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Report on a WHO Meeting

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Note

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR EUROPE

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ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ
ЕВРОПЕЙСКОЕ РЕГИОНАЛЬНОЕ БЮРО

CORRIGENDA

Page 19, under FRANCE, include:

Dr Robert Netter*
Directeur Général du
Laboratoire National de la Santé
25, Bd St Jacques
75680 Paris Cedex 14
France

*Participation expenses not covered by WHO

Page 26, under OBSERVERS:

Second name to read: Dr Nedret Emiroglu

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Introduction

The first Meeting of National Programme Managers on the subject of the Expanded Programme on Immunization (EPI) took place in Budapest in April 1988. One of the programme managers' recommendations was that further meetings should be held annually to review strategies and initiatives for achieving target 5 of the strategy for health for all by the year 2000 and the objectives adopted at the Second Conference on Immunization Policies in Europe, held in Karlovy Vary in 1984. In particular, it was recommended that special attention should be paid to those countries farthest from achieving the target, with a view to helping them make progress. Recent developments in Europe were assessed in January 1989 at the Third Meeting of the European Advisory Group (EAG) on EPI in Rome, and plans for a second meeting of national EPI programmme managers were drawn up.

The Second Meeting was held, therefore, with the agreement and help of the Government of Turkey, in Istanbul from 23 to 26 May 1989. Representatives of 28 countries, and observers from the Commission of the European Communities, United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP) and Rotary International attended (Annex 1). The Meeting was chaired by Dr Henrik Zoffmann, Dr M. Ali Biliker served as Vice-Chairman, Dr E. Griffiths acted as Rapporteur and Dr B. Bytchenko was Secretary.

The specific objectives of the Meeting were:

- to review the progress of the national and regional EPIs, their conformity to WHO immunization policy, their achievements and their failures;

- to consider strategies for the eradication of poliomyelitis; and

- to formulate conclusions and recommendations for the further development of the regional EPI, with regard to both target 5 diseases (poliomyelitis, measles, diphtheria, congenital rubella, neonatal tetanus) and others preventable by immunization (e.g. pertussis, mumps, viral hepatitis).

The report of the Third Meeting of the EAG, which was used to focus the discussions, and the working papers presented during the plenary sessions are listed in Annex 2.

Programme management and monitoring

Regional up-date

Prior to the Meeting, to bring the information up-to-date, countries had been asked to provide the most recent data on coverage, measurement methods, surveillance systems, disease incidence, impediments to achieving targets, and evaluation of the cold chain. Generally speaking, very encouraging progress is being made throughout the Region towards eradicating the EPI diseases.

Information management

The generation all over Europe of accurate, comparable data is increasingly recognized as of paramount importance for programme management, whether at national, regional, local or subdivisional level. Computers are recommended for monitoring, evaluating and reporting on the progress and activities of the EPI programme, and for surveillance of adverse reactions to vaccines; a computerized EPI information system (CEIS) is now available. Two countries in the Region have installed CEIS, and at least three others already have their own systems. It is hoped that the latter can be made compatible with CEIS and standardized, so that WHO

can develop a unified global monitoring system. Active collaboration with other WHO programmes on a single monitoring system for primary health care will begin in 1989.

Cold chain

The cold chain, a system which ensures that vaccines are kept in good condition and at the right temperature, forms an essential part of the vaccine delivery system. Cold chain systems in the European Region are now being evaluated, and the data from the first country to produce results have been very useful in that they revealed unexpected weaknesses in both stock management and vaccine storage conditions. The evaluation has also demonstrated that EPIC (cold chain monitor analysis) computer software developed by WHO to analyse the data can identify subtle deficiencies in a system which cumulatively lead to failure of the cold chain. EPIC can be linked to CEIS.

