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EUROPEAN PUBLIC HEALTH INFORMATION NETWORK FOR EASTERN EUROPE (EUPHIN-EAST)

Report on the second meeting

Copenhagen, Denmark
23–25 October 1997

SCHERFIGSVEJ 8
DK-2100 COPENHAGEN Ø
DENMARK
TEL.: +45 39 17 17 17
TELEFAX: +45 39 17 18 18
TELEX: 12000
E-MAIL: POSTMASTER@WHO.DK
WEB SITE: [HTTP://WWW.WHO.DK](http://www.who.dk)

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HEALTH INFORMATION SUPPORT

By the year 2000, health information systems in all Member States should actively support the formulation, implementation, monitoring and evaluation of health for all policies.

ABSTRACT

The European Commission and the Regional Office have begun a two-year project to develop a European public health information network for eastern Europe (EUPHIN-EAST). The project is structured as a concerted action by 23 countries of central and eastern Europe (CCEE) and the newly independent states (NIS) to investigate the feasibility and applicability of the network, which would link national health databases and make the data easily accessible to national and international users.

The main objectives of this second meeting were: to review progress in countries on the development of national health databases and tasks agreed at the first meeting; to review progress in the development of the national health service indicator packages in the 12 NIS and progress in their application in the 11 CCEE; to discuss reports on the studies of user requirements and telematics infrastructure and to optimize the network design accordingly; to demonstrate the pilot network's software application; to assess the degree to which implementation of the project is feasible in each country; and to agree on a detailed work plan for the next phase of the project.

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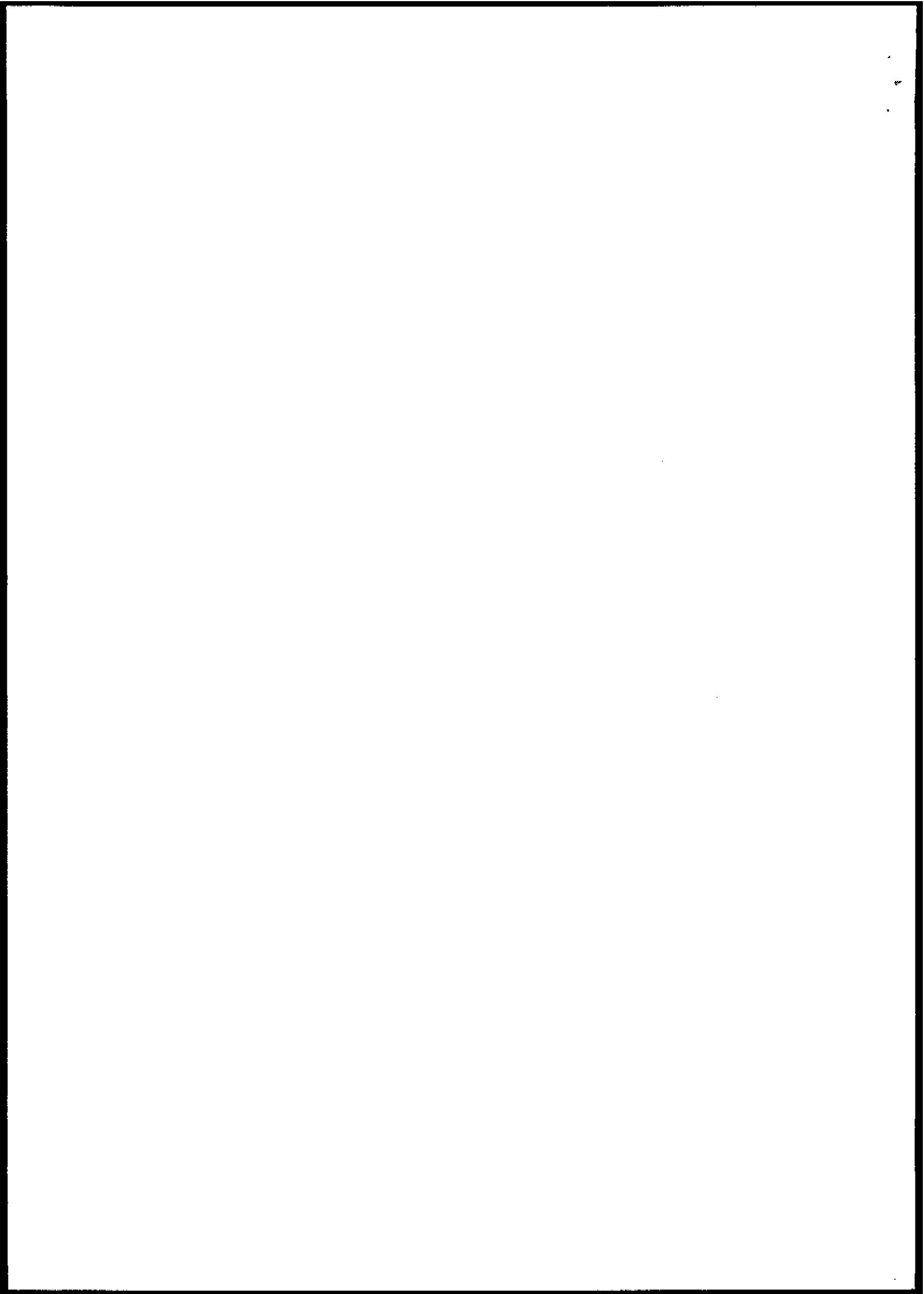
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1. OPENING

1.1 Welcome

Dr Asvall, Regional Director of the WHO Regional Office for Europe, welcomed participants to the second meeting of the EUPHIN-EAST project. He noted that EUPHIN-EAST builds on a number of long-standing partnership development projects between the Regional Office and the European Union (EU).

Dr Asvall said that good quality information is essential to monitor and evaluate health policies and programmes. He cited the health for all (HFA) European policy, which is evaluated every six years using the health for all indicators. The ongoing second evaluation of HFA would lead to refinements in the policy, and on this basis a renewed HFA policy for the twenty-first century will be adopted next September, following agreement with all Member States in Europe. This would lead to new indicators to support the new policy.

Information also has a role to play in improving the accountability of governments and health services to their populations. Many countries have annual national health reports which use statistics about health and health services. It was also imperative for the local health professionals, and WHO was supporting the development of tools to improve the quality of care delivered. For the future, Dr Asvall anticipates that multimedia will also be more prevalent and important as a tool in this area.

Work on health service indicators will strengthen national health management. The ENS Care statistics pilot project with the EU from 1992 to 1994 demonstrated the potential of on-line access to distributed databases throughout the Region in enabling the exchange of information. EUPHIN-EAST is the successor to ENS, extending it to central and eastern Europe, and will facilitate work in those countries. Dr Asvall concluded by thanking participants for attending this important meeting and for their continued contribution to this very exciting and important project.

Mr Nanda, Regional Advisor, Epidemiology, Statistics and Health Information, thanked Dr Asvall and welcomed participants. Apologies had been received from Azerbaijan, as well as from Dr Mukhamediarova from Uzbekistan who had fallen ill on route to the meeting.

