



ECDC **CORPORATE**

Summary of key publications

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Introduction

In 2010 the European Centre for Disease Prevention and Control (ECDC) published a total of 35 scientific documents. Highlights comprise:

- *Annual epidemiological report on communicable diseases in Europe 2010*, fourth edition of ECDC's annual publication containing a comprehensive summary of surveillance data in 2008;
- *Tuberculosis surveillance in Europe 2008* and *HIV/AIDS surveillance in Europe 2009*, both produced jointly with the Regional Office for Europe of the World Health Organization, covering surveillance data for both conditions in the European Union (EU) and European Economic Area (EEA) countries, as well as that in additional 23 countries of the WHO Regional Office for Europe region;
- *Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2010 Progress Report*, a review of progress made up to 2010, based on data from 49 countries.
- Antimicrobial resistance surveillance in Europe 2009. Annual report of the European Antimicrobial Resistance Surveillance Network (EARS-Net), the first annual report of EARS-Net after the transition of the European Antimicrobial Resistance Surveillance System (EARSS) to ECDC on 1 January 2010, provides European reference data on antimicrobial resistance for public health purposes.
- *The 2009 A(H1N1) pandemic in Europe, a review of the experience*, a broad overview of the epidemiology and virology of the 2009 pandemic in the EU and EEA countries.

Summaries of selected ECDC documents, like the ones above, have been compiled in order to make them available to policymakers in all EU languages plus Icelandic and Norwegian. They reflect the spirit of the original publications, but some important nuances may have been lost in the summarising process. Readers who wish to have a more detailed view should consult the full text of the documents, which are available online at: www.ecdc.europa.eu.

A list of all ECDC publications in 2010 is in Annex. All of them are available electronically from the link above, with a short description of the respective content. Selected reports are also available in print. To receive any of them in hard copy, please email publications@ecdc.europa.eu.

Technical reports

1 Risk assessment on Q fever

(Published in May 2010)

A risk assessment was carried out on a request from the European Commission to assess questions on Q fever and its transmission through blood, the health impact of chronic Q fever and the risks for pregnant women. With reference to the ongoing outbreak in the Netherlands, ECDC was also asked to address the question of cross-border spread and the need for better surveillance systems. The risk assessment was performed according to the principles of evidence-based methodologies, by defining search terms for each question, inclusion and exclusion criteria for identified studies and assessing the quality of the evidence. A review of the best available evidence was presented to, and discussed with, an expert panel with representatives from the Netherlands, France, Germany, the UK and the United States. The work has been undertaken simultaneously, and in coordination with, a risk assessment on Q fever from the European Food Safety Authority.

Acute Q fever is typically a mild, self-limiting, flu-like disease, but it sometimes presents with pneumonia, hepatitis and other symptoms. It can usually be successfully treated with a two-week course of doxycycline.

Coxiella burnetii is an obligate intracellular bacterium that can be transmitted through **blood and tissues**. The risk of such a transmission is low, and there is only one documented case in the literature. During an outbreak, the endemic area should be defined and safety precautions should be considered, such as active surveillance among blood and tissue recipients, screening of donors, and screening of blood and tissue products. For travellers returning from the area within the duration of the incubation period and with asymptomatic bacteraemia (five to seven weeks), deferral from blood donation may be considered until the end of this period. An antibiotic course could be considered for blood recipients at particularly high risk, such as patients with heart valve defects. Donors who have had an acute Q fever infection should be deferred from giving blood for two years following the date of confirmed cure from acute infection. The benefits of implementation of such measures must be carefully considered against the negative impacts they could have on blood supply in the area. A strategy for risk communication should be developed.

Chronic Q fever is a serious complication of an acute Q fever infection that develops in some 2% of acute symptomatic cases, and the fatality rate may vary from 5% to 50%. Chronic Q fever causes endocarditis in risk groups like people with previous heart valve disease, a prosthetic valve or vascular graft. Patients with cancer or those who are immunosuppressed are also at a higher risk. Chronic Q fever must be treated for at least one year, in some cases for the lifetime with more than one antibiotic. Surgical replacement of damaged heart valves might be needed.

Effective detection of, and treatment for, acute Q fever is the best strategy for avoiding chronic cases. Three possible strategies are described: (1) awareness raising among healthcare staff and the public to address the risk groups; (2) active follow-up with serology for known risk groups to detect and treat an acute Q fever infection early; or (3) refer all known acute Q fever patients to echocardiography for active case finding and follow-up.

There is a need to initiate good prospective cohort studies and controlled trials (when ethically feasible) to obtain more robust evidence on how to prevent and inhibit outbreaks of Q fever in the public health field, and on how to diagnose and treat acute and chronic disease at the clinical level.

Evidence on **Q fever in pregnancy** is very limited and comes mainly from observations and research in domestic and experimental animals, seroprevalence studies, case reports, and one case series including 53 pregnant women over a 15-year period. The risk for pregnant women of severe Q fever outcomes compared with the risk for the general (female) population cannot be quantified based on currently available evidence. Several cases of *Coxiella burnetii* infection during pregnancy resulting in adverse pregnancy outcomes have been reported. In some of the cases *Coxiella burnetii* was found in the placenta and in fetal tissue. *Coxiella* has also been identified in human breast milk but no case of transmission to the breastfed child has been validated.

There is some indication that long-term antibiotic therapy with cotrimoxazole has the potential to prevent severe pregnancy outcomes, but the evidence is based on a case series without randomisation and without controlling for potential biases. As long as no further evidence from high quality treatment studies is available, pregnant women with diagnosed Q fever infection should be treated with antibiotics throughout the remaining pregnancy. However, the scientific basis for this recommendation is weak, and ECDC would strongly recommend that randomised controlled trials are performed to obtain more reliable evidence.

Pregnant women should be advised not to visit farms in affected areas. ECDC does not recommend against breastfeeding except in cases of chronic disease that need long-term treatment of the mother.

A formaline-inactivated whole-cell **Q fever vaccine** is produced and licensed in Australia. The vaccine is effective, but pre-vaccination testing is necessary due to high reactogenicity in persons who have earlier been infected with *Coxiella burnetii*, making the vaccine more suitable for defined risk groups than for general vaccination.

Available evidence suggests an effective range of **airborne spread** of *Coxiella burnetii* of less than 5 km. The risk of airborne spread from the Netherlands is therefore limited to neighbouring countries (i.e. Germany, Belgium), and to areas close to outbreak sources. Active surveillance or case finding for acute Q fever in possible risk groups (i.e. pregnant women, patients with heart valve or vascular diseases) on a local level and for a defined period of time is reported feasible and an efficient method for detecting acute infections. In areas adjacent to epidemic settings (≤ 5 km from the source), awareness campaigns among healthcare providers should be initiated. If the area also affects other Member States, the responsible public health authorities need to inform their cross-border counterparts. Sharing of information between public health and veterinary authorities would facilitate an early recognition of an outbreak. Further, the health and veterinary authorities at national and local levels should take the necessary action to stop an outbreak.

2 Surveillance and prevention of hepatitis B and C in Europe

(Published in October 2010)

Scope

This survey was carried out to map existing national surveillance systems and prevention programmes for hepatitis B and C in the EU/EEA.

Hepatitis B

Surveillance in Europe

All countries indicated that they maintain a passive mandatory reporting system for hepatitis B. In 15 countries there was only one specific surveillance system, whereas four countries had multiple surveillance systems. The national objectives of surveillance are very similar in different countries but the case definitions were not always in line with the objectives; eight countries indicated that they implemented the EU-2008 case definition, and three were using the EU-2002 case definition. In total, 21 countries were using a case definition that closely resembled the EU definition. Based on the various case definitions, 28 countries report confirmed cases, and 27 include acute hepatitis B cases. Chronic cases are included in the reports of 17 countries; asymptomatic cases are often omitted. Twenty-six countries reported to collect case-based data at the national level, but the frequency of analysis varies between countries. A basic data set (age, gender, place of residence, date of onset of disease, date of reporting) is collected in 26 countries, but detailed data on epidemiological risk and impact of the disease are often missing.

Epidemiology in Europe

The number of newly reported cases per 100 000 population in 2007 as reported by 27 countries ranges from 0 to 15.0, with an average of 1.5 (Annual Epidemiological Report on Communicable Diseases in Europe 2009. Stockholm: ECDC; 2009). The number of reported HBV cases in the EU/EEA countries per 100 000 population has declined from 6.7 to 1.5 between 1995 and 2007. Tracking trends and making comparison between countries can be challenging, as surveillance systems differ considerably and recent changes may impact the presented data.

Prevalence of HBV in the general population varies widely between countries, with low to intermediate HBsAg carrier rates in Slovakia (1.6%), Italy (1%), Belgium and France (around 0.6 %), Finland, Hungary, the United Kingdom (all below 0.5%), and Bulgaria (3.8%). Screening for HBV in pregnant women is conducted in 24 countries, but not in Belgium, Bulgaria, Lithuania, Luxembourg and Romania. Prevalence in pregnant women varies between 1.15% in Greece and 0.14% in Finland. There are also screening programmes for injecting drug users (15 out of 29 countries), prisoners (11 countries), STI clinic attendees (nine countries), and persons with multiple sex partners (two countries). HBV prevalence in IDU reported by eight countries was higher than in the general population. The prevalence in IDU varies widely, ranging between 0.5% in Norway and 50% in Denmark. Prevalence among healthcare workers in Denmark and Germany was shown to be similar to the general population.

