EUROPEAN ADVISORY GROUP ON THE EXPANDED PROGRAMME ON IMMUNIZATION

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR EUROPE
COPENHAGEN

TARGET 5

REDUCING COMMUNICABLE DISEASE

By the year 2000, there should be no indigenous cases of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella in the Region and there should be a sustained and continuing reduction in the incidence and adverse consequences of other communicable diseases, notably HIV infection.

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Report on the Sixth Meeting

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Abstract

The WHO Expanded Programme on Immunization needs to find ways of improving the surveillance of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella, if the European target 5 to eradicate these diseases by the year 2000 is to be achieved. The European Advisory Group on EPI at its sixth meeting found that progress towards eradication was being made in the European Region in general, but that the countries of central and eastern Europe, including the former USSR, are suffering from poor vaccine quality, supply and distribution, poor acceptance of immunization among the public and difficulties with maintaining the cold chain. Twenty-six countries are free of poliomyelitis, though four foci still persist. Acute flaccid paralysis surveillance should be introduced by all countries. Environmental surveillance will be vital before poliomyelitis can finally be declared eradicated. The Group endorsed the recommendations made at two recent WHO meetings that hepatitis B vaccination should be introduced into childhood immunization schedules in high endemicity countries, and that pregnant women should be screened and infants immunized as appropriate elsewhere. A European Community subsidized project, EUR/EPI, to investigate methods of managing immunization programmes had resulted in better measurement of coverage, better investigation of suspected cases and better surveillance of adverse events following immunization. Finally the Advisory Group drew up new terms of reference: its first two tasks being to set new operational targets in line with the revised target 5, and to set up a commission for the eradication of poliomyelitis.

Keywords

IMMUNIZATION
COMMUNICABLE DISEASE CONTROL – methods
EUROPE

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Introduction

The Sixth Meeting of the European Advisory Group on the Expanded Programme on Immunization was held in Langen, Germany from 18 to 20 February 1992. The meeting was chaired by the late Dr I. Masar, the Vice-Chair was Dr J. Hallauer, and the rapporteur Dr D. Salisbury. Dr G. Oblapenko was Secretary to the meeting. Dr Hallauer welcomed guests on behalf of the Government of Germany; Professor R. Kurth welcomed the participants to the Paul Ehrlich Institute.

Scope and purpose

The objectives of the meeting were:

- to review the terms of reference of the European Advisory Group (EAG);
- to review the progress made towards reaching target 5 and discuss ways of improving the surveillance of the diseases covered by the Expanded Programme on Immunization (EPI) in Europe;
- to discuss the composition of a commission for the certification of poliomyelitis;
- to review the recommendations for hepatitis B vaccination made during the WHO meeting on hepatitis in Europe (in Munich in April 1991) and the meeting of the Global Advisory Group on EPI (in Antalya in October 1991) in the light of the EPI schedule of immunization; and
- to adopt the draft agenda for the Fifth European Meeting of National Programme Managers on EPI.

Role of the European Advisory Group on the Expanded Programme on Immunization

The proposed terms of reference of the European Advisory Group on the Expanded Programme on Immunization are attached as Annex 1.

The participants agreed that the purpose of the EAG is to advise the WHO Regional Office for Europe as well as individual countries. Specifically, the Group should review the progress of immunization policies and strategies; its members should be knowledgeable about EPI matters; and the Group should be small but broadly representative of the disciplines involved in immunization.

Under these new terms of reference, the EAG's first function should be to consider the now modified target 5 objectives of the health for all strategy and, in the light of these, to propose new interim process indicators whose achievement should help attain the outcome indicators, the elimination of the target diseases.

Overview of the European Region

In the last year, the dramatic political changes that have taken place throughout Europe have overshadowed any other issues. Although Europe has in the past been considered a homogeneous region, compared with others, it is now clear that it contained huge social and economic differences with many consequent differences in public health functions.

Considerable successes have occurred in the Region. The laboratory network for poliomyelitis surveillance continues to expand, as does the regional network for information. The trends in measles reporting appear to be showing declines as do reports for mumps. Some eastern European countries used no rubella vaccine, however, and proper monitoring of rubella and its consequences does not yet take place. Nevertheless, 26 countries now publish regular epidemiological bulletins, but underreporting continues to be a problem. Ten countries now

provide "zero reporting" for poliomyelitis, weekly or monthly, and monthly reporting of suspected cases is also occurring. About half the Region has undertaken cold chain studies.

The main problems that still occur in some countries of the Region are:

- EPI's low priority and lack of political support;
- lack of managerial skill;
- insufficient surveillance;
- lack of availability of certain vaccines;
- low coverage in many districts; and
- lack of communication and social mobilization skills.