1.2 Election of Chairperson and Rapporteur

Mr Nanda and Mr Halsall were elected Chairperson and Rapporteur, respectively.

1.3 Adoption of agenda and programme

The provisional programme was adopted. Mr Nanda emphasized that it was flexible, and could be changed to meet the needs of participants or the availability of speakers over the course of the three-day meeting.

1.4 Progress report from management team

Mr Nanda outlined the rationale for the project. Technical advances now mean that information can be shared between countries much faster.

In the past the focus had been on reporting information to the centre, to health ministries and international bodies. The information thus reported had not always been fed back to those who supplied it, except perhaps in thick reports where the data were difficult to access. Furthermore, managers have had little experience of using information.

The solution is not more data, nor is it to wait until existing data are perfect. The solution is to make more and better use of existing data. This requires better access to the data, which national health databases can provide. National health databases are not the same in all countries, nor should they be, since they should be designed to meet the information needs in that country. They should, however, have a common internationally agreed core of data and indicators which would help all countries in making and using international comparisons. National health databases need to be user-friendly and enable users to display the information: the Database Presentation System (DPS) developed and distributed by WHO is a good example, but not the only one, of this kind of software.

Advances in information technology and telematics make more and better use of existing data possible. While in the past, data were inaccessibly stored on mainframe computers in large databases, nowadays vast storage capacity and user-friendly software are available relatively cheaply, and databases can be distributed (rather than centralized) and accessed by telematic links.

EUPHIN-EAST will build on past work done in other projects, in particular ENS Care, COPERNICUS Care Support, and G7 Health Care, and will link to concurrent work being done for the EU-IDA HIEMS network.

The expected results of the project are set out in the Technical Annex to EUPHIN-EAST, which was distributed and discussed at the first meeting in Bratislava. The minimum and maximum results are outlined in section 1.1 of the Technical Annex and section 8 of the minutes of the Bratislava meeting. Mr Nanda explained that achieving more than the minimum will only be possible if the project obtains extra resources.

Mr Nanda reviewed the timetable for the project shown in section 2.3.2 of the Technical Annex. Work packages two and three are complete. On work package four the disks for the DPS had been distributed. Work-packages five and six are well under way, as the application software is being developed.

It is hoped that the next meeting will be in Kiev. This location was chosen on grounds of location and cost.

Mr Nanda summarized the main actions taken by the management team since the last meeting:

- the user requirements and telematics infrastructure studies were complete and reports of the results were available at this Meeting;
- the application software for the pilot network was being developed, and the demonstration database had been initially loaded with data already reported to WHO for test purposes;
- a Russian language version of the DPS had been developed and disks containing the relevant files would be available during the Meeting;

- the management and progress reports to the European Commission, which were due every eight months, would include details of the current status of the projects and financial accounts; these reports would be distributed to all participants;
- a proposal had been made to the EU INCO COPERNICUS Care Support project (CP94:334 Care Support) to bid for funds to support national training seminars in all participating countries with the aim of developing skills in applying and analysing indicators, to support work planned in EUPHIN-EAST; the outcome of this proposal was still unknown;
- work on the international compendium of health indicators.

In future, each country will have a database which will be accessible by international organizations through the network. Information would be delivered once to the network, and agencies and others would access it via the network. In the pilot network being set up in EUPHIN-EAST, there will be some national servers and a central WHO server, to replicate national databases and speed up comparisons.

Training in skills to analyse and apply indicators to practical problems and decisions will be part of EUPHIN-EAST. To learn lessons from the COPERNICUS project, and to help design training work for EUPHIN-EAST, participants would be asked to complete a questionnaire during the Meeting.

Introducing this questionnaire, Mr Halsall said that relevant indicators, and the skills to analyse them, were necessary to understand situations better and to improve decision-making. The completed questionnaires would help to design work in EUPHIN-EAST to develop skills to analyse and apply indicators, especially in the non-COPERNICUS countries. The deliverables for EUPHIN-EAST included software documentation, manual, training material, and guidelines for data analysis. The COPERNICUS countries have these, and joint work would be done to help the non-COPERNICUS countries to produce them. There were two different questionnaires, one for the COPERNICUS countries, and another for the non-COPERNICUS countries. The COPERNICUS countries were being asked:

- which parts of the COPERNICUS project had been most effective
- how EUPHIN-EAST could help COPERNICUS countries
- what impact the COPERNICUS project had had.

All countries were asked to identify important decisions in their health services which would benefit from the use of health indicators. Decisions at both local and national level were sought. Participants were asked to complete the questionnaire and return it to Mr Halsall before the end of the Meeting on Saturday.

2. PROGRESS REPORTS FROM PARTICIPATING COUNTRIES

Countries were asked for brief verbal and written reports, against the headings on the pro-forma which had been circulated before the Meeting. The highlights of these reports are described in Annex 1, which includes tables summarizing the main topics. A summary of the reports is in section 5 below.

During the discussion on the progress reports, Mr Nanda and Dr Prokhorskas made the following points:

- a data dictionary contains information about the definitions of indicators and the sources of the data;
- written agreements with institutes and ministries about the supply of data help to overcome problems which can arise when staff change; even if the supply of data from other organizations is governed by law, there are advantages in also having detailed written agreements;
- it is a lot of work producing the health service indicator package for a country (on DPS), so it should be shared with other institutions when it is finished;
- all the DPS software (both DOS and windows versions) is in the public domain, so it may be copied and distributed freely;
- the data are as important as the software;
- it is not worth recoding mortality data collected with an old coding system (list of 175 causes) into ICD-9 BTL codes, as WHO can process 175 coded data directly.

All countries were asked to send Dr Prokhorskas a copy of their national health service indicator package once it was ready to use (that is, the data and maps contained in the DPS). Dr Prokhorskas thanked Dr Kamberska and Dr Holub for pointing out problems with the DPS software and asked all participants to let WHO know of any problems or programming errors that they find with it.

3. AUTOMATION OF REPORTING FROM NATIONAL DATABASES TO THE INTERNATIONAL LEVEL

There are advantages in having computer programs to extract the information needed by international agencies from national databases. They can improve the accuracy of data and significantly reduce the burden of regular reporting. Some countries are already doing this. It is not, however, worth doing this for small numbers of indicators.

Dr Prokhorskas had previously sent countries information about the data validity checks which WHO uses to validate mortality data. Copies of these mortality data validation guidelines were available during the Meeting. Participants should contact Dr Prokhorskas if they had any queries.

4. RESULTS OF SURVEYS ON USER AND TELEMATIC REQUIREMENTS

The final reports of the User Survey and the Telematic Infrastructure feasibility study, distributed to all participants, were introduced by Mr Nanda. Special thanks and acknowledgement were given for the support and help of CAP GEMINI (Telematics study) and the Ministry of Health, Denmark (User study) in designing the respective questionnaires, conducting the studies, analysing the results and writing the final reports.