Poliomyelitis eradication

General progress

The progress of EPI worldwide has made those concerned optimistic that poliomyelitis can be eradicated in the next decade. Europe and the Americas continue to have the strongest immunization programmes, while Africa, the poorest region, still has the largest proportion of infants below the 50% level of coverage for EPI antigens in general. Experience in the Americas suggests that the latter may well overtake Europe in their drive to eradicate poliomyelitis. Although many countries in the Region have resources, they sometimes suffer from a lack of the political will needed to carry the eradication programme through to its final conclusion. The participants appreciated that it is increasingly

difficult to arouse support when the public is no longer alerted to danger by high numbers of poliomyelitis victims.

According to the information available in 1988, 27 countries in the Region had reached Stage A in their eradication programmes (free of poliomyelitis due to wild poliovirus), and two countries Stage B (less than 10 cases per year); three others were still at Stage C (10 or more cases per year). In the majority of Member States high immunization coverage rates had been achieved (90% and over), although several countries identified areas where coverage was lower.

Vaccine-associated cases of poliomyelitis have been reported from Belgium, France, Federal Republic of Germany, German Democratic Republic, Hungary and the United Kingdom. Vaccine-associated contact cases as well as poliomyelitis cases of unknown origin have also occurred every year in Romania, with unusually high frequency. Where oral poliomyelitis vaccine (OPV) is used, the reporting of vaccine-associated cases is an immediate indication of the sensitivity of the surveillance system.

Almost 50% of the European population now live in countries where there is no disease caused by wild poliovirus, but there is no room for complacency and high levels of coverage must be sustained for eradication to be achieved in the Region as a whole. Unexpected outbreaks still occur, such as those in Spain (1987) and Israel (1988), reported below.

Problem areas

Poliomyelitis remains a problem in some areas of Turkey and the USSR, but remedial measures are being taken.

Turkey had considerable problems in the past but is now making such good progress that its target date for the elimination of indigenous poliomyelitis has been fixed at 1990. Immunization was initially increased by the use of mass campaigns, but is now done routinely at health centres. Better programme management and monitoring are playing key roles and an education and training programme is in progress. UNICEF and Rotary International have supported Turkey, mainly by helping with the purchase of poliovirus vaccine and social mobilization. A recent study of the cold chain using cold chain monitors has shown the vaccine supply system to be reliable, with only a very small percentage of vaccines being compromised by the time they are used. Reliable serological and other surveys will now be needed for Turkey to achieve its target. Laboratory support facilities for isolating and identifying polioviruses also need to be strengthened.

In the USSR the most recent cases have occurred in only a few regions: 118 out of a total of 165 cases reported in 1988 came from the Union Republics of Azerbaidjan, Turkmenia and Uzbekistan. Steps are being taken to improve immunization coverage and disease surveillance in these and other problem regions, with special attention to the isolation and identification of poliovirus strains and to serological surveillance for the purpose of identifying immunity gaps. From 1991, cold chain procedures recommended by WHO will be strictly adhered to with the introduction of cold chain monitors. On the basis of current developments, the USSR could be expected to achieve eradication by 1995, as desired.

Spain had very few poliomyelitis cases in 1984 and 1985, and none in 1986. It was therefore believed that the immunization programme had resulted in eradication, but, in 1987, some 11 cases were reported from southern Spain, followed by four more in the first quarter of 1988. The outbreak centred on children of low socioeconomic class, mostly gypsies, who were either

poorly vaccinated or not vaccinated at all. A special campaign was mounted, which involved strengthening the number and quality of immunization teams in the area, and no new cases have occurred since March 1988. This incident again highlights the problem of ensuring vaccine coverage of marginal and possibly mobile populations.

Another unexpected outbreak occurred in Israel in 1988, with 15 cases of paralytic poliomyelitis caused by type 1 wild poliovirus. Most cases occurred in teenagers and young adults, many of whom had been vaccinated as children with at least three doses of trivalent OPV, and this episode highlighted weak spots in eradication programmes and the risks posed by virus importation. The few serosurveys carried out at the time these individuals were immunized showed that only 70% of vaccinees from their ethnic and (low) socioeconomic groups appeared to seroconvert. This was possibly due to interference by other enterovirus infections, although a breakdown in the cold chain cannot be entirely discounted. The focus of the outbreak was one of two subdistricts where enhanced inactivated poliomyelitis vaccine (IPV) had been the exclusive routine poliomyelitis immunization used for infants since 1982. This suggests that for certain regions of a country like Israel the exclusive use of IPV may not succeed in eliminating poliomyelitis; it seems that the high degree of intestinal immunity provided by OPV is desirable. Programmes combining IPV and OPV are now being considered for use in such areas.