Screening and vaccination

Universal vaccination programmes for infants, children or adolescents were implemented in 22 countries. Seven countries (Denmark, Finland, Iceland, Norway, Sweden, the Netherlands, and the United Kingdom) have implemented selective vaccination programmes targeted at risk groups. Additional prevention programmes for different risk groups were usually targeted at those at increased risk for HBV due to occupational exposure. In addition, there is a wide variety of risk-group vaccination programmes. Only half of the countries with a routine vaccination programme indicated heterogeneous coverage rates, but the coverage rate in infants (one to two years) seems to be above 95% (except in Austria, Malta, and France).

Hepatitis C

Surveillance in Europe

All EU/EEA countries indicated that they have implemented a reporting system for hepatitis C (either national or targeted at one specific population). In 14 countries there was one specific surveillance system, but 15 countries indicated that they use multiple surveillance systems to monitor hepatitis C. The national objectives of surveillance are very similar in the different countries but it appears that case definitions were not always in line with the objectives. Eleven countries indicated that they have implemented the EU-2008 case definition, and four countries apply the EU-2002 case definition. Despite this, there is a wide variety in the implementation of case definitions in the Member States, especially in the case classification. All countries included confirmed acute cases in their surveillance systems¹, and 18 countries also included chronic cases. Some countries indicated that they collected a mixture of cases, and no serological markers were available to differentiate between acute and chronic hepatitis C.

¹ Acute confirmed cases of hepatitis C in France were surveyed only in 2006 and 2007 and for a specific population, e.g. HIV-infected men who have sex with men.

This hampers the interpretation of available data across countries. Twenty-six countries reported to collect case-based data at the national level, but the frequency of analysis varies between countries. In addition to clinical reporting, 19 countries collect data from laboratories as a part of their surveillance system; 10 countries do not include laboratory reporting. A basic data set (age, gender, place of residence, date of onset of disease, date of reporting) is collected in 26 countries, but information on detailed epidemiological risk and impact of the disease are often missing. Underreporting seems to be common, due to the asymptomatic character of the disease.

Epidemiology in Europe

The number of newly reported cases per 100 000 population in 2007, as reported by 27 Member States, range between 0 and 36, with an average incidence of 6.9 cases per 100 000 (AER, ECDC 2009). The number of reported HCV cases in the EU/EEA countries per 100 000 population has increased from 4.5 to 6.9 between 1995 and 2007. Plotting trends and comparing data between countries is difficult and needs to be done with caution, as surveillance systems differ considerably and recent changes may impact the presented data. For HCV, the interpretation is further hampered by the asymptomatic nature of infection so that reported numbers may reflect testing practices rather than true incidence and because no distinction can be made between acute and chronic disease.

Prevalence data on HCV for the general population are rather scarce; prevalence ranges from 2.6% in Italy in 2007 to 0.12% in Belgium in 2003. A relative high prevalence was reported by Bulgaria (1.2%) and Slovakia (1.56%). Eleven Member States reported prevalence data in IDU ranging from 25% to 75%. In 2006–07, Italy reported the lowest prevalence (10.8%–25.6%) and Norway the highest (70%). The HCV prevalence data are based on serological markers for hepatitis C, but this does not indicate which part of the population are carriers and thus infective.

Prevention in Europe

Half of the countries indicated that they have implemented screening programmes for risk groups: 16 countries have programmes for IDUs, 11 for prisoners. It remains unclear whether many countries have implemented programmes to monitor the infection rate in healthcare workers. There appears to be a need for more screening programmes for risk groups, hard-to-reach populations, and the general population, but before implementing any measure a thorough investigation should be carried out, based on a cost-effectiveness analysis and the availability of effective treatment.

Conclusion

This report collected and analysed data from 29 EU/EEA countries in regard to hepatitis B and C surveillance and prevention programmes. Although all countries have systems in place that collect data at the national level, these systems differ in the way they apply case definitions and make use of collected data.

As viral hepatitis is a frequent and often underreported disease, this report tries to summarise the latest available prevalence data at EU level. Harmonising the available surveillance data in order to improve comparability of data among countries will be a major challenge in the next few years.

ECDC Guidance

3 Public health management of sporadic cases of invasive meningococcal disease and their contacts

(Published in October 2010)

Neisseria meningitidis is a common commensal bacterium of the human pharyngeal mucosa. This organism can cause severe invasive meningococcal disease (IMD) usually presenting as meningitis, septicaemia or both. Unfortunately, public health management of sporadic IMD varies widely in Europe and this can be partly attributed to uncertainty surrounding the effectiveness of preventive measures.

The purpose of this document is to provide evidence-based guidance for good practice in public health management of sporadic cases of meningococcal disease and their contacts. It has the additional aim of assisting countries across Europe in making decisions about appropriate measures to control and prevent meningococcal disease at national and sub-national levels. This guidance document should assist European countries in reviewing their own policies on public health management and microbiological diagnosis of meningococcal disease. While the results presented here do not include guidance for management of exposed healthcare workers nor of community outbreaks, it will cover the following relevant areas:

- Laboratory tests to confirm the diagnosis of IMD.
- Use of antibiotics at discharge from hospital.
- Chemoprophylaxis for close contacts considering different settings.
- Choice of antibiotic for chemoprophylaxis for different groups (adults, children, pregnant women).
- Use of meningococcal vaccine in addition to chemoprophylaxis.

In addition to the quality of scientific evidence, the conclusions take into account potential benefit and harm, values, burdens and costs.

Results

Conclusions are based on the systematic review and critical assessment of the current, best available evidence. For a more comprehensive overview, please refer to the main body of the document.

1. What laboratory tests are advised to make an accurate (sensitive, specific) and rapid diagnosis of IMD?

Research question: What are the most sensitive and specific laboratory tests to confirm the diagnosis of IMD?

- Based on evidence of moderate quality, polymerase chain reaction (PCR) and culture should be the diagnostic tests of preference. If logistically and economically feasible, microbiology laboratories that undertake diagnosis of meningococcal disease should have access to PCR testing. In cases where antimicrobial treatment has already started, PCR testing of skin biopsy/aspirate as a supplementary sample to blood/cerebrospinal fluid (CSF) could—based on evidence of low quality—increase the sensitivity of diagnosis in patients with skin lesions.

2. Should antibiotics, apart from those used in clinical treatment, be given to a case of IMD on discharge from hospital?

Research question: Is administration of antibiotics effective in eradicating carriage to a case of IMD in order to prevent secondary cases on discharge from hospital, compared to no antibiotics administered on discharge?

- The quality of evidence for or against the administration of antibiotics to a case of IMD at hospital discharge is very low. However, due to the moderate quality evidence for the effectiveness of chemoprophylaxis when given to close contacts, and given the relatively low cost of the intervention, antibiotics that eradicate carriage should be offered if not already used in treatment.

3. Should chemoprophylaxis be given to people who shared the same household or equivalent level of contact with a case of IMD?

Research question: What is the effectiveness of chemoprophylaxis given to those who had household contact with a case of IMD in preventing further cases among those contacts?

- Based on moderate quality evidence from observational studies, household contacts of a case of IMD should be offered chemoprophylaxis with an antibiotic regimen that eradicates carriage.

4. Should chemoprophylaxis be given to children or students who attend the same pre-school, school or college as a case of IMD?

Research question: What is the effectiveness of chemoprophylaxis given to contacts of a case of IMD in pre-school, school and college settings in preventing further cases?

- Based on low quality evidence, those attending the same pre-school as a case of IMD should be offered chemoprophylaxis, depending on risk assessment. Attending the same school/college as a case of IMD should not in itself be an indication for chemoprophylaxis.

5. Should chemoprophylaxis be given to people who have shared drinks with a case of IMD?

Research question: What is the effectiveness of chemoprophylaxis given to those who have shared drinks (or had similar contact, e.g., shared the same cigarette, shared eating utensils) with a case of IMD in preventing further cases among those contacts?

- Based on low quality evidence, sharing drinks, cigarettes or similar contact with a case of IMD should not, in itself, be an indication for chemoprophylaxis.

6. Should chemoprophylaxis be given to people who share the same transport vehicle (e.g., plane, boat, bus, car) as a case of IMD?

Research question: What is the effectiveness of chemoprophylaxis given to contacts who shared the same transport vehicle as a case of IMD in preventing further cases among those contacts?

- The current available evidence is of very low quality. Based on this evidence, the risk of transmission in different transport settings cannot be quantified. No secondary cases have been confirmed in this setting. Sharing the same transport vehicle as a case of IMD should therefore not, in itself, be an indication for chemoprophylaxis.

7. Which antibiotic regimes should be advised for chemoprophylaxis among adults, children and pregnant women?

Research question: Which antibiotic regimes are most effective in eradicating carriage among adults, children and pregnant women?

- Based on moderate to high quality evidence, rifampicin, ciprofloxacin, ceftriaxone, azithromycin and cefixime can be used for prophylaxis in adults and children. No regimen seems to be superior, but ciprofloxacin, azithromycin and ceftriaxone can be given as single dose. Resistance development has been reported after rifampicin use.

8. Should contacts of a case of IMD who receive chemoprophylaxis also be offered a meningococcal vaccine, if appropriate?

Research question: What is the effectiveness of vaccination, in addition to chemoprophylaxis, among household contacts of a case of IMD in preventing further cases among those contacts?

- The quality of the current available evidence is very low and the following conclusions are based on indirect evidence. If a case of meningococcal disease is caused by a strain that is preventable by an available licensed vaccine, vaccination in addition to chemoprophylaxis should be offered to household contacts unless considered to be already immune.

