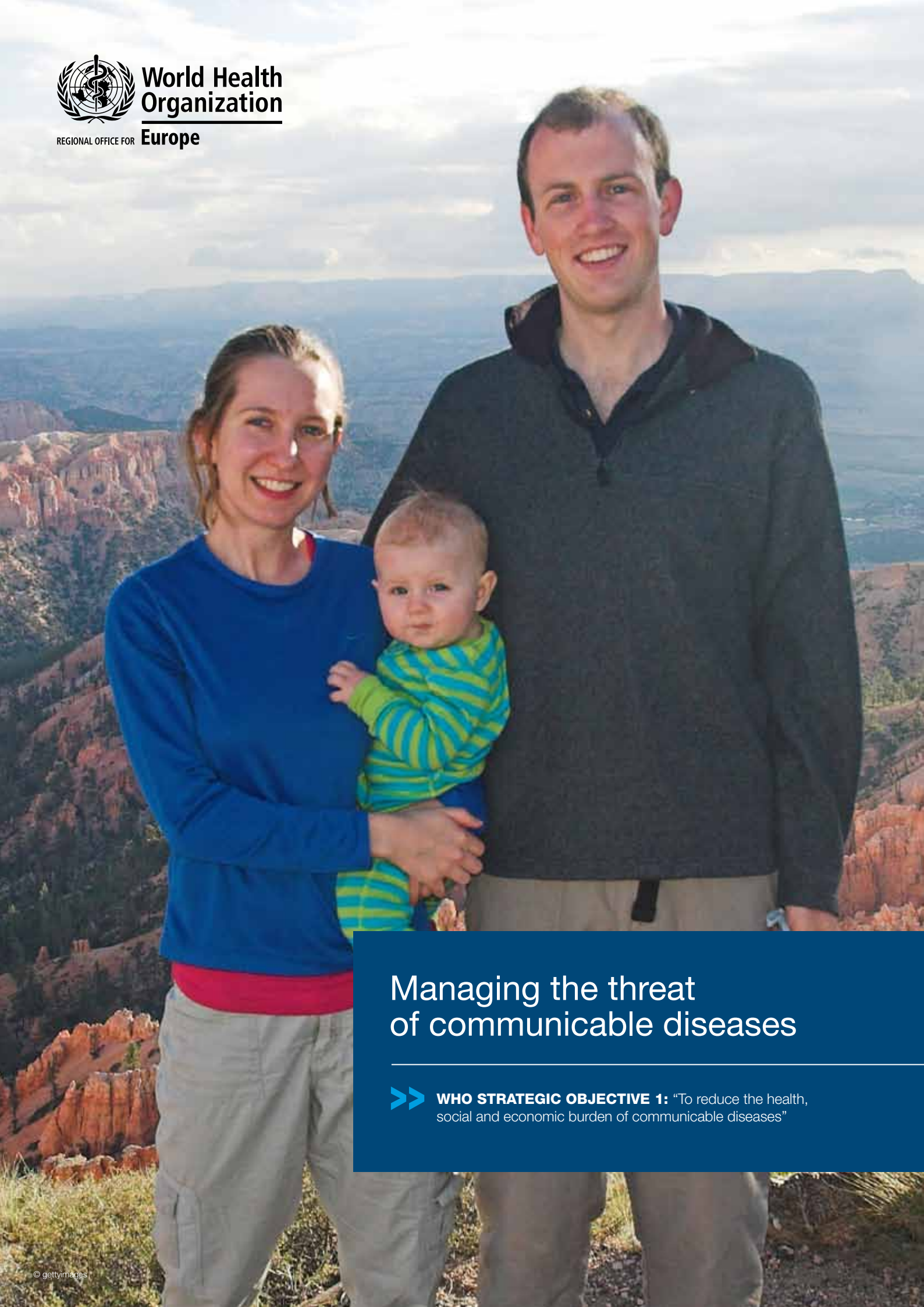
World Health Organization

REGIONAL OFFICE FOR Europe



Managing the threat of communicable diseases

WHO STRATEGIC OBJECTIVE 1: "To reduce the health, social and economic burden of communicable diseases"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"Emerging and re-emerging communicable diseases (CDs) remain a priority area of concern in many countries in the Region… including alarming outbreaks of potential global significance…The growth of antimicrobial resistance and hospital-acquired infections is also of great concern, and the latter is increasingly also a public concern."

