	—	—	—	—
Latvia	A	1	1	< 0.1
Lithuania	C	0	0	0.00
Luxembourg	C	0	0	0.00
Malta	C	0	0	0.00
Netherlands[a]	—	—	—	—
Poland	A	7	7	< 0.1
Portugal	—	—	—	—
Romania	C	4	4	< 0.1
Slovakia	C	1	1	< 0.1
Slovenia	C	45	45	2.2
Spain	C	2	2	0.00
Sweden	C	569	569	6.2
United Kingdom	C	0	0	0.00
EU total		**4 488**	**4 486**	**1.36**
Iceland	—	—	—	—
Liechtenstein	—	—	—	—
Norway	C	50	50	1.1
Total		**4 538**	**4 536**	**1.35**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a). In the Netherlands information on notified cases of hantavirus is only available from 2009.

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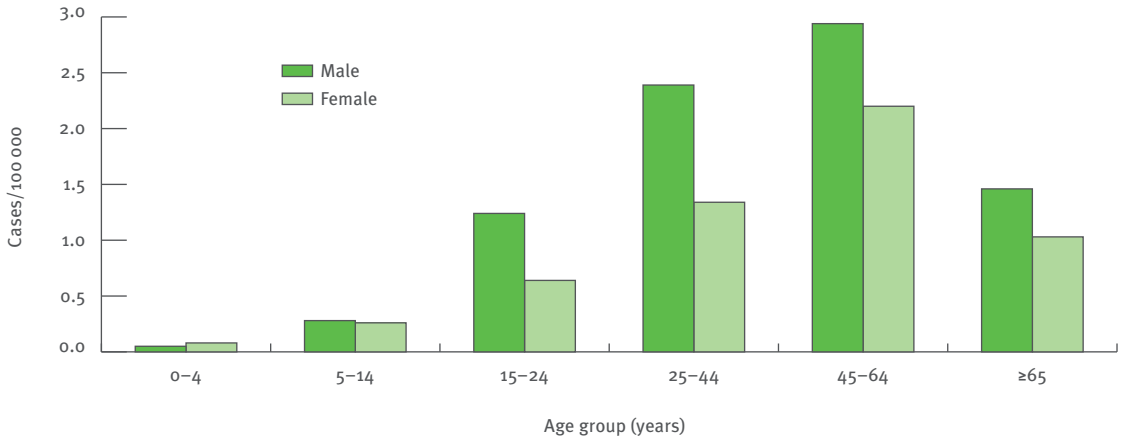
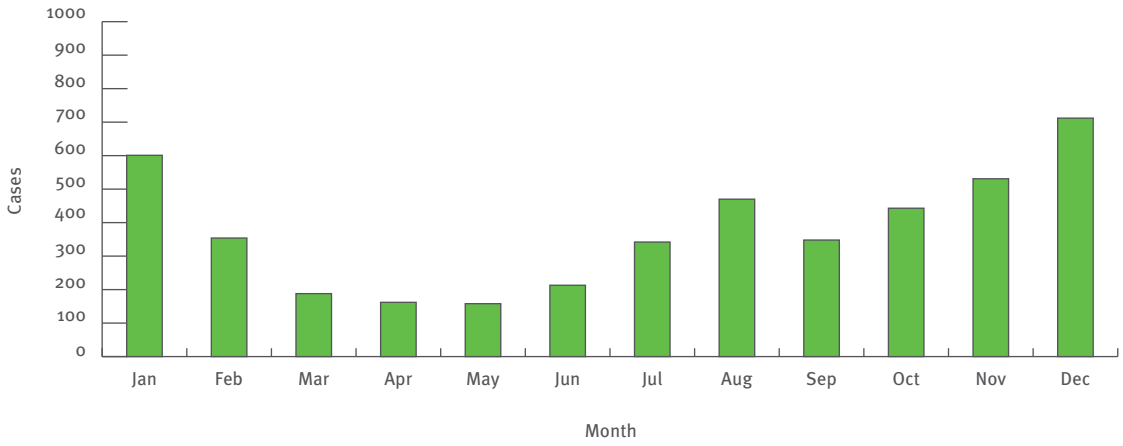
Figure 2.4.5. Notification rates of cases of hantavirus infection in EU and EEA/EFTA countries, by age and gender, 2008 (n = 4 503)



Source: Country reports: Belgium, Estonia, Finland, Germany, Latvia, Romania, Slovenia, Spain, Sweden and Norway. Ireland, Lithuania, Luxembourg, Malta and United Kingdom reported zero cases.

Figure 2.4.6. Seasonal distribution of cases of hantavirus infections in the EU and EEA/EFTA, 2008 (n = 4522)



Source: Country reports: Austria, Belgium, Estonia, Finland, Germany, Greece, Hungary, Slovakia, Slovenia, Spain, Sweden and Norway.

Crimean–Congo haemorrhagic fever

Epidemiological situation in 2008

Greece reported its first human case of Crimean–Congo haemorrhagic fever (CCHF) and twenty-four cases were confirmed in Bulgaria.

CCHF is endemic in the Balkan region where cases have previously been reported Kosovo[i], Albania, and Bulgaria. In March/April 2008, two confirmed cases were reported in Bulgaria[1]. In Greece, the first human case of CCHF in that country was reported in June 2008 in the northern part of the country close to a known endemic area[2]. In Turkey, where the disease first emerged in 2002–03, 1315 cases were reported in 2008, including 62 deaths and eight nosocomial cases[3].

References

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i UN Administered Province of Kosovo in accordance with Security Council Resolution 1244 (1999).

Table 2.4.4. Number and notification rate of reported cases of dengue fever in the EU and EEA/EFTA, 2008

Country	Report type*	Total cases	Confirmed cases	Notification rate per 100 000 population
Austria	C	0	0	0.00
Belgium	A	60	60	0.56
Bulgaria	—	—	—	—
Cyprus	—	—	—	—
Czech Republic	—	—	—	—
Denmark	—	—	—	—
Estonia	C	0	0	0.00
Finland	C	35	35	0.66
France	C	56	15	< 0.1
Germany	C	273	273	0.33
Greece	C	0	0	0.00
Hungary	C	6	6	< 0.1
Ireland	C	0	0	0.00
Italy	C	12	12	< 0.1
Latvia	C	0	0	0.00
Lithuania	C	0	0	0.00
Luxembourg	C	0	0	0.00
Malta	C	0	0	0.00
Netherlands	—	—	—	—
Poland	C	2	2	< 0.1
Portugal	—	—	—	—
Romania	C	1	1	< 0.1
Slovakia	C	0	0	0.00
Slovenia	C	6	6	0.30
Spain	C	0	0	0.00
Sweden	C	73	73	0.79
United Kingdom	C	6	6	< 0.1
EU total		**530**	**489**	**0.11**
Iceland	—	—	—	—
Liechtenstein	—	—	—	—
Norway	—	—	—	—
Total		**530**	**489**	**0.11**

Note. Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.
Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Dengue fever

Epidemiological situation in 2008

In 2008, 530 cases of dengue fever (489 confirmed) were reported by 11 out of 21 countries (Table 2.4.4). All were imported apart from four from the UK. Data were not available from Bulgaria, Cyprus, Czech Republic, Denmark, the Netherlands, Portugal, Iceland, Liechtenstein or Norway. The overall notification rate was 0.11 per 100 000. The individual country rates varied between < 0.01 and 0.79 cases per 100 000 population. The higher rates reported by Sweden (0.79 per 100 000) and Finland (0.66 per 100 000) reflect the predominant choices of travel destinations to those countries where dengue fever is endemic. The data below vary rather widely as some countries reported all diagnosed dengue fever cases while others only reported dengue haemorrhagic fever.

Age and gender distribution

The notification rate was higher in males (0.11 cases per 100 000) than in females (0.08 per 100 000), with a male-to-female ratio of 1.36. Most of the cases were identified in the age group 25–44 years (0.16 cases per 100 000), then 15–24 years (0.12 per 100 000) and 45–65 (0.11 per 100 000), most likely related to these age-groups' preferences for travel to tropical countries (Figure 2.4.7).

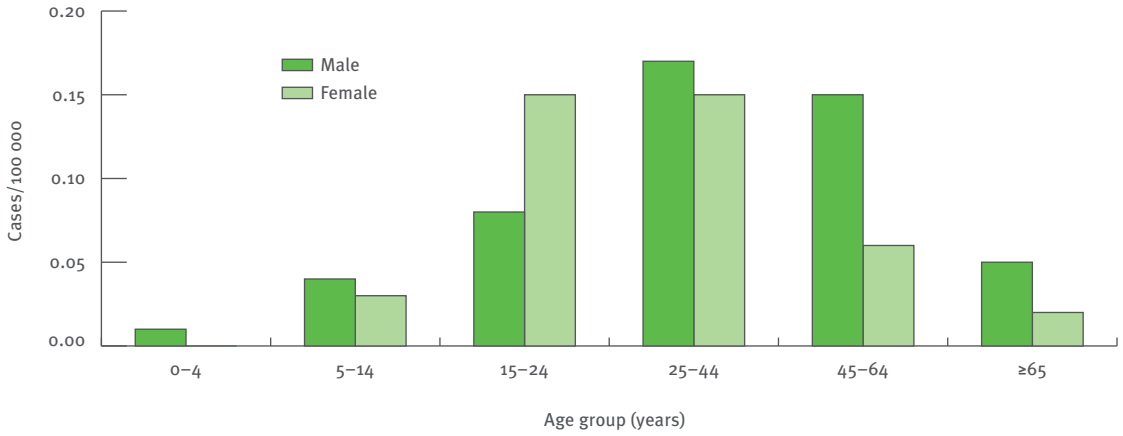
Seasonality

Cases were reported all year round without any apparent seasonal trend.

Discussion

Although these data concern continental[i] Europe, dengue fever is endemic in most tropical regions. According to the Pan American Health Organization, in the three French departments in the Americas, 1323 confirmed cases of dengue fever have been reported for 2008

Figure 2.4.7. Notification rates of dengue fever cases in EU and EEA/EFTA countries, by age and gender, 2008 (n = 429)



Note. Only EU and EEA/EFTA countries on the European continent, i.e. excluding overseas territories, protectorates or départements.
Source: Country reports: Finland, France, Germany, Hungary, Italy, Poland, Romania, Slovenia, Sweden and United Kingdom. Austria, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovakia and Spain.

(up to weeks 45/46) with an incidence ranging from 64.2 per 100 000 population in Guadeloupe, to 151.8 in Martinique and 270.6 in French Guiana[1]. The year 2008 was characterised by a low dengue virus activity in that region following a large outbreak in 2007 with incidences ranging from 388.8 per 100 000 population in French Guiana to 1317 per 100 000 in Martinique. In the Indian Ocean, La Reunion island reported seven confirmed cases of dengue fever in 2008 (three autochthonous DEN1 cases, and four imported cases) and 32 probable cases (including two imported cases)[2]. 2008 was also marked by the emergence of DEN 3 serotype in West Africa (Cote d'Ivoire)[3].

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Rift Valley fever

Epidemiological situation in 2008

No cases were reported in continental Europe[i]. However, nine cases were confirmed in 2008 in Mayotte, a French island of 187 000 inhabitants located in the Indian Ocean (overall incidence 4.81 per 100 000). The previous year, one case had been retrospectively identified there[1]. These are the first human cases identified on the island. Rift Valley fever was widely circulating in East Africa (Kenya, Somalia, Tanzania[1]) and large outbreaks were also confirmed in Madagascar[2-4].

References

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Marburg virus infection

Epidemiological situation in 2008

In 2008, the Netherlands notified their European Union partners and the World Health Organization of one confirmed case of Marburg fever diagnosed in the Leiden University Medical Centre. The case was a 40-year-old woman who had recently returned from a holiday in Uganda where she had been exposed to fruit bats[1]. No further cases of Marburg virus infections were reported in Africa. However, an outbreak of Ebola virus (32 cases, 15 deaths) was notified by WHO in the Republic of Congo, Province of Kasai Occidental[2].

References

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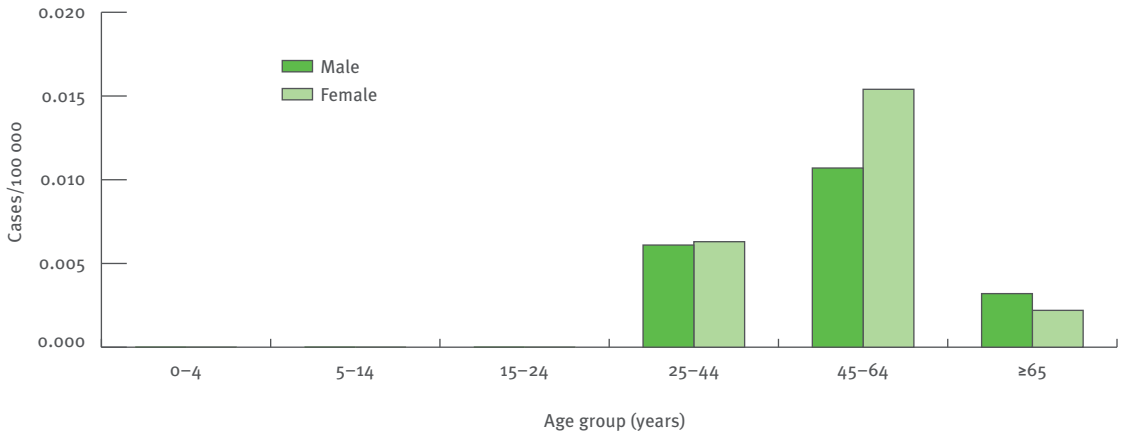
2. WHO Global Alert and Response (GAR). End of Ebola outbreak in the Democratic Republic of the Congo. Available from: http://www.who.int/csr/don/2009_02_17/en/index.htmlMarburg virus infection

i The term 'continental Europe' is used to mean EU and EEA/EFTA countries on the European continent, i.e. it excludes overseas territories, protectorates or départements.

Figure 2.4.8. Notification rates of cases of chikungunya fever in EU and EEA/EFTA countries, by age and gender, 2008 (n = 25)



Source: Country reports: France, Germany, Italy, Spain and United Kingdom. Austria, Belgium, Czech Republic, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia and Slovenia all reported zero cases.

Chikungunya fever

Epidemiological situation in 2008

In 2008, 25 confirmed cases of chikungyuna fever were reported by 20 EU and EEA/EFTA countries. No data were provided by Bulgaria, Cyprus, Denmark, Netherlands, Portugal, Sweden, Iceland, Liechtenstein or Norway. The cases were reported by France (one case), Germany (17 cases), Italy (nine cases), Spain (five cases), (United Kingdom (five cases, of which one confirmed). All cases were imported. However, the information regarding the probable country of infection was not available.

Age and gender distribution

All cases (11 males, 14 females) were identified as adults over 25 years old who had been exposed during travel to tropical countries (Figure 2.4.8).

Seasonality

No seasonal trend can be discerned from such a small number of cases.

Discussion

From the beginning of 2008, increasing numbers of cases of chikungunya fever were reported in several countries in Asia such as Indonesia, Malaysia, India, Sri Lanka, Singapore and India. In La Reunion, a French department in the Indian ocean where a major outbreak occurred during 2005–06, eight probable (autochthonous) cases (without confirmation) were reported in 2008 compared with three probable cases in 2007[1].

This first identified outbreak of chikungunya fever in 2007 in a temperate climate (Italy) demonstrated the potential of the *Aedes albopictus* mosquito to transmit the virus at EU latitudes. The absence of reported autochthonous cases in 2008 in the previously affected region may be due to the inability of the virus to sustain transmission in temperate climate, possibly in combination with important vector control activities.

References

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General discussion

Importation of VHF cases requires particular attention considering the need for urgent tracing of persons who have been in contact with the case during the infectious period, in order to prevent further spread.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y

West Nile fever

- A total of 24 confirmed cases of West Nile virus infection were reported across the EU and EEA/EFTA countries in 2008: 19 cases in Hungary, three cases in Italy and two cases in Romania.

Epidemiological situation in 2008

A total of 24 confirmed cases of West Nile virus (WNV) infection were reported in 2008 by 24 EU and EEA/EFTA countries. No data were available for Denmark, Germany, Portugal, Sweden, Iceland or Liechtenstein.

Nineteen confirmed cases were reported by Hungary, eight neuroinvasive cases due to WNV were reported by Italy and two cases by Romania. The overall notification rate in Europe was 0.01 per 100 000 and the highest rate was 0.19 per 100 000 reported by Hungary. All cases were autochthonous and occurred in individuals older than 15 years (Figure 2.4.9).

The majority of cases (n = 18) were male (male-to-female ratio 3.15).

Seasonality

Although the numbers were small and cases reported by Hungary only, these cases were consistently reported between August and October as in 2006 and 2007 (Figure 2.4.10).

Discussion

Since the first large outbreak of West Nile fever in Romania in 1996, in which 835 patients were hospitalised and 393 were found to have laboratory-diagnosed West Nile fever, the West Nile virus has been recognised as a public health concern in Europe. Sporadic cases have been reported in recent years in a few countries, including Hungary. The large outbreak in horses and humans in 2008 in northern Italy clearly demonstrates that West Nile virus can occur in regions which combine high densities of competent vectors, suitable amplifying hosts (birds) and susceptible human and horse populations. Early detection is crucial for appropriate control measures particularly regarding blood donations. Further investigations in Italy confirmed WNV infection in a total of 16 clinical cases in 2008[2].

References

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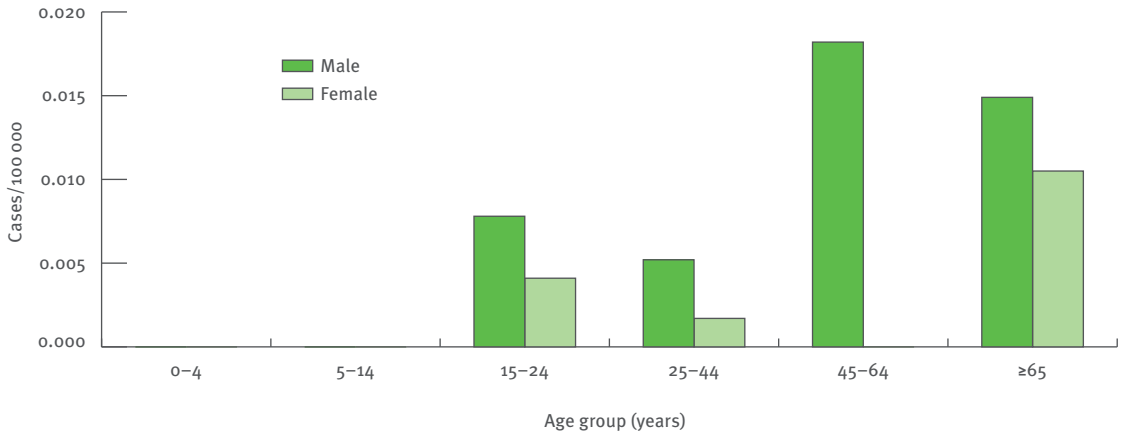
Figure 2.4.9. Notification rates of cases of West Nile fever in EU and EEA/EFTA countries, by age and gender, 2008 (n = 24)

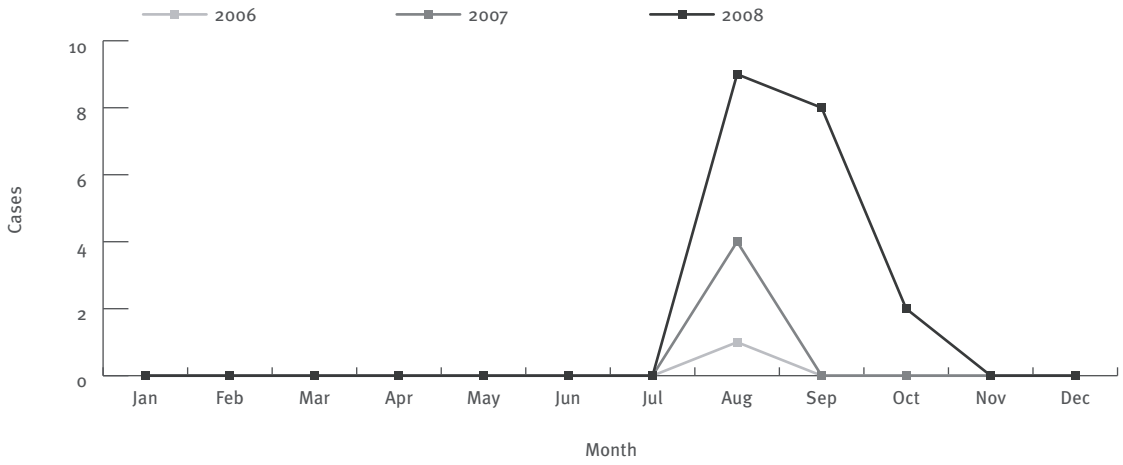


Source: Country reports: Hungary, Italy and Romania. Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Norway reported zero cases.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Estonia	EE-VHF	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-WEST_NILE_VIRUS	V	Se	A	C	Y	Y	Y	Y	N
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-WNF	V	Co	P	C	Y	N	N	N	Y
Italy	IT-WNF	Cp	Co	P	C	N	Y	Y	N	N
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	-	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-WEST_NILE_FEVER	V	Co	A	C	Y	N	Y	Y	Y

Figure 2.4.10. Seasonal distribution of cases of West Nile fever in the EU and EEA/EFTA, 2006–08



Source: Country reports: Hungary.