4 HIV testing: increasing uptake and effectiveness in the European Union

(Published in October 2010)

Scope and purpose of this guidance

This evidence-based guidance is designed to inform the development, monitoring and evaluation of national HIV testing strategies or programmes in the countries of the European Union (EU) and the European Economic Area (EEA).

Why is it important to test for HIV?

Across Europe the number of people infected with HIV continues to rise and the problem of late diagnosis has been described in many countries. There is strong evidence that earlier treatment reduces morbidity and mortality but many people with HIV remain undiagnosed until late in the course of infection. As HIV infection may have almost no symptoms for many years, testing is the only way to achieve early diagnosis, enabling early referral for treatment and care. People diagnosed early may also be less likely to transmit the virus to others because of both lower infectivity when treated and changes in sexual and drug injecting behaviour. Mother-to-child transmission can be effectively prevented by HIV testing and treatment of pregnant women. Early diagnosis of HIV thus has great benefits for both the individual and the community and is a critical public health priority.

Core principles for national HIV testing strategies

HIV testing should be voluntary, confidential and undertaken with informed consent

There should be easy access to voluntary testing for everyone and special efforts need to be made to ensure this for groups most at risk for and vulnerable to HIV. These will include people who are hidden or marginalised in society, for whom access to testing should be encouraged without coercion or breach of confidentiality.

Ensure access to treatment, care and prevention services

The single biggest benefit of HIV testing is access to treatment. Providing universal access to treatment and care, prevention and support services, with clear referral pathways, must be a cornerstone of national HIV testing strategies.

Show political commitment

Government priority for the HIV testing programme will be required in order to achieve impact. This will need to be supported by financial investment, with monitoring to ensure that the funds are used in a cost-effective way.

Reduce stigma

The stigma that is still attached to HIV is a barrier to testing, especially among communities that are themselves stigmatised and among healthcare workers. 'Normalising' testing, e.g. making the process more like that for other screening and diagnostic tests, can help counter this, although testing must remain voluntary.

Remove legal and financial barriers

Testing strategies should find ways to overcome legal and financial disincentives to testing. Such barriers may include policies of criminal prosecution for HIV transmission, and the requirement to pay for treatment where this is unaffordable. With the exception of mandatory testing of blood and tissue donations anti-discrimination legislation and policies to prevent mandatory testing for any group in any setting should be considered.

Make access to HIV testing an integral part of national strategies

Any national strategies for the prevention and treatment of HIV, other sexually transmitted infections (STIs), viral hepatitis, tuberculosis and other HIV indicator diseases must include HIV testing, with appropriate targeting, as a key element. Opportunities to increase access to, and uptake of, voluntary confidential HIV testing should also be identified within other relevant national strategies, such as those targeting pregnant women, drug use, sex work or healthcare in prisons.

Develop and implement an HIV testing strategy with the participation of stakeholders

Use available information about HIV and related issues nationally and locally to clarify what needs to be achieved and prioritised. Encapsulate this in a set of strategic aims and objectives, so that everyone involved or affected has a shared understanding. Developing the strategy requires the participation of all major stakeholders to build a coalition around shared objectives, including people living with HIV, representatives of communities most affected, civil society, prevention agencies, professionals with expertise in HIV testing and others with a role in implementing the strategy.

Develop a national HIV testing strategy

Whom to test?

Know your epidemic and identify groups most at risk. An effective national approach to HIV testing will rely on having an understanding of the epidemic at local and national level. Testing programmes should aim to reach those at risk of infection and to prioritise those at highest risk.

Review surveillance and other relevant data, including information on undiagnosed HIV and late diagnosis, to build an understanding of the epidemic and time trends at regional and national level. Some groups are especially at risk for HIV, including men who have sex with men; injecting drug users; migrants, especially from countries with higher prevalence; the sexual partners of individuals in all of these groups; and the children of HIV-positive mothers. Such subpopulations and/or their risk are often hidden and stigmatised. Special surveys will need to be conducted to find out about the levels of HIV among these groups, their rates of HIV testing, and relevant knowledge, attitudes and behaviour in order to inform interventions to increase their uptake of HIV testing.

Supplementary data on other STIs, sexual and drug injecting behaviours in the general populations, as well as in groups at risk of HIV, should also be reviewed.

Where to test?

Consider logistics

Plan how the HIV testing programme will be implemented and tackle logistical challenges. These may include how the healthcare system is delivered, whether there is access to free healthcare, the preparedness of community services, counselling and support, how to ensure that care pathways are in place for access to HIV treatment, and how confidentiality can be assured.

Make testing available in a variety of settings

Use knowledge of the epidemic and groups at risk to make informed decisions about where to offer HIV testing. Also consider who is currently accessing HIV testing in which settings. Because of the diversity of needs and the barriers to testing, a range of services should be offered to maximise access. Identify action needed to establish new services or change practice in existing healthcare settings or community services. Evaluate whether regulations that may act as obstacles to testing in community settings, including use of point-of-care tests or the requirement for tests to be performed only by specific professionals, could be relaxed without compromising testing quality.

Aim at offering HIV testing

- Dedicated HIV testing services, to provide easy and safe access to HIV testing alone or combined with other tests.
- Settings where HIV testing should be universally offered: services for people at risk (STI services, IDU services); antenatal services; services for clinical diagnosis and management of HIV indicator conditions; and other settings where undiagnosed HIV prevalence is known or estimated to be high.
- All other healthcare settings, where people should be able to request testing or where professionals should be ready to offer it and be vigilant to when it is needed.
- Testing sites in the community, including outreach services, to reach people at high risk of HIV who may be hidden or marginalised and not in touch with traditional healthcare services. Such services should be established with the involvement of the target populations.

When to test?

Provide guidance on testing frequency

More frequent testing is advisable for people who have ongoing risk behaviour. For example, some countries recommend that men who have sex with men should test annually or more often depending on sexual behaviour. Current guidance from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) recommends regular offering of tests to injecting drug users at least once every six to 12 months.

How to test?

Raise public awareness

To seek and accept HIV testing, the public, and especially groups at higher risk of HIV, need to understand its benefits. A strategic approach to communication is needed, using a range of different channels. Visible and high-level support from opinion formers, including politicians, community leaders and celebrities, and supportive and accurate coverage in the media, can all be used to raise awareness.

Ensure confidentiality

Confidentiality is a fundamental principle in healthcare but because of the stigma attached to HIV and the behaviours through which it may be transmitted, it is critically important for HIV testing. Relevant professional guidance and national legal requirements should be followed. A lack of confidence may act as a barrier to

accessing HIV testing services. Clear policies on confidentiality, and publicity about the policies in settings providing testing, can help to overcome this barrier. HIV testing should always be offered and discussed in privacy. The option of anonymous testing should be available.

Raise professional awareness and train the workforce

Awareness, confidence and competence of professionals to offer HIV testing can be raised by training. HIV testing can be offered by any appropriately trained and skilled healthcare worker, and expanding HIV testing will require a wider workforce that is confident and competent to offer it. With appropriate training and quality assurance, non-healthcare workers may also offer HIV testing. Members of the workforce need to understand the benefits of HIV testing and overcome the barriers that inhibit their ability and willingness to offer it. These include lack of confidence, difficulties in talking about sex or stigmatised behaviours, anxiety about giving a positive result and discriminatory attitudes towards people at risk or affected by HIV.

Pre-test discussion

Brief pre-test discussion, covering the benefits of testing and the practical arrangements for taking the test and giving results, has been shown to be acceptable and effective in helping to increase testing uptake. The main purpose is to ensure informed consent, which should be documented but does not have to include signed written consent. This is in line with other medical investigations and is part of the normalisation of HIV testing. A detailed sexual or injecting history is not required before offering an HIV test. However, for certain individuals, or in settings where sexual health and/or drug use is within the scope of the services, a brief risk assessment or more extensive pre-test counselling may be indicated, e.g. in case of continued risk exposure. This should always be available and staff should know how to refer to skilled counsellors.

Use appropriate testing technologies

Identify the HIV tests available and assess their respective benefits for testing in different contexts, including rapid (point-of-care) tests. Testing technology is constantly evolving and expert advice should be sought to keep the choice of tests under regular review. All reactive tests should be confirmed and WHO guidelines on this should be followed. National guidelines for applying a minimum standard of quality assurance for diagnostic testing are essential to ensure high-quality practice and methodological standardisation and reliability.

Always give results

Every effort should be made to ensure that people who have had an HIV test are informed of the result, whether positive or negative. When giving positive results, ensure that staff are available to provide post-test counselling and that also links to appropriate HIV treatment and support services are in place for referral. People at high risk of HIV who receive a negative test result may also benefit from counselling and referral to appropriate prevention services.

Ensure access to HIV treatment, care and prevention

Access to antiretroviral therapy

It is essential for all HIV testing programmes to have clear mechanisms to ensure that people who test positive are integrated into HIV treatment and care. There should be universal access to antiretroviral therapy across Europe. Inability to afford the cost should not prevent access to treatment, and solutions need to be found to overcome this barrier to universal access. Referral pathways should be in place from all HIV testing sites to ensure that people receive a specialist consultation promptly after receiving a positive HIV test result. This consultation should include assessment of when to start antiretroviral therapy and needs for other health and social care and support.

Access to psychosocial support and prevention services

Psychosocial support should be immediately accessible following a positive test result. For people who test positive, referral to specialist care should include access to support for the prevention of further transmission of HIV. For people who test negative, referral to counselling and support for HIV prevention should also be available where there is significant ongoing risk of exposure or upon request.