Reaching the target

As Europe draws near to eradicating poliomyelitis, it is essential to sustain immunization coverage and to improve disease surveillance, with particular attention to case definition and classification. These measures need to be in place for unexpected outbreaks to be dealt with effectively. They were discussed in depth at the Meeting by three working groups, who endorsed the EAG's view that eradication could be achieved by 1995.

Recommendations

1. Coverage should be maintained at a minimum of 90% in all geopolitical units. It is recognized that in some countries special groups or geographic areas exist (gypsies, or cities with large immigrant or poor populations) which are not yet sufficiently covered by immunization. Whenever low levels are found, the contributing factors should be looked for and remedial action taken. Programme managers in some countries believe that revaccination should be considered for school-leavers to maintain their immunity. Although some serological surveys have demonstrated the presence of antibody levels high enough to ensure immunity against poliomyelitis in the same community some 30 years after primary immunization, it is suggested, to guarantee protection, that travellers to endemic regions should be revaccinated if they have not had a poliomyelitis vaccination in the previous 15 years. Health education must also be strengthened to sustain the high uptake of vaccine.

2. Disease surveillance is considered extremely important for all countries. Surveillance procedures for flaccid paralysis are satisfactory for classic cases with virological confirmation, but there are concerns about the Guillain-Barré Syndrome (GBS) and viral meningitis cases, and the possibility - albeit rare - of missing the first cases in a poliomyelitis outbreak. Countries should make sure that GBS and viral meningitis cases are thoroughly investigated and that stool samples are sent for virological analysis. Ideally all such cases should be reported to epidemiologists at least at the district level. However, there may well be practical difficulties in certain countries, in which case special surveys have to be made instead. All Member States agreed that the case definition for poliomyelitis and information on national procedures used for surveillance should be made

widely available, so that clinicians are aware of the above requirements.

All suspected and confirmed cases of poliomyelitis should be reported immediately to the national programme manager. Returns should always be made even if no cases occur. Each country should report its cases to WHO without delay and produce general returns on a routine basis. At the end of a year a line-listing of all confirmed cases, and the control measures taken, should be submitted to the Regional Office.

3. Wherever possible, every case of poliomyelitis should be classified, according to WHO's recommendations and on the basis of the characteristics of the poliovirus isolated from that case, as:

- indigenous wild poliovirus
- imported wild poliovirus
- vaccine-associated, or
- unknown other.

A case should be reported as vaccine-associated when the virus isolated is shown to have vaccine-like characteristics and no other etiological agent can be identified as the clinical cause. Several WHO European reference laboratories exist (Annex 3) where the strains identified by national poliomyelitis reference laboratories can be confirmed and/or further characterized. The original WHO definition of vaccine-associated cases includes recipients developing disease within 7-30 days of vaccination and their contacts. However, countries are now encouraged to use the stricter laboratory-based definition and to classify cases diagnosed clinically and/or serologically as unknown.

Certification of poliomyelitis eradication

To prove that a country is free from indigenous poliomyelitis it must be shown that:

- an efficient laboratory-supported surveillance system exists;
- all cases of flaccid paralysis and GBS are being fully investigated;
- no cases of poliomyelitis (fulfilling the poliomyelitis case definition) have been found within the last three years;
- a minimum immunization coverage rate of over 90% has been achieved in all geopolitical units; and
- seropositivity rates are high (over 80%).

However, the absence of confirmed clinical cases, even for three years, does not mean that wild poliovirus has disappeared from the population and environment, since cases of poliomyelitis infection, as opposed to disease, will not be apparent. Furthermore, there is a disturbing possibility that poliovirus can survive in faecally contaminated cold environments for fairly long periods. Some countries carry out environmental monitoring of circulating wild and vaccine virus, but not routinely. Certification that a country is poliovirus-free, i.e. that wild poliovirus has been eradicated, will only become meaningful as global poliomyelitis eradication approaches, since the importation of viruses is always possible.