Apologies were recorded from CAP GEMINI, who could not be represented at the Meeting. It was noted that Mr André Vandenberghe had completed the report of the Telematic Feasibility Study (presented to the meeting) prior to leaving CAP GEMINI. Mr Martin Lund of the Danish Ministry of Health presented the results of the user survey based on the report distributed to all participants.

The discussion on both reports centred around the issue of how many countries could participate in the complex (advanced) solution and the various levels and possibilities of participation, given the telematic and hardware capacities and availabilities in each country (see sections 7 and 9 below).

5. SUMMARY OF DEVELOPMENTS IN COUNTRIES BASED ON REPORTS

Mr Halsall summarized the developments reported by participants.

- In 16 countries the national health database (NHDB) was already in the official plan of the institute or the ministry of health; in 4 other countries it was proposed to include it in the 1998 fiscal plan.
- An agreement had been reached on the initial national core set of data for the NHDB in 15 countries and the work was in progress in most other countries.
- Delegates from some countries reported that written agreements had been developed with other sectors for the regular supply of data in the core set. In some countries this was governed by law; 14 countries had no problems in this area, while 2 reported some problems related to financial constraints (where data had to be purchased from other sectors).
- Technical options for NHDB implementation had been discussed earlier at the Copenhagen meeting.
- 17 countries (11 of them COPERNICUS countries) already had an NHDB with data.
- Computer programs to produce standard files with HFA and mortality data automatically included had already been discussed at the Meeting; 10 countries had reported that they had such programs.
- Two approaches to validation had been reported: by the centre or by data suppliers within the countries.
- 5 countries have a data dictionary with national definitions; others are working on one.
- 15 countries have an internet connection (mostly via modem), and others expect to be connected in 1998 or later.

Mr Halsall went on to summarize progress reported by countries in developing and using their national health service indicator package based on the DPS.

- Training seminars had been held in six countries and were planned in five others.
- Some participants were involved in training programmes, which could be used as an opportunity to promote indicators and the national HSI package based on the DPS.
- In some countries the national HSI package (with DPS) was solely at the ministry or institute. The next stage would be to distribute it.
- Work reported on producing a national indicator package in other countries (mainly non-COPERNICUS Care Support countries) included:
 - entering maps of administrative boundaries;
 - loading data into the DPS;
 - translating into the national language (a Russian-language version of the DPS was made available).

- The Russian Federation had developed its own on-line database presentation system (see also 11.3).

All participants were reminded that there were four stages to the development and implementation of a national HSI package (with DPS):

- set it up on the DPS
- distribute it
- promote it
- train users in skills to use it.

6. CURRENT SITUATION ON DATA REPORTING TO WHO

Dr Prokhorskas presented the annual cycle of HFA data collection and dissemination, including the main principles, data sources, timing and documentation used.

Two tables summarizing what had been received at WHO from each country so far, were displayed. One table described those data supplied in 1997 for HFA List 1 indicators, and the other was for detailed mortality data.

Mr Nanda pointed out that the EUPHIN-EAST group of countries had supplied more recent data than other countries. Delegates were urged to discuss any problems with Mr Nanda or Dr Prokhorskas.

7. DESIGN OF CENTRAL DATABASE, LINKS TO DISTRIBUTED DATABASES AND DATA FLOWS

Mr Bech Mogensen described the design of the distributed database network and the results of phase 1 of the technical project. Data for countries without a national server (simple solution) would be stored on the central EUPHIN server. Data for other countries (complex solution) would be stored on their national servers.

The data import process comprises a central data processing system which cleans the raw data and calculates indicators (in phase 1 this will be done manually). The results are added to the central database, and a copy is returned to the national database (for those countries which are part of the complex solution). The automated data import program requires data in a standard format.

Under the EUPHIN distributed database network, internet users access the EUPHIN hub in Copenhagen. When the request for data includes a country which is part of the complex solution, the EUPHIN hub makes any necessary enquiries to the national distributed database(s) before sending the result of the query back to the user.

The EUPHIN pilot will have:

- an HFA List 1 indicator query facility
- high-speed graphics over the internet using Java
- down-loadable data for external processing
- a 100% browser-based solution.

The results of phase 1 of the technical project are:

- the network and database have been designed and implemented in the EUPHIN laboratory;
- an automated data import facility;
- a limited data query facility (only List 1, supplemented with some other calculated and annually updated HFA indicators, not raw detailed mortality data in this phase).

Mr Nanda clarified the technical terms being used. He explained that the role of this project was to strengthen the use of indicators in two ways:

- to develop an international information system;
- to develop the use of national indicator presentation systems, especially in those countries which were not in the COPERNICUS project.

Mr Nanda illustrated the current process of updating and distributing the health for all database. As countries become more closely involved, they will provide better data. In future, as the quality and consistency of national validation improves, validation of the data by WHO can be dropped. WHO would continue to validate national data until it was confident that WHO validation gave the same results as national validation, that is for several years.

EUPHIN-EAST is developing a distributed system which runs on a leased fixed line (for speed like the Danish one described in section 11.2). EUPHIN-EAST will also use a central server which contains copies of national databases to answer queries quickly. In the short term, the central server will also help to ensure the participation of all EUPHIN-EAST countries by enabling those with no permanent internet connection to store their data on the central server. Eventually all countries will also be able to host their national databases on their distributed servers. The central database copies itself back to the national database to ensure consistency between the central and distributed databases.

Mr Nanda said that for the EUPHIN-EAST project each country needs to:

- validate and clean its national data;
- provide the data in standard format;
- investigate the possibility of a fixed internet connection (to support the complex solution);
- have a national database which is accessible and used within the country, either by using the HFA DPS, or via its own system.

Those countries which already have a fixed internet connection (and are therefore potentially able to participate in phase 1 via the complex solution) will also need a high performance dedicated server. The precise technical specifications were provided as part of the follow-up technical questionnaire (see also section 9).

Potentially six countries could already be included in the pilot EUPHIN-EAST network. Six servers (computers) had been loaned to the project by WHO and had been used to develop the EUPHIN laboratory in Copenhagen. Provided this loan could be extended, they would be loaded with software and transported to those countries with a permanent internet connection. Skilled

collaborators would be needed in those countries to maintain those machines and links. For EUPHIN-EAST perhaps a half-time person would be needed to be on-call.

For EUPHIN-EAST, the national database need only contain national data, but it could also contain subnational data in future. This would be loaded onto one of the six computers and connected to the pilot network to support international comparisons.

Many countries, including all those which had taken part in the COPERNICUS project, had national databases for domestic use with a wider range of core international subnational indicators and subnational values. Dr Kamberska had compiled a suggested list of core international subnational indicators for COPERNICUS countries to use in their EUPHIN-EAST national database (section 10.1).

In the long term, the EUPHIN national databases could contain subnational data to allow comparisons of regions on either side of international borders.