Follow-up: monitoring and evaluation

Monitoring and evaluation (M&E) is an essential component of an HIV testing programme and ensures that the programme is fit for purpose and provides high-quality HIV testing. A well designed M&E system will inform policies, improve the quality and effectiveness of interventions and therefore guide future resource allocation of the programme. National surveillance data include new diagnoses and the proportion of individuals who present late. Estimates of the undiagnosed are important to monitor the impact of a programme. Expanding testing in new settings will require robust monitoring and evaluation to ensure high-quality HIV testing. The success of local interventions to promote HIV testing can be assessed according to five criteria: Feasibility; Aceptability; Effectiveness and Cost-effectiveness; Target populations are reached; and Sustainability (FACTS). Clear, well-defined and measurable indicators can assist in monitoring these criteria and provide a standard method of reporting findings at the local and (inter)national level.

Surveillance reports

5 Tuberculosis surveillance 2008

(Published in March 2010)

Since 1 January 2008, the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe have jointly coordinated the tuberculosis (TB) surveillance activities in Europe. Their aim is to ensure a high quality of standardised TB data covering all 53 countries of the WHO European Region and Liechtenstein.

The WHO European Region

For 2008, 461 645 TB cases (52.2 per 100 000 population) were reported by 50 of the 54 countries of the European Region², representing approximately 6% of TB cases reported worldwide to WHO. The trend in overall TB notification rates in the European Region has continued to increase since 2004. However, overall TB notification rates across 18 high priority countries (HPC)³ decreased from the previous year by 3.9% to 87.6% of all TB cases and across the Region the overall notification decreased by 2.6% between 2007 and 2008. A decrease by 4% from 2007 in the notification of newly detected TB cases suggests reduced spread of TB in the Region. The percentage of previously treated cases has also decreased since 2007 from 31.7% to 29.8%.

The age group with the highest number (42.0%) of newly detected TB cases in the Region is 25–44 years.

The number of reported HIV co-infected TB cases almost doubled, from 5 828 in 2006 to 11 395 in 2008, due to increased testing as part of intensified HIV care services for TB patients in the HPC. There was no appreciable increase in the number of reported HIV co-infections outside of the HPC during this period.

Across the Region, the total number of reported multidrug-resistant TB (MDR TB) cases for 2008 has doubled since the previous year due to improvements in drug susceptibility testing (DST) and MDR TB prevalence among new TB cases was at 11.1%. The highest burden of MDR TB cases in the Region is found in the HPC, with a prevalence of 13.8% among newly diagnosed cases, five times higher than the prevalence reported in the EU/EEA, and over 50% among previously treated cases, a proportion more than twice as high as in the EU/EEA.

The treatment success rate among the newly detected laboratory-confirmed TB cases in 2007 has decreased to the level of 70.7% (compared with 73.1% for cases registered in 2006); 9.0% were reported as failed treatment, 8.4% died, and 6.9% defaulted. The treatment success rate in non-EU/EEA countries is lower than in the EU/EEA:

67.5% compared with 79.5%, respectively. In the 18 HPC, treatment succeeded for only 69.2% of newly detected laboratory confirmed TB cases, which is far from the 85% Stop TB Strategy target.

The TB mortality rate has decreased by 45% from 9.0 per 100 000 population in 2005 to 5.0 per 100 000 population in 2007. Similar proportional reductions were seen in the EU/EEA as well as the HPC. However, mortality in the HPC remained almost 15 times higher than in the EU/EEA.

European Union and European Economic Area countries⁴

For 2008, 82 611 TB cases were reported by 26 European Union (EU) countries (all except Austria) and two other countries of the European Economic Area (EEA) (Iceland and Norway), showing a decrease of 615 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 was 16.7 per 100 000, with rates lower than 20 per 100 000 reported 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), Portugal (28.2) and Poland (21.2). The overall notification rate was 1.2% lower than that in 2007 (for the 28 reporting countries), reflecting a net downward trend in 17 countries.

However, substantial increases were observed in Malta (28.8%), Iceland (19.8%) and Cyprus (12.2%), and some increases were seen in Sweden (4.9%) and in the United Kingdom (2.8%), mostly of foreign origin cases. In 2008, 22.4% of cases (country range: 0–88%) were in persons of foreign origin, more than two-thirds of whom originated from Asia or Africa.

² No data from Monaco, San Marino, Austria or Liechtenstein; Liechtenstein is included in this report, but is only presented as an EEA country as it is not a WHO European Region Member State.

³ Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Romania, Russia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

⁴ The 27 EU Member States, Iceland, Liechtenstein and Norway.

HIV prevalence among TB cases increased between 2006 and 2008 in Estonia (from 9.0% to 9.9%), Latvia (3.4% to 6.7%) and Malta (3.7% to 9.4%). In the rest of the countries that submitted data, the HIV prevalence among TB cases was 1% or less in six countries, 2–5% in three others, 5–8% in two countries and 14.6% in one country.

Multidrug resistance remained most frequent in the Baltic States (combined MDR: 15.6%–21.3%) followed by Romania, which reported results for the first time (14.7%). Other countries reported lower levels of MDR (0%–5%), where it was generally more common in cases of foreign origin. Of the 14 countries reporting extensive drug resistance (XDR), Romania had the highest numbers (total of 54 cases), while Latvia and Estonia had the highest percentage of XDR cases among MDR cases (14.7 and 12.2%, respectively) with Latvia showing a sharp increase in XDR cases compared with 2007, from 6 to 19, (6.1% to 14.7%).

Twenty-two countries reported treatment outcome monitoring data for definite pulmonary TB cases in 2007. Among previously untreated, culture-confirmed, pulmonary TB cases, 79.5% had a successful outcome. Successful outcomes were significantly lower among previously treated TB cases (51.8%) and among MDR TB culture-confirmed pulmonary cases at 24 months (30.9%).

6 Influenza surveillance in Europe 2008/09 – Week 40/2008 to week 39/2009

(Published in May 2010)

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. The weekly (sub)type-specific proportions of influenza-positive sentinel samples showed two overlapping peaks, the initially dominant influenza A(H3N2) being replaced by influenza B as the most prevalent influenza virus after week 8/2009. 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. Given the relatively low prevalence of B viruses observed during this season, however, this mismatch is unlikely to have been of particular public health significance.

Cases of the 2009 pandemic influenza A(H1N1) started to appear in Europe in week 16/2009. By week 39, the total reported number of confirmed cases amounted to 53 658 from all EU Member States, Iceland, Liechtenstein and Norway, and included 175 deaths in 14 countries. The case-based data showed that patients were between 0 and 90 years old (median: 19 years), 78% were younger than 30 years, and school children between 5 and 19 years of age accounted for 47% of all cases. The overwhelming majority of cases (96%) were not known to have any underlying medical conditions. Among those with underlying conditions, chronic lung disease was the most frequently reported underlying condition, accounting for 30% of these cases. Pneumonia was cited as a complication in 0.6% of pandemic influenza infections, the overall hospitalisation ratio was 13%, and 0.03% of cases were reported to have died.

The integrated European clinical and virological influenza surveillance network (EISN) proved effective in the timely detection of the start of the 2008/09 influenza season, in monitoring its course and in characterising its main virological features. The first 2009 pandemic influenza viruses detected in non-sentinel and sentinel patients were confirmed within one and three weeks respectively, after the first cases in Europe had fallen ill. However, the sentinel surveillance of influenza-like illness (ILI) and acute respiratory infection (ARI) only detected a clear increase with ten weeks' delay. Even in week 39/2009, when cases of pandemic influenza had been reported by all EU Member States, Iceland, Liechtenstein and Norway, ILI/ARI activity above the baseline had been seen only by nine of 29 countries reporting to EISN.

While a higher sensitivity would require greater numbers of sentinel physicians, other systematic shortcomings also need to be addressed. Suggested changes to the influenza surveillance system in Europe are:

- to further promote standardised reporting of the intensity, geographical spread and trends of ILI and ARI;
- to augment ILI and ARI surveillance with surveillance of severe acute respiratory infections (SARI);
- to introduce standardised epidemic thresholds for ILI/ARI sentinel surveillance;
- to further develop all-cause mortality surveillance at European level and to make regular outputs publicly available.

7 Surveillance of invasive bacterial diseases in Europe 2007

(Published in October 2010)

This report describes the epidemiology of invasive bacterial diseases due to *Haemophilus influenzae* and *Neisseria meningitidis* in the European Union (EU) Member States (MS) in 2007. Designated national contact points were asked to submit data using the revised version of the dataset for invasive bacterial infections (IBI) developed in 2008, on the basis of the former EU-IBIS database. This dataset contains case-based information on epidemiological and laboratory variables, and is divided into a core set of variables applicable to all notifiable diseases in the EU and an enhanced dataset of variables specifically for invasive *Haemophilus influenzae* disease and invasive meningococcal disease. To facilitate data submission, the MS received online training in June 2008, and supplementary training videos and other materials were made available prior to the data call.

Of the 30 EU/EEA Member States, 27 submitted data on invasive *Haemophilus influenzae* disease and 29 submitted data on invasive meningococcal disease.

