

Strengthening the Surveillance and Control of Communicable Diseases in the Slovak Republic

2003-004-995-03-07

Basic Information

The overall objective of the project is to complete the implementation of the Acquis concerning the surveillance and control of communicable diseases (CD).

Purpose of this project will be:

- Administrative and implementing structures concerning the epidemiological and laboratory control of CD upgraded and integrated into EU networks
- Surveillance of CD strengthened.

The project reflects the AP 2001 priority of further action - *in the area of surveillance and control of communicable diseases and health monitoring and information.*

It is also in line with the 2001 National Programme for the Adoption of the Acquis, which defines the project priorities and actions in the public health section of chapter 13 on Social Policy and Employment - *In the area of public health this stage focuses on directives on the network for the surveillance of communicable diseases.*

Background and Justification

Surveillance of communicable diseases (epidemiological vigilance) has been introduced gradually since the 1960s in Slovakia, and the duty to control infectious diseases with subsequent anti-epidemic precautions has been supported in the respective legislation. The surveillance principles introduced have remained largely unchanged, although it is obvious today that communicable diseases could be controlled more effectively and perhaps at lower costs.

However, the growing mobility of the Slovak population and other changes make a reassessment of the control of infectious diseases in Slovakia unavoidable. Disease control is to build on international co-operation. Harmony in working methods and in definitions of diseases must be reached. Any occurrence of serious and uncommon communicable diseases must be monitored, and the surveillance must be based on clear priorities and the pooling of highly effective data.

Slovakia will join as soon as possible the network for surveillance of infectious diseases developed in the EU Member States and in associated countries. Epidemiological surveillance could have been more effective, and pooling of epidemiological data more relevant, if it was aimed mainly at communicable diseases preferential in Slovakia, infectious diseases preventable by vaccination, and communicable diseases monitored within the international scope.

The priorities in the field of communicable diseases surveillance strengthening are the surveillance of infectious diseases preventable by vaccination, surveillance of salmonellosis and neuroinfections.

The Slovak public health policy is regulated by Act No. 272/1994 Coll. on the *Health Protection of the People* as amended by subsequent regulations, and by Act SR No. 277/1994 Coll. on *Public Health Care*, as amended by subsequent regulations. The first of the two laws regulates matters of health protection and of precautions against infectious diseases. The Ministry of Health of the Slovak Republic, which makes it obligatory to report all infectious diseases in Slovakia, has issued secondary legislation.

The surveillance of infectious diseases is co-ordinated by the Chief Hygienist of the Slovak Republic and provided for by the:

- Public Health Authority of SR (PHA SR)
- 36 Regional Public Health Authorities (RPHAs)

- National Reference Centres (NRCs).

Data on infectious diseases are processed and stored in the National Register of communicable diseases at the Regional Public Health Authority (RPHA) in Banská Bystrica.

National Reference Centres are highly specialised sites providing complete epidemiological and laboratory surveillance of selected infectious diseases at the national level. They usually consist of epidemiological and laboratory parts. Epidemiological part of NRCs tightly cooperates with National Register of CD. NRCs acquire, process, analyse and evaluate epidemiological data about monitored infectious diseases. NRCs also process clinical material, carry out confirmative examination for microbiological laboratories. In addition to these activities, NRCs methodically coordinate these laboratories. Other duties of NRCs include proposing of measures to be taken in order to decrease the incidence of infections, as well as monitoring and evaluation of their effectiveness. They are established by the Ministry of Health as a compact part of the Public Health Authority of SR in Bratislava and in Regional Public Health Authority in Banská Bystrica and Regional Public Health Authority in Košice, which are funded by the state budget. Currently, all still must introduce modern fast diagnostic procedures and methodologies for detailed identification of micro-organisms. In the interests of exact and prompt diagnostics of infections and harmonisation of their working methods with the European ones, it is urgent to expand their instrumentation, material supplies, and personnel resources and to achieve a standard level via accreditation.

The proposed project is focused on upgrading the NRC for salmonellosis, NRC for influenza and influenza-like diseases, NRC for poliomyelitis, NRC for measles, mumps and rubella (MMR), NRC for meningococcal invasive diseases, NRC for resistance to antibiotics (all established at the Public Health Authority of SR, Bratislava), then NRC for diphtheria, which is established at the RPHA Košice, and NRC for pertussis and parapertussis established at the RPHA Banská Bystrica.

All NRCs mentioned above provide services to institutes of health throughout the Slovak Republic, namely by confirming laboratory results carried out in the field. The NRCs also provide professional consultation services.