Yellow fever

- No cases of yellow fever were reported in EU and EEA/EFTA countries in 2008.
- Despite the lack of reported cases, non-vaccinated travellers travelling to affected areas without the effective protection of yellow fever 17D vaccination expose themselves to risk of infection.

Epidemiological situation in 2008

No cases of yellow fever were reported by 29 EU and EEA/EFTA countries in 2008 (data not available from Liechtenstein). WHO reports that the number of yellow fever cases worldwide was up to 20 061 cases[1]. In South America, outbreaks were reported in Brazil, Paraguay, Argentina, and in Africa, cases were reported in Liberia, Guinea, Central African Republic, Burkina Faso and Cote d'Ivoire. Targeted immunisation campaigns were conducted in these countries as a result[2-6].

Discussion

Yellow fever is commonly underreported in the affected areas since the symptoms may be easily misinterpreted and most areas lack effective surveillance systems. WHO estimates that there are approximately 200 000 cases of yellow fever every year resulting in 30 000 deaths[1].

Yellow fever is one of the diseases given special focus in the International Health Regulations (IHR) (2005). As such, vaccination against yellow fever is required for all travellers leaving an area from where there is risk of transmission. Further, a country in which the yellow fever vector is present may require that a traveller coming from a country where the risk of transmission is present, who is unable to produce a valid certificate of vaccination against yellow fever, be quarantined.

References

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6. WHO. Outbreak news. Yellow fever, Guinea. Wkly Epidemiol Rec. 2009 Jan 23;84(4):29.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-VHF	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-YELLOW_FEVER	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-YELLOW_FEVER	O	Co	P	C	Y	N	Y	Y	Y

2.5 Vaccine-preventable diseases

Diphtheria, infection with invasive *Haemophilus influenzae* disease, invasive meningococcal disease, invasive pneumococcal infections, measles, mumps, pertussis, poliomyelitis, rabies, rubella and tetanus.

Diphtheria

- In 2008, 47 cases were reported across the EU. Of these, 62 % were reported by Latvia.
- The most affected age group was 5–14 years old (0.018 per 100 000) followed by the age group 45–65 years old (0.010 per 100 000).
- Although diphtheria is a rare disease in the EU, the indigenous transmission of the disease persists in certain countries and suggests that epidemic diphtheria remains a potential threat to the European Union. Therefore, high vaccination coverage must be sustained, adult booster coverage increased, and epidemiological surveillance and laboratory capacity maintained despite the small number of cases.

Epidemiological situation in 2008

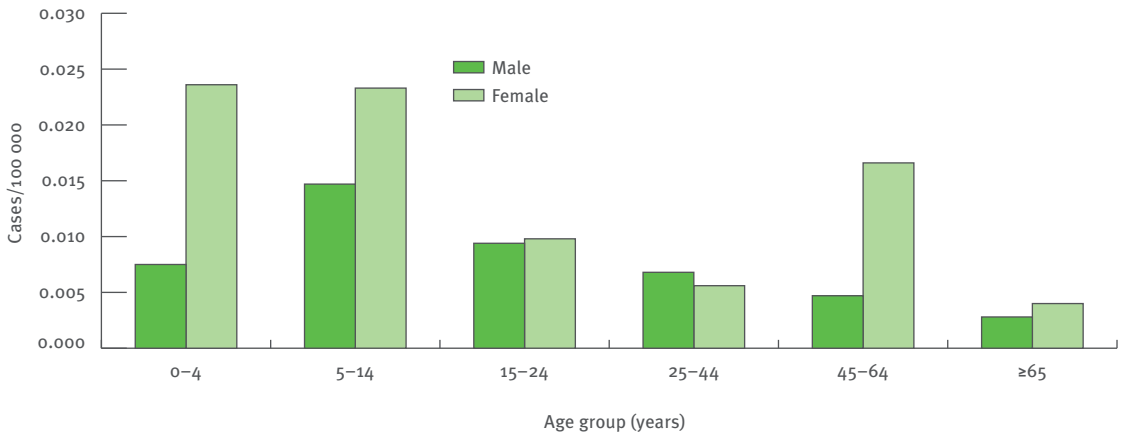
Six countries reported a total of 47 confirmed diphtheria cases in 2008. (Table 2.5.1). A total of 29 EU and EEA/EFTA countries provided reports, with an overall notification rate of 0.01 per 100 000 population. The majority of cases (29) were reported by Latvia (1.28 cases per 100 000 population). Sporadic cases were reported by the United Kingdom (six), France (five), Norway (four), Lithuania (two) and Sweden (one).

The overall notification rate of this rare disease with epidemic potential is similar to that for the last two years (2006: 0.01 per 100 000 and 2007: < 0.01 per 100 000). At present these figures include both disease caused by *Corynebacterium ulcerans* and with *C. diphtheriae*.

Age and gender distribution

The most affected age group (males and females) was 5–14 years old (0.018 per 100 000) followed by the age group 45–64 years old (0.010 per 100 000). The high

Figure 2.5.1. Notification rate of diphtheria cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 46)



Source: Country reports: France, Latvia, Lithuania, Sweden, United Kingdom and Norway. Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Iceland reported zero cases.

Table 2.5.1. Number and notification rate of diphtheria cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	0	0	0.00	0	0.00	0	0.00
Belgium	C	0	0	0.00	0	0.00	0	0.00
Bulgaria	C	0	0	0.00	0	0.00	0	0.00
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	0	0	0.00	0	0.00	0	0.00
Denmark	C	0	0	0.00	0	0.00	0	0.00
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	C	0	0	0.00	0	0.00	0	0.00
France	C	5	5	< 0.1	1	< 0.1	3	0.00
Germany	C	0	0	0.00	2	< 0.1	0	0.00
Greece	C	0	0	0.00	0	0.00	—	—
Hungary	C	0	0	0.00	0	0.00	0	0.00
Ireland	C	0	0	0.00	0	0.00	0	0.00
Italy	C	0	0	0.00	0	0.00	0	0.00
Latvia	A	29	29	1.3	15	0.66	64	2.8
Lithuania	C	2	2	< 0.1	0	0.00	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	0	0	0.00	0	0.00	0	0.00
Poland	C	0	0	0.00	0	0.00	0	0.00
Portugal	C	0	0	0.00	0	0.00	0	0.00
Romania	C	0	0	0.00	0	0.00	0	0.00
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	0	0	0.00	0	0.00	0	0.00
Spain	C	0	0	0.00	0	0.00	0	0.00
Sweden	C	1	1	< 0.1	0	0.00	0	0.00
United Kingdom	C	6	6	< 0.1	3	< 0.1	3	< 0.1
EU total		**43**	**43**	**0.01**	**21**	**< 0.1**	**70**	**0.01**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	4	4	< 0.1	0	0.00	0	0.00
Total		**47**	**47**	**0.01**	**21**	**< 0.1**	**70**	**0.01**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

number of cases among 45–64 year-olds could be attributed to the low level of immunity in this age group.

Information on gender was available for all 47 (100 %) cases. Overall, the number of cases was higher among females (n = 30) than among males (n = 17). The gender difference is largest among the 0–4 and 45–64 year-olds. The male-to-female ratio is 0.5.9.

Seasonality

No seasonal trend can be observed from the small number of cases.

Enhanced surveillance in 2008

From March 2010, the responsibility for the coordination of the activities of the European Diphtheria Surveillance Network has been transferred to ECDC.

The activities are aimed at integrating surveillance activities, which cover all diphtheria diseases caused by toxigenic *C. diphtheriae* and *C. ulcerans* from an epidemiology and laboratory point of view.

The target for the WHO European Region was the elimination of indigenous diphtheria by the year 2000. This meant the absence of indigenous cases caused by toxigenic *C. diphtheria* strains.

Although diphtheria is a rare disease in the EU, the WHO elimination targets have not been met across the whole European Region. However, they have been met in western and central European countries.

Discussion

In this report, disease caused by both *C. ulcerans* and *C. diphtheriae* have been analysed together even though one is more of a zoonosis while the other involves human-to-human transmission. They will be addressed separately in future reports. Although the aggregated data format currently used for this disease has these and

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-ANTH/CHOL/DIPH/MALA/SPOX/TRIC/TULA/TYPH	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-DIPHTERIA	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	Y	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-DIPHTHERIA	O	Co	P	C	Y	N	Y	Y	Y

other limitations, the data still shows that diphtheria appears to be under control in the EU.

The indigenous transmission of the disease continues in Latvia and suggests that epidemic diphtheria could return to any country in the EU. Therefore, high vaccination coverage must be sustained, adult booster coverage increased, and epidemiological surveillance and laboratory capacity maintained.

Invasive *Haemophilus influenzae* disease

- The incidence of invasive *Haemophilus influenzae* remains stable in Europe, with a notification rate below 0.5 per 100 000 population.
- The highest rates in the EU for 2008 were reported by Sweden and Norway.
- Almost all EU countries have the Hib vaccine included in the national immunisation schedule for many years and the routine vaccination continues to have a great impact on the reduction of incidence of the disease due to serotype b.

Epidemiological situation in 2008

In 2008, a total of 2122 confirmed cases of invasive *Haemophilus influenzae* disease (all serotypes) were reported by 24 countries (see Table 2.5.2). The overall notification rate was 0.46 per 100 000 in 2008, which was similar to the one reported in the previous year. Note that these figures cannot be compared with the 2006 data, as only serotype b (Hib) was included in that report.

The highest 2008 rates were reported by Sweden (1.78 per 100 000) and Norway (1.58 per 100 000) while zero cases have been reported by Cyprus for two consecutive years.

Age and gender distribution

The most affected age groups were the youngest and the oldest. Children under five years of age were reported with a notification rate of 0.95 per 100 000 for males and 0.50 per 100 000 for females. Adults aged 65 years or older were reported with a notification of 0.80 for males and 0.71 per 100 000 population for females. The latter age group represented in total 43 % of all reported cases, with highest notification rates reported by Sweden with 5.78, Norway with 5.77, France 3.26, and UK 3.20 per 100 000. There was no real overall difference between males and females (male-to-female ratio 1.12).

Seasonality

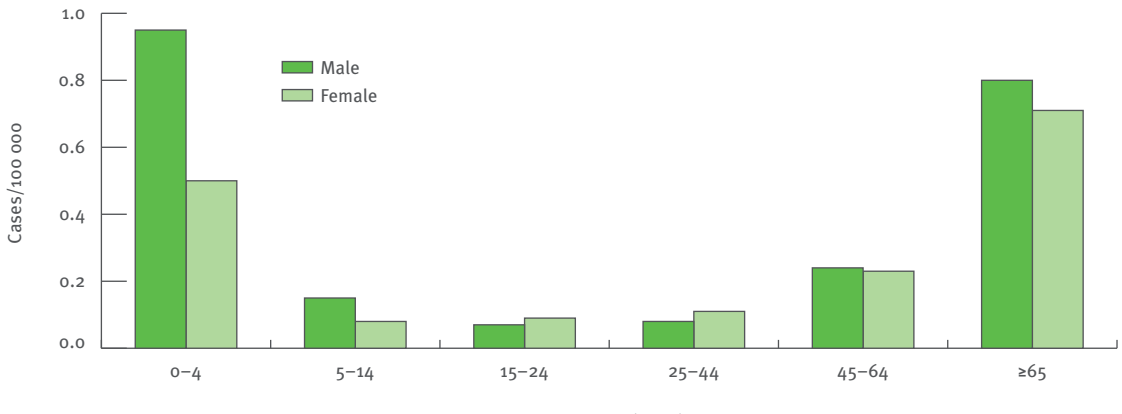
The distribution of observed invasive *Haemophilus influenzae* cases clearly follows a seasonal pattern with the highest number reported in the winter months, followed by a steady decrease until September and a further increase to a peak in December. The pattern is the same for the years 2006–08, as shown in Figure 2.5.3.

Discussion

These numbers may reflect real differences in rates, but are influenced by differences between surveillance systems and are certainly partly due to the variation in the methods used for confirming suspected cases.

The youngest and the oldest age groups are the most affected. However, no more conclusions can be drawn from these data as information on serotype distribution is not yet available, nor on vaccination status of cases. The new enhanced surveillance system will allow us to see whether the high figures in these age groups are due to non-capsulated strains or to capsulated strains and also whether there was any element of vaccine failure.

Figure 2.5.2. Notification rates of invasive *Haemophilus influenzae* cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 1 162)



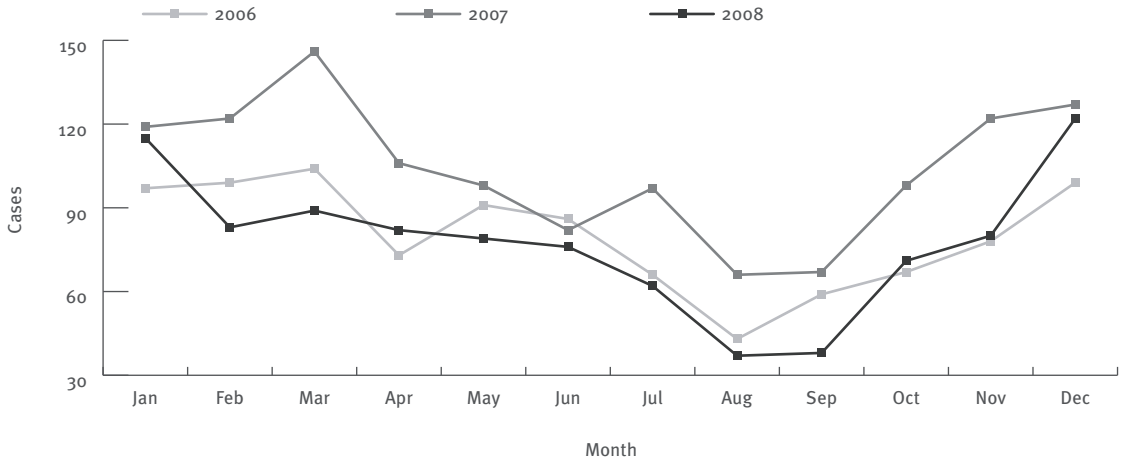
Source: Country reports: Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Slovakia, Sweden, United Kingdom and Norway. Iceland, Cyprus, Luxembourg and Malta reported zero cases.

Table 2.5.2. Number and notification rate of invasive *Haemophilus influenzae* cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	A	5	5	0.06	4	0.05	7	0.08
Belgium	A	49	49	0.46	55	0.52	3	0.03
Bulgaria	A	14	14	0.18	19	0.25	0	0.00
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	7	7	0.07	13	0.13	11	0.11
Denmark	A	8	8	0.15	15	0.28	4	0.07
Estonia	A	1	1	0.07	1	0.15	7	0.52
Finland	A	45	45	0.85	54	1.02	32	0.61
France[a]	A	706	706	1.10	658	1.03		
Germany	C	152	152	0.18	93	0.11	55	0.07
Greece	A	5	5	0.04	7	0.06	3	0.03
Hungary	A	6	6	0.06	2	0.02	0	0.00
Ireland	A	22	22	0.50	31	0.72	34	0.81
Italy	A	53	53	0.09	33	0.06	23	0.04
Latvia	A	1	1	0.04	0	0.00	0	0.00
Lithuania	A	4	4	0.12	0	0.00	2	0.06
Luxembourg	C	0	0	0.00	1	0.21	0	0.00
Malta	C	0	0	0.00	1	0.25	0	0.00
Netherlands[b]	—	—	—	—	—	—	121	0.74
Poland	C	31	28	0.07	39	0.10	19	0.05
Portugal	A	5	4	0.04	16	0.15	17	0.16
Romania	A	2	2	0.01	—	—	—	—
Slovakia	A	4	4	0.07	6	0.11	0	0.00
Slovenia	A	12	12	0.60	13	0.65	0	0.00
Spain[c]	A	73	73		66		4	
Sweden	A	163	163	1.78	144	1.58	112	1.24
United Kingdom	C	732	732	1.20	696	1.14	624	1.03
EU total		**2 100**	**2 096**	**0.48[d]**	**1 967**	**0.48[d]**	**1 078**	**0.29[d]**
Iceland	C	0	0	0.00	1	0.33	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	A	75	75	1.58	83	1.77	73	1.57
Total		**2 175**	**2 122**	**0.46[d]**	**2 052**	**0.48[d]**	**1 151**	**0.31[d]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) France has a sentinel surveillance system.
(b) In the Netherlands, information on notified cases of *Haemophilus influenzae* type b is only available from 2009.
(c) Spain has a sentinel system based on a limited number of selected laboratories.
(d) Rates calculated excluding the Spanish data.

Figure 2.5.3. Seasonal distribution of invasive *Haemophilus influenzae* cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Ireland, Italy, Lithuania, Poland, Portugal, Slovakia, Slovenia, Sweden, United Kingdom and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-LABNET	V	Se	A	C	Y	N	-	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	Y	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-HIB	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-EPIBAC	V	Se	A	C	Y	N	Y	N	Y
Germany	DE-SURVNET@RKI-7.1	Cp	Co	P	C	Y	N	N	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-MENINGITIS	Cp	Co	P	C	N	Y	Y	Y	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	N	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-HAEMOPHILUS_INFLUENZAE	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-HIB	O	Co	P	C	Y	N	Y	Y	-

Invasive meningococcal disease

- The notification rate of meningococcal disease remains low across Europe (0.9 per 100 000) and appears to have stabilised over recent years after having, decreased by half since 1999 (1.9 per 100 000).
- Most invasive meningococcal diseases are caused by the serogroups B and C. Commonly used vaccines in Europe cover only the serogroup C (MenC).
- Infants and children under four yearsold experienced the highest number of cases. Adults older then 25 years rarely experienced the disease.

Epidemiological situation in 2008

In 2008, a total of 5 043 cases were reported, of which 4 700 cases were confirmed. Twenty-nine EU and EEA/EFTA countries provided reports with an overall notification rate of 0.93 per 100 000. Ireland and the United Kingdom reported the highest rates with 3.5 per 100 000 and 2.1 per 100 000, respectively. The lowest notification rates were reported by Cyprus (0.25), Bulgaria (0.26) and Latvia (0.26) (Table 2.5.3).

Since 1999 (1.9 per 100 000) there has been a steady decline in notification rates across Europe[1,2], but this seems to have reached a plateau in recent years. (2006: 0.96 per 100 000; 2007: 1.0 per 100 000).

Age and gender distribution

Of the 4 691 cases with known age, 33 %were seen in children under five years old. This age group experienced a notification rate of 8.51 per 100 000, followed by the age group 15–24 years with a notification rate of 1.47 per 100 000. In the older age groups the disease was extremely rare. In the youngest age group the notification rate was the highest in Ireland (28.7 per 100 000) followed by Lithuania (27.9 per 100 000) and the United Kingdom (20.0 per 100 000). The highest notification rate in the second most affected age group (15-24 year olds) was reported by Ireland (4.82 per 100 000) and Slovenia (3.25 per 100 000) (Figure 2.5.4).

Information on gender was available for 4 691 cases. The incidence rates among males (1.00 per 100 000) and females (0.85 per 100 000) are almost the same, with a slightly higher rate among males. The male-to-female ratio is 1.16.

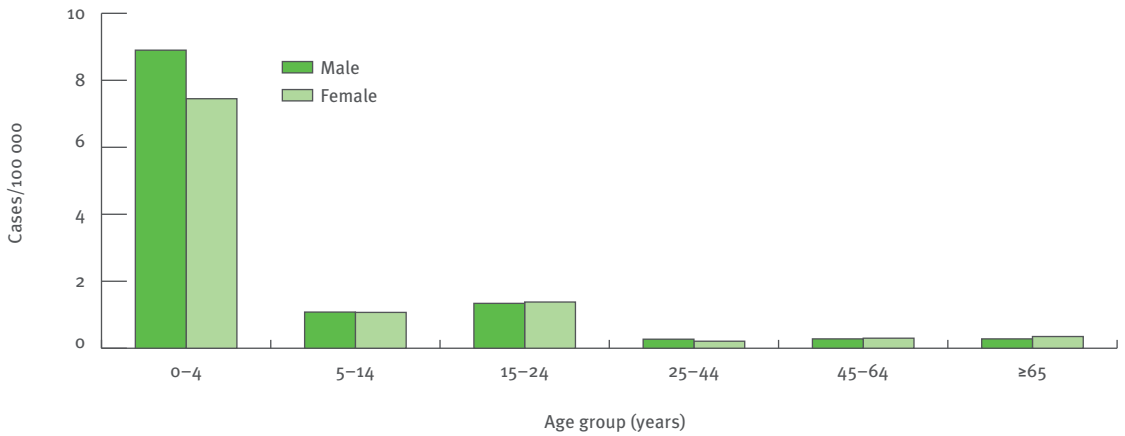
Seasonality

No seasonal trend is evident from the small number of cases reported with this information. Only four countries provided data on seasonality.