Following the recent political changes, the number of countries within the European Region has increased to 42 and may increase further; it is still not clear what relationship some of the republics from the former USSR will have to WHO.

The Region's political changes have occurred mainly in areas where some evidence of decline in the quality of EPI already existed. For example, the reporting of diphtheria in the former USSR has increased following low vaccination coverage in children, hostile public attitudes towards immunization and an inappropriate promotion of contraindications by health professionals.

A European Community project

Following an initial meeting in 1989, an application was made to the European Community for funding for a research project on immunization in the European Community. The EUR/EPI project (research in

methodologies of immunization programmes management) has three main components:

- to improve the quality and comparability of coverage data;
- to refine surveillance for diseases that are close to elimination; and
- to consider the reporting of adverse events following immunization in European Community countries.

The coverage part of the project has considered the methods for measuring coverage and has recommended that, at least, coverage data should be available annually, disaggregated to district level for most of the EPI antigens at 12 months and for measles, mumps and rubella (MMR) at 24 months. The constraints on improving coverage measurements are the decentralized management of immunization services in some countries, the regulations on the confidentiality and computerization of personal data, the lack of access to information from the private sector, the inaccuracy of denominator data, poor political commitment and the existence of hard to reach groups. The coverage data project has already led to new initiatives in coverage measurements, such as a random digit dialling study in Switzerland to validate routine coverage data, and a WHO cluster samples survey in Belgium.

The surveillance part of the project has concentrated on measles and has developed a protocol for investigating suspected cases in countries with more than 90% coverage in over 90% of districts. In particular, it considered the details of case investigation, outbreak investigation and control measures.

The part of the project on adverse events following immunization found that only three countries have adequate surveillance of such adverse events. The project recommended that all countries should set up a system for the surveillance of adverse events following immunization, be able to investigate cases or clusters of adverse events, evaluate data, take appropriate action, evaluate the surveillance system and provide training for health professionals. Different research methods for the investigation of adverse events following immunization were reviewed.

Country reports

Czechoslovakia

Despite very high levels of immunization coverage and the use of a two-dose measles schedule, the Czech Republic had a measles outbreak in 1990 and the Slovak Republic had a slight increase in measles reporting in 1988 and 1991. The focus for the latter cases was a gypsy village where vaccination coverage was low. Anti-measles vaccine propaganda about subacute sclerosing panencaphalitis (SSPE) was recently reviewed. When prospectively collected data were included, the decline in SSPE matched the earlier decline in measles notifications with a time-lag of 7–10 years. The introduction of measles vaccination had quite clearly led to a marked decline in SSPE.

A rubella resurgence occurred in 1991 almost exclusively in adolescent boys who had not been given rubella vaccine in early childhood.

Hepatitis B vaccine has been introduced into one district and its suitability for incorporation into the diphtheria, pertussis, tetanus vaccine (DPT), mixed at the time of immunization, is at present being studied. It is hoped that within the next year, the EPI will be computerized in all health districts.

England

Immunization coverage continues to rise with matching declines in disease notifications. The introduction of the MMR vaccine has been a considerable success with coverage now over 90% and measles, mumps and rubella notifications at record low levels. For two years running, no single child in England (or Wales) has died of acute measles-related illness. Rubella infections in pregnancy are now less than 20 per year; rubella-associated terminations of pregnancy number less than 40.

Surveillance for acute flaccid paralysis (AFP) in children under 16 years of age has now been running for six months and the rate of AFP appears to be around 1 per 100 000 in the population under 16 years of age. When a case of suspected poliomyelitis occurred in a 42-year-old man, it could be discarded as indigenous poliomyelitis

when wild virus could not be detected despite 170 faecal specimens being taken from local residents, the AFP surveillance failed to identify any other cases and molecular techniques failed to detect any poliovirus in histological samples.

Haemophilus influenzae type b (Hib) vaccine will be introduced in October 1992 as part of the routine schedule, administered at the same time as DPT. In the first six months of the campaign, immunization will be offered to all children over two months and under 13 months (in three doses) as they are the highest risk group for invasive disease; all children from 13 months to four years will be offered a single dose of the vaccine in the second six months of the campaign.

France

Despite the successful introduction of the MMR vaccine leading to higher coverage (77% in 1991), measles remains a problem with about 150 to 200 cases per 100 000 population. The MMR campaign has had little visible impact yet on the incidence of measles or mumps.

Universal screening in pregnancy for hepatitis B surface antigen, with infant immunization as appropriate, has now been recommended; adolescent immunization is being considered. The incorporation of Hib vaccine into the routine schedule is also under consideration.