8. DEMONSTRATION OF PILOT NETWORK'S SOFTWARE APPLICATION

Mr Hummelmoose demonstrated the current version of the system. It was user-friendly and menu-driven, with the options available clearly set out at each stage. The user selects the display format, then the indicator and other parameters. Depending on the options selected, this might yield a map and table, which Mr Hummelmoose showed was cursor-sensitive (the system highlights the country underneath the cursor and displays its indicator value). Graphs and bar charts were also shown to be cursor-sensitive, although they contained fictitious data at this stage.

Further development work was continuing, and in a month it would be possible to demonstrate the full use of the system, including interrogation and access of the remote distributed national database.

Mr Hummelmoose explained that this demonstration had been live on the internet. It showed that fast responses are possible. He had used a high-speed link via France, but commented that slower links would inevitably affect performance.

Standard security technology such as passwords could be used. Mr Nanda emphasized that detailed mortality information should be protected. During development the system would be closed to everyone other than those given permission.

9. SELECTION OF COUNTRIES FOR PILOT PHASE AND FEASIBLE OPTIONS FOR NATIONAL DATABASES IN OTHER COUNTRIES

The following countries said they were interested in having a local server in the EUPHIN-EAST pilot network: Armenia, Czech Republic, Hungary, Kazakhstan, Russian Federation, Slovakia, Slovenia, Ukraine.

Pilot countries will be selected from among those volunteering on the basis of the technical questionnaire (described below). As many countries as possible should have a local server in the pilot network, subject to availability of computers for the server and the possibilities for permanent internet connection.

9.1 Follow-up questionnaire

An additional questionnaire had been designed and was distributed to participants by Mr Hummelrose and Mr Bech Mogensen. The purpose of this questionnaire was to elicit additional information on the situation in countries which was not available from the telematics infrastructure feasibility study. Mr Hummelrose explained the questionnaire to the Meeting.

Countries were asked to identify experts in their country who would help to set up the national server so that the project team could contact the experts directly.

For the pilot phase of EUPHIN-EAST, a dedicated server would be needed in each country taking part in the complex solution. This server would only be used for EUPHIN-EAST. Each EUPHIN-EAST server would be located at the site of permanent connection. At a later stage of the project, it might be possible to use servers with spare capacity as EUPHIN servers.

A permanent internet connection would be needed for a national server to be connected to the pilot EUPHIN network. The cost of a permanent internet connection varied from US \$200 to US \$1500 per month between the countries represented. In two countries the State Committee of Research paid for the connection. Participants were reminded to investigate whether they could use an existing permanent internet connection, or if the fee could be paid from a central budget.

The follow-up questionnaire would also be used to identify countries which already had a suitable computer available for use as a dedicated server for connection to the pilot network (without using one of the six servers loaned by WHO).

Participants were assured that, as previously pointed out, countries without a national distributed server would still be part of phase 1 of EUPHIN-EAST. The only difference would be that their data would only be stored on the EUPHIN hub server in Copenhagen.

Delegates were asked to complete the questionnaire and return it to the project team as soon as possible, and in any case within two weeks.

10. DEVELOPMENT OF DPS APPLICATIONS

10.1 Suggested subnational indicators for international HSI package

Dr Kamberska spoke on three topics: a list of core indicators for which subnational data for international comparisons can be available in a number of countries; difficulties in calculation of some indicators for areas with small populations, and new indicators.

Core indicators

It had been agreed in Bratislava to try to identify health service indicators (HSI) which could be used for subnational cross-country (international) comparisons. Work had resulted in 52 HFA indicators for which subnational data are available in most COPERNICUS Care Support countries and 111 indicators based on hospital statistics which were available in seven countries. WHO definitions had been used (the only new indicator proposed was the number of paramedics). The draft list of these indicators was distributed to all participants.

Small-number problems

Several indicators, such as life expectancy when calculated for small districts, have large random variations. In some cases the amount of data may not even be sufficient to calculate an indicator. It was agreed that the use and interpretation of such data should be made with extreme caution.

New indicators

Dr Psavke suggested the following additional HSI as also being useful at the national level:

- national average treatment rates for selected conditions (e.g. hip replacement, coronary artery by-pass graft, knee replacement, kidney transplant);
- patient deaths outside hospital (e.g. from tuberculosis, diabetes, pneumonia);
- tuberculosis smear detections;
- alcohol consumption;
- rate of attempted suicides, which could be ten times more common.

10.2 Development of CARINFONET project

Dr Bozgunchiev described the development of the Central Asian Republics' Information Network (CARINFONET). He also presented a written report to the meeting, and a list of indicators for the national health databases in central Asian republics (CAR).

The aim of the CARINFONET project is the fast development and improvement of national health information systems in the CAR. A key element of the project is the establishment of national and regional health databases which would support the formulation, monitoring and assessment of health care policy, and the management of the health care systems in these countries.

The first meeting had been in April 1996. WHO had provided the necessary software, namely modules for data input and processing, and the DPS adjusted to the circumstances of central Asian countries. Following the meeting, an agreement on cooperation within the CARINFONET project was signed.

In December 1996, a report *Health of population and health care in the republics of central Asia* had been published. It included information from the project's list of indicators in the form of tables, graphs and maps.

The second meeting of CARINFONET had taken place in March 1997. At the meeting a list of some 600 HSI common to the national databases of all the CAR had been agreed. Data for 90 of these have been loaded into the DPS software for all republics except one. They deal with social and environmental topics relevant to health. The system was demonstrated to the Meeting, displaying information for individual oblasts.

During the discussion it emerged that where there was a lack of computers, written reports (including printouts from the software) had been distributed. The reliability and validation of data was also discussed. Dr Prokhorskas noted that this was a successful project where several similar countries had got together and made rapid progress with help from WHO.

10.3 Russian-language version of DPS

Dr Prokhorskas commented that it is important that indicators should be named in the DPS in the national language. The most recent version of the DPS (for DOS) allows the prompts to be translated (in future this would also be possible for the WINDOWS version). He demonstrated a Russian-language version and made copies of it for the 12 NIS. Disks were distributed during the meeting.

10.4 Discussion of the development of HSI packages in NIS and prospects for training

Mr Halsall gave a presentation on possible work in EUPHIN-EAST in two areas:

- to develop skills in *applying* indicators to problems and decisions
- to demonstrate *links* between HIS and problems and decisions.

Since learning is best achieved by doing, EUPHIN-EAST participants could learn how to *apply* indicators by doing case studies, i.e. analysing a real decision or problem using health service indicators and then writing a short report of the analysis. The COPERNICUS project had used this approach. In COPERNICUS, participants also learned from each other's case studies. Case studies were used to help train managers and policy-makers in each country at seminars, training courses and in-training documents. Each COPERNICUS country had appointed an expert user to produce the case studies.

To demonstrate *links* between indicators and problems or decisions, Mr Halsall described three possible pieces of work.