Discussion

The notification rate varies widely between countries, ranging from 0.25 to 3.5 per 100 000. These figures do probably reflect real differences in rates, but also differences between surveillance systems and are certainly partly due to the variation in the methods used for confirming suspected cases. Considering the reported data

Figure 2.5.4. Notification rates of invasive meningococcal disease cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 3 042)



Source: Country reports: Cyprus, Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Slovakia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.5.3. Number and notification rate of invasive meningococcal disease cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	A	95	84	1.0	61	0.74	68	0.82
Belgium	A	111	111	1.04	158	1.5	138	1.31
Bulgaria	A	29	20	0.26	24	0.31	39	0.51
Cyprus	A	2	2	0.25	4	0.51	3	0.39
Czech Republic	C	84	82	0.79	75	0.73	79	0.77
Denmark	A	68	68	1.2	78	1.4	78	1.44
Estonia	A	6	6	0.45	11	0.82	11	0.82
Finland	A	29	29	0.55	43	0.81	0	0.00
France	A	689	673	1.1	680	1.1	668	1.06
Germany	A	452	452	0.55	436	0.53	555	0.67
Greece	A	81	78	0.70	106	0.95	105	0.94
Hungary	A	34	30	0.30	43	0.43	32	0.32
Ireland	A	157	152	3.5	162	3.8	173	4.11
Italy	A	184	171	0.29	178	0.30	144	0.25
Latvia	A	9	6	0.26	15	0.66	8	0.35
Lithuania	A	68	68	2.0	50	1.5	45	1.32
Luxembourg	C	2	2	0.41	2	0.42	2	0.43
Malta	A	3	3	0.73	6	1.5	18	4.44
Netherlands	A	162	161	0.98	195	1.2	169	1.03
Poland	A	373	321	0.84	335	0.88	199	0.52
Portugal	A	77	58	0.55	98	0.92	103	0.97
Romania	A	121	104	0.48	145	0.67	114	0.53
Slovakia	A	55	48	0.89	35	0.65	36	0.67
Slovenia	A	24	24	1.2	18	0.90	11	0.55
Spain	A	762	581	1.3	619	1.4	595	1.36
Sweden	A	49	49	0.53	49	0.54	52	0.57
United Kingdom	C	1 279	1 279	2.1	1 522	2.5	1 266	2.10
EU total		**5 005**	**4 662**	**0.94**	**5 148**	**1.00**	**4 753**	**0.96**
Iceland	A	2	2	0.63	4	1.3	4	1.33
Liechtenstein	—	—	—	—	—	—	—	—
Norway	A	36	36	0.76	30	0.64	35	0.75
Total		**5 043**	**4 700**	**0.93**	**5 182**	**1.00**	**4 792**	**0.96**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

for recent years, there appears to have been an overall decline in incidence since 1999.

References

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2. Invasive neisseria meningitidis in Europe 2006, Health Protection Agency Centre for Infection, London.Available from: http://www.euibis.org/documents/2006_meningo.pdf

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	Y	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-MENINGOCOCC	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-MENINGITIS	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Latvia	LV-LABORATORY	Cp	Co	P	C	Y	N	N	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Netherlands	NL-AGGR	Cp	Co	P	A	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-MENINGOCOCAL	Cp	Co	P	C	Y	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-MENINGOCOCCAL	O	Co	P	C	Y	N	Y	Y	Y

Invasive pneumococcal disease (IPD)

- The overall notification rate of invasive pneumococcal disease in 24 EU and EEA/EFTA Member States was 5.2 per 100 000 population in 2008.
- There is a wide heterogeneity of IPD surveillance systems in the EU, particularly in the type of surveillance systems in place, their coverage and the case definition used; while in some countries there are no surveillance systems in place.

Epidemiological situation in 2008

In 2008, 14 883 cases were reported, of which 14 757 were confirmed. Six countries did not provide any data. The overall rate for these reporting countries was 5.2 per 100 000 (slightly lower than in previous years) with the highest rates being reported by Sweden (19.5 per 100 000), Norway (18 per 100 000), Belgium (17.6 per 100 000) and Finland (17.5 per 100 000).

Compared with previous years, there were increases in the notification rate of invasive pneumococcal disease reported by Belgium (14 in 2006 to 18 per 100 000 population), Finland (from 15 to 17per 100 000 population), Slovenia (from 7.7 to 10 per 100 000 population, which are most likely due to recent improvements in the effectiveness of their surveillance systems.

Considering the total lack of surveillance of invasive pneumococcal disease in several countries and the heterogeneity of the systems that exist across the Member States, the data should be compared with caution. In addition, some countries collect data only on pneumococcal meningitis.

Age and gender distribution

The most affected age groups were the youngest (under five years) with an overall notification rate of 6.96 cases per 100 000 and the oldest age group (over 64 years) with a notification rate of 12.10 cases per 100 000).

The notification rate was slightly higher for males (4.68 per 100 000) than females (4.02 per 100 000), giving an overall male-to-female ratio of 1.16.

Seasonality

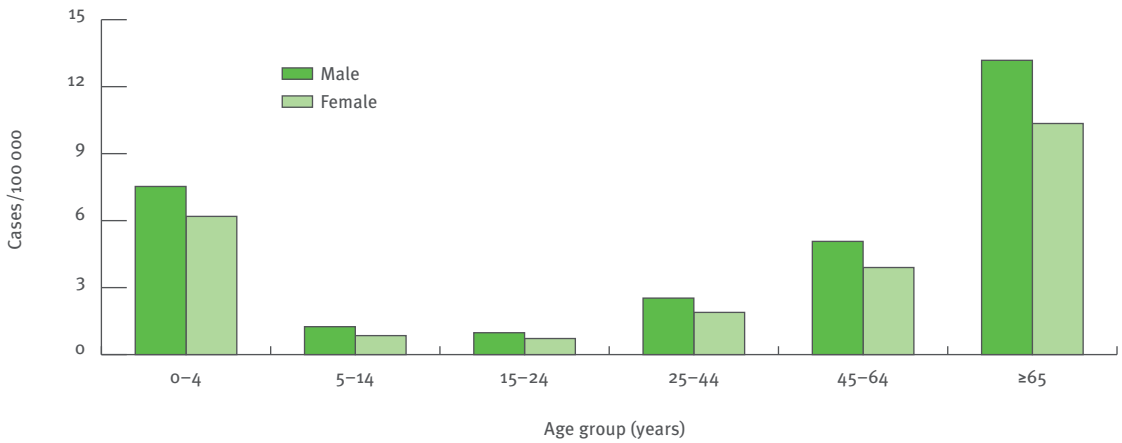
The seasonal distribution of cases of pneumococcal disease follows a pattern similar to that of other respiratory diseases. The lowest rates were observed during summer, they then increased rapidly with the onset of autumn and winter (Figure 2.5.6).

Discussion

The notification rate varied widely between countries, ranging from 0.0 to 19 per 100 000, probably reflecting not just a true inter-country variation but also major differences in the application of case definitions and operation of different national surveillance systems.

There are concerns regarding the possibility that, after introduction of the vaccine, serotypes covered by the vaccine may be replaced by serotypes not covered by PCV7, as this has already been observed in some EU

Figure 2.5.5. Notification rates of invasive pneumococcal disease cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 12 427)



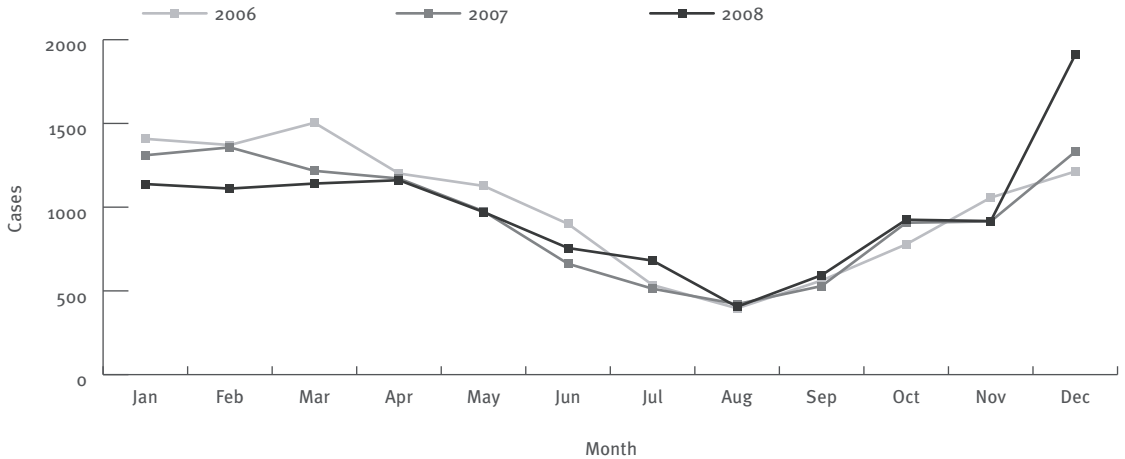
Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. Luxembourg, Malta and Romania reported zero cases.

Table 2.5.4. Number and notification rate of cases of invasive pneumococcal disease in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	133	133	1.6	361	4.36	141	1.7
Belgium	A	1 875	1 875	17	1 728	16.33	1 484	14
Bulgaria	A	35	35	0.46	39	0.51	1	< 0.1
Cyprus	C	21	21	2.7	6	0.77	7	0.91
Czech Republic	C	117	117	1.1	89	0.87	72	0.70
Denmark	C	120	120	2.2	101	1.9	92	1.7
Estonia	C	32	32	2.4	36	2.7	37	2.8
Finland	C	925	925	17	791	15	0	0.00
France	—	—	—	—	—	—	—	—
Germany	—	—	—	—	—	—	—	—
Greece	C	67	63	0.56				
Hungary	C	65	65	0.65	57	0.57	56	0.56
Ireland	C	459	400	9.1	313	7.3	407	9.7
Italy	C	694	694	1.2	—	—	—	—
Latvia	A	3	3	0.13	4	0.18	0	0.00
Lithuania	A	18	18	0.53	32	0.95	10	0.29
Luxembourg	C	0	0	0.00	2	0.42	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands[a]	C	—	—	—	—	—	—	—
Poland	A	273	212	0.56	250	0.66	196	0.51
Portugal								
Romania	C	0	0	0.00				
Slovakia	C	36	36	0.67	37	0.69	44	0.82
Slovenia	C	204	202	10	189	9.4	155	7.7
Spain	C	1 648	1 648		1 428		2 587	
Sweden	C	1 789	1 789	19	1 441	16	1 334	15
United Kingdom	C	5 514	5 514	9.0	5 624	9.3	5 820	9.6
EU total		**14 028**	**13 902**	**4.39**	**12 528**	**5.97**	**12 443**	**5.32**
Iceland	—	—	—	—	—	—	—	—
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	855	855	18	958	20	1 006	22
Total		**14 883**	**14 757**	**5.20**	**13 486**	**7.07**	**13 449**	**7.08**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) In the Netherlands information on notified cases of invasive pneumococcal disease is only available from 2009.

Figure 2.5.6. Seasonal distribution of invasive pneumococcal disease cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	Y	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-PNEUMOCOCC	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-MENINGITIS	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-LABORATORY	Cp	Co	P	C	Y	N	N	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	N	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-MICROBIOLOGICAL	V	Se	P	C	Y	N	N	N	N
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-PNEUMOCOCCAL	O	Co	P	C	Y	N	Y	Y	Y

countries[1,2]. For this purpose, more enhanced surveillance, also involving laboratory surveillance, is being introduced in the EU by ECDC.

References

1 Peabody RG, on behalf of the European Union funded Pnc-EURO contributing group. Pneumococcal disease surveillance in Europe. Eurosurveillance 2006; 11(9), available at http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=646

2 Obaro AK, Madhi SA. Bacterial pneumonia vaccines and childhood pneumonia: are we winning, refining, or redefining? Lancet Infect Dis 2006; 6: 150-161.

Measles

- The number of measles cases reported in the EU and EEA/EFTA in 2008 was higher than the previous year and as such the goal of eliminating measles in the EU will not be reached in 2010.
- A total of 4499 confirmed cases, including one fatal case, were reported in 2008, with an overall rate of 0.9 per 100000.
- Eight measles cases were reported to have been complicated with encephalitis.
- Only three countries (representing about 1.5 % of the EU population) have been measles-free during the last three years.

Epidemiological situation in 2008

A total of 9404 measles cases were reported in 2008 (4499 confirmed), with an overall notification rate of 0.89 per 100000 population (Table 2.5.5). Only five countries (Estonia, Hungary, Slovakia, Slovenia and Iceland) reported zero cases. Eight countries reported rates below one per million inhabitants. The highest notification rates were reported by the United Kingdom (2.4 per 100000), Italy (2.1 per 100000), and Austria (1.9 per 100000).

The situation has changed considerably since 2007 due to large outbreaks in these countries, and also the high proportion of cases reported in Germany and France. Only Slovenia and Iceland have maintained their status as consistently reporting zero cases (since 2004) while Slovakia has achieved uninterrupted 'zero-reporting' since 2005.

Age and gender distribution

The most affected age group was the 0–4 year olds (5.81 cases per 100000) followed by the 5–14 (4.87 per 100000) and 15–24 year-olds (4.08 per 100000). Notification rates for the two later age groups are considerably higher than in 2007. In 2008 the rate was somewhat higher in males (2.00 per 100000) than in females (1.72 per 100000), male-to-female ratio of 1.16. The gender difference is largest in the age group 15–24 years of age (Figure 2.5.7). A possible explanation may be that some countries make extra effort to ensure that all teenage girls are covered by rubella vaccination, and have been using the measles–mumps–rubella vaccine for this purpose.

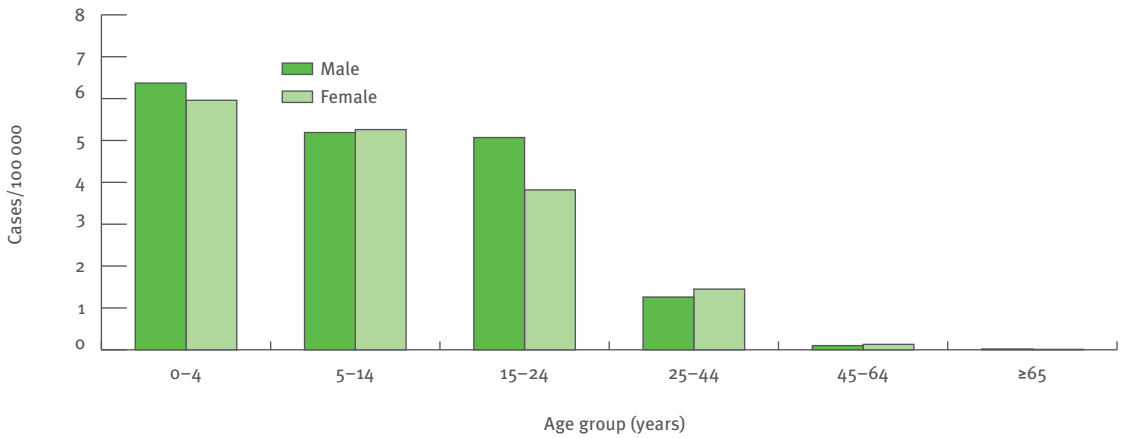
Seasonality

For 2008 there is a clear seasonal pattern of measles with a peak in late spring (April–June) and lower rates in summer and especially in autumn. The pattern was the same in the three countries with the highest numbers of cases. Figure 2.5.8 indicates that the seasonal differences are more pronounced in years with large outbreaks like 2006 and 2008 than in years with fewer cases like 2007.

Enhanced surveillance in 2008

A total of 7817 cases of measles were reported by the surveillance community network for vaccine preventable infectious diseases (EUVAC.NET) in 2008 for EU and

Figure 2.5.7. Notification rates of measles cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 8 346)



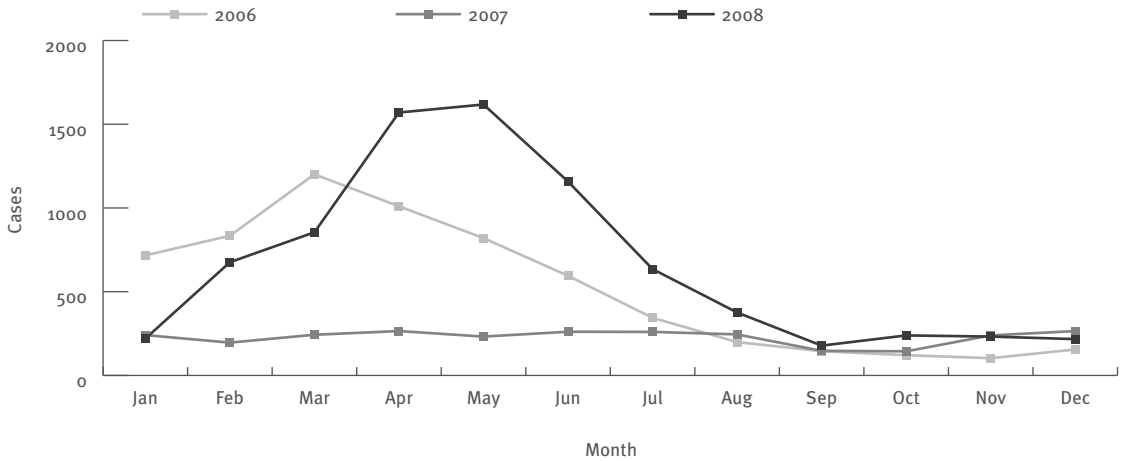
Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Spain, Sweden, United Kingdom and Norway. Estonia, Hungary, Slovakia, Slovenia and Iceland reported zero cases.

Table 2.5.5. Number and notification rate of measles cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	446	156	1.9	20	0.24	15	0.18
Belgium	A	98	98	0.92	63	0.60	15	0.14
Bulgaria	U	1	1	< 0.1	1	< 0.1	1	< 0.1
Cyprus	C	1	1	0.13	0	0.00	0	0.00
Czech Republic	C	2	2	< 0.1	2	< 0.1	7	< 0.1
Denmark	C	14	14	0.26	2	< 0.1	27	0.50
Estonia	C	0	0	0.00	1	< 0.1	27	2.0
Finland	C	5	5	< 0.1	0	0.00	0	0.00
France	C	604	305	0.48	16	< 0.1	17	< 0.1
Germany	C	916	779	0.95	485	0.59	1 475	1.8
Greece	C	1	1	< 0.1	0	0.00	257	2.3
Hungary	C	0	0	0.00	0	0.00	1	< 0.1
Ireland	C	55	13	0.30	20	0.46	24	0.57
Italy	C	5 311	1 236	2.1	—	—	—	—
Latvia	A	3	3	0.13	0	0.00	6	0.26
Lithuania	A	1	1	< 0.1	0	0.00	1	< 0.1
Luxembourg	C	1	1	0.21	0	0.00	8	1.7
Malta	C	1	1	0.24	0	0.00	1	0.25
Netherlands	C	109	109	0.66	4	< 0.1	1	< 0.1
Poland	C	100	89	0.23	30	< 0.1	90	0.24
Portugal	U	1	1	< 0.1	0	0.00	0	0.00
Romania	U	12	12	< 0.1	345	1.6	3 524	16
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	0	0	0.00	0	0.00	0	0.00
Spain	C	229	198	0.44	224	0.50	363	0.83
Sweden	C	25	25	0.27	1	< 0.1	19	0.21
United Kingdom	C	1 462	1 442	2.4	1 026	1.7	762	1.3
EU total		**9 400**	**4 495**	**0.90**	**2 240**	**0.51**	**6 641**	**1.53**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	4	4	< 0.1	17	0.36	0	0.00
Total		**9 404**	**4 499**	**0.89**	**2 257**	**0.51**	**6 641**	**1.51**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.5.8. Seasonal distribution of measles cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Spain, Sweden, United Kingdom and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-PEDISURV	V	Se	A	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-MEASLES, POLIO	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-MEASLES	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-MEASLES	O	Co	P	C	Y	N	Y	Y	Y

EFTA countries. Of these, 90 % occurred in six countries: Austria, France, Germany, Italy, Switzerland (not reporting to ECDC) and the UK. Only 47 % of the cases were laboratory-confirmed, 12 % epidemiologically linked and 40 % were only clinically diagnosed. This is a much higher proportion than in 2007, possibly as a consequence of the large number of cases in some countries.