The last case of indigenous wild virus poliomyelitis occurred in 1989; a national serosurvey of poliovrus antibodies has been undertaken and the results will be available shortly.

Germany

Serosurveillance of poliovirus antibodies in eastern Germany has revealed very high levels of protection; similar data from western Germany show 75% of the surveyed population was seropositive to all types of poliovirus; only among people over 40 years of age did less than 65% of the population have antibodies to all three poliovirus types. In 1991, Germany had no indigenous cases of poliomyelitis and all virus strains identified by the poliomyelitis reference laboratory were Sabin-

like. There were three vaccine-associated cases and one imported case. In 1992, there has been one imported case so far.

Notifications of hepatitis B have declined in western Germany from 12 to 6.5 per 100 000 population over the last decade; in eastern Germany they have declined from 6 to 3 per 100 000. This decline has levelled off over the last four years. Notification rates remain very much higher in major cities such as Berlin and Hamburg and very much lower in rural areas. Age-specific infection rates in western Germany are highest in the 15 to 24 year age group; in eastern Germany, cases occur only in those aged over 15 years. In all, 87% of acute cases are in individuals over 15 years of age. It is therefore expected to take at least 20 years for universal infant immunization, if implemented, to have an impact on the incidence of acute cases of hepatitis B.

Measles vaccination coverage is around 70% and improving, but there is no reporting system for clinical cases. There have been about six acute measles-related deaths each year. A priority is to convey to the private sector the importance of the immunization coverage targets and the reporting of disease.

Italy

Surveillance of poliomyelitis shows that there have been no cases of indigenous wild virus poliomyelitis in recent years, the only cases occurring being either vaccine-associated (2) or imported (1). Tetanus continues to be a problem with at least 100 cases per year, most occurring in women over the age of 50 years. The incidence in men is much lower since they were immunized during military service. There are no cases of neonatal tetanus. On the basis of serosurveillance, about 500^000 cases of measles could be expected every year, but only one tenth of this number are notified. A recent mass campaign against measles aimed at achieving high coverage as well as filling any "susceptibility gaps" to prevent later outbreaks. This recent measles campaign prevented about one million cases of measles. Where selective rubella immunization has been offered in some regions, matching decreases have occurred in the susceptibility of pregnant women to rubella.

The incidence of acute hepatitis B has fallen from 12 per 100 000 population in 1985 to 5 per 100 000 in 1990. In 1991, immunization against hepatitis B became compulsory for all newborn babies and 12-year-olds.

Russian Federation

Following the dramatic political changes in the former USSR, the EPI programme has had considerable problems. Coverage levels are still low, in part because of an excessive application of contraindications on the part of health professionals and the public's loss of confidence in immunization. Morbidity from pertussis has increased and polio reporting has increased slightly from the lowest levels. An epidemic of diphtheria affected some areas, starting in 1989.

Vaccine quality and standardization have been a major problem with domestically produced poliomyelitis, measles and BCG vaccines failing to match international criteria. Measles vaccine production was temporarily halted in 1988 and 1991; 15% of BCG vaccines have been rejected on the grounds of poor manufacturing. The quality control of vaccine production also needs improving.

The cold chain clearly suffers considerable shortcomings with shortages of vaccine carriers, cold boxes, ice packs, monitors and refrigerators and an emerging need for cold chain training for at least 85^000 workers and supervisory staff.

The three main problems within the Russian Federation are vaccine manufacture, deterioration in programme acceptance and cold chain logistics. The provision of external assistance for vaccine supply can be only a short-term solution until the vaccine production industry can be modernized and brought up to international standards. Training on the cold chain and the promotion of immunization for professionals and the public remain priorities.

Poliomyelitis eradication

Global overview

Progress towards the goal of poliomyelitis eradication continues, with the reported incidence of cases declining dramatically to 16 000 in 1990 worldwide. This figure represents considerable underreporting, however, with an estimated 150 000 cases occurring annually, but 440 000 cases being prevented. In 1990, 116 countries reported the absence of cases of indigenous wild virus poliomyelitis but, of the reported cases, 89% came from China and India. Reporting from Africa is clearly still poor. Indigenous poliomyelitis has been virtually eliminated from the Region of the Americas with the last isolated wild virus coming in September from Peru. Only Colombia and Peru reported cases in 1991, despite intensive acute flaccid paralysis surveillance throughout central and south America. Experience from Egypt, Jordan, Oman and other countries has revealed that transmission of poliomyelitis will not be interrupted through the delivery of three doses of triple oral poliovirus vaccine (TOPV) by routine services. Eradication will only be achieved with the addition of supplemental strategies.