- An information pack about indicators and their use; a pack had been sent to COPERNICUS countries and it could be sent to non-COPERNICUS countries based on the findings of the evaluation questionnaire (section 1.4 above).
- Working groups at the next international meeting could share experience of analysing particular topics. Topics would be those identified in the questionnaire distributed in Copenhagen (section 1.4 above); each group would work on one topic, share details of relevant indicators and analyses of problems and a short summary report would then be made of each group's work and circulated.
- Indicator dictionaries could usefully include other information in addition to the definition of indicators; for example, the outcome objectives for the services concerned, cross-references to related indicators, a list of topics to which that indicator is relevant, and even a list of case studies using that indicator. Mr Halsall agreed to send participants copies of pages from indicator dictionaries.

Mr Nanda said that national indicator databases should be active and used in each country. Training seminars, written training material and development work were needed to support the *use* of indicators. Mr Nanda had submitted a proposal to the EU for funds to support national training seminars in each country (described in section 1.4 above).

10.5 International compendium of health indicators

Mr Nanda introduced this work to the Meeting, which would support the future of EUPHIN-EAST. At present several organizations ask governments for information about mortality, demography, health and health services, with some overlap. An international compendium of such indicators would help countries and international organizations to map overlapping

indicators and differences in definitions and would help to identify data in the national databases required for reporting to international level. Mr Bent Løwe Nielsen described the work done so far and demonstrated the compendium which had been developed as a database. The compendium uses hierarchical coding of indicators. For example:

health status/mortality/general/infants/mortality per 1000 live births.

The database could be searched to find an indicator. The record for each indicator contains the title of an indicator, the organizations which use it and the appropriate identification codes and definitions.

A preliminary draft paper (not for wider circulation) was given to participants for information. Some of those present commented on the usefulness of this compendium, especially for those Member States that had now joined other international agencies (e.g. the Czech Republic, Hungary and Poland, which had joined the OECD). These Member States had tried to do precisely what the Compendium had been designed for and had not been very successful. They were therefore very pleased with this helpful initiative.

10.6 Atlas of Avoidable Mortality

Dr Prokhorskas displayed to the meeting a copy of the *Atlas of avoidable mortality* which was published in Hungary by the Central Statistical Office and complements the similar Atlas for the European Union published some time ago. The computer version based on the DPS software was also demonstrated. This includes mortality information at subnational level for countries of central and eastern Europe and illustrates the possibilities and advantages of international comparisons of subnational data.

11. DEMONSTRATION OF DATABASE PRESENTATION SYSTEM APPLICATIONS

11.1 Germany

Dr Brückner from the German Federal Statistical Office demonstrated a prototype system to display indicators about health and health services in Germany on the internet (Annex 2). Project participants were very impressed and much of the discussion centred around the costs of developing and maintaining such a comprehensive system.

11.2 Denmark

Mr Martin Lund introduced Ms Pernille Christensen and Mr Henrik Dahl of the Danish Ministry of Health, who demonstrated the Danish Data Warehouse (Annex 2). This is a distributed database which allows users to access and analyse information about health and health services in Denmark. Participants recognized the tremendous potential of such a system, including the use of individual record-based data. Many participants felt that in their countries legal and security issues would make it difficult to collect and use such data centrally.

11.3 Russian Federation

Dr Burmistrov gave an on-line demonstration of the website of the Russian Ministry of Health. All kinds of information and statistics covering the period 1993–1996 are presented at the website. In addition to statistical information, the ICD-10 manual and information about the Ministry of Health (including addresses) are available.

The website has been endorsed by the Minister of Health and other relevant authorities. There are links to the website of the WHO Regional Office and its HFA database.

11.4 Armenia

Dr Tadevosian demonstrated the Armenian system to the meeting. The system has the following three elements:

- data collection in hospitals (loading and validation)
- data collection at regional level (editing)
- national centre (analysis).

The regions and the centre use the same system, which uses the Armenian language. The system is implemented on EPI INFO. Data can be displayed as graphs, maps and tables, and indicators can be calculated from raw data. The software, which is free and works well in many countries, had been developed by CDC (Atlanta, USA) in collaboration with WHO. The Russian-language version of EPI INFO (version 5 only) is also available.

Some of the data are reported monthly and used to calculate annual values. The system also produced regular standard reports automatically. For general use, quarterly publications on health situation and trends are prepared using these data. A program module is being developed to extract and convert appropriate data and indicators into the standard format for EUPHIN-EAST purposes.

12. CONCLUSIONS AND SUMMARY OF IMMEDIATE TASKS

Mr Nanda reviewed progress against the work packages in the project plan:

- work packages 2 and 3 are complete;
- work package 4 is behind schedule; in particular work package 4.3 would be taken up at the next meeting;
- work package 5 is on schedule;
- work package 6 is up with the plan.

Today, the work lies mostly with participants. Work was still needed on the tasks agreed in Bratislava.

Mr Nanda thanked everyone for attending and closed the meeting.

12.1 Immediate tasks

Mr Nanda to e-mail Mr Hummelrose's questionnaire to participants.

All participating countries to:

- follow up outstanding tasks agreed at the Bratislava meeting;
- complete and return Mr Hummelrose's questionnaire within two weeks;
- complete and return Mr Halsall's questionnaire;
- correct any errors on the address list and give e-mail address to WHO;

- send copies of national indicator packages (using DPS) when they are ready to Dr Prokhorskas;
- if the indicator dictionary has been translated into English, send a copy to Mr Halsall.

COPERNICUS countries to:

- send written reports of COPERNICUS follow-up national seminars to Mr Nanda;
- inform Dr Kamberska of any errors or problems with the international list of core indicators for HSI.

Mr Halsall to:

- send the indicator information pack to non-COPERNICUS countries;
- circulate examples of pages from indicator dictionaries to all participants.

Annex 1

PROGRESS REPORTS FROM PARTICIPATING COUNTRIES

Countries were asked to report on progress by describing the steps taken to achieve the following.

1. Establishment of NHDB in official plan of institute.
2. Agreement on initial national core set of data for NHDB.
3. Contact other sectors to get agreement on regular supply of that data which is part of (2) above and definition of the responsibility of other sectors.
4. Technical options for NHDB implementation (i.e. software/DB Management System, File structure).
5. NHDB implementation started (i.e. does NHDB exist with data for one or more years).
6. Are there computer programs ready to produce data for List 1 and Mortality in the standard format for transfer to WHO and/or the EUPHIN EAST national server.
7. Validation and checking of data before sending to WHO and/or EUPHIN EAST National Server.
8. Data dictionary with national definitions.
9. In particular, were items 6, 7 and 8 applied/used to prepare and send data on HFA List 1 and mortality to WHO in 1997 (letter of 9/10 July 1997)?
10. Internet connection.
11. Progress in development and use of national HIS package based on DPS.

The written and verbal reports presented to the meeting are summarized in the following tables, followed by some notes.