Invasive *Haemophilus influenzae* disease

- A total of 2 058 cases of invasive *Haemophilus influenzae* disease were reported in 2007. The notification rates varied across the MS and the rates in the Nordic countries were higher compared to the rest of Europe, with a continued increasing trend. However, the majority of the countries stayed below 1 case per 100 000 population. The highest overall notification rates have been reported among infants younger than one year of age (3 per 100 000, 118 cases). While trends among infants decreased substantially for serotype b from 1999 to 2007 (from 3 per 100 000 to 1 per 100 000), they increased for non-capsulated strains, moving from 1.5 per 100 000 up to 2.5 per 100 000 in the same period.
- Sixty-seven per cent of all invasive *H. influenzae* cases reported in 2007 were due to non-capsulated strains. The increase in the number of non-capsulated strains reported over the years may be partially attributable to an enhanced case ascertainment and an improvement in the sensitivity of the surveillance systems, which have also been documented in several MS. However, a real increase in the number of notified serotypes not covered by the vaccine (non-b and non-capsulated strains) has also been observed in EU over the last several years. The introduction of the *H. influenzae* type b (Hib) conjugate vaccine has led to a higher proportion of invasive *H. influenzae* infection attributable to non-serotype-b strains because of the reduction in Hib disease. However, unlike the pneumococcal conjugate vaccination programme, there is no consistent or robust evidence to suggest that mass Hib vaccination in infancy has led to serotype replacement in either carriage or disease. A recent World Health Organization (WHO) position paper on Hib conjugate vaccines concluded that 'so far, bacterial strain replacement has not been a prominent feature of large-scale Hib immunisation'.
- In terms of absolute numbers reported, there appears to be a shift towards older age groups. Forty-six per cent of all cases reported in 2007 were among adults older than 65 years of age; this finding is consistent with a study from USA highlighting the increased incidence of invasive *H. influenzae* disease from 1996 to 2004. The epidemiological characteristics of *H. influenzae* also changed from a disease predominantly found in children and dominated by serotype b to a disease predominantly found in adults and dominated by non-typeable strains.
- In 2007, up to 60% of cases occurred in vaccinated individuals, as is usually observed in populations with high vaccination coverage. Among those fully vaccinated, the majority were children aged 1–4 years while those younger than one year accounted for 27% of cases. With the data available, it is not possible to assess whether the cases observed can be classified as true vaccine failures and more information is needed to further explore this finding. Some additional background on this topic has been provided by a study conducted by EU-IBIS that analysed Hib vaccine failure identified through national surveillance between 1996 and 2001 in Europe, Israel and Australia and described the clinical and laboratory features in a large and diverse population with different immunisation schedules.

A re-emergence of the disease from Hib due to vaccine failure has also been extensively reported by the UK.

Invasive meningococcal disease

- In 2007, 5 583 cases of invasive bacterial disease due to *N. meningitidis* were notified in the EU/EEA, with an overall notification rate of 1.12 cases per 100 000. Notification rates varied across MS and were higher in Ireland and the United Kingdom (UK) compared to the rest of Europe, although in both countries there is a sustained declining trend. Apart from these two countries, another six MS have notification rates above 1 per 100 000 (Belgium, Denmark, the Netherlands, Spain, Lithuania and Malta). Infants and children still experienced the highest number of invasive meningococcal disease cases, with 50% of cases reported in children younger than 10 years old. The highest rates observed in infants younger than one year were reported from Ireland and the UK, with rates of 74.5/100 000 and 46.6/100 000, respectively.

- As with *H. influenzae*, the heterogeneity in case reporting may be attributable to a number of possible causes: an improvement of the sensitivity of the surveillance systems; variation in the types of clinical presentations under surveillance (i.e., sepsis or meningitis or both) in each MS; differences in the applied case definitions; differences in the laboratory capacities; or differences in the healthcare practices for ensuring early blood culture sampling. At this stage, the European Centre for Disease Prevention and Control (ECDC) does not yet have a good overview of the main reasons behind these differences and therefore advises caution when comparing inter-country notification rates by serogroup and age.
- The proportion of cases with missing information on serogroup remains high, especially in the eastern European countries. However, serogroup identification has improved over the years, with the number of unknowns decreasing substantially over the last five years from 1 448 in 2003 to 559 cases in 2007. In 2007, serogroup B was the most frequently reported serogroup causing invasive meningococcal disease in Europe, representing about 90% of all serogroups notified among children younger than four years of age. In countries with meningococcal C vaccination (MCC), there is a large predominance of B cases in all age groups and, in particular, in the age groups younger than one and between one and four years old (73 and 81% of cases, respectively), the usual targeted groups for vaccination against serogroup C.
- In countries with MCC vaccination, the proportion of cases due to serogroup C has decreased dramatically in the few years after the introduction of the vaccine in the national schedule, especially in the target groups of vaccination programs. The proportion of serogroup C cases appears to increase with age, which is likely due to the low vaccine coverage in the older age groups as well as decreasing effectiveness of the vaccine following the year of the primary immunisation schedule.
- Information on serotyping and subtyping of strains is increasing due to the adoption of molecular technologies in more and more countries. However, the number of samples serotyped and serosubtyped remains low and the interpretation of these results must be done with care. The highest number of samples serosubtyped was reported by France, the United Kingdom and Belgium.

Main conclusions

Overall, the incidence of both diseases continues to decline, especially in young children who are the target of vaccination campaigns. However, at the European level, the number of cases due to serotypes and serogroups not covered by the vaccines is increasing, affecting young children as well and this trend has to be monitored with attention.

As vaccination coverage is high for both vaccines, cases also occur in vaccinated individuals. Unfortunately, there were not sufficient data collected to make an in-depth analysis of vaccine failures possible or to make any inference on the proportion of cases occurring among vaccinated individuals in countries with or without vaccination. This is because the overall proportion of missing values for vaccination status was very high and information on date of birth, number of doses received and date of the last dose were not available. In addition, all information required for stating there is vaccine failure is not yet included in the set of variables (such as time of birth, and number and dates of doses given).

In order to improve data comparability between the participating countries, more standardised laboratory methods for identifying a case and the local adoption of a common case definition for surveillance purposes are needed. Genotyping methods will become more and more feasible in European countries and this will improve the understanding the surveillance data; still, this requires closer collaboration between laboratories and epidemiological centres at national as well as at European levels. In this respect, a call for tender named 'Laboratory surveillance and external quality assurance (EQA) of invasive bacterial diseases in EU' has been awarded in 2008 by a consortium of European institutions coordinated by the University of Würzburg, Germany, and the project now is in the second year of activity. It is focused not only on EQAs and training but particularly on strengthening and harmonising laboratory capacity in MS and reinforcing the collaboration between laboratories and public health institutes in EU. One of the key activities of the group is to promote the use of molecular typing methods in routine surveillance.

8 Annual epidemiological report on communicable diseases in Europe 2010

(Published in November 2010)

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 separately⁵.

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 1 500 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 1 422 hospitals and data from 654 hospitals on 9 129 episodes of Intensive Care Unit (ICU)-acquired pneumonia and 4 077 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 under-reported 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.

⁵ ECDC. Annual Threat Report 2009. European Centre for Disease Prevention and Control, Stockholm; 2010. Available from: http://www.ecdc.europa.eu/en/publications/surveillance_reports/Pages/index.aspx

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 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
Echinococcosis	↔	0.2	45–44, ≥ 65
Vero/Shiga toxin-producing <i>Escherichia coli</i> (VTEC/STEC)	↔	0.7	0–4
Giardiasis	↓	59.6	0–4
Hepatitis A	↓	3.3	5–14
Leptospirosis	↔	0.2	45–64

Disease	General trend	EU notification rate cases per 100 000 (2008)	Main age groups affected (2008)
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	0–14
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	No cases
Vaccine-preventable diseases			
Diphtheria	↓	<0.01	5–14, 45–64
Invasive infection caused by <i>Haemophilus influenzae</i>	↓	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

9 Antimicrobial resistance surveillance in Europe 2009

(Published in November 2010)

This is the first Annual Report of the European Antimicrobial Resistance Surveillance Network (EARSNet) after the transition of the European Antimicrobial Resistance Surveillance System (EARSS) to the European Centre of Disease Prevention and Control (ECDC) by 1 January 2010. This report represents the continuation of the series of highly valued EARSS Annual Reports published by the network since 2001.

During the last decade, antimicrobial resistance has moved steadily to a more and more prominent position on the public health agenda in Europe. The surveillance of antimicrobial resistance conducted previously by EARSS, and currently by EARS-Net, has played an important role to provide documentation of the occurrence and spread of antimicrobial resistance, and to increase awareness of the problem at the political level, among public health officials and in the scientific community.

Based on the antimicrobial resistance data reported to EARS-Net by 28 countries in 2009, and on the results of trend analyses including EARSS data from previous years, the resistance situation in Europe displays large variation depending on pathogen type, antimicrobial substance and geographic region.

In 2009, the most concerning resistance results come from the rapidly decreasing susceptibility of invasive *Escherichia coli* to basically all antimicrobial agents included in the EARS-Net surveillance except carbapenems, and from the high prevalence of resistance in *Klebsiella pneumoniae* to third-generation cephalosporins, fluoroquinolone and aminoglycosides. In half of the reporting countries, the proportion of multiresistant *K. pneumoniae* isolates (combined resistance to third-generation cephalosporins, fluoroquinolones and aminoglycosides) is above 10%, and a few countries are now also reporting high proportions of resistance to carbapenems. These antibiotics have been widely used in many countries due to the increasing rate of extended-spectrum beta-lactamase (ESBL) producing Enterobacteriaceae with a consequent impact on the emergence of carbapenemase production (VIM, KPC and NDM-1), especially in *K. pneumoniae*.

The highest resistance proportions in *E. coli* were reported for aminopenicillins ranging up to 66%. Irrespective of the high level of resistance, proportions continue to increase even in countries already presenting resistance levels well above 50%. Resistance to third-generation cephalosporins in *E. coli* has also increased significantly during the last four years in more than half of the reporting countries. This resistance is directly linked to the high proportions (85–100%) of ESBL positives among the resistant isolates in countries reporting on ESBL in 2009.