Some of the NRCs mentioned herein cooperate widely on the international level. There is tight cooperation between NRC for influenza and European working group for influenza – EISS (European Influenza Surveillance Scheme). Representatives from NRC for influenza take part in EISS meetings regularly twice a year. NRC for influenza also cooperates intensively with the WHO Centre for Influenza in Geneva, CDC (WHO Collaborating Centre) in Atlanta and the WHO Reference Laboratory for Europe (NIMR) in London.

NRC for meningococci is a member of EMGM (European Monitoring Group for Meningococci), which is coordinated by the Public Health Laboratory Service in London. There has been a long-term cooperation with the NRL for meningococcal infections in the Czech Republic.

NRC for poliomyelitis is a WHO Euro Polio Laboratory and cooperates with the WHO Regional Laboratory in Helsinki and with the National Institute of Public Health and the Environment in Bilthoven.

Three other NRCs, NRC for MMR, NRC for diphtheria, NRC for pertussis and parapertussis, are currently taking part in population immunity testing in frame of the project of the EC ESEN 2 (European Sero-Epidemiological Network 2), coordinated by PHLS London.

NRC for antibiotic resistance monitoring, established in 1994, presently concentrates on founding a national web anti-microbial resistance database system compatible with other Anti-microbial Resistance Systems supported by the European Commission.

Acute diseases of respiratory tract including influenza are reported regionally to the competent state healthcare institutions once a week, during an influenza epidemic also in shorter intervals. The systems functions reasonably well at the levels of public healthcare, of districts and regions, and at the international level. Improvements are needed at the level of primary healthcare, concerning mutual interconnection of the data systems, and with regard to the availability of information to the population.

The system should furthermore be improved by introducing an *Early Warning System* as a tool that allows timely and accurate dissemination of public health event information leading to effective intervention measures including investigative and containment activities. Timely recognition of outbreaks requires detecting these events before they develop into public health crisis. Prompt detection depends on careful monitoring by modern surveillance system and a thorough understanding of trends in incidence and distribution of known infectious agents.

The ability to detect what is new, emerging or re-emerging depends on the capacity to identify and track the routine as well the unusual. To develop and implement rapid, effective prevention and control measures for epidemics, good surveillance system is needed to detect infectious diseases before they become widespread. A good national surveillance and appropriate laboratory support are critical to an effective defence against these threats.

In the Slovak Republic, the system is currently mainly based on fax messages that are exchanged regularly every Friday. They inform about an outbreak (diagnosis, locality of occurrence, number of cases, number of exposed persons, suspected transmission factor, antiepidemic measures) and on sporadic diseases occurrence of highly contagious, clinically serious infections, selected neuro-infections including polio-like diseases, occurrence of diseases included in the Immunisation Programme, etc. The data in the Slovak Early Warning System flows from district to regional and then to national level to the NPHA SR where they are manually summarized. The Slovak Republic lacks an operating electronic Early Warning System compatible with the existing networks in the EU.

The system of collection and evaluation of data on communicable diseases changed from manual tabulation of individual notification cards to data collection system working on PC in 1991. Since then, the same computer platform is being used. Maintenance, support, further development of this system is not more effective, because the currently used system was designed for the MS DOS environment. It is unable to run under Windows environment, and it has limited support for networking.

The existing central register does not allow the continuous analyses of reported data but only monthly and yearly analyses of epidemiological data on occurrence of infectious diseases in the Slovak Republic.

The manner of reporting and processing of data on influenza has been computerised since 1996, but the surveillance is not compliant with the requirements of the European working group for influenza EISS, of which Slovakia has been an associated member since 2001. A condition for admitting Slovakia as a full-fledged member of this network is making the existing system of data reporting and processing more effective and adapting it to the EU countries. The database of occurrence of influenza and influenza-like illnesses is at the PHA SR in Bratislava.

Linked Activities

The Slovak Republic participates in the EU projects concerning influenza, meningococcal infections and immunity surveillance:

- European Sero-Epidemiological Network 2 (ESEN 2 – QLRT-2001-02888) coordinated by PHLS London

- European Influenza Surveillance Scheme (EISS)
- European Monitoring Group for Meningococci (EMGM)

Slovakia also participates in WHO activities dealing with poliomyelitis eradication and elimination and control of diseases preventable by vaccination, and with the food borne diseases surveillance programme, network for harmonisation of surveillance of CD in Countries of Central, Eastern Europe. In this network also the Early Warning System involving member countries was created.