Zsuzsanna Jakab, WHO Regional Director for Europe

The following programmes at the WHO Regional Office for Europe are concerned with communicable diseases:

- VACCINE-PREVENTABLE DISEASES AND IMMUNIZATION (VPI)
- ANTIMICROBIAL RESISTANCE (AMR)
- ALERT AND RESPONSE OPERATIONS (ARO)
- INFLUENZA AND OTHER RESPIRATORY PATHOGENS (IRP)

The Regional Office also plays a major role in strengthening Member States' capacities related to

- THE INTERNATIONAL HEALTH REGULATIONS
- NATIONAL LABORATORY SERVICES

Introduction

All of the work WHO undertakes for the prevention, early detection, diagnosis, treatment, control, elimination and eradication of communicable diseases is shaped by the priorities and needs of its Member States. This includes technical support for the formulation of national policy and strategy as well as support in programme planning, implementation and monitoring/evaluation. Specific attention is given to countries with the highest burden of mortality and disease and to the disproportional impact of communicable diseases on poor and marginalized populations. The aim in the WHO European Region is to enable all children to grow up free from the threat of vaccine-preventable diseases and to detect and contain disease outbreaks before they can become national or international health emergencies. Targeted diseases include but are not limited to vaccine-preventable, tropical, zoonotic and epidemic-prone diseases. Separate programmes within WHO focus on HIV/AIDS, tuberculosis and malaria.

Executive Summary

Vaccine-preventable diseases and immunization (VPI): Great strides have been made in recent decades in the WHO European Region in dramatically reducing the threat of many vaccine-preventable diseases, such as polio, whooping cough, measles and rubella. Many millions of deaths, disabilities and unnecessary suffering have been prevented, resulting also in long-term social and economic benefits to society. Success in eradicating or eliminating many serious diseases is now within reach. However, challenges such as decreasing commitment, reduced funding and inequitable access to immunization are inhibiting progress.

Antimicrobial resistance (AMR) and especially antibacterial resistance is caused by the use, and particularly the overuse and misuse, of antibiotics. It is a problem of growing concern that threatens to undermine the success of treating life threatening bacterial infections and prevention of infections after surgery and diagnostic interventions. Curtailment requires integrated monitoring of antibiotic resistance and consumption, prescriber and consumer education, and regulation of use in communities, hospitals and the veterinary and agricultural sectors. WHO is working to strengthen needed technical capacity and political commitment at national and international levels to ensure that antimicrobials and especially antibiotics will in the future be effective and available –for all who need them.

Influenza and other respiratory pathogens (IRP): Seasonal influenza epidemics affect 5-15% of the population in the northern hemisphere each year, creating a significant economic and social burden for society. In addition, new influenza subtypes can emerge at any time with the potential to cause global pandemics. The 2009 influenza pandemic revealed both the strengths and shortcomings of influenza surveillance and response systems in the WHO European Region. Among the lessons learnt is the need for greater flexibility in pandemic plans and preparedness activities. Seasonal influenza prevention programmes also need to be strengthened throughout the Region.

Alert and response operations (ARO): WHO plays a leading role in protecting global public health from outbreaks of infectious diseases and other health emergencies. Its alert and response activities, including coordination of the Global Outbreak Alert and Response Network, are aimed at the detection, verification, risk assessment and containment of epidemics. Through its event management system, WHO manages critical information about outbreaks and ensures accurate and timely communication between key actors.

The International Health Regulations (2005) are a set of rules, procedures and obligations agreed upon by 194 countries to help them prevent and respond to acute public health risks that may be of international concern. These countries are committed to implementing the procedures as well as to gradually developing and strengthening their public health core capacities for surveillance and response. Full implementation of the IHR requires the continued commitment of the international community and further strengthening of both national and international capacities, including those of WHO in its vital event management role.

Laboratory services are crucial for communicable disease surveillance and response. Through disease-specific networks, laboratories supply and exchange the information needed at national and international levels to detect, monitor and contain the spread of disease. WHO supports Member States in developing national policies, standards and strategies for laboratory services, strengthening the capacities of these laboratories and creating well-structured networks.


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Vaccine-preventable diseases and immunization


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Vaccination is one of the most successful and cost-effective public health tools for preventing serious disability and death. Each year an estimated 3 million lives are saved worldwide thanks to immunization programmes. Countries throughout the European Region have benefited significantly from disease prevention efforts to make polio, diphtheria, rubella and measles, and whooping cough, diseases of the past; and these societies continue to reap the benefits of new vaccine development and introduction.

Annually, 10.7 million babies are born in the European Region and they all need to be immunized against vaccine-preventable diseases. Yet, in Europe, nearly 650,000 infants do not receive the complete three-dose series of diphtheria, tetanus and pertussis vaccine by age one.

The 2005 World Health Assembly Resolution WHA58.15 urged all Member States to adopt the *Global Immunization Vision and Strategy*[1] (GIVS) as a framework for strengthening national immunization programmes during the 2006 to 2015 timeframe, with the objectives of achieving higher vaccination coverage and equity in access to immunization; improving access to existing and future vaccines; and extending the benefits of vaccination linked with other health interventions to age groups beyond infancy. This strategy has recently been supported by the commitment of the Bill and Melinda Gates Foundation of US$ 10 billion over the next 10 years (the *Decade of Vaccines*) to help research, develop and deliver vaccines for the world's poorest countries.