Other trends in the occurrence of resistance reported to EARS-Net bring hope that national efforts on infection control and efforts targeted at containment of resistance may in some cases bring the development of resistance to a halt, or even reverse undesirable resistance trends, as exemplified by the development for methicillin-resistant *Staphylococcus aureus* (MRSA). Even though the proportion of MRSA among *Staphylococcus aureus* is still above 25% in 10 out of 28 countries, the occurrence of MRSA is stabilising or decreasing in some countries and a sustained decrease was observed in Austria, France, Ireland, Latvia and UK.

Furthermore, the United Kingdom has shown a consistent reduction of resistant proportions in *K. pneumoniae* for all the antibiotic classes under surveillance, and in a few countries (Greece, Germany, Italy and France) the efforts to control glycopeptide resistance in *Enterococcus faecium* seem to be successful and resulting in a continuous decrease of proportions of resistant isolates. Meanwhile, high-level aminoglycoside resistance in *Enterococcus faecalis* seems to stabilise at a relatively high level. The majority of countries reported proportions of resistant isolates between 30% and 50%.

For *Streptococcus pneumoniae*, non-susceptibility to penicillin is generally stable in Europe and non-susceptibility to macrolides has declined in six countries while no country reported increasing trends. For *Pseudomonas aeruginosa*, high proportions of resistance to fluoroquinolones, carbapenems and combined resistance have been reported by many countries, especially in southern and eastern Europe.

For several antimicrobial and pathogen combinations, e.g. fluoroquinolone resistance in *E. coli*, *K. pneumoniae*, *P. aeruginosa* and for MRSA, a north to south gradient is evident in Europe. In general, lower resistance proportions are reported in the north and higher proportions in the south of Europe likely reflecting differences in infection control practices, presence or absence of legislation regarding prescription of antimicrobials and other factors known to influence the occurrence of resistance.

However, for *K. pneumoniae*, increasing trends of resistance to specific antibiotic classes and of multiresistance have been observed also in northern European countries, like Denmark and Norway, with a traditionally prudent approach to the antibiotic use.

In addition to the regular trend analysis and situation overview, this 2009 EARS-Net report features a new focus chapter providing in-depth analysis for *E. coli* and MRSA. These analyses are based exclusively on data from laboratories reporting consistently over several years. The in-depth analysis confirms a consistent rise in multidrug resistance and reveals a steady and significant decline of antimicrobial susceptibility in *E. coli* over several years.

For MRSA, the observed decline likely reflects the efficacy of infection control measures at hospital level, and may even leave some hope for the success of containment strategies in other areas.

In conclusion, the data reported to EARS-Net for 2009 by the participating countries provide a knowledge baseline on the occurrence of antimicrobial resistance in Europe and document the unfortunate and steadily diminishing antimicrobial treatment options for major bacterial pathogens.

10 HIV/AIDS surveillance in Europe 2009

(Published in November 2010)

Key points

HIV infection remains of major public health importance in Europe, with evidence of continuing transmission of HIV in Europe. Overall, despite incomplete reporting, there is no clear indication of a decline in the number of cases being diagnosed each year. Since 2004, the rate of newly diagnosed cases of HIV reported per 100 000 population has increased by almost 30%, from 6.6 per 100 000 population in 2004 to 8.5 per 100 000 in 2009. The number of diagnosed AIDS cases has continued to decline in the WHO European Region, except in the East, where the number of AIDS cases has increased. Among the 48 countries consistently reporting AIDS data for 2004–09, the rate of reported AIDS diagnoses declined from 2.0 per 100 000 population to 1.0 per 100 000.

- In 2009, 53 427 cases of HIV were diagnosed and reported by 49 of the 53 countries in the WHO European Region (data not available from Austria, Monaco, Russia or Turkey). The highest rates were reported from Estonia, Moldova, Ukraine and Uzbekistan.
- 6 568 cases of AIDS were reported by 48 countries (data not available from Austria, Sweden, Monaco, Russia or Turkey).
- In 2009, 25 917 newly diagnosed cases of HIV infection were reported by the countries of the European Union and European Economic Area (EU/EEA) (data not available from Austria). In the EU/EEA, the highest rates were reported from Estonia, Latvia, Portugal and the United Kingdom.
- In the EU/EEA, the predominant mode of transmission for HIV infection is sex between men, followed by heterosexual contact. Around 38% of the cases reported to be heterosexually acquired were diagnosed in individuals originating from countries with generalised HIV epidemics.
- In the three geographical/epidemiological areas, the predominant transmission mode varies by area, illustrating the wide diversity in the epidemiology of HIV in Europe. Although the reported data suggest that heterosexual transmission has become the dominant mode of transmission in the East, the inclusion of cases from Russia, not available for this report, would significantly increase the relative proportion contributed by injecting drug use. Injecting drug use would then account for more infections in the Region as a whole and in the East in particular. In the Centre the predominant mode of HIV transmission is sex between men followed by heterosexual contact. Similarly, in the West, the predominant transmission mode is sex between men, followed by heterosexual contact, when cases originating from countries with generalised epidemics are excluded.
- The data presented here have some limitations, due to incomplete reporting and missing data from a number of countries and because the data are subject to reporting delays. This limits the conclusions that can be drawn with respect to the size and scope of the HIV and AIDS epidemics in Europe. If the data were to be corrected for these limitations, the overall number of HIV infections would have more than doubled for 2009.

Recommendations for HIV/AIDS surveillance

HIV/AIDS surveillance data are vital to monitor the current status and the trends of the HIV epidemic and guide the public health response. Therefore all countries in Europe should:

- implement case-based national reporting systems for HIV and AIDS cases and ensure data completeness and timeliness; and
- improve the quality of data reported, especially regarding probable routes of transmission and CD4 cell count.

Recommendations for public health

Interventions to control the epidemic should be evidence-based and adapted to the country and its epidemiological situation. From the surveillance data available it is reasonable to recommend the following:

- For the countries in the East: interventions to control HIV among injecting drug users, including harm reduction programmes, should be the cornerstone of HIV prevention strategies. Measures should also be strengthened to prevent heterosexual transmission targeted at those with high-risk partners.
- For the countries in the Centre: prevention should be adapted to each country's circumstances in order to limit the epidemic to its current low level. However, as the epidemic among men who have sex with men is increasing, interventions to control HIV in this group should be strengthened as a priority.
- For the countries in the West: interventions to control HIV among men who have sex with men should be the cornerstone of HIV prevention strategies, including innovative programmes for this group. Interventions for prevention, treatment and care must be adapted to reach migrant populations.

- Overall, HIV counselling and testing should be promoted to ensure early diagnosis and access to treatment and counselling in order to help prevent or reduce further transmission to decrease the number of late presenters and improve the longer term treatment outcomes for the individuals concerned. Equal access to HIV treatment and care for all population groups in need should be ensured in order for countries to reach the global goal of Universal Access to prevention, treatment and care and to achieve the targets set out in the EU Commission Communication and Action Plan 'Combating HIV/AIDS in the European Union and Neighbouring countries, 2009–2013'.

Special reports

11 Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2010 progress report

(Published in September 2010)

In February 2004, representatives of European and central Asian countries met in Dublin and issued a declaration focused on accelerating the implementation of the Declaration of Commitment that countries made at the UN General Assembly Special Session (UNGASS) on HIV/AIDS in 2001.

So, what progress has been made? That is the focus of this report. It seeks to document achievements, using country-based reports, against a selected number of indicators of relevance to the countries of the region. It uses existing data, where possible, and builds on previous work, in general, and the report issued by the WHO Regional Office for Europe and UNAIDS in 2008, in particular. Tailored questionnaires were sent to 55 countries and responses were received from 49.

Political leadership and partnership

Almost all countries report having a strategic framework for their response to HIV (92%) and a management/coordination body (84%). Eight countries reported that they had developed their strategic frameworks in the last five years, i.e. since the Dublin Declaration. However, it is unclear whether these generic measures are appropriate proxies for political leadership on HIV in the region. More appropriate measures might be:

- the degree to which financial resources for HIV prevention are appropriately targeted on key populations, such as injecting drug users (IDU), men who have sex with men (MSM) and sex workers;
- the extent to which countries are implementing key interventions, such as harm reduction programmes for IDU and prevention programmes for MSM at sufficient scale; and
- the extent to which countries have tackled difficult but essential policy issues related to marginalised and most-at-risk populations, such as the provision of harm reduction programmes for IDU in prison settings and access to services for migrants from countries with generalised HIV epidemics.

In general, there is strong evidence that civil society is widely-recognised as a key player in the response to HIV across the region and that it is heavily involved in that response. For example, almost all countries (98%) reported involving civil society to some extent in developing their strategic framework. In line with the findings from the first progress report on the Dublin Declaration, both government and civil society reported specific benefits of including civil society in HIV responses, and civil society commented that the context for their involvement in responses improved between 2005 and 2007. Formal involvement of the private sector in HIV responses appears to be much more limited.

HIV epidemics in Europe and central Asia are largely concentrated among specific populations. There is evidence that some countries in the region are effectively focusing their funding for prevention efforts on the most-affected populations. Doing this more would not only ensure better value for money but promises to produce a more effective response overall. Although financing for national HIV responses in the region is coming increasingly from domestic sources, there is a pressing need for ongoing financial support for HIV responses in low- and middle-income countries of the region. Establishing sustainable mechanisms for providing this financial support needs to be a priority for all countries in the region.