Results

1. Slovak monitoring system of CD harmonised with EU standards, *Early Warning System (EWS) upgraded and staff trained.*

Three new kinds of software programmes will be developed: CD National Register Programme, Influenza Surveillance Programme, and Early Warning System, compatible with the EU networks, i.e. Surveillance of Communicable Diseases Network, EISS and EWS, which, along with the technical equipment provided, will be assisting monitoring and surveillance of infectious diseases in Slovakia. The cardinal change of evidence and processing of information from manual to modern electronic system will raise the capacity and speed of data transfer and thereby also the speed of application of adequate measures. Underreporting will be reduced. The implementation of new technologies will request higher quality and structure of input data, possible change of the methodology of input data processing, eventually presentation of new standard definitions of infections according to appropriate Decision EP and Council. Therefore we expect training of responsible workers at PHA SR and later final seminar for employees of all RPHAs. The workers will acquire the skills to use the developed software programmes, to apply new practises and methodology (verification), data processing and evaluating with equivalent reactions (response) according to EU standards.

The Ministry of Health has already prepared a draft National Preparedness Plan for Outbreak Management, which should be adopted in the forthcoming months. The Plan describes the management of unusual serious events, including the structure, responsibility and the activities of the co-ordination committee. The Plan covers the EWS (according to the Commission Decision 2000/57/EC of 22nd December 1999 on the Early Warning and Response System for the prevention and control of communicable diseases under Decision 2119/98/EC of the European Parliament and of the Council) and a system of implementation and evaluation of epidemiological measures.

2. National Reference Centres (NRC) network extended, existing NRC strengthened, and *Laboratory Assurance Quality System in NRC implemented.*

One new NRC for arboviral infections will be established and together with eight selected NRCs will be equipped with missing laboratory equipment, which is necessary to achieve the standards applicable in the NRCs of EU member countries. By mastering the methodology, procedures and guidelines, and by obtaining an accreditation from the SNAS (Slovak National Accreditation System), the NRCs will comply with the requirements for integration into existing EU networks.

3. External quality assurance system in clinical microbiology laboratories implemented

Standard procedures will be created for external control of quality of work of clinical microbiological laboratories by superior NRCs. This will involve co-operation with international experts, testing on pilot projects, and eventually implementing a methodology of external control.

Activities

The project will be implemented in the framework of one Twinning Arrangement, one service contract and two supply contracts covering the following activities.

1. Harmonisation and upgrading of monitoring system of CD and EWS

1. Software specification and training of the staff

A working group will be established at the recipient institution, composed of representatives of PHA SR, RPHAs and MoH. Its members will include also two short-term experts contracted as a pool of short-term experts. The group will be coordinated by the RTA together with a representative of the PHA SR. The working group will define the conditions, outputs, inputs, and functionality of the special software for three target applications: Early Warning System, Infectious Diseases National Register, and Influenza Surveillance. In co-operation with RTA and two international experts mentioned, six employees from RPHAs (two for each application) will pass a short-term temporary study visit at corresponding workplaces for Early Warning System and/or a national register of communicable diseases and influenza surveillance in some of the EU member countries. The objective of the study visit is to obtain professional knowledge and experience of monitoring, control, system of processing and evaluation of information reported on occurrence of infectious diseases in the EU states, and possibilities of modification and implementation of such systems in Slovak conditions in the framework of integration to the relevant EU structures. Slovak specialists benefit greatly from experience abroad, as it is currently their only option for observing EU surveillance systems in practice.

This experience is a great contribution to effective and rational implementation of these systems.

2. System provisions for monitoring programmes

The specified requirements for software for Early Warning System, National Register and Influenza Surveillance will serve as the basis on which a qualified software development house will create the required software and train the users. The software development team will be contracted under the service component of the project.

With respect to the parameters of the new software and its applicability and use at individual workplaces of the PHA SR, purchase and installation of 50 computers with accessories is envisaged within this component plus connection thereof to the Internet within the SR, which will be co-financed by the state budget and the supply component of the present project. Thereby all 36 RPHAs will be equipped, as well as 9 NRCs, 2 servers - one for PHA SR (EWS, Influenza) and another for RPHA B.Bystrica (National register of CD) 3 for analysis of statewide data for each software. The specification of hardware and type of Internet connection will be done by Technical assistance per requirements of Slovak partners. Thereby an operating electronic network will have been built, which will enable immediate interactive exchange of all relevant information on unusual epidemiological events. The system will provide improved, prompt and easy access to the analyses to all end users.

3. Pilot projects and full systems roll-out

To eliminate deficiencies before a nationwide implementation of the new systems, pilot projects will be performed at selected regional PHAs under the leadership of the working group established. The selected pilot sites will be: Trenčín, Martin, Banská Bystrica, Rimavská Sobota, Košice. All detected shortcomings will be removed before the new software including technical

equipment will be introduced at all 37 PHAs in Slovakia. Subsequently, representatives of all 37 PHAs will be trained in using and working with all three new software products.