In the 21st century, every child has the right to live free from vaccine-preventable diseases. Effective and safe vaccines against over 20 serious diseases are available and many promising new vaccines are being developed. However, although today's vaccines are highly effective and safe, new challenges are emerging.


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1 World Health Organization and UNICEF. GIVS: Global Immunization Vision and Strategy 2006-2015. Geneva, WHO 2005.

Challenges

Low immunization coverage and cross-border mobility of people pose the risk of disease importation to countries and regions in which diseases have been eradicated. Stagnated or lowered coverage rates have also contributed to outbreaks and threaten the health of children and adults across Europe. In 2007 western European countries recorded a higher number of measles cases than their neighbours to the east. This situation persists such that more than 67% of the 7345 confirmed measles cases in 2009 occurred in western European countries.

Recent global outbreaks of avian flu influenza and H1N1 are important reminders of the speed at which disease can spread and the significance of maintaining strong surveillance systems. They also illustrate that only with continued vaccine development and collaboration across borders can prevention efforts be truly effective.

Key challenges facing the WHO European Region include:

- persistence of vulnerable and marginalized populations lacking access to immunization services;
- decreasing national commitment to immunization due to absence of disease, competing health priorities and lack of available funds resulting from the global financial crisis;
- inadequate and insufficient immunization-related information reaching parents;
- growing sources of misinformation, misperceptions and ill-informed beliefs;
- complexity of health-care reforms that adversely impact delivery of community-based health care services;
- ongoing outbreaks of measles and rubella in the western part of Europe due to low routine immunization coverage and parents refusing vaccines; as well as a large polio outbreak in the Region in 2010

What the WHO Regional Office for Europe is doing

In line with Millennium Development Goals 4 and 6, GIVS, and the *Decade of Vaccines*, WHO/Europe's goal is to reach and maintain high levels of immunization of children, adolescents and adults, particularly those in vulnerable groups. To achieve this, WHO/Europe's Vaccine-Preventable Diseases and Immunization Team (VPI) provides policy and technical assistance to countries to maximize equitable access of all people to vaccines of assured quality, including new immunization products and technologies. In doing so, VPI aims to strengthen Member State programmes for the control of vaccine-preventable disease through partnerships with them, with international organizations and with bilateral agencies.

Current major initiatives include:

- promoting access to high-quality vaccines and safe immunization practices;
- introducing new and under-used antigens;
- eliminating measles, linked to accelerating prevention of congenital rubella infection;
- maintaining the poliomyelitis-free status of the European Region; and
- strengthening vaccine-preventable disease surveillance, including data management and laboratory networks.
- coordinating European Immunization Week and promoting the message that immunization of every child is vital, to prevent diseases and protect life. The slogan – *Prevent. Protect. Immunize* – carries this message across the Region.

Why is it so important?

Successful immunization interventions over time have resulted in formidable achievements and a significant decline in suffering and death. Immunization prevents death and disability at a fraction of the cost of treatment, to the benefit of both the individual and society as a whole. Effective health policies and related expenditure must be seen as an investment, not a cost. Good health boosts economies while illness drains them.

Immunization is undoubtedly one of the most cost-effective public health achievements of modern times. It is one of the rare services that costs very little, but offers huge benefits for the health and well-being of populations. WHO estimates that, since the beginning of the Global Polio Eradication Initiative (GPEI) in 1988, five million people are walking today who would have otherwise been paralysed by the polio virus.

A study of 11 western European countries reported that the cost of measles treatment was € 209-480 per case, while the cost of measles vaccination and control was € 0.17-0.97 per person (Carabin 2003). Health-care provider costs during a measles outbreak of 614 cases in Germany were reported to be € 102 804 for measles with complications, and € 229 122 for all services combined (Wichmann, 2009).

The economic impact of immunization is much broader than just savings on the costs of treatment. Immunization protects against the long-term effects of a disease on a person's physical and mental well-being and thereby on their ability to complete education or training and to carry out work. In this way, the protection provided by immunization offers immeasurable individual and societal benefits in terms of earning capacity, productivity and growth.

>> *What additional progress can be achieved with more resources?*

With current levels of funding, WHO/Europe can continue to work with Member States to prevent a decline in coverage rates and extend access to vulnerable and marginalized populations with more antigens. But much more is needed if we are to ever realize the eradication and elimination goals that are within our reach.

Greater donor support would allow WHO/Europe to:

> establish a Measles and Rubella Regional Verification Commission
> strengthen national vaccine preventable disease surveillance systems, including laboratory networks
> support vaccine-preventable disease outbreak control measures
> assist Member States in ensuring completeness and accuracy of data at national and sub-national levels
> equip Member States with the information they require to make informed decisions regarding new and under-utilized vaccine introduction.
> support the establishment and reinforce national immunization technical advisory groups (NITAGs)
> provide member States with the tools necessary to tailor communications and responses to reach susceptible populations
> further enhance knowledge exchange across the Region by building communication platforms and facilitating dialogue.