Importation status was known for 54 % of the cases. Only 5 % of these (218 cases) were imported, 76 % of which were from another European country. Vaccination status was known for 90 % of all reported cases. Of these, 91 % were unvaccinated. According to the EUVAC.NET report[1], one 17-year-old girl with a congenital immunodeficiency disorder died of measles in the UK. Five cases were complicated with encephalitis (Germany: one; Switzerland: two; Italy: one; UK: one). None of the complicated cases had been vaccinated against measles.

Discussion

The total number of measles cases in EU and EFTA countries was considerably higher in 2008 than in 2007. This was due to large outbreaks in several countries, with the highest number of cases in Switzerland, Italy, Austria, Germany France and UK. Importations or smaller outbreaks occurred in most other European countries. Only two countries (Iceland and Slovenia) have maintained 'zero-reporting' since 2004. The fact that over 90 % of cases with known vaccination status were unvaccinated indicates that measles can still be conquered by sufficient focus on vaccination, but the goal of eliminating measles will not be reached in 2010. Strong political commitment is needed to reverse this worrying trend.

References

1. EUVAC.NET. Measles surveillance annual report 2008. Available from http://www.euvac.net/graphics/euvac/pdf/annual_2008.pdf

Mumps

- Mumps is one of the childhood vaccine-preventable diseases that still maintain a relatively high notification rate across the EU ad EEA/EFTA (2.8 per 100 000), although there appears to be a slowing declining trend.
- Through the enhanced surveillance, 1 774 mumps cases were reported to be hospitalised[1].
- Vaccination status obtained through the enhanced surveillance showed that 24 % of all mumps cases were unvaccinated, 26 % had received one dose and 20 % had received at least two doses of mumps-containing vaccine suggesting breakthrough infections after vaccination in a significant number of cases[1].
- Several genotypes among the naturally circulating mumps strains have been identified in Europe: D, F, J, H, etc. Further studies are needed to assess cross-immunity to different mumps strains developing after vaccination with genotype A-containing vaccines and may influence the formulation of the future mumps vaccines.

Epidemiological situation in 2008

A total of 19 640 cases of mumps (9 940 confirmed) were reported in 2008 by 27 EU and EEA/EFTA countries, with an overall notification rate of 2.79 per 100 000 population. Only Iceland reported zero cases. Five countries reported rates below one per million inhabitants; Finland, Greece, Netherlands, Slovakia and Iceland.

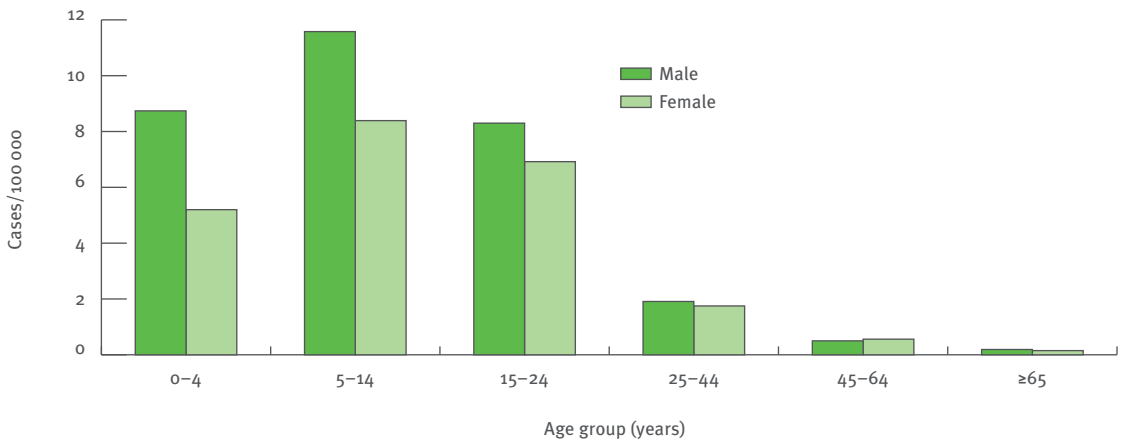
The highest notification rates were observed in Ireland (16 per 100 000), Bulgaria (15 per 100 000), Romania (11 per 100 000), Luxembourg (5.4 per 100 000) and the United Kingdom (4.3 per 100 000). The overall notification rate for 2008 of reported mumps cases in EU and EEA/EFTA countries is slightly lower than for 2007 (4.09 per 100 000) and has remained lower than the notification rates for 2006 (8.69 per 100 000) and 2005 (17.6 per 100 000).

Age and gender distribution

Age was reported for 15 597 cases. Mumps occurs in all age groups, but the most affected age groups were 0–4 years (10.54 per 100 000), 5–14 years (17.22 per 100 000) and 15–24 years (12.12 per 100 000). Either children, teenagers or young adults were the most affected age groups in Bulgaria, Ireland, Italy, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Spain and the United Kingdom.

Gender was reported for 9 459 cases. The notification rates were higher for males in all age groups up to 45 years old: 0–4 years (8.91 per 100 000 for males and 5.31 for females); 5–14 years (11.81 for males and 8.56 for females); 15–24 years (8.44 for males and 7.04 for females); and 25–44 years (1.93 for males and 1.77 for females). The overall notification rates were 3.6 per 100 000 for males and 2.61 for females giving a male-to-female ratio of 1.38.

Figure 2.5.9. Notification rates of mumps cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 9 411)



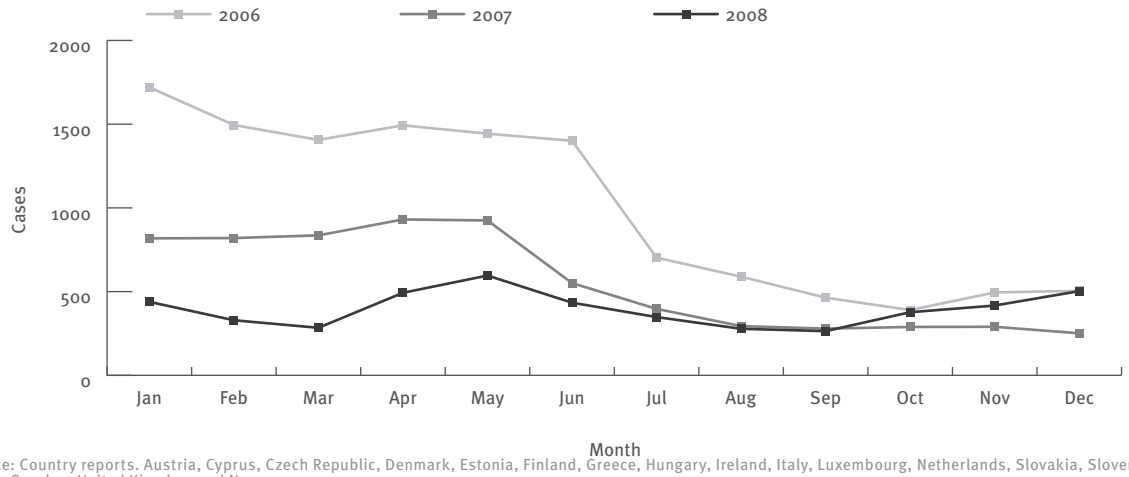
Source: Country reports. Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Norway. Iceland reported zero cases.

Table 2.5.6. Number and notification rate of mumps cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	22	22	0.26	7	< 0.1	227	2.8
Belgium	A	52	52	0.49	68	0.64	35	0.33
Bulgaria	A	5 582	1 155	15	875	11	911	12
Cyprus	C	3	3	0.38	5	0.64	0	0.00
Czech Republic	C	402	260	2.5	735	7.1	3 969	39
Denmark	C	24	24	0.44	12	0.22	11	0.20
Estonia	C	14	14	1.0	18	1.3	17	1.3
Finland	C	5	5	< 0.1	6	0.11	0	0.00
France	—	—	—	—	—	—	—	—
Germany	—	—	—	—	—	—	—	—
Greece	C	5	1	< 0.1	3	< 0.1	3	< 0.1
Hungary	C	14	11	0.11	16	0.16	7	< 0.1
Ireland	C	932	698	16	69	1.6	209	5.0
Italy	C	1 387	1 387	2.3	1 312	2.2	1 406	2.4
Latvia	A	6	3	0.13	2	< 0.1	3	0.13
Lithuania	A	82	82	2.4	81	2.4	0	0.00
Luxembourg	C	28	26	5.4	0	0.00	0	0.00
Malta	C	7	7	1.7	2	0.49	0	0.00
Netherlands	C	7	7	< 0.1	0	0.00	—	—
Poland	A	3 271	0	0.00	0	0.00	20	< 0.1
Portugal	C	140	140	1.3	48	0.45	34	0.32
Romania	A	2 302	2 302	11	5 291	25	14 671	68
Slovakia	C	5	5	< 0.1	3	< 0.1	13	0.24
Slovenia	C	32	13	0.65	9	0.45	4	0.20
Spain	C	2 607	1 012	2.2	3 147	7.1	1 440	3.3
Sweden	C	51	51	0.56	47	0.52	60	0.66
United Kingdom	C	2 644	2 644	4.3	2 702	4.4	6 129	10
EU total		**19 624**	**9 924**	**2.82**	**14 458**	**4.14**	**29 169**	**8.81**
Iceland	C	0	0	0.00	1	0.33	29	9.7
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	16	16	0.34	23	0.49	24	0.52
Total		**19 640**	**9 940**	**2.79**	**14 482**	**4.09**	**29 222**	**8.69**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.5.10. Seasonal distribution of mumps cases in the EU and EEA/EFTA, 2006–08



Source: Country reports. Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Norway.

Seasonality

Information on month of infection was available for 6195 (32 %) of all mumps cases. The month of infection was not reported in several countries with large outbreaks such as Bulgaria, Poland and Romania. The previously observed winter–spring outbreaks in 2006 and 2007 were not as obvious during 2008.

Enhanced surveillance in 2008

A total of 20634 mumps cases in 25 countries (24 EU and EEA countries and Croatia) were reported through the surveillance community network for vaccine-preventable infectious diseases in 2008[1]. Of the 15061 cases reported by those countries that carry out laboratory confirmation, 5835 cases (39 %) were laboratory-confirmed, ranging from 0–100 % in different reporting countries.

Vaccination status was known for 12491 of reported mumps cases. Of these, 2998 (24 %) were unvaccinated, 3306 (26 %) had received one dose and 2536 (20 %) had received at least two doses of vaccine. The remaining 3651 had been vaccinated with an unspecified number of doses. In the Czech Republic and Italy, 68 % and 48 %, respectively, of the mumps cases had received two doses of vaccine. In several other countries an unusually high proportion of reported mumps cases (around 20 %), had received more than two doses: Croatia, Ireland, Portugal, Slovakia, Slovenia and Spain. Two countries do not report vaccination status: Poland and Romania.

In total, 1774 (12 %) reported mumps cases in the 20 reporting countries were hospitalised and among those, 177 cases developed complications (774 cases reported from 14 countries). The distribution of complications and the outcome is not known.

Discussion

An overall decrease in the number of reported mumps cases has been observed during the last two years. This is at least in part due to the larger uptake of mumps-containing vaccines throughout EU and EEA/EFTA countries.

However, high notification rates are still observed in Bulgaria, Ireland, Romania, Poland, Luxembourg and the United Kingdom. Smaller and larger European outbreaks were reported in the scientific literature[2-4]) during 2008, some of which were in countries that had high vaccination coverage.

There are several explanations for the observed outbreaks. Some of the more important reasons are low uptake of mumps-containing vaccine in several countries; lack of catch-up campaigns when mumps-containing vaccines were implemented; waning immunity after vaccination; and possible reduced effectiveness to some of the circulating mumps wild-type strains.

Of specific interest is the high number of individuals with breakthrough infections reported from several countries after two or more doses of mumps vaccine. In a scientific article from the Netherlands, a mismatch between the genotype of the circulating wild-type mumps virus and the immune response evoked by the vaccine strain is suggested to influence the effectiveness of the vaccine[5]. The effectiveness may also be influenced by the different mumps vaccine strains being used during recent decades in Europe. The wild-type strains circulating in Europe recently have been genotypes D, F, G, and H, while the most common vaccine Jeryl Lynn strain is genotype A. Further studies are needed to assess cross-immunity between different mumps strains and results may influence the formulation of the future mumps vaccines. The possibility of providing a third dose of mumps vaccine either in an outbreak situation, as successfully tested during the Luxembourg outbreak among military personnel[2], or in routine programmes, should also be further evaluated.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Belgium	BE-PEDISURV	V	Se	A	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-MUMPS	Cp	Co	P	C	N	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-MUMPS	O	Co	A	C	Y	N	Y	Y	Y

Pertussis

- The increase in the number of reported cases (observed since 2003), continued in 2008, even though less pronounced. The overall notification rate remains low with 5.28 per 100 000.

Epidemiological situation in 2008

In 2008, 18 807 confirmed cases (out of 20 442 reported), were reported by 28 countries, Germany and Liechtenstein did not report. The overall notification rate remains low with 5.28 per 100 000, relatively unchanged over the previous two years (Table 2.5.7).

As in previous years, Norway reported the highest notification rate with 82 per 100 000, although there was a noteworthy decrease in comparison with 2007 when 115 cases per 100 000 were reported and with 2006 with 142 per 100 000. The Netherlands and Estonia followed with 52 and 36 per 100 000, respectively. Both countries showed a slight increase in comparison with previous years. No country reported zero cases.

Age and gender distribution

Information on age and gender was available for 69 % of the confirmed cases. Similar to previous years, the most affected group was the 5–14 year-olds with a notification rate slightly above 14 per 100 000 (Figure 2.5.11), which is mainly due to this group having been the most affected age group in countries reporting the highest notification rates, mainly northern countries. For most of the remaining countries the most affected group were young children under five years old. Overall, females (7.07 per 100 000) were again slightly more often affected than males (5.94 per 100 000), with a male-to-female ratio of 0.84.

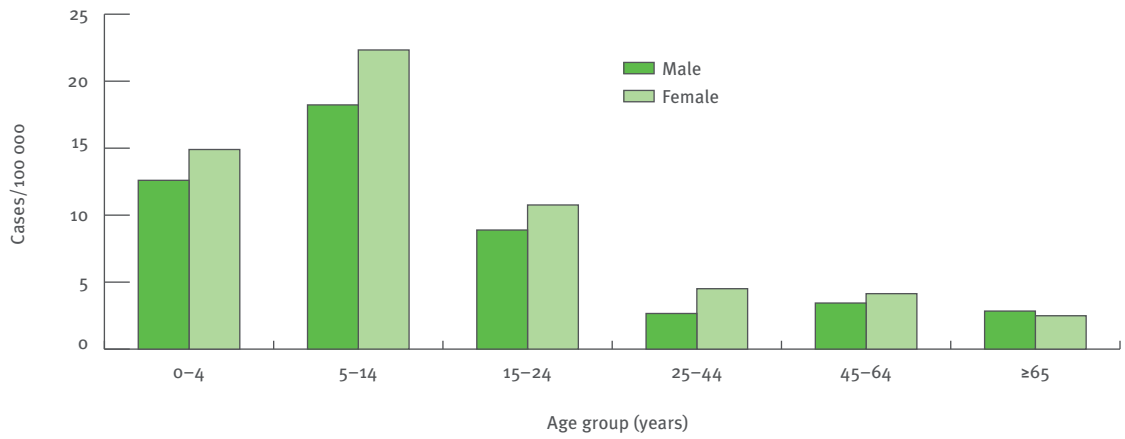
Seasonality

In 2008, pertussis notification rates were slightly higher during summer and early autumn but this pattern was less evident in previous years (Figure 2.5.12).

Discussion

The wide inter-country variation was narrower than in 2008 but notification rates still ranged from 0.09 to 82.05 per 100 000, with northern countries reporting higher notification rates; a picture already seen in previous years. The most affected age group in these countries is 5–14 year-old children and adolescents. Some of the countries recently introduced additional booster doses of the vaccine to cover this age group. Norway, for example, introduced a booster for seven-year-olds in 2006, and it is too early to assess the impact of this policy change, although the overall notification rate did decrease in Norway in 2008 compared with previous years. The variation in rates in different countries may well be caused by different vaccination policies, but also different levels of awareness towards the clinical presentation of the disease (that is very often not perceived as pertussis), differences in reporting procedures and surveillance systems, or by real differences in disease incidence. If and which of these possible explanations contributes most to the observed variation in notification rates remains unclear, and comparisons between countries should be made with caution.

Figure 2.5.11. Notification rates of pertussis cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 16 871)



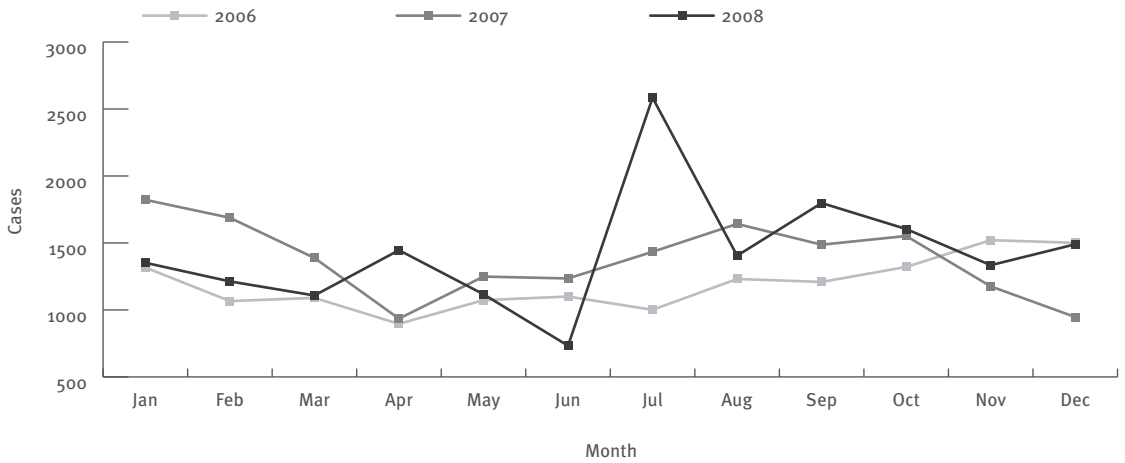
Source: Country reports: Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Table 2.5.7. Number and notification rate of pertussis cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	A	175	175	2.1	136	1.6	78	0.94
Belgium	A	174	174	1.6	214	2.0	197	1.9
Bulgaria	D	193	131	1.7	235	3.1	335	4.3
Cyprus	C	3	3	0.38	9	1.2	3	0.39
Czech Republic	C	765	763	7.4	184	1.8	233	2.3
Denmark	C	106	106	2.0	94	1.7	54	0.99
Estonia	C	485	485	36	409	30	153	11
Finland	C	511	511	9.6	480	9.1	0	0.00
France[a]	C	139	138	—	61	—	125	—
Germany	—	—	—	—	—	—	—	—
Greece	C	22	10	< 0.1	6	< 0.1	5	< 0.1
Hungary	C	33	33	0.33	48	0.48	17	0.17
Ireland	C	104	71	1.6	47	1.1	38	0.90
Italy	C	336	336	0.56	795	1.3	796	1.4
Latvia	A	14	7	0.31	15	0.66	10	0.44
Lithuania	A	51	51	1.5	17	0.50	4	0.12
Luxembourg	C	2	2	0.41	4	0.84	0	0.00
Malta	D	1	1	0.24	0	0.00	0	0.00
Netherlands	C	8 745	8 557	52	7 185	44	4 174	26
Poland	A	2 163	1 272	3.3	1 667	4.4	1 368	3.6
Portugal	D	72	72	0.68	20	0.19	21	0.20
Romania	D	51	51	0.24	2	< 0.1	14	< 0.1
Slovakia	C	105	99	1.8	21	0.39	21	0.39
Slovenia	C	181	161	8.0	533	27	446	22
Spain	C	613	200	0.44	151	0.34	102	0.23
Sweden	C	459	459	5.0	690	7.6	795	8.8
United Kingdom	C	1 051	1 051	1.7	65	0.11	3	0.00
EU total		**16 554**	**14 919**	**4.25[b]**	**13 088**	**3.75[b]**	**8 992**	**2.59[b]**
Iceland	C	1	1	0.32	2	0.65	3	1.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	3 887	3 887	82	5 373	115	6 587	142
Total		**20 442**	**18 807**	**5.28[b]**	**18 463**	**5.21[b]**	**15 582**	**4.42[b]**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.
(a) The French pertussis surveillance comprises a sentinel paediatric hospital-based surveillance system for the under 6-month-olds.
(b) Rates calculated excluding French data.

Figure 2.5.12. Seasonal distribution of pertussis cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Iceland and Norway.