The headquarters for the co-ordination of monitoring and analysis of data reported nationwide for the Early Warning System and influenza surveillance will be the PHA SR. For the CD National Register, it will be the RPHA Banská Bystrica.

4. Harmonisation and integration of selected EU networks

The Slovak systems will be integrated into the European Early Warning System (EWS). The co-operation is based on participation of PHAs employees, who are experts on certain disease, in the working groups e.g. for monitoring of meningococci (EMGM) or surveillance of influenza (EISS). The co-operation is being continued and a new co-operation with more networks will be gradually introduced. These will include the European Antimicrobial Resistance Surveillance System (EARSS), European project for the surveillance of vaccine preventable diseases (EUVAC), and the European surveillance network for the enteric infections (ENTERNET).

Means

One Twinning arrangement

The Resident Twinning Adviser (RTA) (24 months) should fulfil the following criteria:

- Must have proven team leading experience in working with international teams and several years of experience in managing similar projects;
- Will come from a PHI or an equivalent institution;
- Will perform professional and managerial supervision over the entire project;
- Special expertise in the area of surveillance of infectious diseases, an epidemiologist;
- University education in relevant field: medical doctor;
- At least 10 years of experience in surveillance of infectious diseases;
- Excellent knowledge of English and good communication skills

The RTA should:

- recommend the most suitable specialised institutions and facilities in EU member states (according to activities 1. and 2.) and ensure temporary study visits for selected professional employees of PHAs and NRCs;
- coordinate and professionally participate in a working group, which task will be specification of requested software;
- coordinate partial tasks of the project, sequence their realisation, to control and help with realisation of pilots projects;
- in coordination with TA, who will create SW, to develop and provide training for PHAs' workers. Training will focus on utilisation of new programmes, application of new methods and procedures, new quality of input data and data processing and evaluation according to the newest EU knowledge and implementation of EU rules in the field of CD;
- help perform tasks connected with cooperation with EU networks for CD surveillance;
- deal in specification and identification of acquire laboratory equipment and instruments according requirements of Slovak specialists;
- participate in developing of original methodology of external quality control assurance for NRCs assist the PHA staff in developing a Disease Priority Setting exercise for surveillance of CD;

- assist in implementing the Preparedness Plan for Outbreak Management in line with best practices in the EU.

Two short-term experts (each for assignments totalling 2 work/months) are required who should meet the following criteria:

Short-term epidemiologist/expert for surveillance of communicable diseases -

- Must have experience in providing similar interactive web nets for collection and analysis of CD epidemiological data.
- We require him/her to be an expert in the area of the surveillance of communicable diseases, epidemiologist.
- He/she will be member of working group for software specification and will help with organisation of short-term temporary study visit of Slovak experts.
- He/she will come from the PHI or an equivalent institution.
- He/she should have min. 5 years of the relevant working experience in the field of Early Warning System, or Infectious Diseases National Register or Influenza Surveillance.
- Excellent knowledge of English and good communication skills.

Short-term expert for the collection and analysis of CD epidemiological data:

- He/she must have experience in technical providing of similar interactive web nets for collection and analysis of CD epidemiological data, knowledge in bio statistics are advantage.
- He/she will be member of working group for software specification and will help with organisation of short-term temporary fellowship of Slovak experts.
- He/she should have min. 5 years of the relevant working experience in the field of Early Warning System, or Infectious Diseases National Register or Influenza Surveillance.
- Excellent knowledge of English and good communication skills.

CVs of available short-term experts should be submitted with the background documentation for selection of a RTA

Service Contract

The TA will be selected with the purpose of developing the required software and training of competent staff designated for use thereof. At the same time, the TA will participate in specifying the necessary hardware and type of Internet connection for a functional application of the software developed.

Supply Contract

Fifty PCs with complete equipment will be purchased.

2. National Reference Centres (NRC) network extended, existing NRC strengthened, and Laboratory Assurance Quality System in NRC implemented.

1. Equipping the selected centres with laboratory equipment

Nine selected NRCs will be completed and equipped with special laboratory equipment and, subsequently, a selected supplier will train selected staff for use thereof.