In countries using OPV, plenty of vaccine virus will circulate in the environment. A change to IPV might therefore be considered in the last stages of the eradication programme when wild viruses have been

eliminated. However, detailed programmes for the end of the campaign should be carefully tailored to specific needs and conditions in individual countries. Also, new and more suitable vaccines may become available following current research and development.

It is recommended that at the EAG meeting in 1990, criteria should be defined for the certification of poliomyelitis eradication in countries in the Region.

Measles eradication

The reported incidence of measles in Europe reached its lowest level in 1987, when less than 300 000 cases were reported from 23 (71%) of the countries in the Region. The general downward trend has been interrupted by small outbreaks of the disease, but the participants in the EAG meeting in Rome (January 1989) still felt able, after reviewing the situation, to endorse the recommendation of the Karlovy Vary Conference in 1984 that by 1995 indigenous measles should be eradicated from all countries of the European Region.

Two major problems need to be overcome if this target is to be achieved:

- vaccination coverage must be increased in countries not already achieving the target coverage of 95% of children by the time of their second birthday;

- the accumulation of non-immune vaccinated children and young adults has to be coped with (this pool has resulted from low seroconversion rates following the use of poor quality vaccine at the beginning of the programme, and/or cold chain failures, and unsatisfactory coverage; outbreaks among such groups can be explained by the importation of virus into areas with little or no natural immunity).

All countries in the Region have introduced measles immunization and a few have been achieving nearly 100% coverage for several years. Elsewhere, overall coverage rates may conceal pockets of low uptake and every effort should be made to increase coverage. The introduction of measles-mumps-rubella (MMR) vaccine in some countries has increased coverage considerably. Furthermore, the heat stability of the measles vaccine has improved over the last decade and only good quality, heat-stable vaccine giving high seroconversion should now be used.

There is general agreement that the problem of non-immune vaccinated children and young adults can be tackled by the introduction of a further dose of vaccine for all children later in childhood. The exact timing of the catch-up point should be left to individual countries to decide, but it could be either before school entry or at 11-12 years. Its effect would be twofold:

- it would provide another chance to cover individuals who failed originally to seroconvert because of defective vaccine; and

- it would give unvaccinated people another chance to be immunized.

Catch-up campaigns can bring about a rapid reduction in the pool of susceptible individuals. A catch-up point may, of course, be discarded when the first infant cohort immunized with present vaccines reaches it, provided high enough coverage has been achieved. Specific older groups can also be revaccinated on the basis of serological survey results, to remedy an inadequate earlier immunization programme.

Eradication of congenital rubella syndrome (CRS)

According to target 5, congenital rubella syndrome is to be eradicated by the year 2000 and operational

strategies for this purpose were adopted in 1984 at the Karlovy Vary Conference. By 1990 all countries should be using rubella vaccines in their national programmes, and by 1995 they should have achieved a coverage of at least 90% of the target population, and have set up surveillance and investigation systems. By 1996 all reported suspected cases of congenital rubella should be under investigation.

However, despite the fact that the benefits in terms of the prevention of disabilities caused by congenital rubella far outweigh the costs of an eradication programme, little has happened with regard to CRS eradication in the Region. Fewer than a quarter of the Member States can even produce any data on the incidence of CRS.

With accelerated strategies, rubella transmission could be interrupted in six to seven years. It is vital now to set up and strengthen effective rubella immunization programmes if the target date of 2000 is to be met. Some countries have begun to do this: 10 are using MMR vaccine, others are using alternative strategies. For those countries using MMR vaccine for infants, success will depend on their commitment to measles eradication, the vehicle for rubella coverage. It is important to note that unless high levels of coverage are achieved after the introduction of MMR vaccine, more congenital rubella syndrome could occur than without a programme. If the circulation of rubella virus is reduced but not eliminated, more women entering childbearing age may become susceptible, being neither vaccinated nor previously exposed to the natural disease.