Steps taken to achieve the following	Albania (not at Bratislava)	Armenia	Belarus	Bulgaria	Czech Republic
1. Establish NHDB in official plan of Institute.	Done.	Done. In plans since 1994.	Included in plans of the Centre.	Done.	Done.
2. Agree initial national core set of data for NHDB.	Done.	Done. Further development in progress.	Development in progress.		Done, 500 indicators.
3. Agree regular supply of data for (2) with other sectors.		Done. Strengthening of links in progress.	Starting. Legal support imminent.	Written agreement with National Statistical Institute.	No problems. Have two contracts. Working on others.
4. Technical options for NHDB (software, structure).	Waiting for funds.	Developed and operational.	Not yet. Options being discussed.	Oracle, Foxpro, Excel.	Informix, Foxpro, Excel.
5. Does NHDB exist with data for one or more years?	The information is saved.	Yes, for 4 years.	Started to compile/load 1996 data.		Done, HFA data, and district HIS, 10+yrs.
6. Computer programs to produce list 1 and mortality data in standard format.		Working on it.	Excel.		Yes, but some done by hand.
7. Validate and check data before sending to WHO or national EUPHIN server.	Not computerized.	Yes.	Manual validation.	All data are validated in Centre before use.	Yes, this is routine and automatic.
8. Data dictionary with national definitions.	Translated some into Albanian. Will continue.	Development in progress.	Working on it.	Done. Is being printed.	Ongoing, DPS contains file of definitions.
9. Were 6, 7, & 8 used for list 1 and mortality data sent to WHO in 1997?	No.	In respect of point 7.	Point 7.		Yes.
10. Internet connection.	No, Ministry of Health will.	Unstable phone link.	?	Yes.	Yes, low line capacity.
11. Develop and use national HIS package based on DPS.	Did not attend Bratislava meeting.	Developing it.	In phase of discussions.	Work with Ministry of Health on expanding list of indicators.	New version June 97. Available on network April training seminar.

Question	Estonia	Georgia	Hungary	Kazakhstan	Kyrgyzstan	Latvia
1.	Included in 1998 work plan. Funding requested from state budget.	Done and working group established to create NHDB.	Done.	Yes, included in Ministry of Health plan.	Done. In government programme.	Done.
2.	Yes.	Done, based on List 1.	Done.	Done.	List agreed.	Done.
3.	Receiving from statistics department, cancer registry, others.	A number of institutions provide data.	Central Statistics Office National Information Centre for Health Care, Chief Public Health Office.	No problems getting data.	Close collaboration with other ministries, no big problems.	Reciprocal agreement with Statistical Office. Environmental Health Centre adds HIS to DPS.
4.	Windows NT, SQL server, WEB server.	Own software developed in 1991.	Started developing DPS software.	DPS is used.	Used DPS since 1995.	Windows 95, Office, Foxpro.
5.	Data loaded for 1989-1996.	Most data for 1993-1996.	HFA, HIS, OECD databases exist.	Since 1990. Working on 1996.	Data loaded since 1990.	HIS 1989-1996.
6.			No.	Yes.	Yes?	
7.	Yes.	Only data from health sector.	Done by primary data collectors.	Yes.	Yes.	Checks at collection and processing.
8.	Mainly WHO definitions used.	In progress.	Working on it.	Working on it.	Working on glossary.	Working on it.
9.	Point 7.	Point 7.	(Yes).	Yes.	Yes.	Partly.
10.	Via modem.	Yes.	Yes.	Yes, since 1996.	No, possibly in 1998.	No will be early 1998.
11.	New indicators for 1995/1996.	HIS at rayon level with about 60 indicators.	Distributed new DPS for HIS. HIS in two courses for doctors. Trained trainers at HIS seminar in May. HIS on internet.	Database only in Centre. Will now work with regions. DPS at oblast level with data from 1990.	DPS at oblast level with data from 1990. Plans to make DPS at regional level from 1998.	HIS database used in population health evaluation; reforms assessment; sick fund reform; management; Public Health report. May HIS seminar. Training through Public Health school. Plan November seminar.

Question	Lithuania	Poland	Republic of Moldova	Romania	Russian Federation	Slovakia
1	Done.	Done.	Done.	Done.	Included in ministerial plan for 1996-1998.	
2	Done and available.	Being considered in institute and Ministry.	?	Done.	Done. Committee endorsed.	Done.
3	Good contacts based on tradition and exchange of data.	No agreement. Some free, some purchased.	?	Agreement: National Commission of Statistics. Swaps with others.	Document obliges ministries to submit population and health data to Ministry of Health.	Good cooperation. Documents being prepared for approval at Ministry of Health.
4	DPS software.	None yet.	Windows 95 and NT.	HSI since 1996. Started Oracle project. Comshare in 1998.	Foxpro under DOS6.22.	Foxpro, quattropro, excel.
5	Full data for last 6 years and 4 earlier years.	Yes, flat files. SAS for analysis.	Data available for last 40 years but not yet in database.	Yes, since 1981 for some HSI.	Yes. 1991-1995 data loaded.	Yes.
6	Yes for indicators about health service.	Excel.	Yes.	Yes, Foxpro.	Yes.	Yes for mortality. No for List 1.
7	Both visual and logical (computerized).	Yes, but not computerized.	Yes.	Yes, visual and programs. Fieldwork if problems found.	Yes.	Cross-check mortality.
8	First draft done.	Some definitions in Central Statistical Office yearbook.	?	No.	Partially available in various instructions.	Yes, in Slovak and English.
9			Points 6, 7.	Yes.	Yes.	
10	Yes.	Yes.	Yes, via modem.	Yes.	Yes.	Yes.
11	Developing on institutional level. Expect better medical and financial data following new medical law (1/1/98). Plan two HSI seminars for November and December. Discussing electronic data transfer.	Package with 1995 data will be distributed at conf/workshop in November. Prepared annual national health status report since 1989.	Preparations to load DPS with data at regional level completed.	HSI package has 700 indicators. Seminars in December 1996 and June 1997. Package and documentation to all districts and all Ministry departments. Intends to fund further seminars.	Adapting DPS, have done maps. Will send corrections and information to oblasts. Demo website based on WHO DPS model. Contains 1993-1996 information.	Created new maps showing new regions. National seminar and three regional seminars planned for December. New version will be ready by then. Manuals and system in Slovak.