There has been a dramatic increase in funds available for the global response to HIV since the Dublin Declaration. Prior to the declaration, in 2002, resources available for the global response to HIV were USD 1.2 billion. These rose more than sixfold to USD 7.7 billion in 2008. This increase has been driven by the United States and some European countries, through both bilateral and multilateral initiatives. In 2008, 40% of all disbursements for international AIDS assistance from donor countries came from European Union (EU) Member States, European Free Trade Association (EFTA) countries and the European Commission. Given the current global financial crisis and competing priorities for funding, it is important that countries of the region meet the challenge to maintain and further increase these levels of funding and to ensure that funding is used most effectively.

Prevention

There is strong evidence that certain key populations are particularly affected by HIV in Europe and central Asia. The ongoing challenge is to ensure that these populations have access to the necessary HIV prevention services at sufficient scale. The first progress report on the Dublin Declaration stated the importance of intensifying and scaling up targeted HIV efforts to reduce inequities and this issue continues to be relevant in the region.

It is well-known that injecting drug users are particularly vulnerable to HIV infection and this is certainly the case across the region. It is also clear that HIV transmission among IDU can be controlled if effective services are provided on a sufficient scale to make a difference. Key measures of scale include the number of needles/syringes distributed per IDU per year and the percentage of IDU receiving opioid substitution therapy. There is a need for all countries to aspire to the high levels of programme coverage that have already been achieved by some.

It is also well known that MSM have been particularly affected by HIV in certain countries and regions, including parts of Europe. MSM are particularly affected by HIV not only in the western part of the region, but there is also evidence that they are more affected than previously recognised in other parts of the region. This evidence supports the findings of the first progress report that there is a hidden HIV epidemic among MSM. In some countries, infection rates among this group continue to rise. However, the reasons for this are unclear and may vary from country to country. Further evidence on these reasons is needed and should be provided by the ongoing European MSM Internet Study (EMIS). Although it is not clear how coverage of programmes for MSM can be precisely measured, it can nevertheless be seen that coverage remains low in many countries and rates of unprotected anal sex remain unacceptably high. There is also evidence from some countries that particular groups of MSM—the young, those outside capital cities, those who are less well educated and those who identify themselves as bisexual—are less likely to be reached by HIV programmes.

Although sex workers are seen as being particularly at risk of HIV infection globally, there is less evidence that this is the case in the region. For example, HIV prevalence rates among sex workers are relatively low in many countries of the region. However, this is not true of all sex workers. Some categories of sex workers have higher rates of HIV infection, including those who also inject drugs, male and transgender sex workers, those from countries with generalised epidemics and those who work on the street. Among sex workers as a whole, reported rates of condom use during commercial sex are relatively high and probably more relevant than generic measures of sex workers' knowledge.

Migrants from countries with generalised HIV epidemics are especially affected by HIV. Although some countries are concerned about other groups of migrants, there is little convincing evidence that these groups are disproportionately affected by HIV, independent of other risk behaviours such as injecting drug use. Issues relating to migrants do not only relate to HIV prevention but also to the provision of treatment and care. There are particular issues, in many countries, relating to the access of undocumented migrants to essential services, such as antiretroviral therapy (ART).

Prisoners, especially those who inject drugs, are also highly vulnerable to HIV infection in the region. Although there is a recognised need for prisons and the community to have the same HIV services available, this is not the case in many countries of the region. EU/EFTA countries have demonstrated a strong lead in providing opioid substitution therapy in prisons, but this approach has not been taken up in many other countries of the region. This leadership has not been so consistent regarding the provision of sterile injecting equipment in prisons.

The extent to which young people are particularly vulnerable to HIV infection in countries of the region proved to be a contentious issue for this review. Clearly, young people can not be considered a homogeneous group in terms of HIV risk. Nevertheless, some are at significant risk, e.g. young IDU and young MSM, and there is some evidence that programmatic responses are less able to reach these groups than older age groups. Although more than three quarters of countries reported that HIV education is part of the curriculum in secondary schools, it is of concern that comprehensive sexual health education is not available for all young people in the region, particularly for the youngest, e.g. in primary schools.

Living with HIV

All countries with trend data available reported an increase in the number of people on ART since the Dublin Declaration was adopted. However, there are concerns that many of these countries started from a very low level of treatment provision and whether or not all those who need treatment receive it promptly. The main issue regarding prompt delivery of treatment to those who need it is not related to providing treatment to those who are known to need it, e.g. with a CD4 of < 350 cells/mm³. Rather the issue is the extent to which PLHIV in the region who need treatment are unaware of their HIV status, i.e. they have not been diagnosed. ECDC data for 2008 shows that in 21 countries that reported data for CD4 count at time of diagnosis, more than half of those who had a CD4 count had a CD4 count of less than 350 cells/mm³ when diagnosed. These figures are of great concern because they indicate that a significant number of people in the region are starting ART later than recommended.

Almost all countries (84%) report that stigma and discrimination is addressed in national strategies or action frameworks for HIV and AIDS, but this is not consistently reflected in policies and programmes. There is also strong evidence of residual stigmatisation and discriminatory attitudes in countries of the region and the extent to which available mechanisms to combat stigma and discrimination are used is unclear. This situation has not improved significantly since the first progress report on the Dublin Declaration.

Monitoring the Dublin Declaration

One of the commitments of the Dublin Declaration was to monitor its implementation. The European Commission gave this responsibility to ECDC. This report is the product of a process initiated by ECDC to fulfil that responsibility. It is based on the contributions of a wide range of individuals and organisations. In particular, the data in the report has been contributed by the 49 countries that participated in this review.

Two of the principles followed during this review were to use existing data and indicators wherever possible and to ensure that indicators being tracked were relevant to the context of European and central Asian countries. At times, there were tensions between these principles, particularly over the extent to which UNGASS indicators and data can be used for the process. UNGASS indicators have been used wherever possible. Where countries previously submitted data for UNGASS, this has been used. Data was received from 12 countries who did not submit reports to UNGASS in 2008. The review specifically allowed countries to submit available data for particular topics even if it did not correspond exactly to UNGASS indicators. In addition, information has been collected for some population groups for whom there are no specific UNGASS indicators, e.g. prisoners and migrants from countries with generalised epidemics. This review concludes that higher response rates for UNGASS reporting from countries of the region would be achieved if:

- the indicators were more relevant for the region;
- the benefits of international reporting were more clearly articulated;
- reporting burden on countries was reduced by having one coordinated international reporting process

Moving speedily to address these issues emerged as an urgent concern of the countries of the region that participated in this review. ECDC is committed to play a leading role in such a regional process.

12 The 2009 A(H1N1) pandemic in Europe – A review of the experience

(Published in November 2010)

This extended report aims to provide a broad overview of the epidemiology and virology of the 2009 pandemic in the European Union and European Economic Area (EU/EEA) countries (27 EU Member States (MS) and Norway and Iceland). Relevant background information on influenza epidemics and pandemics, notably their variability and unpredictability, is provided. The main trends and information are derived from the analysis and interpretation of the epidemiological and virological data and other analyses provided to the European Centre for Disease Prevention and Control's (ECDC) European Surveillance system (TESSy) through the European Influenza Surveillance Network (EISN).

These data and analyses show that, following its emergence in North America, the pandemic virus started to be transmitted in Europe around week 16/2009. This virus met the previously determined criteria for a pandemic in Europe as it did elsewhere. Surveillance suitable for the pandemic was rapidly developed and agreed upon by ECDC and the EU/EEA MS, with input from the World Health Organization (WHO) and countries already affected from outside Europe. This built on pre-existing systems, but included new elements to monitor the situation among those severely affected by the pandemic virus. In addition, epidemic intelligence and targeted science-watch methods were employed to determine, as early as possible, important parameters needed for informed risk assessments, adjusting projections and informing counter-measures.

The European Influenza Surveillance Network reported an initial spring/summer wave of transmission that appeared in most countries, but was only striking in a few countries, especially the United Kingdom. The rate of transmission briefly subsided as the summer progressed, but then accelerated again in the early autumn just after the re-opening of schools. This time it affected all countries, as an autumn/winter wave was seen to progress from west to east across the continent. The World Health Organization officially declared the pandemic over in week 32 of 2010.

In most countries, the autumn/winter wave of infection was sharp in shape, lasting approximately 14 weeks and was accompanied by a similar wave of hospitalisations and deaths. However, there was heterogeneity in the severity of disease as it varied from place to place, even within countries. In all, 2900 official deaths were reported by EU/EEA countries in the first 12 months during which the MS made extra efforts to collect these data. However, it is recognised this will be only a proportion of the true burden of deaths due to the pandemic. An excess of all-cause deaths in school-aged children was detected. Though this was an influenza virus never seen previously, prior exposure to a presumably antigenically similar influenza virus circulating before the mid-1950s ensured that many older people in Europe had some prior immunity. This fact, not unique to the 2009 pandemic, explains two of its notable differences from interpandemic, or seasonal, influenza: the overall lower mortality and the higher than expected relative burden of illness and fatality rates in young people. Though many older people appeared to be protected, those that were not showed the highest case fatality rates of any age group.

The pandemic virus displaced the previously dominant interpandemic influenza A viruses in Europe; though influenza B viruses still appeared at a low level late in the season. Only a low number of pandemic viruses were found to be resistant to oseltamivir and of these, very few seemed to be capable of being transmitted from one human to another. Though the pandemic viruses are not identical, there is little evidence of significant drift or the emergence of dominant new variants to date. One variant—A(H1N1)-D222G—has been suggested to be associated with more severe disease, though causation has not been established.