As in measles immunization, catch-up campaigns, including the immunization of adult women and other susceptible groups, need to be considered.

Recommendations

1. Every country should have a national rubella policy.

2. Countries which have not yet started rubella vaccination should adopt a policy of intensive mass vaccination campaigns to protect susceptible women and simultaneously interrupt rubella transmission. This interruption can only be achieved by means of a multipronged strategy involving infants, preschool children, pre-pubertal girls and susceptible adult women.

3. Every country already using MMR vaccine should commit itself to achieving at least 90% coverage by 1990.

4. Every country should set up a mechanism for monitoring the incidence of congenital rubella syndrome.

All rubella infections in pregnancy should be investigated and the termination of a pregnancy on account of rubella should be categorized as confirmed rubella infection, rubella contact or vaccine-associated. Inadvertent rubella vaccination in pregnancy is no longer considered a ground for termination.

Hepatitis B vaccine in national immunization programmes

The discussion on hepatitis B virus infection at the Meeting gave the clear impression that this disease is an increasingly important public health problem in certain parts of the Region and can become a considerable economic burden. Some countries have already introduced routine hepatitis B vaccination on a limited scale for children born to infected mothers. The participants endorsed the recommendation made in Budapest (1988) regarding the use of hepatitis B vaccine.

The high price of the vaccine in Europe is still a serious impediment to its adoption for routine use in childhood vaccination programmes. It is recommended, therefore, that ways of reducing the price should be investigated by both WHO and individual countries.

Diphtheria eradication

The participants endorsed the recommendation of the EAG in Rome (1989) that the eradication of diphtheria should be attempted by 1995 even though certain problems still remain. In 1987, some 20 Member States were free of diphtheria, 1 country reported just over 1000 cases, and 11 countries reported less than 6 cases each. In general, countries with only a few or no cases have a very high coverage with diphtheria vaccine, but in many of them serosurveys have shown a significant percentage of the adult population to be without protective levels of diphtheria antitoxin.

Countries where diphtheria still occurs are advised to review the situation and make appropriate modifications to their programme. The revaccination of adults should be considered wherever gaps in immunity are detected. Low-dosage adult diphtheria vaccine (d) can be given with tetanus (T) vaccine as a combined Td vaccine, but the optimum timing of doses following primary vaccination is unclear. The EAG or a special WHO expert group should consider this particular issue and make recommendations.

The participants expressed concern that serosurveys for antibodies important to EPI are increasingly being hampered in some countries in the Region by rules of privacy and informed consent, which may seriously interfere with progress.

Tetanus eradication

Neonatal tetanus has been eradicated from most but not all of the Region. Turkey, for example, reported 174 cases between 1985 and 1987, although considerable progress has been made there recently in strengthening surveillance systems, improving vaccination coverage of women of childbearing age, and improving conditions during childbirth. The 1990 target set for the eradication of the disease is now thought to be realistic.

To eradicate non-neonatal tetanus, it is essential to maintain active immunization using adequate vaccines that fully meet WHO requirements. Since at present non-neonatal tetanus mainly affects older people in most countries in the Region, more attention must be paid to the immunization of adults and to the maintenance of life-long immunity by periodic revaccination.

Social mobilization

The discussion of social mobilization highlighted the benefits to be gained from a well planned campaign. The work done in the United Kingdom when MMR vaccine was introduced in 1988 was used as an example of a campaign with a high impact.

There are two main targets for social mobilization on immunization: the medical profession in its broadest sense and the general public. Each requires a separate strategy.

The following are the key questions, the answers to which form the basis of a social mobilization campaign.

- What is the relevant vaccine uptake?
- Are all professionals promoting immunization?

- Are professionals using false contraindications, or downgrading the importance of the target diseases? Are parents actively advised to get their children immunized?

- Is the public persuaded of the benefits of immunization?

- Is immunization available at all appropriate opportunities?

- Does the cold chain work?

- Are there cultural or set beliefs influencing parents away from immunization?

- Are health promotion and disease prevention of any importance in the lives of all families?