Question	Slovenia	Tajikistan	Turkmenistan	Ukraine	Uzbekistan	Azerbaijan
1	In 1998 fiscal plan, awaiting approval.	Being considered in Ministry of Health plan.	Included in 1998 fiscal plan.	Done.		
2	Propose HSI, discussions 1998.	Done.	In progress.	Done.		
3	Contract with Statistics Office. Get ministry data OK. Negotiating with other sectors.	Relevant Institutions agree to supply data.	Close links with other sectors in place.	Complicated by financial difficulties.	President ordered institutions to supply information to health workers (law).	
4	Shared Sun server, oracle database.	Delphi software, Borland database engine, paradox7 file structure.	Support needed.	Sun ultra 1 Sun solaris v2.5.1.		
5	Yes, 1980-1995 data, some database tools. Building web access.	Exists for population and mortality but without data.	Preparations started.	Need help to install database server software.	Some data for 10 years, other data for 5 years. Will have 35 indicators.	
6	Yes, for 3 years.	Yes, for mortality and population.	No.	No.		
7	Yes, standard procedures.	Will be done within NHDB.	Yes.	No, only one source so cannot cross check.		
8	Propose dictionary in 4 languages.		Work started.	Working on it.		
9	Except item 8.		Point 7.	No.		
10	Yes.	Mid-1998.	Still to be decided.	Yes.	Technical hitch.	
11	Windows version used internally. Two seminars in May, two more planned for October and November.	Are training people in medical statistics and informatics. Adopted HSI on environment.	Did not attend Bratislava meeting.	Trained 20 users in DPS. Translated manual into Russian. Distributed DPS software and manuals. Russified some HSIs.	Leader absent from Copenhagen meeting.	Did not attend Copenhagen meeting.

Specific additional notes from country reports

Albania

The Albanian delegates reported that they could not attend the meeting in Bratislava because of the civil unrest in Albania at the time. A network is being built for all departments of the Ministry of Health. Staff need training and the Albanian health minister supports training.

Armenia

Every month, the Armenian Health Information Centre circulates regional bulletins, and also a national health report which is translated into English. Transfers of data between ministries are electronic. Only specialists currently have access to the National Health Database. Those without computers receive printouts.

Work is going on to convert data to the format needed by the Database Presentation System.

Azerbaijan

Owing to unexpected changes in staffing, counterparts from Azerbaijan were not present at the meeting.

Belarus

The Council of Ministers will pass a law to force other authorities to supply data.

There is a lack of specialist staff to develop Internet applications. This is being explored with the Academy of Sciences.

The delegates recently called a meeting about indicators and reporting for all *oblast* chiefs and national institutes.

Bulgaria

Elections in the early spring led to changes in the Ministry and in regional health chiefs, and also to reforms of health care.

Information had been collected from 92 municipal hospitals for accreditation of the status and capacity of hospitals. A commission was being held this month. The Database Presentation System had been used to support this work. It is planned to repeat the exercise next year.

Financial support is needed for permanent iP [internet connection].

Czech Republic

Several hundred people are using the national health service indicator package (DPS) around the country. The latest version is available on the network of the Ministry of Health. A training seminar was held in April.

A database of terms, indicators and definitions of the national health information system is planned. The DPS already contains a file of definitions and explanations.

Estonia

Reforms are continuing in Estonia. Financing is unreliable.

Georgia

There are some problems with the reliability and completeness of information. Some sectors charge for their information.

Hungary

A data dictionary is being developed on a spreadsheet, which lists the different codes used to describe the indicators, including OECD, HSI.

Kazakhstan

Two weeks before the meeting, the Ministry of Health had become part of the Ministry of Education, Culture and Health, with a new minister. The structure of the new ministry was not yet finalized.

Kyrgyzstan

E-mail and electronic links are being set up via the WHO Health Information Centre for the Central Asian Republics (CAR).

Latvia

A new regional level (population 300,000) is being established in the sick fund system.

The DPS package is delivered to the State Environmental Health Centre, which adds its data on the environment and communicable diseases.

The Latvian health service indicator (HSI) database has been used for a population health evaluation, a health care system reform advance assessment, sick fund financial reform, and health service management. A public health report and quarterly analytical reports are produced. Information was supplied for a national report on children and women's health, and for a World Bank project. A draft report for the World Bank was distributed at the meeting, and comments on it invited.

Lithuania

Managers need data by institute, not district. This is being developed.

A new medical insurance law means that new data will be collected from the start of 1998. It is expected that this will lead to better quality data, and that more managers will be interested in using it.

Poland

A home page is accessible at <http://www.medstat.waw.pl>.

Republic of Moldova

A reform plan to 2003 was agreed in June. The accent is on prevention, the efficiency of primary health services and decentralization. The reforms require adequate information. It has been agreed to use a single resource to analyse and collate data. A national health database is included in these plans.

Some information is still submitted by paper. Work is going on to ensure that all reporting is done by computers.

Romania

It is planned to run further training seminars to help and encourage staff from the districts and the Ministry to use the health service indicator database.

Russian Federation

The aim is for telematic transfer of information: distances are very great in the Russian Federation. The Moscow website which was demonstrated at the meeting is described in section 11.3 above.

Slovakia

In 1996 the regional boundaries were changed. The eight new regions are not compatible with the old ones. Data are structured by region, according to the old boundaries until 1995 and the new boundaries since 1996. A map of the new boundaries has been created for the Database Presentation System and experimentally filled with data.

Slovenia

The windows version of the Database Presentation System has been loaded with indicator data and is used at the Institute of Public Health. It should also be disseminated for use by local health managers and policy makers.

Tajikistan

A new system for recording activity in primary health care has been introduced.

Turkmenistan

Health care reforms are in the pipeline. The Lukman program has a health component.

Ukraine

Twenty people have been trained to use the Database Presentation System, including the first secretary of the Ministry. A problem had been identified, in that usually managers and decision-makers do not use computers but leave that to their secretaries. Most of those trained so far have been secretaries.

Uzbekistan

Epidemiology and sanitation are the most important topics domestically.

Annex 2

DETAILS OF NATIONAL DATABASE PRESENTATION SYSTEM APPLICATIONS

Germany

Dr Gunter Brückner from the German Federal Statistical Office demonstrated a prototype system to display indicators about health and health services in Germany on the internet.

The system presents facts about health, risks, activity, resources and spending. It addresses different groups (e.g. the public, politicians) through specific information platforms. It includes statistics and background information: both numbers and text. Text includes health reports (basic and special), and methodological reports. Information about definitions, sources (260), and data owners (90 different) is also available.

Subnational and international comparisons can be made. Subnationally, the system compares the German federal states. The search hierarchy is by topic with seven main topics and also subtopics. Searches tell the number of hits (matches).

Indicators are calculated from raw data each time a request is made to the system. Thousands of different indicators can be calculated. Tables and diagrams can be downloaded. Users can put selected texts into their shopping baskets, to be compressed and despatched by e-mail.

Access is (preferably) via the internet, or by telephone, which is expensive. It will be available from 1 April 1998 in German and English (only abstract of texts in English). The system is planned to be routine by the start of 1999.

The system uses Oracle with a heavy-duty Sun server. Data are stored by axes of interest (e.g. age, region, sex), which makes it 15 times larger than a relational database.

The project costs US \$20 million over five years and has been financed by German federal ministries. Most of this money has been spent on producing reports. The hardware and software cost around US \$2.5 million. The project has been advised by five experts, including three companies.

Denmark

Mr Martin Lund introduced Ms Pernille Christensen and Mr Henrik Dahl of the Danish Ministry of Health, who demonstrated the Danish Data Warehouse.