Surveillance systems overview

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						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REFLAB	V	Co	P	C	Y	N	N	N	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	N	N	N	Y
France	FR-RENACOQ	V	Se	P	C	Y	Y	Y	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-PERTUSSIS	O	Co	P	C	Y	N	Y	Y	Y

Polio

- The WHO European Region was declared polio-free in 2002 and neither wild-type or vaccine-type associated polio cases were reported in the EU and EEA/EFTA countries in 2008.
- Persistent pockets of wild-type and vaccine-type poliovirus transmission were reported from sixteen countries outside the EU and EEA/EFTA in 2008; mainly in Afghanistan, India, Nigeria and Pakistan where both wild-type poliovirus types 1 and 3 were identified. In addition, vaccine-derived poliovirus types were identified in patients with primary immunodeficiency in the Russian Federation and Belarus.
- Screening of sewage water is a valuable tool to detect polioviruses imported to EU and EEA/EFTA countries. In 2008, Global Polio Laboratory Network laboratories identified ambiguous vaccine-derived polioviruses type 1 and 2 in Zurich and Geneva, respectively.

Epidemiological situation in 2008

No cases of polio disease were reported in any of the 29 reporting EU and EEA/EFTA countries in 2008 (no report from Lichtenstein).

Enhanced surveillance in 2008

The Global Polio Laboratory Network (GPLN), comprising 145 laboratories in 100 countries and operating in the EU and all six WHO regions, perform laboratory surveillance for wild-type and vaccine-type polioviruses in sewage water and patients with acute flaccid paralysis. The GPLN evaluates progress toward polio eradication.

Screening of sewage water samples for wild-type and vaccine-type polioviruses is performed in seven EU and EFTA countries. Vaccine-type poliovirus strains were identified and genotyped in 2008 in Zurich, Switzerland (type 1) and Geneva, Switzerland (type 2), Tallinn, Estonia (type 2 and 3) and Tampere, Finland (type 1, 2 and 3).

Discussion

The WHO European Region was declared polio-free in 2002.

Persistent pockets of wild-type poliovirus transmission were reported in 2008 from 16 countries[1,2] outside the EU and EEA/EFTA; mainly in Afghanistan, India, Nigeria and Pakistan where wild-type poliovirus types 1 and 3 were identified in 2008. The other twelve countries were Angola, Australia, Benin, Central African Republic, Chad, Democratic Republic of the Congo, Ethiopia, Myanmar, Nepal, Niger, Somalia and Sudan. In addition, vaccine-type poliovirus transmission was identified in several of the above-mentioned countries as well as in Russia, Belarus, Iran, China, Malawi, and Egypt.

Importation of wild-type or vaccine-type polioviruses from regions with endemic polio or vaccinating with oral live-attenuated poliovirus vaccines still remain a threat to unvaccinated European populations. High vaccination coverage is obtained using inactivated poliovirus vaccines in all EU and EEA/EFTA countries. However, susceptible individuals may be found among children belonging to a limited number of families refraining from vaccination and individuals suffering from congenital or acquired immunodeficiency.

References

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-PEDISURV	V	Se	A	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-MEASLES, POLIO	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-POLIMYELITIS	Cp	Co	P	C	Y	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-POLIMYELITIS	O	Co	P	C	Y	N	Y	Y	Y

Rabies

- Four human cases were reported in 2008 in the EU and EEA/EFTA and at least one case was autochthonous.
- Rabies is still endemic in wild and domestic animals in different areas of the EU. Thirty-two cases in bats have been reported.

Epidemiological situation in 2008

In 2008, 29 EU and EEA/EFTA countries reported a total of four human cases of rabies, all of which were confirmed. One case each was reported from France, the Netherlands, Romania and the United Kingdom. They were two males and two females, all in the age group 25–44 years.

The Dutch case was a 34-year-old woman returning from a two-week holiday trip through Kenya. She had been in contact with a bat that made two bleeding scratches on the right side of her nose. Despite all efforts, the patient died 23 days after the onset of illness[1]. The UK case was also a woman, 37 years old, returning from Kenya. No additional information on the country of exposure is available for the remaining two cases. The Romanian case was a 40-year-old male who was bitten by a wolf and died after a few weeks, despite prophylaxis and treatment. The case reported by France was living and infected in French Guiana and not in mainland France. It was demonstrated that the patient was infected with a variety of rabies virus usually spread by blood-feeding bats in South America. However, the patient could not be interviewed due to his medical condition, and he had had at-risk exposures to various animals (dogs, cats and bats). Some of these animals could not be tested and it was therefore impossible to determine whether he had acquired his infection directly through bat bite or via a carnivore infected by a bat.

Animal cases of rabies in the EU

In 2008 a total of 1458 cases of rabies were reported in animals in the EU, mainly from Bulgaria, Lithuania, Latvia, Romania and Slovenia: 252 in domestic animals and 1174 in wild animals. The number of cases in wild animals shows a slight increase compared with the previous year. Thirty-two cases in bats were reported from France (five), Germany (10), Poland (three), Spain (one), the Netherlands (eleven), and the UK (two)[2].

Discussion

The risk of human rabies is still present in Europe. A few sporadic severe human cases are still reported in the EU, often travellers that were exposed to rabid animals outside Europe. The main animal reservoirs in the EU are dogs, cats and wild animals (foxes and raccoons) in central and eastern Europe. Insectivorous bats can play a significant role throughout the entire European territory, even though it is difficult to assess the real magnitude of this phenomenon because the reporting is strongly influenced by the national surveillance systems.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Belgium	BE-REF_FLA_FRA	Cp	Co	A	A	Y	Y	Y	-	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-RABIES	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Germany	DE-SURVNET@RKI-7.1/6	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-Zoonoses	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Liechtenstein	LI-SEPI	Cp	Co	-	C	Y	Y	Y	-	-
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-RABIES	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	Y	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-RABIES	O	Co	A	C	Y	N	Y	Y	Y

Rubella

- The number of reported and laboratory-confirmed rubella cases decreased between 2007 and 2008.
- Rubella is usually a mild self-limiting disease but infection during pregnancy can lead to miscarriage, stillbirth or multiple birth defects, especially if contracted during the first trimester.
- Despite an overall dramatic decrease in the number of cases of congenital rubella infection after introduction of vaccination, sporadic cases do still occur in Europe. Sub-optimal coverage with the measles-mumps-rubella vaccine can lead to pockets of susceptible individuals, followed by an increase of those diseases, including congenital rubella infection.

Epidemiological situation in 2008

In 2008, 1921 rubella cases were confirmed out of the 21307 cases reported from 26 countries (Table 2.5.8). Belgium, France, Germany, and Liechtenstein did not report. In several countries the surveillance system is not national; in Germany, for example, mandatory reporting of rubella cases is established in some federal states, whereas nationwide mandatory reporting is restricted to congenital rubella.

The total number of rubella cases has decreased, though not substantially, since 2006, but with most of these cases not laboratory-confirmed, the rate appears to have increased slightly. In 2006, 440 rubella cases were confirmed out of 25037 cases reported from 25 countries.

The notification rate remains high in Romania, but shows a clear trend towards decreasing numbers in comparison with previous years. In most other countries, the decreasing trend continued or the notification rate remained stable.

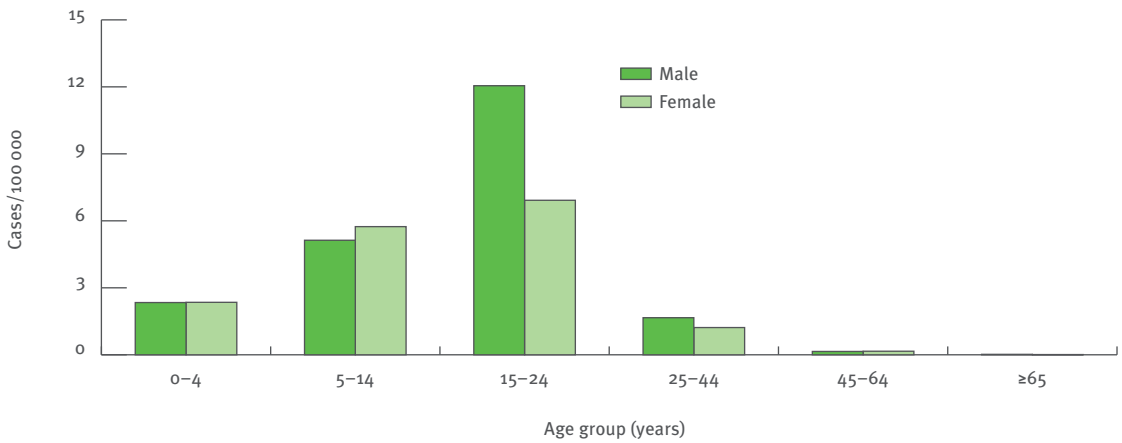
Overall just 9 % of the reported cases were laboratory-confirmed, in comparison with 15 % in 2006 and 3 % in 2007. Poland continued to report the highest number of clinical rubella cases, of which only a small number were laboratory-confirmed (70 out of 13146).

Age and gender distribution

The age group (males and females) with the highest notification rate remained the group of very young children aged 0–4 years (rate of 9.34 per 100000), as is to be expected in the era of vaccination. The second largest group were adolescents and young adults between 15 and 24 years of age (8.18 per 100000). These rates were mainly due to cases reported from Italy, and reflect quite a high number of susceptibles in this age group, suggesting that a sizable proportion of girls entering childbearing age had not been protected against rubella.

The overall rate was higher for males (2.79 per 100000) than for females (1.91 per 100000) in those cases with this information (76 % of the data), giving a male-to-female ratio of 1.46.

Figure 2.5.13. Notification rates of rubella cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 6197)



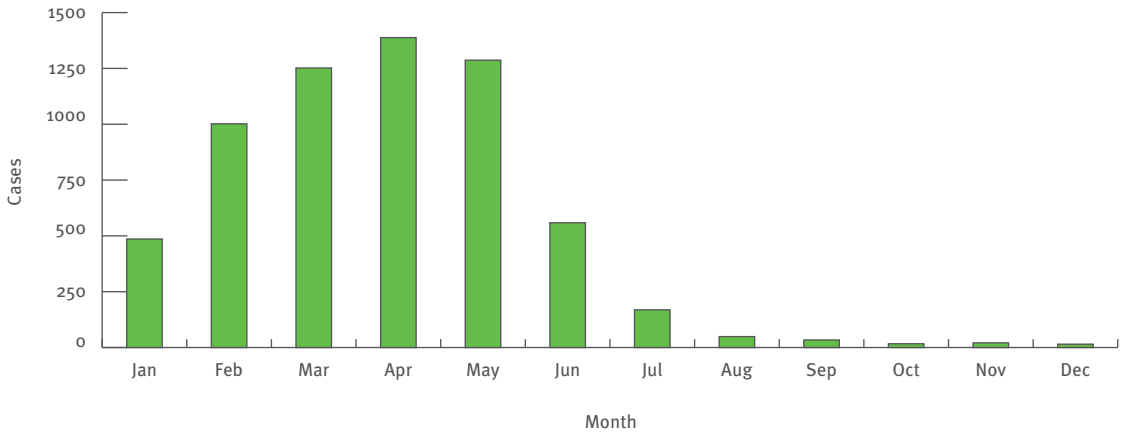
Source: Country reports: Austria, Czech Republic, Denmark, Estonia, Ireland, Italy, Latvia, Netherlands, Spain, United Kingdom and Norway. Cyprus, Finland, Greece, Hungary, Lithuania, Luxembourg, Slovakia, Slovenia, Sweden and Iceland reported zero cases.

Table 2.5.8. Number and notification rate of rubella cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	12	5	< 0.1	14	0.17	—	—
Belgium	—	—	—	—	—	—	—	—
Bulgaria	A	58	0	0.00	3	< 0.1	247	3.2
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	12	2	< 0.1	2	< 0.1	5	< 0.1
Denmark	C	4	4	< 0.1	0	0.00	0	0.00
Estonia	C	4	4	0.30	10	0.75	5	0.37
Finland	C	0	0	0.00	0	0.00	0	0.00
France	—	—	—	—	—	—	—	—
Germany	—	—	—	—	—	—	—	—
Greece	C	0	0	0.00	0	0.00	0	0.00
Hungary	C	0	0	0.00	0	0.00	2	< 0.1
Ireland	C	39	2	< 0.1	3	< 0.1	1	< 0.1
Italy	C	6 183	0	0.00	0	0	0	0
Latvia	A	9	2	< 0.1	1	< 0.1	2	< 0.1
Lithuania	C	0	0	0.00	13	0.38	0	0.00
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	3	3	0.73	0	0.00	0	0.00
Netherlands	C	2	2	< 0.1	4	< 0.1	5	< 0.1
Poland	A	13 146	70	0.18	153	0.40	103	0.27
Portugal	C	4	4	< 0.1	1	< 0.1	0	0.00
Romania	A	1 746	1 746	8.11	2 958	14	0	0.00
Slovakia	C	0	0	0.00	0	0.00	2	< 0.1
Slovenia	C	0	0	0.00	0	0.00	0	0.00
Spain	C	46	40	< 0.1	14	< 0.1	27	< 0.1
Sweden	C	0	0	0.00	2	< 0.1	3	< 0.1
United Kingdom	C	36	36	< 0.1	34	< 0.1	36	< 0.1
EU total		**21 306**	**1 920**	**0.56**	**3 212**	**0.95**	**438**	**0.13**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	1	1	< 0.1	0	0.00	2	< 0.1
Total	-	**21 307**	**1 921**	**0.56**	**3 212**	**0.93**	**440**	**0.13**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.5.14. Seasonal distribution of rubella cases in the EU and EEA/EFTA, 2008 (n = 6 279)



Source: Country reports: Austria, Czech Republic, Denmark, Estonia, Ireland, Italy, Netherlands, Spain, United Kingdom and Norway.

Seasonality

In 2008, the peak notification rate was seen in spring with a pronounced decrease over summer and autumn, a pattern similar to the one observed in previous years. Data on seasonality was available from 77 % of the confirmed cases.

Enhanced surveillance in 2008

A total of 20 579 rubella cases were reported by 27 countries to EUVAC.NET in 2008. The vaccination status was known for 15 701 reported rubella cases: 82 % were unvaccinated, 16 % were vaccinated with one dose, and 1 % was vaccinated with at least two doses[1].

Discussion

The main aim of rubella vaccination is the prevention of congenital rubella infection (CRI). Many countries originally had started to selectively vaccinate adolescent girls. After introduction of the measles-mumps-rubella vaccine (MMR) most countries moved to vaccinating all young children. The emphasis of the vaccination programme changed from protecting the individual woman directly to indirect protection by creating herd immunity. To keep herd immunity sufficiently high, vaccination coverage is essential.

Italy experienced a rubella outbreak in several regions in 2008, and the most affected age group was young adults between 15 and 24 years of age. The number of reported cases of CRI also increased during that outbreak[2]. A national cross-sectional population-based seroprevalence study performed between January 2003 and October 2004 had shown lack of immunity in almost 15 % and 20 % of 10-14 year and 15-19 year-olds, respectively; these age groups forming the most affected group during the outbreak five years later in 2008[3]. In the same period, Italy also reported the resurgence of measles in some regions with more than 2 000 cases from May 2007 to May 2008. The median age of cases was 17 years, and the highest incidence rate was found in the group 15–19 years of age. The vaccination status was known for more than 1 900 cases, and 91.7 % were unvaccinated[4].

In 2008, an international network (ESEN II) reported the results of a comparison of rubella seroepidemiology from 16 European and one non-European country[5]. Only very few participating countries showed protective immunity in › 95 % of the tested samples from women of childbearing age (15–39 years), so that rubella outbreaks and an increase of CRI can be expected, especially if MMR vaccination coverage does not reach the threshold of establishing and maintaining herd immunity to provide indirect protection to women of childbearing age. A combination of both universal vaccination of newborns and selective immunisation of women of childbearing age is required to reduce the incidence of congenital rubella.

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Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Epidemiegesetz	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-RUBELLA	Cp	Co	P	C	Y	Y	Y	Y	Y
Finland	FI-NIDR	Cp	Co	P	C	Y	Y	N	N	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	N	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-RUBELLA	O	Co	P	C	Y	N	Y	Y	Y

Tetanus

- Thanks to good general public health and hygiene supported by effective universal vaccination against tetanus in all EU countries, tetanus appears to be under control in all EU and EEA/EFTA countries.
- In the EU and EEA/EFTA countries, no cases of neonatal tetanus were reported.
- The overall notification rate remains very low (0.02 per 100 000 population) and a slightly decreasing trend can be observed in recent years.
- The most affected group was the elderly (65 years or older). Some additional efforts should be put in place in order to improve the immunisation status of the adult and elderly population.

Epidemiological situation in 2008

In 2008, 118 cases, including 103 confirmed cases, were reported by 27 countries (Table 2.5.9). Finland, Germany, and Liechtenstein did not report. Austria, Cyprus, Czech Republic, Estonia, Greece, Hungary, Iceland, Latvia, Luxembourg, Malta, Netherlands, Slovakia, Sweden and the United Kingdom reported zero cases. The overall notification rate remains very low at 0.02 per 100 000 population. The highest rate was reported by Italy (0.09 per 100 000).

Age and gender distribution

The most affected group was the elderly (≥ 65 years) with 86 of the 116 reported cases (74 %) with this information (0.13 per 100 000), followed by the age group 45–64 years with 20 cases (Figure 2.5.15). One case from Italy and one case from Bulgaria were reported in the age group 5–14 years. No significant difference between genders (both males and females: 0.03 per 100 000; ratio: 0.81) has been reported.

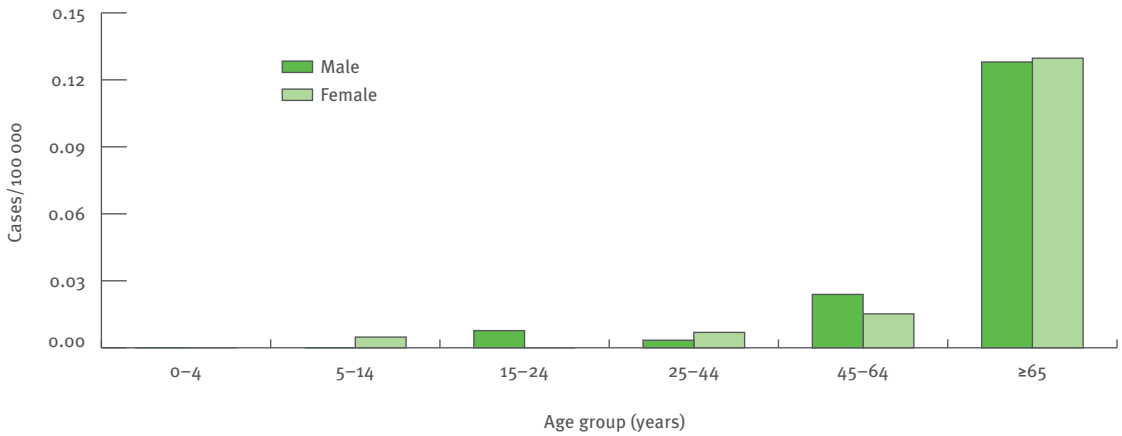
Seasonality

A peak of tetanus notifications is clearly evident from July to September, even though the number of cases is low, probably related to more outdoor activities during this period (Figure 2.5.16).

Discussion

The overall notification rate for tetanus remains very low in the EU, and the total number of reported cases shows a slightly decreasing trend over the last few years. The few cases reported were probably related to waning immunity in elderly people, which suggests the need to maintain high vaccination rates in all age groups and to implement catch-up strategies in those countries with higher rates.

Figure 2.5.15. Notification rates of tetanus cases in the EU and EEA/EFTA, by age and gender, 2008 (n = 114)



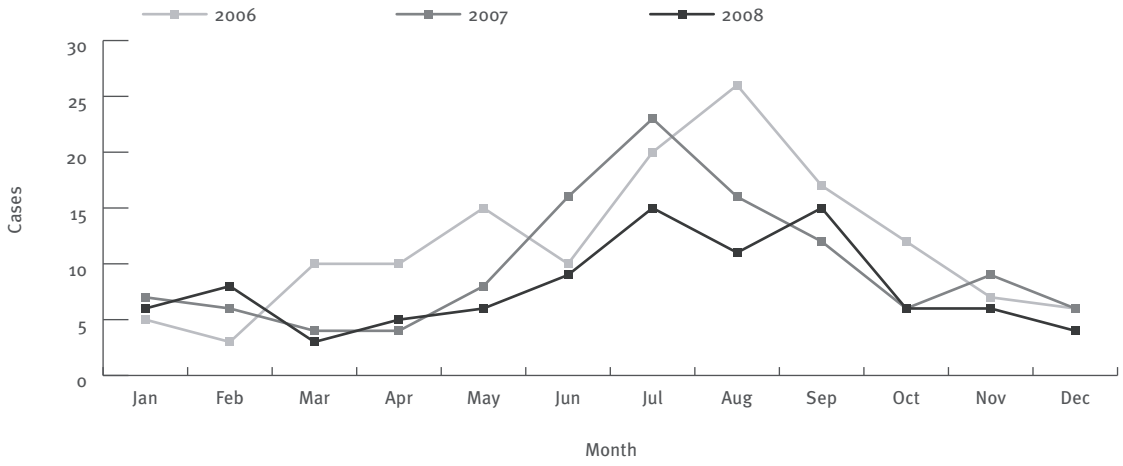
Source: Country reports: Denmark, France, Greece, Hungary, Ireland, Italy, Poland, Portugal, Romania, Slovenia, Spain, United Kingdom and Norway. Austria, Cyprus, Czech Republic, Estonia, Latvia, Luxembourg, Malta, Netherlands, Slovakia, Sweden and Iceland reported zero cases.