Antimicrobial Resistance

Antibiotics have revolutionized medicine and without them millions of people would have continued to die from what are now considered relatively simple and easy-to-cure infections. Today, modern health care depends on antimicrobial drugs such as antibiotics to prevent and treat infections.

Antimicrobial resistance (AMR) threatens the health care sector's ability to control infections efficiently. AMR is the ability of a microorganism to survive exposure to antimicrobial drugs. Genes can transfer this ability from one microorganism to another and between human beings, animals, products and the environment. Antimicrobial drugs include antiviral drugs (for instance against HIV) and anti-parasitic drugs (for instance against malaria). Antibacterial drugs, also called antibiotics, are used to prevent and treat bacterial infections such as pneumonia, bloodstream, wound, respiratory-tract and sexually transmitted infections as well as tuberculosis. Their use but especially overuse and misuse have led to an increase in and the emergence of bacterial resistance to these drugs. Over the counter sales of antibiotics, prescribing antibiotics for viral infections, incorrect precriptions of antibiotics all lead to the increased risk of bacterial resistance.

The development of bacterial resistance had already been observed when the first anti-bacterial drug, penicillin, was developed in 1928. The more antibiotics are used, the higher the risk of resistance. The food industry's increased use of antibiotics can lead to the further emergence of resistant bacteria and genes that threaten human health as many bacteria are present in humans, animals and the environment.

In the European Union, Norway and Iceland, 400 000 resistant bacterial infections, mostly health care associated infections, are estimated to occur every year, leading to about 25 000 deaths (according to the European Centre for Disease Prevention and Control). Preventive measures including infection control , hygiene especially hand hygiene), surveillance and vaccination can and should be used to prevent health-care-associated infections in addition to the appropriate use of antibiotics.

Challenges

Antimicrobial resistance is a serious problem that strikes at the core of infectious disease control and has the potential to halt, and possibly even to roll back, progress we have made during the last 70 years. While it is a natural response of microbes, resistance can be contained through careful and appropriate antibiotic use and prevention of infections all together.

Surveillance and monitoring of antibiotic resistance and consumption, prescriber and consumer education and awareness , infection prevention and control and regulation of the use of antibiotics in communities and hospitals have shown that it is possible to contain antimicrobial resistance. However, even in well-regulated systems, such as those in Europe, resistance in some pathogens continues to increase unabated and problems remain in the use of antibiotics outside the health system, especially in veterinary and agricultural use, which in some countries outweighs the use in human medicine. The increased use of antibiotics in animal production for human consumption can lead to the further emergence of resistant bacteria and genes that threaten human health.

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Multidrug-resistant organisms can complicate the outcome of many planned interventions in hospital settings, making some surgical medical diagnostic procedures life threatening. The emergence of resistant strains can also complicate recovery in the community, where antibiotics are used to treat foodborne infections and other common infections such as those of the urinary tract, respiratory tract and skin.

What the WHO Regional Office for Europe is doing

The WHO Regional Office for Europe supports countries' in a seven point strategic actions plan to contain antimicrobial resistance in various sectors. It does so by advocating for research, forming and facilitating strategic partnerships and working at local, national and international levels to build capacity and political commitment and strengthen essential parts of the health systems, such as diagnostic capacity, surveillance systems and hospital infection control programs. The goals are to ensure the provision of high-quality and effective antimicrobials for patients today and the preservation of their life-saving power for future generations.

On the occasion of World Health Day 2011, the WHO Regional Office for Europe released policy guidance on antimicrobial resistance from a food safety perspective, addressing primarily the Commonwealth of Independent States and south-eastern European countries. This guidance will complement a comprehensive policy package for health ministries that is being developing at global level.

The guidelines include the key interventions necessary to reduce the impact of diseases caused by resistant bacteria:

- National surveillance systems need to be expanded and strengthened so that bacterial resistance can be detected early and the problem can be better documented and monitored in the future. The European Antimicrobial Resistance Surveillance Net (EARS-NET) in the European Union is currently in place in 27 countries of the region

- Surveillance systems need to monitor, for example, the use and prescription of quality antibiotic drugs. The European Surveillance of Antimicrobial Consumption (ESAC) provides yearly data on antibiotics consumption for 34 European countries and offers a good model for other countries.

- Appropriate use of antibiotics in the food industry, especially in the animal husbandry sector, must be ensured. It is particularly important to reduce the use of antibiotics for the purpose of preventing infections.

- Prevention of hospital-acquired infections, testing and isolation of carriers of antibacterial-resistant bacteria, and standards for infection control and hygiene are needed in every health care facility and other facilities where infections can spread easily.