Problems with the old system included out-of-date and undocumented data and inefficient use of the SAS, so an intranet was created to share the data. Data Warehouse is an SAS interface. There are various users around Denmark. The system is not accessible by the public, so there are no confidentiality problems.

Through the system, users can access records of hospital discharges since 1977 and records of hospital waiting lists. The records are stored by the data owner. SAS processes raw data. Different data reach the Data Warehouse by different routes. For example, records of ambulatory care visits are kept by regional councils and updated annually. They have separate records for every visit, both outpatient and GP (family doctor) consultations. The system shows the potential of distributed databases.

During the demonstration, a map of Danish districts showing dental visits by 20-year-old men in 1990 was displayed. Morbidity and mortality data can be compared by social group. Users do not need to be programmers to use the system.

Work started on this system two years ago. Some 50-60 staff work on it, including data entry staff. The main problem (and expense) is entering data.

Annex 3

PARTICIPANTS

Albania

Ms Nurie Caushi
Director, Department of Statistics and Information, Ministry of Health and Environment, Tirana

Mr Arti Cicolli
Department of Statistics and Information, Ministry of Health and Environment, Tirana

Armenia

Dr Laura H. Danelyan
National Health Information Analytical Centre, Ministry of Health, Yerevan

Dr Arayik Tadevosian
National Health Information Analytical Centre, Ministry of Health, Yerevan

Belarus

Dr Oleg Levshukov
Centre for New Medical Technologies, c/o Ministry of Health, Minsk

Professor Nikolai Piliptsevich
Director, Centre for New Medical Technologies, Minsk

Bulgaria

Dr P.D. Amudjev
National Centre of Health Information, Sofia

Dr Jordan Petrov Arnaudov
Department of Information Technology, National Centre of Health Information, Sofia

Czech Republic

Dr Zuzana Kamberska
Institute of Health Information and Statistics, Prague

Dr Jiri Holub
Vice-Director, Institute of Health Information and Statistics, Prague

Estonia

Dr Reet Malbe
Director, Medical Statistics Bureau, Tallinn

Mr Aleksandr Drozdov
Chief Specialist, Programmer, Medical Statistics Bureau, Tallinn

Georgia

Ms Olga Idzikovskaya
Deputy Manager, Centre of Medical Statistics and Information, Ministry of Health, Tbilisi

Ms Mzia Arevadze
Centre of Medical Statistics and Information, Ministry of Health, Tbilisi

Germany

Dr Gunter Brückner
Head of Section, Information Unit for Health Data, Federal Statistical Office, Wiesbaden

Hungary

Dr Gyula Kincses
National Information Centre for Health Care, Ministry of Welfare, Department of Health Policy,
Budapest

Mr Jozsef Berta
National Information Centre for Health Care, Ministry of Welfare, Szekszard

Kazakhstan

Mr T.K. Nugumanov
Director, AO Medinform, Ministry of Health, Almaty

Dr Semeigul Shopshebaeva
Department of Medical Statistics, Ministry of Health, Almaty

Kyrgyzstan

Dr L.K. Murzakarimova
Director, Health Information Centre, Ministry of Health, Bishkek

Dr Maratbek Bozgunchiev
Head, WHO Information Centre for Central Asian Republics, Bishkek

Latvia

Dr R. Psavke
Chief, Analytical Unit, Medical Statistics Bureau, Health Statistics, Information and Medical
Technology Centre, Riga

Mrs Velta Erna Lace
Chief, Computer Unit, Medical Statistics Bureau, Health Statistics, Information and Medical
Technology Centre, Riga

Lithuania

Dr Aldona Gaizauskiene
Director, Health Information Centre, Vilnius

Dr Rita Gaidelyte
Computer specialist, Health Information Centre, Vilnius

Poland

Dr Bogdan Wojtyniak
Department of Medical Statistics, National Institute of Hygiene, Warsaw

Dr Pawel Gorynski
Department of Medical Statistics, National Institute of Hygiene, Warsaw

Republic of Moldova

Dr Gheorghe Rusu
Director, National Centre of Public Health and Management, Ministry of Health, Chisinev

Dr Valeriu Macovei
Vice-Director, National Centre of Public Health and Management, Ministry of Health, Chisinev

Romania

Dr Dan D. Farcas
Director-General, National Centre for Health Statistics, Ministry of Health, Bucharest

Dr Liviu Botezat

Database Administrator, National Centre for Health Statistics and Medical Documentation, Ministry of Health, Bucharest

Russian Federation

Dr E.I. Pogorelova

Statistical Department, Ministry of Health, Moscow

Dr V.P. Burmistrov

Director, Main Computing Centre of the Ministry of Health, Moscow

Slovakia

Dr Imrich Steliar

Institute of Health Information and Statistics, Bratislava

Mr Jan Ondrejka

Director, Institute of Health Information and Statistics, Bratislava

Dr Dagmar Skacková

WHO Liaison Officer, WHO Liaison Office in the Slovak Republic, Bratislava

Slovenia

Mr Jure Misjak

Institute of Public Health, Ljubljana

Mr Marko Ambroz

Government Centre for Informatics, Ljubljana

Tajikistan

Dr S.R. Saifuddinov

Director, Centre of Medical Statistics and Information, Ministry of Health, Dushanbe

Ms O.Y. Blagoveshenskaja

Centre of Medical Statistics and Information, Ministry of Health, Dushanbe

Turkmenistan

Dr C. Mamedkuliyev

Department of Medical Statistics, Ministry of Health and Medical Industry, Ashgabat

Dr O. Guidjeva

Head, Central Methodical Bureau, Sanitary Statistics, Ministry of Health and Medical Industry, Ashgabat

Ukraine

Dr I. Barilyak

Director, Scientific Centre on Hygiene, Ministry of Health, Kiev

Mr Yuri Bosykh

LAN administrator, Information Resources Centre, Scientific Centre of Hygiene, Ministry of Health, Kiev

Uzbekistan

Dr V. Khodjaev

Deputy Director, Calculation Centre, Ministry of Health, Tashkent

Project Management Team

- Mr Ole Bech Mogensen
Hyldekaer 23, DK-2765 Smørum, Denmark
- Mr J.R. Halsall (*Rapporteur*)
NHS Executive, Economics and Operational Research Division, Leeds, United Kingdom
- Mr Jens Hummelose
GIANT Resources, Frederiksberg, Denmark
- Mr Martin Lund
Economics and Statistics Division, Ministry of Health, Copenhagen, Denmark

WHO Regional Office for Europe

- Dr J.E. Asvall
Regional Director
- Mr Ole Borchersen
Programmer Analyst, Informatics Support
- Ms Zsuzsanna Jakab
Director, Country Health Development
- Mr Arun Nanda (*Chairperson*)
Regional Adviser, Epidemiology, Statistics and Health Information
- Dr Remigijus Prokhorskas
Statistician, Epidemiology, Statistics and Health Information