Table 2.5.9. Number and notification rate of tetanus cases in the EU and EEA/EFTA, 2006–08

Country	Report type*	2008			2007		2006	
		Total cases	Confirmed cases	Notification rate per 100 000 population	Confirmed cases and notification rate		Confirmed cases and notification rate	
					Cases	Rate	Cases	Rate
Austria	C	0	0	0.00	—	—	—	—
Belgium	A	1	1	< 0.1	1	< 0.1	1	< 0.1
Bulgaria	A	2	2	< 0.1	0	0.00	4	< 0.1
Cyprus	C	0	0	0.00	0	0.00	0	0.00
Czech Republic	C	0	0	0.00	0	0.00	0	0.00
Denmark	C	2	2	< 0.1	3	< 0.1	2	< 0.1
Estonia	C	0	0	0.00	0	0.00	0	0.00
Finland	—	—	—	—	—	—	—	—
France	C	3	3	< 0.1	7	< 0.1	17	< 0.1
Germany	—	—	—	—	—	—	—	—
Greece	C	7	0	0.00	8	< 0.1	5	< 0.1
Hungary	C	4	0	0.00	0	0.00	7	< 0.1
Ireland	C	2	2	< 0.1	1	< 0.1	0	0.00
Italy	C	53	53	< 0.1	59	0.10	64	0.11
Latvia	C	0	0	0.00	0	0.00	0	0.00
Lithuania	A	1	1	< 0.1	1	< 0.1	3	< 0.1
Luxembourg	C	0	0	0.00	0	0.00	0	0.00
Malta	C	0	0	0.00	0	0.00	0	0.00
Netherlands	C	0	0	0.00	0	0.00	—	—
Poland	C	14	14	< 0.1	19	< 0.1	22	< 0.1
Portugal	C	1	1	< 0.1	9	< 0.1	7	< 0.1
Romania	C	11	11	< 0.1	9	< 0.1	10	< 0.1
Slovakia	C	0	0	0.00	0	0.00	0	0.00
Slovenia	C	1	1	< 0.1	1	< 0.1	4	0.20
Spain	C	10	10	< 0.1	8	< 0.1	13	< 0.1
Sweden	C	0	0	0.00	0	0.00	1	< 0.1
United Kingdom	C	4	0	0.00	0	0.00	3	< 0.1
EU total		**116**	**101**	**0.02**	**126**	**0.03**	**163**	**0.04**
Iceland	C	0	0	0.00	0	0.00	0	0.00
Liechtenstein	—	—	—	—	—	—	—	—
Norway	C	2	2	< 0.1	2	< 0.1	0	0.00
Total		**118**	**103**	**0.02**	**128**	**0.03**	**163**	**0.04**

Source: Country reports. *A: Aggregated data report; C: Case-based report; —: No report; U: Unspecified.

Figure 2.5.16. Seasonal distribution of tetanus cases in the EU and EEA/EFTA, 2006–08



Source: Country reports: Bulgaria, Denmark, France, Greece, Hungary, Ireland, Italy, Poland, Portugal, Slovenia, Spain, United Kingdom and Norway.

Surveillance systems overview

Country	Data Source	Compulsory (Cp) / Voluntary (V) / Other(O)	Comprehensive (Co) / Sentinel (Se) / Other(O)	Active (A) / Passive (P)	Case-Based (C)/ Aggregated (A)	Data reported by				National Coverage
						Laboratories	Physicians	Hospitals	Others	
Austria	AT-Reflab	O	O	P	C	Y	N	N	N	N
Belgium	BE-FLA_FRA	Cp	Co	P	C	Y	Y	Y	Y	Y
Bulgaria	BG-NATIONAL_SURVEILLANCE	Cp	Co	P	A	Y	Y	Y	Y	Y
Cyprus	CY-NOTIFIED_DISEASES	Cp	Co	P	C	N	Y	N	N	Y
Czech Republic	CZ-EPIDAT	Cp	Co	A	C	-	Y	Y	N	Y
Denmark	DK-MIS	Cp	Co	P	C	N	Y	N	N	-
Estonia	EE-TETANUS	Cp	Co	P	C	N	Y	Y	Y	Y
France	FR-MANDATORY_INFECTIOUS_DISEASES	Cp	Co	P	C	Y	Y	Y	Y	Y
Greece	GR-NOTIFIABLE_DISEASES	Cp	Co	P	C	Y	Y	Y	N	Y
Hungary	HU-EFRIR	Cp	Co	P	C	Y	Y	Y	N	Y
Iceland	IS-SUBJECT_TO_REGISTRATION	Cp	Co	P	C	Y	Y	Y	N	Y
Ireland	IE-CIDR	Cp	Co	P	C	Y	Y	Y	N	Y
Italy	IT-NRS	Cp	Co	P	C	N	Y	Y	-	Y
Latvia	LV-BSN	Cp	Co	P	C	Y	Y	Y	N	Y
Lithuania	LT-COMMUNICABLE_DISEASES	Cp	Co	P	C	Y	Y	N	N	-
Luxembourg	LU-SYSTEM1	Cp	Co	P	C	-	Y	N	N	-
Malta	MT-DISEASE_SURVEILLANCE	Cp	Co	P	C	Y	Y	Y	Y	-
Netherlands	NL-OSIRIS	Cp	Co	P	C	Y	Y	N	Y	Y
Norway	NO-MSIS_A	Cp	Co	P	C	Y	Y	Y	N	-
Poland	PL-NATIONAL_SURVEILLANCE	Cp	Co	P	C	Y	Y	N	N	-
Portugal	PT-TETANUS	Cp	Co	P	C	N	Y	N	N	Y
Romania	RO-RNSSy	Cp	Co	P	C	N	N	Y	N	Y
Slovakia	SK-EPIS	Cp	Co	A	C	Y	Y	Y	N	Y
Slovenia	SI-SURVIVAL	Cp	Co	P	C	Y	Y	Y	N	Y
Spain	ES-STATUTORY_DISEASES	Cp	Co	P	C	N	Y	Y	N	Y
Sweden	SE-SMINET	Cp	Co	P	C	Y	N	N	N	Y
United Kingdom	UK-TETANUS	O	Co	P	C	Y	N	Y	Y	Y

2.6 Antimicrobial resistance and healthcare-associated infections

Antimicrobial resistance and healthcare-associated infections.

Antimicrobial resistance

- In 2008, *Escherichia coli*, the most common Gram-negative bacteria responsible for bacteraemia and urinary tract infections, showed a Europe-wide increase of resistance to all antibiotic classes under surveillance.
- A decrease of the proportion of meticillin-resistant *Staphylococcus aureus* (MRSA) was reported by some countries, although the MRSA proportions remained above 25 % in one third of the countries.
- Multidrug resistance (resistance to multiple antibiotics), which is often observed in some Gram-negative bacteria such as *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*, further increases the threat posed by antibiotic resistance since it limits the number of options for treating infections.

For more than a decade, the European Antimicrobial Resistance Surveillance System (EARSS) has collected and published data on antimicrobial resistance in Europe. On 1 January 2010, coordination of the EARSS network was transferred to ECDC, and the network changed its designation to EARS-Net. As previously done by EARSS, EARS-Net will continue to collect routinely generated antimicrobial susceptibility data, provide trend analyses and timely feedback of results via the ECDC web portal.

The summary of data on antimicrobial resistance presented here is based on the work performed by EARSS during 2009[1]. Routine antimicrobial resistance (AMR) data for major indicator micro-organisms (*Streptococcus pneumoniae*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*) isolated from blood and spinal fluid samples were reported to EARSS by more than 900 laboratories serving more than 1500 hospitals in 33 countries.

Escherichia coli

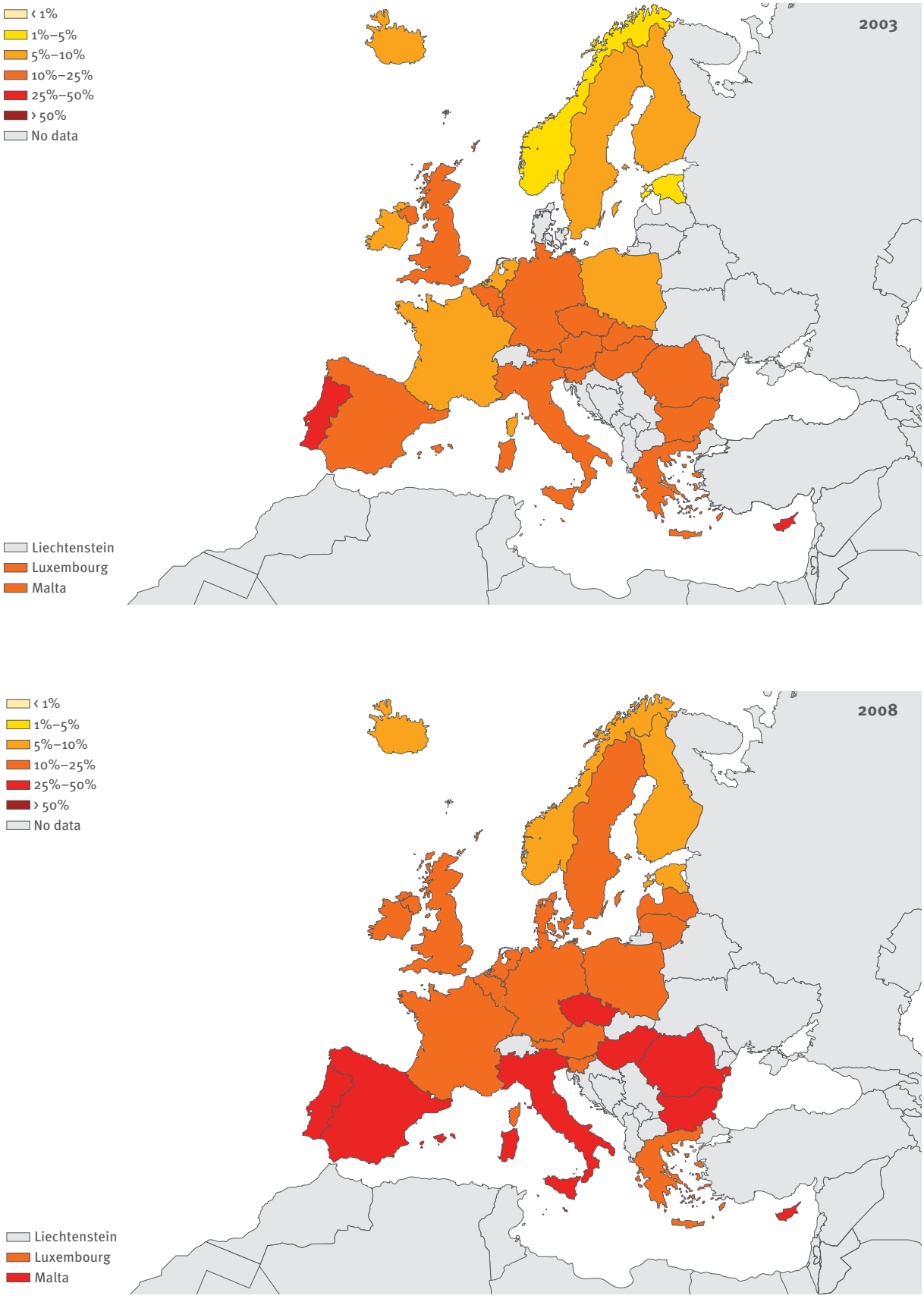
Escherichia coli is the Gram-negative bacteria most frequently responsible for bloodstream infections and is associated with a range of infections including wound infections, pneumonia and meningitis. It is one of the most important food-borne pathogens, and is the most frequent cause of urinary tract infections acquired in the community and in hospitals. For almost all countries reporting data to EARSS, the occurrence of resistance to aminopenicillins, fluoroquinolones, third-generation cephalosporins and aminoglycosides in *E. coli* from bloodstream infections has shown an increasing trend over several years.

In 2008, resistance to aminopenicillins was highly prevalent; all countries reported proportions of resistant isolates above 30 %. Only Finland, Norway and Sweden reported proportions of resistant isolates below 40 %, and 20 of 28 countries reported 50 % or higher. At this level of resistance, aminopenicillins can no longer be regarded as a useful option for empirical treatment.

Resistance to third-generation cephalosporins varied substantially from less than 1 % reported by Iceland to 29 % reported by Bulgaria. However, most countries reported less than 10 % resistant isolates. A significant increase was observed from 2005 to 2008 in 17 of 28 countries, and increasing resistance seemed to affect a number of countries which had formerly had very low levels of resistance (as low as 1 %). No country showed a decreasing trend.

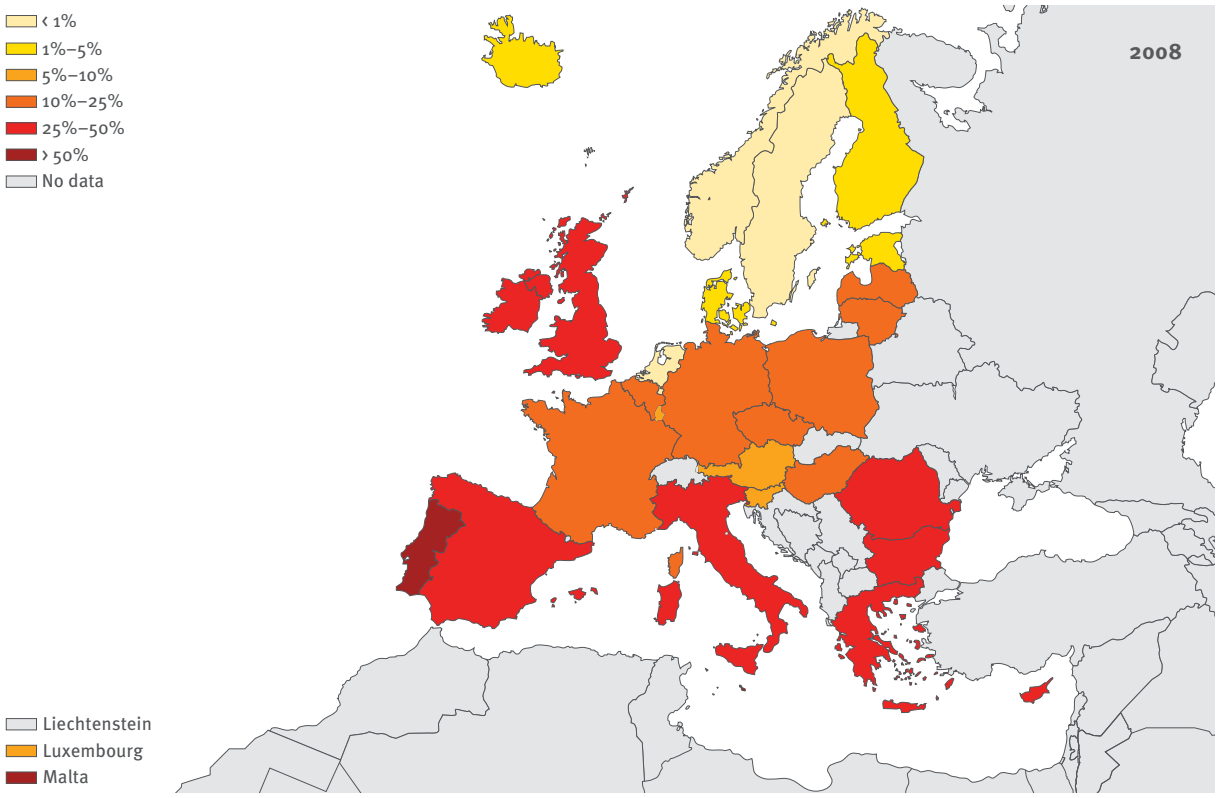
All over Europe, resistance to fluoroquinolones in *E. coli* from bloodstream infections has increased consistently over recent years and this situation is especially alarming. Fluoroquinolone resistance has increased substantially in 15 of 26 countries since 2005. In 2008 the proportion of fluoroquinolone-resistant isolates ranged from 6 % reported by Iceland, to 45 % reported by Cyprus. Nine countries reported more than 25 % fluoroquinolone-resistant *E. coli* while only four countries reported less than 10 % (Figure 2.6.1).

Figure 2.6.1. ***Escherichia coli*: proportion of blood and cerebrospinal fluid isolates resistant to fluoroquinolones in EU and EEA/EFTA countries*, 2003 and 2008**



Source: EARSS.
*Only data from countries reporting more than 10 isolates are shown.

Figure 2.6.2. ***Staphylococcus aureus*: proportion of blood and cerebrospinal fluid isolates resistant to meticillin in EU and EEA/EFTA countries*, 2008**



Source: EARSS.
*Only data from countries reporting more than 10 isolates are shown.

The occurrence of aminoglycoside resistance in *E. coli* ranged from 2 % to 31 %. Nineteen of 28 countries reported resistant proportions below 10 %, and eight countries reported 10–25 %. Only one country (Bulgaria) reported more than 25 %. Between 2005 and 2008, a significantly increasing trend for aminoglycoside resistance was observed in 14 of 26 countries.

Combined resistance (co-resistance to two or more antimicrobial agents) occurs with an increasing frequency in *E. coli*. In 2008, 3.1 % of *E. coli* isolates were resistant to all four antimicrobial agents reported to EARSS.

Staphylococcus aureus

Among *Staphylococcus aureus* isolates, meticillin-resistant *S. aureus* (MRSA) is the most important cause of antibiotic-resistant, healthcare-associated infections worldwide.

In 2008, nine out of 28 countries, mainly southern European countries, the UK and Ireland (high endemic countries), reported MRSA proportions of 25 % or higher (Figure 2.6.2). In the northern part of Europe, in particular the low-endemic countries (Denmark, Estonia, Finland, Iceland, the Netherlands, Norway and Sweden) the proportion of isolates resistant to meticillin remained below 5 %.

An increasing trend in MRSA proportions was observed only for Portugal, whereas nine countries showed decreasing MRSA trends (Austria, Belgium, France, Ireland, Italy, Latvia, Poland, Romania and the UK). Nevertheless, MRSA proportions are still above 25 % in one third of countries (Figure 2.6.2).