- As the issue is complex and can not be solved by one sector only national coordination mechanism need to be in place so that all sectors and stakeholders can contribute to reducing antibiotic usage and consequently bacterial resistance

Why is this important?

The use and misuse of antibiotics in human medicine and animal husbandry over the past 70 years has led to a relentless rise in the number and types of microorganisms resistant to these medicines – leading to death, increased suffering and disability, and higher health care costs.

.In the WHO European Region, most of these deaths from infections caused by multidrug-resistance bacteria are the result of hospital acquired infections and many could have been prevented through stringent hospital infection control measures. In addition, infections due to antibiotic-resistant bacteria result in an estimated 2.5 million extra hospital days and additional costs of more than €900 million each year in the European Union (EU)/ European Economic Area alone.

According to data from the European Antimicrobial Resistance Surveillance System (EARSS) overall resistance to antibiotics in bacteria such as MRSA that cause serious hospital acquired infections in humans reaches 25% or more in some EU countries. The situation outside the EU is not well documented.

The increasing development of resistance is not only a threat to the outcome of any anti-microbial treatment but also to the success of medical interventions such as transplants, hip replacements, saving pre-mature infants and many invasive diagnostic procedures.

Multidrug-resistant and extensively multidrug-resistant tuberculosis (MDR/XDR) poses an additional serious health risk. Fifteen countries in the Region, including four in the EU, are considered to have the highest rates of multidrug-resistant tuberculosis in the world. An estimated total of 81 000 cases of MDR/XDR tuberculosis occur every year in these countries, only 34% of which are detected. The remaining undetected cases, coupled with the rising HIV epidemic in many eastern European countries, contribute to a tuberculosis epidemic that is becoming more difficult and costly to manage. The cost of treatment of MDR/ XDR tuberculosis is 10 times higher than the standard treatment offered to tuberculosis patients.

>> *What additional progress can be achieved with more resources?*

Interventions consisting of both prevention and control measures can stop and even reduce the development of antimicrobial resistance. But long-term success also depends on the development of new drugs.

Political commitment is needed by all sectors involved to assure that appropriate actions will be in place in every country, health care facility, pharmaceutical company and the food industry. No single body has the knowledge or capacity to face the further emergence and spread of antimicrobial resistance alone – a strategic alliance and coordination among all partners is therefore essential. Many countries currently lack the capacity to even review the problem of antibiotics resistance as surveillance systems are not in place, and sensitivity testing is not performed in many laboratories. National coordinating mechanism need to be created, national awareness on infection prevention and prudent use of antibiotics is largely needed.

Alert and response operations

Throughout history, humanity has been challenged by outbreaks of infectious diseases and other health emergencies that have spread, caused an unprecedented number of deaths and suffering and threatened public health security. Such emergencies can also have an impact on economic or political stability, trade, tourism, access to goods and services and, if they occur repeatedly, on demographic stability.

Public health security is defined as the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of national populations. Ensuring public health security in today's world requires an integrated global alert and response system for epidemics and other public health emergencies. National health systems and the international community need to be equipped to detect, assess, respond to and cope with major epidemic and pandemic-prone diseases (e.g. influenza, meningitis, yellow fever, haemorrhagic fevers, plague and smallpox) through the development and implementation of tools, methodologies, practices, networks and partnerships for prevention, detection, preparedness and intervention.

WHO's alert and response activities, including coordination of the Global Outbreak Alert and Response Network, represent a major pillar of global public health security aimed at the detection, verification and containment of epidemics. In the event of the intentional release of a biological or chemical agent, for example, these activities would be vital to effective international containment efforts.

Challenges

The vast amount of information available from various forms of media makes it very challenging to detect meaningful and significant "signals" about risks to public health. Separating important "signals" from huge amount of other information ("noise") requires utilisation of modern information technologies and close cooperation with a number of partners at local, regional and global levels. A joint risk assessment of detected hazards requires a systematic approach and – once again – communication between a number of stakeholders in Member States, partner agencies, and WHO Country, Regional and Headquarters' staff. Maintaining transparency and open communication channels, while guaranteeing confidentiality of sensitive information at all times, is a precondition for detecting, assessing and responding to any kind of hazards threatening public health in a timely and effective manner.

What the WHO Regional Office for Europe is doing

Epidemiological data and operational information about outbreaks is dynamic and changes rapidly. WHO has developed a comprehensive “event management system” to manage critical information about outbreaks and other public health emergencies and ensure accurate and timely communications between key international public health professionals, including WHO Regional Offices, Country Offices, collaborating centres and partners in the Global Outbreak Alert and Response Network.

The WHO event management system generates a dynamic picture of alert and response operations and provides information for action in a systematic way to enable both WHO and the Global Outbreak Alert and Response Network to prepare better, respond faster and manage resources more effectively. The WHO event management system is being further strengthened to support alert and response operational aspects of the revised International Health Regulations (IHR).