2. Training of relevant staff

Since each NRC is a highly specialised workplace for particular diagnosis, we envisage a cooperation with three international experts from corresponding institutions (NRC EU Notified Bodies). This will ensure transfer of knowledge and experience from the practice of EU member

countries, which will be supported by short-term study visit of selected 4 Slovak members of NRC staff abroad (for example, two-week study visits in quality control, EQAS) and two-months advanced Virology Training Diagnosis in a EU Reference laboratory (PHLS, INVS). The staff will be trained in the most progressive detection methods, which allow rapid laboratory detection of infectious agents. They will also be taught methods of analysis and control of statewide laboratory results and to control a high-quality professional environment in the given field.

3. Passing the accreditation process

Due to fact that the NRC have to lead, check and be supervisors for other laboratories of clinical microbiology in the given area, they must pass an accreditation process, which will result in granting of an accreditation by the SNAS (Slovak National Accreditation System).

The accreditation process is passed by confirming the equivalence of the existing system of quality in given laboratory to generally accepted standards. Parameters must be met in the areas of the laboratory equipment, space, professional staff and methods used. All fees connected with the process of accreditation will be funded by the state budget in the framework of co-financing.

Means

Under same **Twinning** arrangement as described under 3.4.1 will provide at least three short-term experts for two months assignments. They should fulfill the following criteria:

- Specialisation respectively in the fields of -
- Clinical virology
- Clinical bacteriology and
- Good laboratory praxis and EQAS in clinical microbiological laboratories
- He/she will come from the PHI, NRC EU Notified Bodies the best;
- He/she should have university education;
- He/she should have min. 10 years of the relevant working experience;
- Excellent knowledge of English and good communication skills.

Supply

Special laboratory equipment will be purchased to support all selected NRCs.

3. External quality assurance system in clinical microbiology laboratories implementation

1. Developing standard methodological procedures for external quality assurance

The goal is to unify methods used in microbiological laboratories, to ascertain the professionalism, and to achieve validity of the laboratory results.

Slovakia presently lacks a standard methodological procedure of external quality assurance at clinical microbiological laboratories in relation to superior NRCs. International experts, along with local ones, will participate in developing an original methodology of external control.

2. Pilot project of external quality assurance

After developing the original methodology of control, the same will be implemented and tested through testing panels at selected pilot workplaces in RPHAs Prešov, Banská Bystrica, Košice and laboratories of clinical microbiology in Nitra and Trnava.

Means

The same Twinning arrangement as mentioned before.

Lessons learned

There have been no OMAS assessments of the Phare measures linked to the proposed project. Implementation and co-ordination structures reflect practices that have been successfully applied by the Public Health Authority of SR. Adequate human resource policies are in place to ensure that trained staff can be retained for the intended assignments in the long term.

Institutional Framework

The Ministry of Health (MoH) is the beneficiary institution and will assume overall responsibility for the management and control of the project. The MoH is the direct superior of the Public Health Authority of SR, which is the prime recipient of the assistance.

The central workplace (PHA SR) is located in Bratislava. Its Section of Epidemiology and Clinical microbiology of the Public Health Authority of SR, Trnavská 52, 82645 Bratislava, is the professional sponsor of the project. The PHA SR has a nationwide scope of action and ensures supervision over the activity of 36 regional PHAs.

The implementation of component 1 of the project will be done at all RPHAs, and that of components 2 and 3 at nine selected National Reference Centres (NRC). NRCs perform their activity as parts of PHAs.

Monitoring of and supervision over the progress and development of the entire project will be provided by a steering committee, which will include representatives of the MH, and PHA SR.

The EC Representation will be invited to participate as observers. The SC will meet once a month or more frequently as needed.

We ensure, that necessary office space, equipment and personnel are available at the recipient and beneficiary institutions before the launch of the project.

Implementation Arrangements

Implementing Agency

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Twinning

The institutional twinning partner will be the Ministry of Health of the Slovak Republic, which will assume overall responsibility for the project. The Ministry of Health will cooperate in project implementation with other institutions, in particular with the Public Health Authority of SR, which will be the recipient institution and will be responsible for professional aspects of the entire project. The RTA will be deployed at the office of the Ministry of Health and short-term seconded officials will be deployed at the office of the PHA SR Bratislava and selected other locations.

The RTA will be deployed at the office of the Ministry of Health SR.

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Non-standard aspects

PRAG rules and the rules of the Twinning Manual will be strictly followed.

Contracts

The project will be implemented with the following contracts:

- 1 Twinning contract
- 1 TA
- 1 Supply contract – hardware
- 1 Supply contract – equipment

Equal Opportunity

Equal opportunity principles and practices in ensuring equitable gender participation in the project will be guaranteed, particularly as regards to selection of trainers and trainees for the training programme, where a balanced distribution of positions/places will be sought.