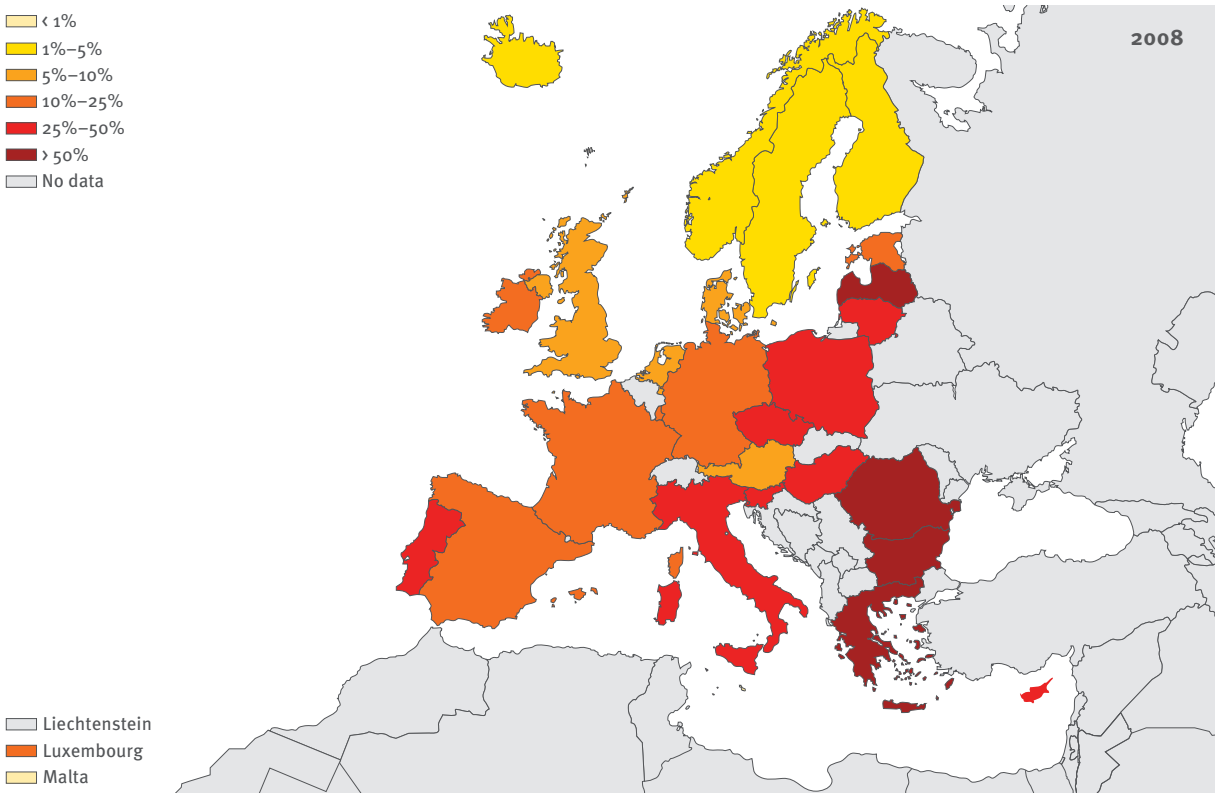
Klebsiella pneumoniae

Klebsiella pneumoniae is mainly associated with opportunistic infections in individuals with impaired immune systems. Common sites of infection are the respiratory tract and the urinary tract. *Klebsiella pneumoniae* is the second most common cause of Gram-negative bloodstream infection. Data for 2008 showed high levels of resistance to third-generation cephalosporins (Figure 2.6.3), fluoroquinolones and aminoglycosides, in most countries and especially in central and south-eastern European countries. Combined resistance is common in *K. pneumoniae* and, in 2008, the most frequently identified resistance phenotype (resistance to fluoroquinolones, third-generation cephalosporins and aminoglycosides) was reported for 14 % of the isolates.

Pseudomonas aeruginosa

Pseudomonas aeruginosa is an opportunistic pathogen with intrinsic resistance to several antimicrobial agents. It is difficult to control in hospital and institutional

Figure 2.6.3. ***Klebsiella pneumoniae*: proportion of blood and cerebrospinal fluid isolates resistant to third-generation cephalosporins in EU and EEA/EFTA countries*, 2008**



Source: EARSS.
*Only data from countries reporting more than 10 isolates are shown.

environments. It is often responsible for healthcare-associated infections, as well as infections in burns, ear infections and infections in patients with cystic fibrosis.

Resistance in *P. aeruginosa* emerges readily during antibiotic treatment, and combined resistance is common. In 2008, 17 % of the isolates were resistant to three or more antibiotics from the EARSS protocol, and even resistance to all five classes of antimicrobials recorded by EARSS was common (6 %). In general, occurrence of resistance was lower among countries in the northern and western parts of Europe and higher among countries in the south-eastern part (Figure 2.6.4).

Streptococcus pneumoniae

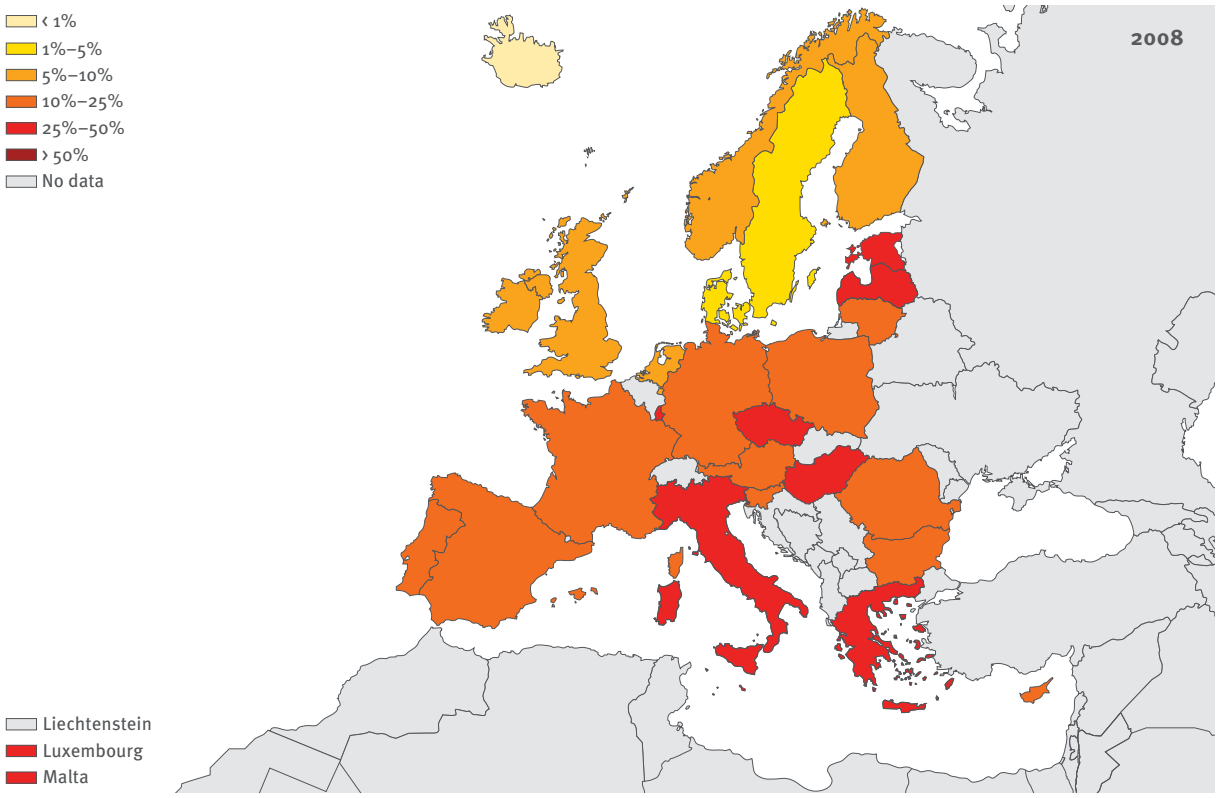
Streptococcus pneumoniae is a common cause of infection, especially among young children, elderly people and patients with compromised immune functions. The clinical spectrum ranges from upper airway infections such as sinusitis, and otitis media to pneumonia and invasive bloodstream infections and meningitis. *Streptococcus pneumoniae* is the most common cause of pneumonia worldwide.

The occurrence of penicillin non-susceptibility in *S. pneumoniae* (PNSP) reported to EARSS in 2008 showed a heterogeneous picture of Europe. Most northern European countries had levels of non-susceptibility below 5 %, although Finland and Ireland reported relatively high levels with 11 % and 23 %, respectively. High levels of PNSP (> 25 %) were reported by southern and eastern European countries: Cyprus, France, Hungary, Malta, and Romania. Rising trends for PNSP were observed in Finland and Ireland and rising trends for full penicillin resistance were observed in Hungary and Ireland. A decreasing trend for PNSP was observed in Belgium, France, Lithuania and Norway and a decreasing trend for full penicillin resistance was observed in Belgium.

In 2008, four countries reported erythromycin non-susceptibility of 5 % or less: Bulgaria, Czech Republic, Estonia and Latvia. High levels of erythromycin non-susceptibility (> 25 %) were reported by Cyprus, France, Hungary and Italy. A significantly increasing trend in erythromycin non-susceptibility was observed in Ireland, whereas decreasing trends were observed in Belgium, France, Germany, the Netherlands, Norway and the UK.

Dual non-susceptibility to penicillin and erythromycin remained below 5 % in 12 of 26 countries. Six countries reported 5–10 %, six countries reported 10–25 % and two countries above 25 %. Significantly increasing trends for dual non-susceptibility to penicillin and erythromycin were observed in Hungary, Ireland and the UK,

Figure 2.6.4. ***Pseudomonas aeruginosa*: proportion of blood and cerebrospinal fluid isolates resistant to carbapenems in EU and EEA/EFTA countries*, 2008**



Source: EARSS.
*Only data from countries reporting more than 10 isolates are shown.

whereas decreasing trends were observed in Belgium and France.

Data from seven countries reporting information on *S. pneumoniae* serogroups for 2008 indicated that resistance was confined to a few serogroups. For penicillin resistance, these included serogroups 9, 14, 19 and 23, and to a lesser extent serogroup 6. Resistance to erythromycin was prevalent in serogroups 1, 14 and 19, and to a lesser extent in serogroups 6, 9 and 33.

Enterococci

The vast majority (approximately 80 %) of clinical enterococcal infections in humans are caused by *Enterococcus faecalis*, and for this species high-level aminoglycoside resistance is of particular concern. Among *E. faecalis* isolates reported to EARSS in 2008, the proportion of high-level aminoglycoside-resistant isolates varied from 13 % to 65 %, with the majority of countries (17 of 25 countries) reporting proportions between 25 % and 50 %. Only Austria, France, Finland Luxembourg and Sweden reported proportions below 25 %. The highest proportions were reported by Cyprus (65 %), Greece (52 %) and Hungary (53 %).

The remainder (approximately 20 %) of clinical enterococcal infections in humans are caused mainly by *Enterococcus faecium* for which resistance to vancomycin is of particular concern. Although the number of vancomycin-resistant *E. faecium* (VRE) isolates reported to EARSS in 2008 was low, and the occurrence of VRE was less than or equal to 5 %, or even absent, in 13 of the 24 countries that reported at least ten *E. faecium* isolates. By contrast, three countries (Greece, Ireland, and the UK) reported more than 25 % VRE isolates. Increasing trends in the occurrence of VRE was observed only in Slovenia. Decreasing trends were observed for France, Greece and Italy.

Discussion

The overall hospital catchment population of the EARSS network is estimated to include at least one quarter of the EU population, with most countries covering between 20 and 100 % of their national population. However, comparison between countries and interpretation of results based on the EARSS data must be made with caution. The laboratories participate on a voluntary basis and in some countries only a few laboratories are included. Furthermore, there may be large regional differences in the prevalence of antimicrobial resistance within countries. Only isolates from blood and spinal fluid samples are included in the EARSS surveillance, and data may not reflect antimicrobial resistance in isolates from other body sites.

Based on data reported to EARSS in 2009, the main conclusions were:

- Antimicrobial resistance represents an increasingly important public health hazard in Europe.
- The proportions of antibiotic resistance among indicator bacteria isolated from blood and cerebrospinal fluid samples showed wide variations across European countries.
- *Escherichia coli*, the most frequent Gram-negative bacteria responsible for bloodstream infection and urinary tract infection, showed a Europe-wide increase of resistance to all antibiotic classes under surveillance.
- Multidrug resistance (resistance to multiple antibiotics), which is often observed in some Gram-negative bacteria such as *E. coli*, *K. pneumoniae* and *P. aeruginosa*, further increases the threat posed by antibiotic resistance since it limits the number of options for treating infections.
- A decrease of the proportion of MRSA was reported by some countries, although proportions of MRSA remained above 25 % in one third of the countries.
- International cooperation and concerted, multidisciplinary efforts are needed to contain and prevent the spread of antibiotic resistance.

References

1. The European Antimicrobial Resistance Surveillance System. http://www.rivm.nl/earss/

Antimicrobial use

The currently available data on antibiotic use in the EU and EEA/EFTA Member States, which are presented below (Figure 2.6.5), were collected by the European Surveillance of Antimicrobial Consumption (ESAC) project, coordinated by the University of Antwerp in Belgium and funded by ECDC.

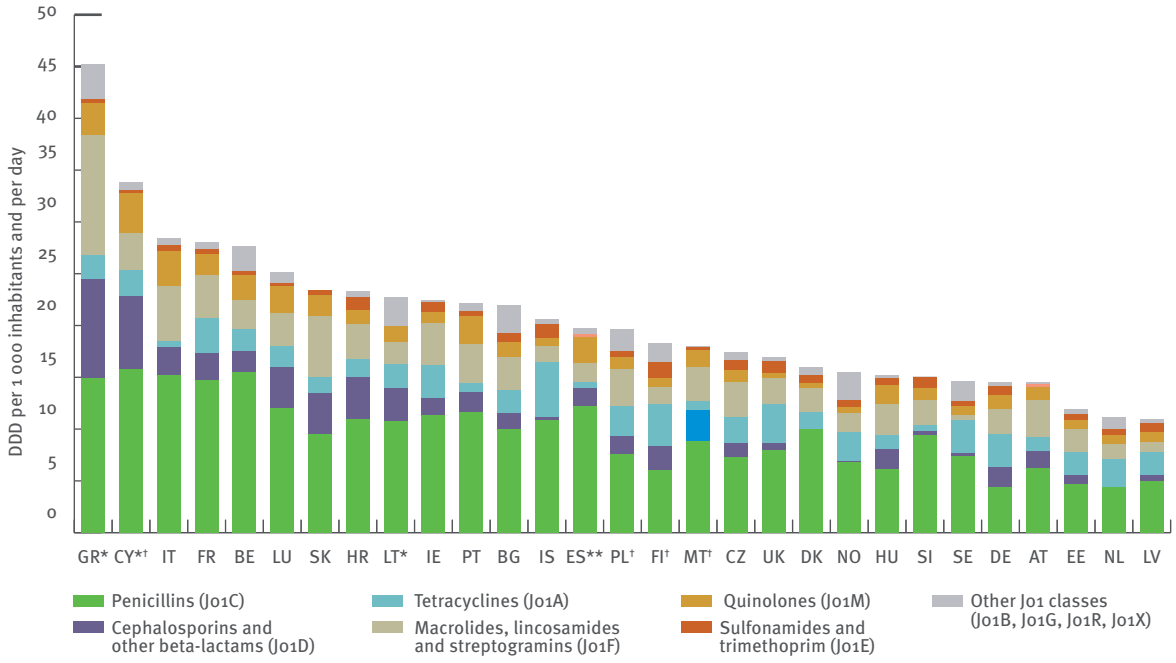
Figure 2.6.5 shows antibiotic use measured in defined daily doses (DDD) per 1000 inhabitants and per day according to the ATC[i]/DDD index[1]. Each bar refers to a specific country while the colours show the recorded volume of use of the different antibiotic classes used in that country. The reported data mainly refer to antibiotic use outside hospitals (outpatient use) which accounts for the largest proportion of human consumption of antibiotics. However, comparison of data between countries should be made with caution as some countries report data on overall consumption, covering both outpatient and hospital care. Total outpatient antibiotic use ranged from 11.0 DDD per 1000 inhabitants and per day in Latvia to 28.5 DDD per 1000 inhabitants and per day in Italy. Penicillins were the most frequently prescribed antibiotic class in all countries, whereas the proportion of use of other antibiotic classes varied among the countries.

References

1. WHO Collaborating Centre for Drug Statistics Methodology [homepage on the Internet]. Oslo (Norway): Norwegian Institute of Public Health. Available from: http://www.whocc.no/atc_ddd_index/

i Anatomical Therapeutic Chemical.

Figure 2.6.5. Outpatient antibiotic (ATC group J01) use subdivided into major antibiotic classes according to ATC classification, 2008



Source: ESAC.
* Total use, i.e. including inpatients, for Cyprus, Greece and Lithuania.
** Reimbursement data, i.e. not including over-the-counter sales without a prescription, for Spain.
† 2005 data for Poland; 2007 data for Cyprus, Finland and Malta.

Healthcare-associated infections

- Surveillance of healthcare-associated infections in Europe is slowly extending with, in 2008, 17 countries having implemented surveillance of surgical site infections and/or surveillance of infections acquired in intensive care units following European standardised protocols.
- Decreasing trends previously observed for surgical site infections following hip prosthesis were confirmed in 2008.
- The distribution of micro-organisms associated with infections acquired in intensive care units showed a high proportion of third-generation cephalosporin-resistant Enterobacteriaceae, and in particular among *Klebsiella* spp. and *Enterobacter* spp.

In July 2008, coordination of the Improving Patient Safety in Europe (IPSE) network for the surveillance of healthcare-associated infections (HAI) in Europe was transferred to ECDC. European surveillance of surgical site infections (HELICS-SSI) and of nosocomial infections in intensive care units (HELICS-ICU) continued without changes according to the surveillance protocols of the HELICS network (Hospitals in Europe Link for Infection Control through Surveillance). Data was collected from the national surveillance networks for HAI based on common protocols agreed in 2002/03. The data call for 2008 HAI surveillance data (with follow-up data until December 2009) was sent out in January 2010. Data for at least one of the HAI surveillance modules were received from 17 countries and 20 surveillance networks.

Surveillance of surgical site infections

A summary of methods for European surveillance of surgical site infections (SSI) can be found in the previous edition of this report[1].

Two indicators have been used to express the risk of SSI: the cumulative incidence, which is the crude percentage of surgical interventions resulting in a SSI, and the incidence density, which is the number of SSI per 1 000 post-operative days at risk in the hospital. The incidence density is the preferred measure for comparison of incidence between countries as it uses only observations during the hospital stay in both numerator and denominator. Comparisons are therefore less affected by variation in length of post-operative stay or intensity of post-discharge case-finding. However, the incidence density can only be calculated when the discharge date is known.

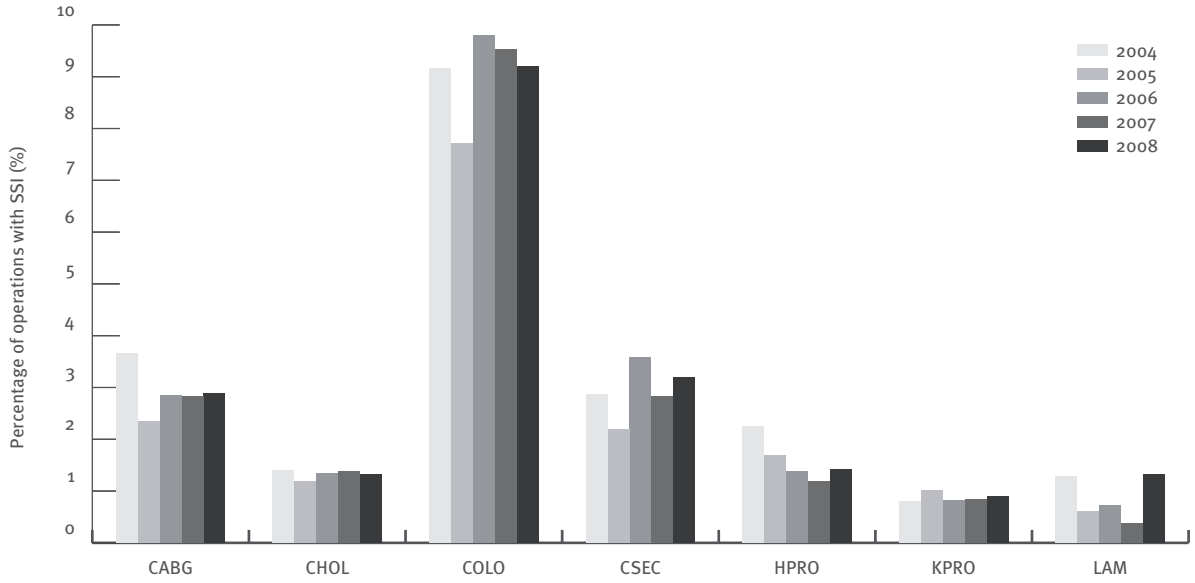
SSI surveillance data for 2008 (with follow-up of patients who had undergone orthopaedic surgery until December 2009) were received from 15 networks from 12 countries and included 306 621 surgical interventions from 1 422 hospitals (compared with 260 414 surgical interventions from 1 156 hospitals in 2007). Malta submitted data for the first time in 2010 (2008 data), whereas data from Finland were still expected at the time of analysis. The types and numbers of surgical interventions reported by each country are reported in Table 2.6.1.

The percentage of SSI varied according to the type of surgical intervention with the highest rates in colon surgery (9.2 %) and the lowest rates in knee prosthesis (0.6 %). The decrease of the SSI cumulative incidence for hip prosthesis (HPRO) interventions observed from 2004 to 2007 did not continue in 2008 (Figure 2.6.6), although statistical analysis still showed a highly significant decreasing trend ($p < 0.001$). Data from Finland must, however, be included to confirm the overall trend for HPRO. The SSI incidence in Caesarean section increased between 2004 and 2008 ($p < 0.001$), but these figures are strongly influenced by varying post-discharge surveillance practices as well as by an increase in the participation for this intervention type, from 21 205 CSEC interventions from nine countries in 2004 to 64 373 interventions from 11 countries in 2008.