- Are there any financial constraints on accepting immunization?

As immunization uptake rises and prevalence of a disease wanes, social mobilization becomes more important rather than less. When society also becomes more sophisticated, social mobilization becomes more complex and more expensive. Immunization programme managers must therefore be prepared to do a lot of research (on which to base activities), involve health education experts and seek the help of commercial advertising and marketing specialists if they want to reach certain members of society. They may also need to ask specific groups, such as religious bodies, which may not seem obvious allies, to collaborate in order to increase and sustain the demand for immunization.

In view of the importance of this aspect of the EPI programme it is proposed that the discussion on ways of promoting vaccine uptake should be continued at the next annual meeting of national programme managers.

Final recommendation

It is essential for the report of this Meeting to be made available well in advance of the thirty-ninth session of the Regional Committee in September 1989, so that the recommendations it contains, especially those relating to the eradication of poliomyelitis, can be taken into consideration when resolutions are drafted and priorities set.

Annex I

PARTICIPANTS

Albania

Mrs Jolanda Koci
Head, Production Department, Institute of Hygiene, Tirana

Austria

Dr Andrea Martinek
Bundeskanzleramt, Sektion VI/A/5, Volksgesundheit, Vienna

Belgium

Professor Jeanne M.H. Dony-Crotteux
Présidente du Conseil Supérieur d'Hygiène de Belgique, Université Libre de Bruxelles, Sterrebeek

Bulgaria

Dr Stanislava Petrova Popova
Senior Officer, Ministry of Public Health and Social Welfare, Sofia

Denmark

Dr Henrik Zoffmann
Department of Epidemiology, State Serum Institute, Copenhagen

Finland

Dr Pertti M.J. Weckström
National Officer for Communicable Diseases, Department of Health Promotion and Hygiene, National Board of Health, Helsinki

France

Dr Colette Roure
Conseiller technique, Bureau des maladies transmissibles 1C, Direction générale de la santé, Ministère de la solidarité, de la santé et de la protection sociale, Paris

German Democratic Republic

Professor Sieghart Dittmann
Director, Zentralinstitut für Hygiene, Mikrobiologie und Epidemiologie der DDR, Berlin

Federal Republic of Germany

Dr Johannes F. Hallauer
Referatsleiter Hygiene und Seuchenhygiene, Bundesministerium für Jugend, Familie, Frauen und Gesundheit, Bonn

Greece

Dr Theodora Stefanou
Director, Public Health Division, Ministry of Health, Welfare and Social Security, Athens

Hungary

Dr Adam Vass
Head, Division for Hygiene and Epidemiology, Ministry of Social Affairs and Health of the Hungarian People's Republic, Budapest

Ireland

Dr Tim O'Dwyer
Deputy Chief Medical Officer, Department of Health, Dublin

Israel

Dr Shmuel Rishpon
Haifa District Health Officer, Haifa

Italy

Dr Salvatore Squarcione
Head, Second Division, Public Hygiene Department, Ministry of Health, Rome

Dr M. Grandolfo[a]
Epidemiology and Statistics Laboratory, National Institute of Health, Rome

Malta

Dr John M. Cachia
Professional Medical Officer II, Community Care Services, Department of Health, Valletta

Netherlands

Dr Hans P. Verbrugge
Medical Officer for Maternal and Child Health, Department of the Chief Medical Officer of Health, Rijswijk

Norway

Professor Otto Closs
Head, Vaccine Research and Supply Unit, National Institute of Public Health, Oslo

---

[a] Participation expenses not covered by WHO

Dr Bodolf Hareide[a]
Director General, National Institute of Public Health, Oslo

Poland

Professor Wieslaw Magdzik
Director, National Institute of Hygiene, Warsaw

Portugal

Dr Maria Celsa Ferreira Afonso de Carvalho
Chief, Maternal and Child Health Division, Directorate General for Primary Health Care, Lisbon

Romania

Dr Alexandru Calomfirescu
Head, Epidemiological Laboratory, Institute of Hygiene and Public Health, Bucharest