The WHO Strategic Health Operations Centre (SHOC) provides a hub and technical platform for the global and regional WHO Event Management Teams (EMT) to support and conduct event management during significant IHR events and humanitarian emergencies.

At regional level, WHO/Europe

- continuously monitors information from a variety of formal and informal sources on potential public health hazards, communicating and assessing related risks with the Member States and with all levels of WHO, utilizing communication channels created under the IHR (2005);
- supports Member States in building national capacities for epidemic preparedness and response in the context of the IHR (2005), including laboratory capacities and early warning alert and response systems;
- supports national and international training programmes for epidemic preparedness and response;
- coordinates and supports Member States in pandemic and seasonal influenza preparedness and response;
- develops standardized approaches for readiness and response to major epidemic-prone diseases (e.g. meningitis, yellow fever, plague);
- strengthens biosafety, biosecurity and readiness for outbreaks of dangerous and emerging pathogens (e.g. SARS, viral haemorrhagic fevers).

Influenza

Influenza is an acute viral infection that spreads easily from person to person. It circulates worldwide causing yearly epidemics, and it can affect any person in any age group. Each year, seasonal influenza affects 5-15% of the population in the northern hemisphere. While most infected people do not need medical treatment, annually an estimated 3-5 million infections worldwide cause severe disease resulting in hospitalization or even death. Globally, an estimated 250 000 to 500 000 people die each year as a result of influenza infection.

Influenza, therefore, is a significant public health problem. In addition to seasonal epidemics, influenza pandemics can occur when a new influenza virus subtype emerges and then spreads easily among human beings. This can potentially result in millions of deaths.

Seasonal epidemics and particularly pandemics have an impact on society as a whole with significant direct costs due to associated medical treatment and care, as well as indirect costs of preventive measures and loss of productivity within the workforce. Influenza is a vaccine-preventable disease and most countries with influenza vaccination programmes target health care workers and risk groups for severe disease. Yearly prevention campaigns aimed at raising awareness on social distancing and personal hygiene are also often implemented. Specific influenza antiviral drugs are available to treat influenza infections and the management of severe respiratory disease must include supportive treatment.

Challenges

The 2009 H1N1 pandemic highlighted the crucial need for timely information on influenza activity, risk factors for severe disease and the degree of severity in order to target interventions. Although seasonal influenza surveillance in a number of European Member States is well developed for mild disease (influenza-like illness), sentinel systems for the routine monitoring of severe disease (severe acute respiratory infection) were largely lacking. Even though the pandemic was relatively mild, pressures on critical care units were experienced across the Region. Pandemic vaccines were under-utilized in a number of countries due to their late arrival and to the mildness of the disease in the majority of patients, leading to low acceptance among health care workers and the public. Consequently, a disproportionate number of pregnant women compared with the more traditional risk groups targeted for influenza vaccination developed severe disease. Many countries faced communication challenges during the pandemic, particularly related to vaccines. Pandemic plans and preparedness activities were considered useful but need to be revised to allow greater flexibility of the response. Seasonal influenza prevention programmes also need to be strengthened throughout the Region, a challenge in the face of competing priorities and the current financial climate. Overall, the world would not have coped well with a severe pandemic.

What the WHO Regional Office for Europe is doing

WHO/Europe works with Member States to ensure that:

- information on influenza activity is collected in a timely manner each season, in order to inform health service policies for prevention and treatment;
- early warning systems are in place to detect the emergence of novel influenza viruses with pandemic potential; and
- plans are created and then implemented to protect the population against seasonal influenza and in the event of an influenza pandemic.

This work is carried out through cooperation with national focal points (who provide data to the Regional surveillance platform EuroFlu [www.euroflu.org]), surveys, training, meetings, dissemination of guidance and examples of good practice, publications and support during outbreaks.

Why is it important?

Seasonal influenza causes deaths among people with certain risk factors each year; these include the elderly, persons with chronic heart disease and respiratory conditions like asthma, infants (0-2 years) and pregnant women. The 2009 pandemic focussed the attention of clinicians and public health officials alike on these groups, as well as the potential for a new virus to cause severe disease and death in healthy individuals. The pandemic thus highlighted the importance of improving influenza vaccination and prevention programmes in countries. It also highlighted the extraordinary rapidity with which a new virus can spread across the globe, as countries had only a few weeks to activate their pandemic plans before the number of cases took off. The importance of the WHO Global Influenza Surveillance Network, consisting of National Influenza Centres (NIC) and WHO collaborating centres for influenza, was paramount in documenting the global spread of the virus as well as informing national strategies for response.

>>What additional progress can be achieved with more resources?