Although anecdotal evidence suggests that there were more mild and asymptomatic cases in comparison to the interpandemic influenza, there were enough cases of acute respiratory distress syndrome (ARDS)—a condition very rarely seen with interpandemic influenza—to stress intensive-care services in many places. Young children experienced the highest rates of disease, and country reports reveal that the highest rates of infection were in school-aged children. These high rates of illness passed particular burdens onto primary services, hospital paediatric services and especially intensive-care units in some localities.

Some limited data from serological surveys are now becoming available and support the surveillance data indicating higher rates of transmission than suspected from the clinical signs. However, these are not yet sufficient to make reliable predictions concerning what will happen next winter (2010/2011), and for this purpose the experience of the Southern Hemisphere temperate countries in the European summer period of 2010 has been most revealing.

At an early stage, the pandemic was much less severe than what had been feared. This was highlighted in the early ECDC Risk Assessments⁶, WHO reports and briefings given by ECDC to national and European authorities.

⁶ Available here: http://ecdc.europa.eu/en/healthtopics/H1N1/risk_threat_assessment/Pages/risk_threat_assessment.aspx

With low rates of absenteeism, there was also little impact on services outside of the health sector. This and other features meant that this was arguably the most benign pandemic for which Europe could have hoped.

As the 2009 pandemic was less of a threat than what many countries had prepared for, this tested the flexibility of existing plans. It occurred at a time when diagnostic tests were made quickly available, as were preventive pharmaceutical countermeasures like antivirals—which have little resistance to the neuraminidase inhibitors but almost complete resistance to older adamantanes—and appropriate vaccines that were developed quicker than ever before. Still, each of these developments brought their own problems and there were new challenges and surprises. As mentioned previously, there was a higher than expected rate of ARDS at a time when many intensive care units were already under pressure, without the rest of the hospitals necessarily being stressed. A more welcome surprise was that the rapidly prepared pandemic vaccines showed such a good immunological response that for many of the formulations only a single dose was needed in adults. They have also proved to be effective and acceptably safe, though post-marketing surveillance still needs to be maintained to determine exactly how safe they are. When the vaccines were made available they were greeted with variable enthusiasm to vaccinate among the health professionals. Reliable coverage data on an EU level are not yet available, but the impression is that coverage will be highly variable across Europe, with only some countries achieving high coverage among the whole population or targeted risk groups.

The lack of widespread acceptance of this vaccine is partly due to the difficulty in transmitting the complex risk communication message that essentially told people that unless they were in a risk group (young children, people with chronic ill health and pregnant women), the chance of severe disease following infection was very low. However because 25–30% of official deaths were in previously healthy people under 65 years of age, the second message was that there was a small but real risk of severe disease and death from the pandemic in all healthy adults and children. The challenges of risk communication were therefore considerable.

On balance, it is probably fair to say that the EU/EEA managed the response to the pandemic reasonably well. No country over-responded, while the systems developed by the Commission, WHO and ECDC for discussing and sharing information and analyses proved resilient and useful. The EISN virological and primary care-based surveillance worked well and served to augment the data emerging from the ECDC epidemic intelligence and targeted science watch sources. Less successful was the sharing of analyses from the countries first affected and it was fortunate that data and analyses were quickly available from North America and the Southern Hemisphere. Despite the many reviews and lessons-learned activities already underway, there are some general lessons that have become immediately apparent:

- agreed definitions of the severity of a pandemic are needed to improve the flexibility of preparedness plans;
- routine surveillance systems established prior to the pandemic will ensure that much less will need to be modified in a crisis, or even a pandemic;
- there should be better routine 'severe end' surveillance of people in hospitals and deaths;
- in the future, sharing early analyses from the first affected countries needs to work better;
- much work, including research and development, needs to take place to make seroepidemiology available in real time; and
- modelling during a pandemic should be more closely related to policy and operations across Europe, not just in one or two countries.

Pandemic planning will now need to be revisited as the occurrence of this pandemic does not exclude the possibility of another pandemic emerging in the near future; an H5 or H7 pandemic, for example. The next generation of plans need to include more flexibility for reacting to different severities and different combinations of ECDC pandemic 'known unknowns'. This would be more feasible if some consensus on a European view of assessing severity was reached, matching levels of response to different scales and characteristics. These next plans must also provide for the consolidation and sustainability of the influenza surveillance systems introduced to meet the demands of the pandemic; in particular, severe acute respiratory infections, attributable mortality and, eventually, seroepidemiological surveillance. This surveillance work needs to be prioritised, given the right level of resources and subsequently allowed to develop and be tested during the interpandemic period so that they will be more resilient and effective by the time the next major crisis appears.

13 Progressing towards TB elimination – A follow-up to the Framework Action Plan to Fight Tuberculosis in the European Union

(Published in November 2010)

Introduction

The Framework Action Plan to Fight Tuberculosis in the European Union was launched by the European Centre for Disease Prevention and Control (ECDC) in 2008. On the basis of a request of the EU Health Commissioner to develop a monitoring framework in support of the plan, ECDC has now produced a Follow-up to the Framework Action Plan. The objectives of the Follow-up to the Framework Action Plan are: to provide an overview of the current strategic environment for TB control in the EU and outline how this relates to the global situation; and, to describe an epidemiological and strategic monitoring framework that would allow progress towards elimination of TB in the EU to be assessed.

Strategic environment at European and global levels

The current level of the TB epidemic in the EU calls for a specific monitoring framework that is directly relevant to the European epidemiological context and easily applicable by the Member States. Therefore, the development of a monitoring framework requires a thorough understanding of the epidemiological and strategic environment to be monitored. Thus, this follow-up report provides an overview of the current environment for the EU and globally, recognising the need for a comprehensive TB control strategy in view of the globalised context of the TB epidemic.

Monitoring the Framework Action Plan

This report proposes a number of core epidemiological and operational indicators and targets as an integral part of the monitoring framework. These indicators and targets are compatible with those already monitored as part of existing global and regional collaborations, and can generally be derived from information already collected and reported by countries. The core indicators of the Follow-up are all specifically related to the eight strategic areas of the Framework Action Plan to allow the assessment of progress of each of these areas.

Epidemiological indicators

- 1 Trends in case notification rate
- 2 Trends in MDR-case notification rate
- 3 Trends in ratio of notification rates in children to adults
- 4 Trends in mean age of TB cases

Operational indicators

- 1 Availability of a national TB control plan
- 2 Availability of guidelines for implementing the national TB control plan
- 3 Percentage of national TB reference laboratories (adhering to ERLN-TB) achieving adequate performance in the external quality assurance scheme
- 4 Availability of a strategy for introducing and implementing new tools for TB control
- 5 Percentage of new pulmonary TB cases confirmed by culture and percentage of cases tested by DST for first-line drugs
- 6 Percentage of Member States reporting treatment success rate
- 7 Treatment success rate
- 8 Percentage of TB patients for whom HIV status is known

Annex: ECDC publications 2010

Technical reports

May

Risk assessment on Q fever

June

Core functions of microbiology reference laboratories for communicable diseases

September

Hepatitis B and C in the EU neighbourhood: prevalence, burden of disease and screening policies

October

Surveillance and prevention of hepatitis B and C in Europe

November

External quality assurance scheme for Salmonella typing

Evidence synthesis for Guidance on HIV testing

December

Fostering collaboration in public health microbiology in the European Union

ECDC Guidance

October

Public health management of sporadic cases of invasive meningococcal disease and their contacts

HIV testing: increasing uptake and effectiveness in the European Union. [Also 'In brief']

December

Risk assessment guidelines for diseases transmitted on aircraft (RAGIDA). Part 2: Operational guidelines. Second edition

Surveillance reports

March

Tuberculosis surveillance in Europe 2008

May

Influenza surveillance in Europe 2008/09

October

Annual Threat Report 2009

Surveillance of invasive bacterial diseases in Europe 2007

November

Annual Epidemiological Report on Communicable Diseases in Europe 2010

Antimicrobial resistance surveillance in Europe 2009. Annual report of the European Antimicrobial Resistance Surveillance Network (EARS-Net)

HIV/AIDS surveillance in Europe 2009

Special reports

July

Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2010 Progress Report: Summary

September

Implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2010 Progress Report

November

The 2009 A(H1N1) pandemic in Europe, a review of the experience

Progressing towards TB elimination. A follow-up to the Framework Action Plan to Fight Tuberculosis in the European Union

Meeting reports

January

First annual meeting of the invasive bacterial infections surveillance network in Europe

February

Expert forum on communicable disease outbreaks on cruise ships

March

Training strategy for intervention epidemiology in the European Union

April

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

May

Annual meeting of the European Influenza Surveillance Network (EISN)

June

First annual meeting of the European Reference Laboratory Network for Tuberculosis

Expert consultation on healthcare-associated infection prevention and control

July

Surveillance in EU and EEA/EFTA countries

December

Developing health communication research: a focus on communicable diseases—challenges and opportunities

Mission reports

February

Public consultation and the advancement of the health system in the Former Yugoslav Republic of Macedonia

October

West Nile virus infection outbreak in humans in Central Macedonia, Greece – July–August 2010

Technical documents

March

Climate change and communicable diseases in the EU Member States: Handbook for national vulnerability, impact and adaptation assessments

Joint European pandemic preparedness self-assessment indicators⁷

September

Conducting health communication activities on MMR vaccination

⁷ Published by WHO.

Corporate publications

Summary of key publications 2009

Annual Report of the Director 2009

Strategies for disease-specific programmes 2010–2013

ECDC Insight

Executive Science Update

Regular publications

Weekly/bi-weekly influenza surveillance overview (42 issues in 2010)

Influenza virus characterisation, summary Europe (9 issues in 2010)