Spain

Dr Julio Casal Lombos
Director, National Virology, Microbiology and Immunology Centre, Carlos III National Health Institute, Madrid

[a] Participation expenses not covered by WHO

Sweden

Professor Margareta Böttiger
National Epidemiologist, National Bacteriological Laboratory, Stockholm

Dr Per Lundbergh[a]
Infektionsklinik II, Roslagstulls Sjukhus, Stockholm

Switzerland

Dr Hanspeter Zimmermann
Wissenschaftlicher Adjunkt, Bundesamt für Gesundheitswesen, Sektion medizinische Epidemiologie, Berne

Turkey

Dr Levent Akin
General Directorate of Maternal and Child Health and Family Planning, Ministry of Health and Social Assistance, Ankara

Dr Ender Aydiner
General Directorate of Primary Health Care, Ministry of Health and Social Assistance, Ankara

Dr Mehmet Ali Biliker
Head, Primary Health Care, Communicable Diseases Unit, Ministry of Health and Social Assistance, Ankara

---

[a] Participation expenses not covered by WHO

Dr Nilüfer Unver
Public Health Service, Ministry of Health and Social Assistance, Ankara

USSR

Dr M.I. Narkevich
Chief, Main Epidemiological Board, Ministry of Health of the USSR, Moscow

United Kingdom

Dr David M. Salisbury
Senior Medical Officer, Department of Health, London

Yugoslavia

Dr Alenka Kraigher
Assistant Director, Epidemiology and Laboratory Diagnosis, Ljubljana

REPRESENTATIVES OF OTHER ORGANIZATIONS

Commission of the European Communities

Dr Anne-Marie Halsberghe[a]
Public Health Unit, Luxembourg

[a] Participation expenses not covered by WHO

United Nations Children's Fund

Mr Alan Brody[a]
Project Officer, Ankara

Dr Gary Gleason[a]
Senior Project Officer, Ankara

Mr L. Rivera[a]
Chief, Programme Communication and Social Mobilization, New York

Dr Clodio Sepulveda-Alvarez[a]
Representative, Ankara

Mrs Figen Tunçkanat[a]
Project Assistant, Ankara

United Nations Development Programme

Dr P. van Hanswick de Jonge[a]
Deputy-resident Representative, Ankara

Rotary Foundation

Dr Unal Ural[a]
Immunization Task Force Coordinator, Rotary International, Ankara, Turkey

---

[a] Participation expenses not covered by WHO

OBSERVERS

Mr P. Bains[a]
SmithKline Biologicals, Rixensart, Belgium

Dr Nedret Emirogly
EPI Task Force, Primary Health Care, Ministry of Health and Social Assistance, Ankara, Turkey

Mr J. Horton[a]
European Manager, SmithKline and French Mundells, Welwyn Garden City, United Kingdom

Mr E. Meachem[a]
Group Product Manager, SmithKline Biologicals, Rixensart, Belgium

Dr V. Ercan Ocalan Ercancad
Officer Responsible for Vaccines, Istanbul, Turkey

Dr Serap Sener
EPI Task Force, Primary Health Care, Ministry of Health and Social Assistance, Ankara, Turkey

TEMPORARY ADVISERS

Dr Francis E. André[a]
Director, Medical and Scientific Services, SmithKline Biologicals, Rixensart, Belgium

---

[a] Participation expenses not covered by WHO

Dr Romulus Arion
Scientific Deputy Director, Cantacuzino Institute, Bucharest, Romania

Dr H. Bijkerk
Former Medical Officer for Infectious Diseases, Department of the Chief Medical Officer of Health, Waddinxdeen, Netherlands

Dr Elwyn Griffiths
National Institute for Biological Standards and Control, Potters Bar, United Kingdom

Dr Tapani Hovi[a]
Head, Enterovirus Laboratory, National Public Health Institute, Helsinki, Finland

Dr Danièle Kohl[a]
International Training Manager, SmithKline Biologicals, Rixensart, Belgium

Dr Ivan Masár
Chief, Department of Epidemiology, Ministry of Health of the Slovak Socialist Republic, Bratislava, Czechoslovakia