The lessons learnt from the pandemic must be translated into improved pandemic preparedness plans, improved surveillance for severe disease and laboratory capacities, and improved seasonal influenza prevention programmes and campaigns. It is critical that Member States and the donor community continue to support these efforts, which should be an integrated part of IHR implementation and health systems strengthening, as the next pandemic may be a severe one.

International Health Regulations (2005)

In the globalized world, diseases can spread far and wide via international travel and trade. A health crisis in one country can quickly affect livelihoods and economies in many parts of the world. The disruptive effect on traffic and trade alone can cause significant health, social and economic consequences. Such crises can result from emerging infections, such as severe acute respiratory syndrome (SARS) or a new human influenza pandemic, bio terrorist attacks or environmental disasters. Achieving international public health security is one of the main challenges of today.

The International Health Regulations (IHR) are intended to help the international community prevent and respond to acute public health risks, while also limiting their interference with international traffic and trade. The IHR constitute an international legal instrument that is binding on 194 countries across the globe, including all WHO Member States. The regulations significantly contribute to global public health security by providing a framework for the coordination of the management of events that may constitute a public health emergency of international concern. Furthermore, the roll-out and implementation of IHR improves the capacity of all countries to detect, assess, report and respond to public health threats.

Member States responded to increasingly frequent public health emergencies and events by revising the IHR and by asking WHO to facilitate the implementation process. Today the revised IHR, adopted in 2005 and implemented since 15 June 2007, define a set of collectively agreed rules, procedures and obligations to prevent such events and, when they occur, to coordinate information sharing and the public health response. The main principles of the revised IHR are

1) transparency,
2) containment of health threats at source, not at national borders, and
3) a new broad scope, including not only threats posed by communicable diseases but all public health threats, e.g. environmental, chemical and radio-nuclear threats.

The States Parties committed themselves to implement IHR and to develop and strengthen their public health core capacities for surveillance and response gradually until 2012.

Challenges

The least-prepared countries are the most vulnerable. National public health preparedness needs to include all sectors; however preparedness activities are often limited to the health sector. They also often fail to reach beyond the national level, leaving regional and local levels of a health system, and especially health care workers, less prepared and trained.

The IHR were agreed upon by consensus among WHO Member States as a balance between their sovereign rights and shared commitment to prevent the international spread of disease. More than three years

after entry into force, continuous efforts are needed to sustain the political commitment to implement the IHR and to develop and strengthen the IHR core capacities by 2012.


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What the WHO Regional Office for Europe is doing

WHO/Europe has planned a set of activities to enable States Parties to implement IHR through 2012. The objectives of this support are:

- to assess or enable self-assessment of the status of States Parties' core capacity development and strengthening;
- to provide awareness raising and training for political and technical target groups on all levels;
- to strengthen the States Parties' national alert function and to provide technical guidance for assessing actual events on a day-to-day basis;
- to facilitate national multi-sectoral coordination and to support the establishment of coordination mechanisms, e.g. through legislation, working groups, emergency committees;
- to facilitate coordination between neighbouring countries, to create peer groups and to identify best practices;
- to enable countries to strengthen their public health capacities at international ports, airports and ground crossings in order to prevent countries from experiencing economic disadvantages caused by non-adopted measures, e.g. immediate border closures, etc.
- to supports Member States in building national capacities for epidemic preparedness and response in the context of the IHR (2005), including laboratory capacities and early warning alert and response systems

>> *What additional progress can be achieved with more resources?*

The capacity of WHO to manage acute public health emergencies on the country level needs to be reinforced through investments in systems and human resources, as well as in joint operations centers.The above mentioned activities would benefit from a more targeted, country-specific focus, a higher number of countries receiving support, and from accompanying training and regular follow-up activities. National, multi-sectoral IHR implementation processes, assessments and legislative procedures have not yet been initiated in a number of countries in the WHO European region.

>> For detailed information, please visit:
http://www.euro.who.int/en/what-we-do/health-topics/emergencies/international-health-regulations

Laboratory services

Well-functioning public health laboratories are critical to Member States' surveillance and response activities and as such they are part of the core capacities required under IHR. Disease-specific networks of national and regional laboratories support the eradication and elimination goals for polio and measles/rubella respectively, while the network of National Influenza Centers (NIC) supports influenza surveillance and response. New laboratory networks are being created to support the introduction of new and underutilized vaccines. WHO/Europe supports the disease-specific function of these laboratories as well as their integration with other national surveillance and response priorities. WHO/Europe accredits or recognizes national laboratories according to their disease-specific functions as well as their ability to work safely and according to some of the essential laboratory quality principles. WHO/Europe also provides tools for the development of laboratory quality systems for all infectious disease laboratories.