Intra-country trends for SSI rates associated with hip prostheses from 2004 to 2008 were analysed both for cumulative incidence adjusting for case-mix (risk index) and, to eliminate the effect of post-discharge surveillance, for infections detected before patient discharge adjusting for the length of stay in the hospital (and the risk index) using Poisson regression analysis (trend analysis of incidence density). Significant risk-adjusted decreasing trends for SSI cumulative incidence for hip prostheses were observed in France ($p < 0.012$, despite an increase in 2008), Germany ($p < 0.001$), Hungary ($p < 0.05$), Spain ($p < 0.05$) and the UK ($p < 0.001$, despite an increase in 2008). After adjustment for differences in post-discharge surveillance and case-mix (in-hospital incidence density), decreasing trends were observed in Hungary ($p < 0.01$), Spain ($p = 0.001$) and the UK ($p < 0.001$). The percentage of SSI following HPRO and detected post-discharge in 2008 (follow-up until December 2009) was the highest in Norway (80.0 %), the Netherlands (71.6 %) and France (70.2 %), and increased to 60.7 % in Italy (Figure 2). In Germany, the percentage of data for which the hospital discharge date was unknown further decreased in 2008 (Figure 2.6.7).

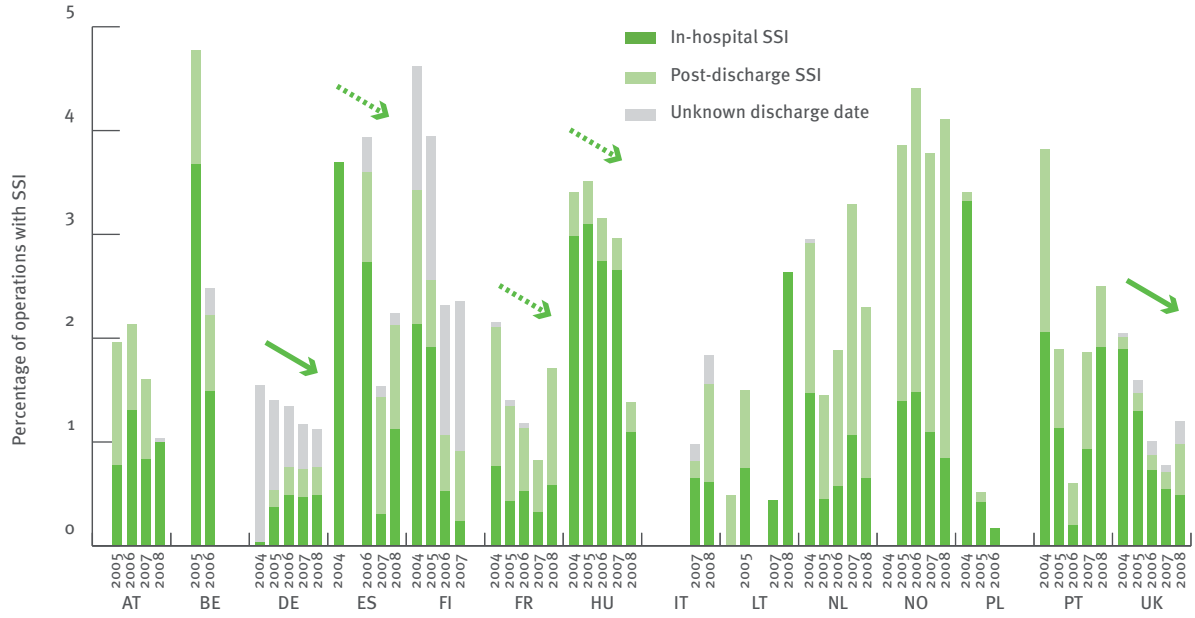
Inter-country comparisons of SSI rates should be made with caution because at least some of the inter-country

Figure 2.6.6. Trends in cumulative incidence of surgical site infections in Europe by intervention category, HELICS-SSI, 2004–08



Source: ECDC, HELICS-SSI database.
CABG: Coronary artery bypass graft; CHOL: Cholecystectomy; COLO: Colon surgery; CSEC: Caesarean section; HPRO: Hip prosthesis; KPRO: Knee prosthesis; LAM: Laminectomy.

Figure 2.6.7. Trends in cumulative incidence of surgical site infections in hip prosthesis (HPRO) by country, HELICS-SSI, 2004–08



Source: ECDC, HELICS-SSI database.
Notes: Belgium, Finland and Poland did not submit data for 2008 and trends for these countries were not analysed. New surveillance network in Spain since 2006. Data from France only include partial hip prosthesis from 2004 until 2008. Arrows indicate statistically significant trends from 2004 to 2008, full line $p < 0.001$, dotted line $p < 0.05$.

Table 2.6.1. Number of interventions included in surveillance of surgical site infections according to HELICS-SSI by category and country, 2008

	Number of hospitals	CABG	CHOL	COLO	CSEC	HPRO	KPRO	LAM	Total
Austria	31	209	259	398	3 248	3 694	220	—	**8 028**
France	605	1178	11 193	6 274	16 729	19 074	9 291	1 182	**64 921**
Germany	220	9 505	8 515	6 105	11 319	23 350	12 709	2 239	**73 742**
Hungary	25	228	1 599	211	3 210	731	219	88	**6 286**
Italy	138	758	4 358	2 205	8 160	1 804	1 079	706	**19 070**
Lithuania	5	483	656	219	241	38	23	0	**1 660**
Malta	1	73	0	0	0	0	0	0	**73**
Netherlands	33	0	1 117	1 183	1 434	6 443	4 110	120	**14 407**
Norway	54	718	346	0	1 970	1 893	0	0	**4 927**
Portugal	15	13	1 745	695	1 079	523	0	146	**4 201**
Spain	33	551	1 623	1 236	1 403	1 784	1 095	263	**7 955**
United Kingdom*	262	4 224	—	2 236	15 580	38 195	41 116	0	**101 351**
Total	**1 422**	**17 940**	**31 411**	**20 762**	**64 373**	**97 529**	**69 862**	**4 744**	**306 621**

Source: ECDC, HELICS-SSI database.
* Comprises orthopaedic surgery data from England, Northern Ireland, Scotland and Wales, CABG and COLO data from England and CSEC data from Scotland and Wales.
CABG: Coronary artery bypass graft; CHOL: Cholecystectomy; COLO: Colon surgery; CSEC: Caesarean section; HPRO: Hip prosthesis; KPRO: Knee prosthesis; LAM: Laminectomy; —: no data.

differences can be explained by one or several of the following parameters:

- Differences in post-discharge surveillance methods (e.g. more intensive in Norway and the Netherlands; post-discharge surveillance in England only started with infections detected at re-admission in 2008).
- Differences in post-operative length of stay (because infections are more likely to be detected in the hospital than in the community).
- Bias due to selection of hospitals with specific problems in countries with low participation in the SSI surveillance module.
- Differences in the mix of hospitals that participated each year.
- Differences in patient case-mix and mix of types of intervention, although these are partly taken into account by the risk index (e.g. some countries perform more total hip prostheses and fewer partial hip prostheses (higher intrinsic risk of infection), which affects the mix of interventions within the HPRO category. Data from France do not include total HPRO).
- Different interpretations of the same case definitions, resulting in different reported percentages of superficial infections.
- Organisational aspects such as mandatory participation with public disclosure of SSI indicators (e.g. in the UK).

Surveillance of infections acquired in intensive care units

The HELICS-ICU protocol includes a unit-based module (level 1, minimal data set) and a patient-based module (level 2). In unit-based surveillance, denominator data (patient-days) are collected globally for the entire ICU; in patient-based surveillance, data (including risk factors for risk-adjusted inter-hospital comparisons) are collected for each patient, infected or not[i].

In 2008, nine patient-based networks (Austria, Belgium, France, Italy, Lithuania, Luxembourg, Portugal, Slovakia and Spain), two piloting countries (UK-Scotland/UK-Wales and Romania) and one unit-based surveillance network (Germany) contributed data from 654 hospitals on 9129 episodes of ICU-acquired pneumonia and 4077 episodes of ICU-acquired bloodstream infections. Additionally, one candidate country (Croatia) submitted level 1 data for five ICUs (data not included in this analysis). Data on bloodstream infections were also received from the Romanian sentinel surveillance system, but were not fully compatible with the European data specifications and were not included.

Of 57437 patients staying more than two days in the ICU (level 2 data), 7.4 % acquired a pneumonia (intubator-associated in 90.1 % cases). The median incidence density varied from 3.3 pneumonia episodes per 1 000 patient-days in ICUs with less than 30 % intubated patients, to 6.4 per 1000 patient-days in ICUs with 30–59 % intubated patients, and 9.4 per 1000 patient-days in ICUs with ≥ 60 % intubated patients.

The most frequently isolated micro-organisms from ICU-acquired pneumonia and ICU-acquired bloodstream infection are shown in Tables 2.6.2 and 2.6.3.

Overall, the most frequently isolated micro-organism in ICU-acquired pneumonia was *Pseudomonas aeruginosa*, followed by *Staphylococcus aureus* with an average proportion of meticillin-resistant isolates (MRSA) of 33.3 %. Inter-country differences showed higher relative frequencies of *Acinetobacter* spp. in Italy, Lithuania,

i The full HELICS-ICU protocol is available at: http://www.ecdc.europa.eu/IPSE/protocols/icu_protocol.pdf

Table 2.6.2. Fifteen most frequently isolated micro-organisms in ICU-acquired pneumonia by country, surveillance of ICU-acquired infections, 2008

	Austria	Belgium	Estonia	France	Germany	Italy	Lithuania	Luxembourg	Portugal	Slovakia	Spain	UK	Total
Number of isolates	167	775	5	3 038	4 143	131	19	64	391	57	1701	47	10 538
Pseudomonas aeruginosa	13.8%	18.6%	60.0%	21.2%	15.5%	26.0%	5.3%	18.8%	23.5%	22.8%	18.2%	2.1%	18.2%
Staphylococcus aureus	6.6%	7.1%	0.0%	19.3%	18.1%	9.9%	21.1%	10.9%	17.6%	7.0%	12.4%	14.9%	16.3%
Escherichia coli	4.8%	9.3%	20.0%	10.3%	10.2%	8.4%	5.3%	12.5%	4.3%	12.3%	7.1%	4.3%	9.3%
Klebsiella spp.	10.8%	11.1%	0.0%	6.3%	9.3%	8.4%	21.1%	9.4%	7.9%	36.8%	5.5%	6.4%	8.1%
Candida spp.	26.3%	2.5%	20.0%	3.9%	11.9%	6.1%	5.3%	6.3%	10.0%	10.5%	5.2%	4.3%	7.9%
Enterobacter spp.	6.6%	11.5%	0.0%	7.2%	7.4%	4.6%	5.3%	10.9%	4.1%	1.8%	5.2%	6.4%	7.1%
Acinetobacter spp.	3.0%	0.9%	0.0%	2.0%	2.4%	16.0%	15.8%	0.0%	14.1%	5.3%	8.2%	0.0%	3.7%
Haemophilus spp.	3.0%	3.2%	0.0%	5.1%	2.6%	0.0%	5.3%	6.3%	2.6%	0.0%	4.9%	4.3%	3.7%
Stenotrophomonas spp.	3.0%	5.8%	0.0%	3.1%	3.3%	6.9%	0.0%	4.7%	3.8%	0.0%	3.8%	0.0%	3.5%
Enterococcus spp.	7.2%	3.9%	0.0%	1.1%	5.6%	0.8%	0.0%	1.6%	0.3%	0.0%	1.6%	0.0%	3.2%
Serratia spp.	0.0%	3.6%	0.0%	2.4%	3.3%	2.3%	0.0%	4.7%	1.5%	0.0%	2.7%	4.3%	2.8%
Proteus spp.	1.2%	3.0%	0.0%	2.9%	3.0%	0.0%	0.0%	1.6%	1.5%	0.0%	2.4%	4.3%	2.7%
Coagulase-negative staphylococci	3.6%	5.9%	0.0%	2.7%	2.0%	3.8%	0.0%	0.0%	0.5%	1.8%	1.6%	0.0%	2.4%
Streptococcus spp.	4.2%	3.4%	0.0%	4.9%	0.0%	2.3%	10.5%	3.1%	1.5%	0.0%	3.1%	4.3%	2.4%
Citrobacter spp.	2.4%	1.5%	0.0%	2.0%	2.3%	0.0%	0.0%	0.0%	0.8%	0.0%	1.0%	0.0%	1.8%

Source: ECDC, HELICS-ICU database.

Table 2.6.3. Fifteen most frequently isolated micro-organisms in ICU-acquired bloodstream infections by country, surveillance of ICU-acquired infections, 2008

	Austria	Belgium	France	Germany	Italy	Lithuania	Luxembourg	Portugal	Slovakia	Spain	UK	Total
Number of isolates	27	218	1167	1436	64	23	50	209	23	1058	40	4 315
Coagulase-negative staphylococci	40.7%	19.3%	22.4%	31.4%	28.1%	30.4%	12.0%	23.9%	13.0%	33.3%	20.0%	28.0%
Enterococcus spp.	18.5%	12.4%	8.0%	17.8%	9.4%	4.3%	24.0%	11.5%	8.7%	10.4%	12.5%	12.5%
Staphylococcus aureus	3.7%	7.3%	15.2%	14.3%	4.7%	13.0%	4.0%	11.5%	0.0%	4.5%	27.5%	11.4%
Pseudomonas aeruginosa	11.1%	6.4%	9.9%	5.6%	14.1%	4.3%	8.0%	8.1%	34.8%	8.5%	2.5%	7.9%
Escherichia coli	0.0%	11.0%	9.8%	6.8%	1.6%	0.0%	14.0%	5.3%	8.7%	6.1%	2.5%	7.5%
Klebsiella spp.	3.7%	11.9%	5.2%	5.8%	14.1%	13.0%	14.0%	7.2%	34.8%	6.0%	5.0%	6.5%
Candida spp.	14.8%	8.3%	7.3%	6.5%	7.8%	0.0%	4.0%	9.1%	0.0%	4.3%	7.5%	6.3%
Enterobacter spp.	3.7%	7.8%	6.5%	4.5%	3.1%	0.0%	8.0%	5.3%	0.0%	5.6%	7.5%	5.5%
Acinetobacter spp.	0.0%	1.4%	1.5%	1.0%	12.5%	8.7%	0.0%	5.7%	0.0%	4.2%	0.0%	2.3%
Serratia spp.	0.0%	4.1%	1.2%	1.9%	1.6%	0.0%	4.0%	3.8%	0.0%	1.9%	7.5%	2.0%
Streptococcus spp.	0.0%	2.8%	2.7%	0.0%	1.6%	8.7%	0.0%	1.9%	0.0%	2.0%	2.5%	1.5%
Proteus spp.	0.0%	0.0%	1.5%	1.3%	0.0%	4.3%	2.0%	1.4%	0.0%	0.9%	0.0%	1.2%
Stenotrophomonas spp.	0.0%	0.9%	0.9%	0.8%	0.0%	4.3%	2.0%	1.9%	0.0%	0.8%	0.0%	0.9%
Bacteroides spp.	0.0%	2.3%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.7%
Citrobacter spp.	0.0%	0.5%	1.5%	0.2%	0.0%	0.0%	0.0%	0.5%	0.0%	0.7%	0.0%	0.7%

Source: ECDC, HELICS-ICU database.

Portugal and Spain, while *Enterobacter* spp. was more frequent in Belgium and Luxembourg. Enterococci were more frequently reported by Austrian and German ICUs. There was an increase in the relative frequencies of Enterobacteriaceae in 2008 as compared with previous years.

On average, ICU-acquired bloodstream infections occurred in 3.4 % of patients staying more than two days in the ICU. Bloodstream infections were catheter-related in 27.3 %, secondary to another infection in 44.0 % and of unknown origin in 28.8 % of cases. For cases where the bloodstream infection was secondary, the primary infection sites were pulmonary in 44.5 %, gastro-intestinal tract in 20.2 %, urinary tract in 15.3 %, surgical site in 5.8 %, skin and soft tissue 5.6 % and other/unknown in 8.2 %.

The most frequently isolated micro-organisms in bloodstream infections were coagulase-negative staphylococci, followed by enterococci, *S. aureus* (proportion of MRSA: 42 %), *P. aeruginosa* and *Candida* spp. As for pneumonia, the percentage of *Acinetobacter* spp. was highest in Italy, Lithuania, Portugal and Spain. The proportion of Enterobacteriaceae among reported micro-organisms increased in several countries. As in 2006, the higher proportion of coagulase-negative staphylococci in Austria and Italy may indicate a more sensitive reporting of skin contaminants isolated from blood cultures.

Additional resistance data showed overall percentages of 25 % for ceftazidime resistance in *P. aeruginosa*, 12 % for ceftriaxone/cefotaxime resistance in *E. coli*, 23 % for ceftriaxone/cefotaxime resistance in Klebsiella spp. and 44 % for ceftriaxone/cefotaxime resistance in *Enterobacter* spp. Countries that collected detailed resistance data reported several carbapenem-resistant and even colistin-resistant Gram-negative isolates.

Discussion

The 2008 data for the surveillance of healthcare-associated infections were collected and analysed by ECDC according to the former HELICS data exchange, validation and analysis procedures. The surveillance modules for surgical site infections and ICU-acquired infections will be integrated into ECDC's surveillance system in 2010.

The 2008 data showed that surveillance was further extended in 2008, with one additional network joining the surgical site infection surveillance (Malta) and two more countries piloting surveillance of ICU-acquired infections (Romania and the UK). ECDC will continue to provide support to Member States for setting up such surveillance networks by making available free software for hospitals and network coordination centres, organising training courses on HAI surveillance and performing country visits for technical support on-site. The main objectives of ECDC's HAI surveillance are: to work towards comparable surveillance methods, to draw up European reference tables for inter-hospital comparisons of risk-adjusted HAI rates, to analyse inter-country differences and to contribute to the extension of HAI surveillance in the EU.

The decreasing overall trend of SSI after hip prosthesis from 2004 to 2008 illustrates, despite a moderate increase in 2008, the contribution of surveillance to HAI prevention, including inter-hospital risk-adjusted comparisons of HAI rates. However, inter-country methodological differences persist and further emphasis should be given to harmonising methods. Furthermore, an EU-wide point prevalence survey of HAI is needed to assess the burden of all types of healthcare-associated infections in Europe. ECDC is currently piloting a European standardised protocol for this point prevalence survey. This presents an opportunity to review and adapt national HAI prevalence protocols thus enabling international comparisons. Further, it will facilitate the collection of baseline data in all Member States in order to plan and evaluate interventions to combat HAI and AMR in healthcare settings in EU and EEA/EFTA countries.

References

1. ECDC. Annual Epidemiological Report on Communicable Diseases in Europe 2009. Stockholm, European Centre for Disease Prevention and Control;2009 p.201.

Annex

Annex List of communicable diseases for EU surveillance

Annex I of Commission Decision 2000/96/EC of 22 December 1999 on the communicable diseases to be progressively covered by the Community network under Decision No 2119/98/EC of the European Parliament and of the Council, as amended by Decisions 2003/534/EC, 2003/542/EC, 2007/875/EC and 2009/312/EC.

1 Communicable diseases and special health issues to be progressively covered by the community network as referred to in Article 1 [of Decision 2000/96/EC]

1.1 For the communicable diseases and special health issues listed in this Annex, epidemiological surveillance within the Community network is to be performed by the standardised collection and analysis of data in a way that is to be determined for each communicable disease and special health issue when specific surveillance networks are put in place.

2 Diseases

2.1 Diseases preventable by vaccination

Diphtheria
Infections with haemophilus influenza group B
Influenza
Measles
Mumps
Pertussis
Poliomyelitis
Rubella
Smallpox
Tetanus

2.2 Sexually transmitted diseases

Chlamydia infections
Gonococcal infections
HIV infection
Syphilis

2.3 Viral hepatitis

Hepatitis A
Hepatitis B
Hepatitis C

2.4 Food- and waterborne diseases and diseases of environmental origin

Anthrax
Botulism
Campylobacteriosis
Cryptosporidiosis
Giardiasis
Infection with Enterohaemorrhagic E.coli
Leptospirosis
Listeriosis
Salmonellosis
Shigellosis
Toxoplasmosis
Trichinosis
Yersinosis

2.5 Other diseases

2.5.1 Diseases transmitted by non-conventional agents

Transmissible spongiform encephalopathies, variant Creutzfeldt-Jakob's disease

2.5.2 Airborne diseases

Legionellosis
Meningococcal disease
Pneumococcal infections
Tuberculosis
Severe Acute Respiratory Syndrome (SARS)

2.5.3 Zoonoses (other than those listed in 2.4)

Brucellosis
Echinococcosis
Rabies
Q Fever
Tularaemia
Avian influenza in humans
West Nile virus infection

2.5.4 Serious imported diseases

Cholera
Malaria
Plague
Viral haemorrhagic fevers

3 Special health issues

3.1 Nosocomial infections

3.2 Antimicrobial resistance

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