Dr I. Petersen
Head of the Enterovirus Department, Statens Seruminstitut, Copenhagen, Denmark

Professor Michel Rey
Chef de service, Maladies infectieuses et tropicales, Clermont-Ferrand, France

---

[a] Participation expenses not covered by WHO

WORLD HEALTH ORGANIZATION

Regional Office for Europe

Dr Boris D. Bytchenko
Regional Officer, Communicable Diseases unit

Dr Remy P. Prokhorskas
Statistician, Epidemiology and Statistics unit

Dr Mark S. Tsechkovski
Director, Systems of Health Care

Mrs Loreta Colatosti
Secretary, Communicable Diseases unit

Mrs Elena Nivaro
Secretary, Communicable Diseases unit

Headquarters

Mr Antony Battersby
Consultant, EPI

Dr T. Bektimirov
Assistant Director-General

Mrs Carole Chan
Administrative Officer, EPI

Dr Ralf H. Henderson
Director, EPI

Dr Ko Keja
Medical Officer, EPI

Dr Alexandre I. Savinich
Medical Officer, EPI

Dr Nick Ward
Medical Officer, EPI

Annex 2

WORKING AND BACKGROUND PAPERS

ICP/EPI 021/6	Eradication of measles, by Dr I. Masár
ICP/EPI 021/7	Education, training and awareness creation in the EPI frame, by Dr D. Kohl
ICP/EPI 021/8	Elimination of congenital rubella, by Dr D.M. Salisbury
ICP/EPI 021/9	Towards the elimination of tetanus in Europe, by Professor M. Rey
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ICP/EPI 021/16	Hepatitis B vaccines - definitive candidates for immunization programmes, by Dr F.E. André
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ICP/EPI 021/20	Varicella vaccine as an additional component of MMR vaccine: state of the art, by Dr F. André
ICP/EPI 021/21	Turkey on social mobilization, by L. Rivera
ICP/EPI 021/22	Rotary International support of poliomyelitis eradication, by Dr U. Oral
ICP/EPI 021/23	An outbreak of measles in Hungary, by Dr A. Vass
ICP/EPI 001 m01	Immunization policies in Europe: report on a WHO meeting, Karlovy Vary, Czechoslavakia, 10-12 December 1984 (recommendations only)
ICP/EPI 012	European Advisory Group on the WHO Expanded Programme on Immunization: report on a WHO meeting, Copenhagen, 10-12 September 1986 (recommendations only)
ICP/EPI 017	Expanded Programme on Immunization: report of the Second Meeting of the European Advisory Group, Rome, 9-11 December 1987 (recommendations only)
ICP/EPI 018	Expanded Programme on Immunization: report of the Meeting of National Programme Managers, Budapest, 26-29 April 1988
ICP/EPI 020	Expanded Programme on Immunization: report of the Third Meeting of the European Advisory Group, Rome, 24-27 January 1989
ICP/EPI 021	Country presentation: Belgium

Annex 3

EUROPEAN LABORATORIES WHICH HAVE AGREED TO SERVE AS REFERENCE LABORATORIES FOR POLIOMYELITIS ERADICATION

National Virology, Microbiology and Immunology Centre
Carlos III National Health Institute
28220 Majadahonda (Madrid)
Spain
(Dr A. Bernal or Dr R. Najera)

Institut Pasteur
25 rue du Dr Roux
Paris 75724
France
(Dr R. Crainic)

National Institute for Biological Standards and Control
Blanche Lane, South Mimms
Potters Bar, Hertfordshire EN6 3QG
United Kingdom
(Dr P. Minor)

National Public Health Institute
Mannerheimintie 166
00300 Helsinki
Finland
(Dr T. Hovi)

Zentralinstitut für Hygiene, Mikrobiologie und Epidemiologie der DDR
Britzerstrasse 1/3
1190 Berlin
German Democratic Republic
(Professor S. Dittman)

National Institute of Health
Enterovirus Unit
Virology Department
Via Regina Elena 299
00161 Rome
Italy
(Dr R. Santoro)