Challenges

Laboratory services and networks require significant investments and resources in a rapidly changing field, exemplified by the emergence of new technologies and the need to fine-tune laboratory capacities and network functions to be able to achieve eradication (polio) and elimination (measles/rubella) goals as well as a high level of alert in other areas (influenza and other emerging pathogens). In a number of countries in the Region, investments in horizontal public health laboratories have lagged behind those for disease-specific vertical programmes (like HIV and TB), contributing to fragmentation and duplication.

National systems to ensure that all infectious disease laboratories operate under conditions of Good Laboratory Practice are also lacking in a number of countries. Member States should strive to establish well-structured laboratory networks, with all laboratories included in a united network under the supervision of the Ministry of Health, which has all relevant information to guide and instruct the work of the network, and in compliance with national and/or international standards.

These are complex challenges in a field involving many stakeholders and donor organizations and in a context in which some countries do not have national strategies or an accreditation system.

What the WHO Regional Office for Europe is doing

WHO/Europe works with Member States to ensure that:

- laboratory services are fit for purpose to achieve Regional eradication and elimination goals, and national and Regional early warning and response goals;
- a network of international reference laboratories (e.g., WHO Regional Reference Laboratories and WHO collaborating centres) is available and systems are in place for the exchange of specimens and other materials as well as capacity building;
- countries have national strategies for public health laboratory services that describe the functions of different laboratories and networks (horizontal and vertical);
- countries have adopted national standards for the accreditation of public health laboratories to which all infectious disease laboratories must comply, as well as accreditation or licensing systems;
- countries have national biosafety regulations and guidelines in place.

This work is carried out through cooperation with national focal points, development of laboratory strategies and standards, training, meetings, dissemination of guidance and examples of good practice and publications.

Why is it important?

Laboratory services for infectious diseases are indispensable for any country, and for the international community. They provide a critical component of surveillance data which forms the evidence base for informed public health policies, strategies and responses. Investments must continue, to ensure appropriate biosafety practices are adhered to within a system that guarantees total laboratory quality and to keep pace with new technologies as well as changing disease priorities.

What additional progress can be achieved with more resources?

WHO/Europe will continue to support disease-specific laboratory networks. At the same time, additional resources need to be made available to invest in strategies for improving laboratory quality and biosafety and to ensure that there is a network of national laboratories and international reference laboratories in place to respond to all communicable-disease events notifiable under IHR.

Global strategies tailored for the European Region

The Regional Office, with support from Headquarters, has adapted global strategies for reducing the burden of communicable diseases to meet specific regional needs and challenges. For instance, regional measles and rubella surveillance guidelines, published in 2010, define indicators and data collection protocols for the region as it approaches the elimination goal. Pandemic preparedness planning and IHR core capacity assessments have long adapted global materials to local circumstances, and global influenza surveillance guidelines were revised and adapted for the European Region and published in July 2009, as the region approached influenza season in the midst of the H1N1 (2009) pandemic. In collaboration with European Commission bodies, the region is leveraging the investments and public health structures of the European Union, such Intervention Epidemiology training (EPIET), the European Antimicrobial Resistance Surveillance System (EARSS) and European Surveillance of Antibiotic Consumption (ESAC), into broader regional initiatives to strengthen public health systems to monitor and control communicable disease.

To date, key partnerships include:

European Centre for Disease Prevention and Control (ECDC)
UNICEF
European Commission's Directorate General for Health and Consumer Policy (DG SANCO)
Centres for Disease Control and Prevention (CDC)
The year joint partnership programme between the Netherlands Minister for Development Cooperation, the Netherlands Minister of Health, Welfare and Sport and WHO
WHO Collaborating Centres

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WHO's Strategic objectives

With a specific focus on inequalities, social determinants of health and health in all policies, 2020 provides a European platform for achieving the 11 Strategic Objectives which frame the work of WHO in the European Region.

Briefings are available in each of the Strategic Objective areas:

1. **Reduce the health, social and economic burden of communicable diseases.**
2. Combat HIV/AIDS, tuberculosis and malaria.
3. Prevent and reduce disease, disability and premature death from chronic noncommunicable diseases, mental disorders, violence and injuries and visual impairment.
4. Reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health and promote active and healthy ageing for all individuals.
5. Reduce the health consequences of emergencies, disasters, crises and conflicts, and minimize their social and economic impact.
6. Promote health and development, and prevent or reduce risk factors for health conditions associated with use of tobacco, alcohol, drugs and other psychoactive substances, unhealthy diets, physical inactivity and unsafe sex.
7. Address the underlying social and economic determinants of health through policies and programmes that enhance health equity and integrate pro-poor, gender-responsive, and human rights-based approaches.
8. Promote a healthier environment, intensify primary prevention and influence public policies in all sectors so as to address the root causes of environmental threats to health.
9. Improve nutrition, food safety and food security throughout the life-course and in support of public health and sustainable development.
10. Improve health services through better governance, financing, staffing and management, informed by reliable and accessible evidence and research.
11. Ensure improved access, quality and use of medical products and technologies.

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