European Region

The decline in poliomyelitis cases seen in the early to mid-1980s has slowed, although this may reflect increasingly efficient reporting. In 1991, 290 indigenous cases were reported, 205 of which came from the former USSR; most cases were from Tajikistan, Azerbaijan, the Russian Federation, Turkmenistan, Georgia, Kazakhstan and Armenia. Cases were also reported from Yugoslavia (1), Romania (18), Turkey (23) and Bulgaria (43).

Four main foci of poliomyelitis remain in the European Region, namely the Caucasus, the Balkans, central Asia and south-eastern Turkey.

Twenty-six European countries are free of poliomyelitis, Belgium, France, Germany and Spain are expected to move into the polio-free

category shortly, while Bulgaria, Romania and Yugoslavia remain problematic. It continues to be difficult to get the political commitment in Turkey to make the last intensive efforts required to achieve elimination and to support the laboratory surveillance. The political changes in the former USSR have contributed to the difficulties in accelerating activities there.

Improvements continue to be made in other aspects and in other parts of the Region. Surveillance is improving through zero reporting and AFP surveillance is being introduced in several countries. The laboratory network is becoming stronger with national and regional reference laboratories and special reference laboratories undertaking the exchange of strains, virus identification and training.

Environmental surveillance

The poliovirus is likely to be found in the environment for at least as long as it continues to circulate among humans.

Experience gained in Finland during the 1984–1985 outbreak showed that the specimens collected from sewage correlated closely with the geographic location of cases; after mass vaccination campaigns, the wild P3/Fin/84–85 virus was replaced by Sabin P1/2/3 which in turn disappeared from the sewage after the campaign ended. Such surveillance is relatively straightforward in countries that use inactivated poliovirus vaccine (IPV) routinely and may be of value in investigations of cases. In countries where OPV is used routinely, it may be very much harder to find a single strain of wild virus among large amounts of vaccine virus.

Several key questions remain to be resolved concerning the surveillance of polioviruses in the environment.

- What proportion of the population requires to be monitored?
- What are the preferred sites of specimen collection (probably inlets to sewage plants)?
- What is the frequency required for sampling?
- How long does this form of surveillance need to continue?

- How should specimens be collected?
- How should wild virus be demonstrated in specimens?

Clearly environmental surveillance methods still need to be elaborated although there is a European expert group that is working on this issue: the collaborative project involves Finland, France, Germany, the Netherlands and the Commonwealth of Independent States (CIS).

Environmental surveillance needs to be considered in the overall scheme of poliomyelitis eradication. In developed countries, where poliomyelitis has been absent for many years, wild viruses could possibly still be found in sewage having been excreted by individuals coming from infected areas. Nevertheless, the virus does not circulate in the resident population if they are effectively immunized. Even if such viruses were detected, there would be few grounds for action in the absence of clinical cases. If routine virological surveillance of stool culture from children and adults fails to detect any wild viruses in a large number of samples, the continuing circulation of wild viruses is unlikely. This form of environmental surveillance may be more appropriate once all that is required is the continuing assurance that wild virus circulation is not occurring. The surveillance of sewage may be necessary worldwide to confirm that the wild virus has truly been eradicated, before a declaration of poliomyelitis eradication can be made.

Hepatitis B

Hepatitis B differs from the routine EPI diseases in its long-term consequences – notably its persistent infectivity and the gravity of its long-term sequelae. Routine surveillance has proved incapable of monitoring the total impact of the symptomatic and asymptomatic infections caused by this virus, as many of those infected may have no signs of infection yet be at highest risk of becoming chronic infectious carriers.

The European Region has broadly three types of country, identified on the basis of HBsAg carriage rates. The northern European countries

(type 1) have low incidence and transmission is mostly between adults. Type 2 countries - mostly western Europe - have mid-level incidence and mixed transmission, with both maternal and adult to adult spread. Southern European and eastern European countries – type 3 – have the highest risk of maternal transmission and the prevalence of hepatitis markers may be as high as 30%.

In all the European countries, certain groups, irrespective of the national prevalence, are likely to be at especially high risk and yet be very difficult to reach. These populations may lead to pockets of infection that can continue the spread of this disease.

In type 3 countries, the most effective strategy to interrupt hepatitis transmission is to recommend universal infant immunization. High coverage is essential, as those groups who default from immunization are also the most likely to be in high-risk groups for hepatitis B. Unless exceptionally high levels of coverage can be guaranteed, extra efforts will be required to identify and immunize these groups. In type 1 and 2 countries, a positive cost-benefit ratio is difficult to show using a universal approach, as the benefits will not accrue for at least 15–20 years. For type 2 countries, universal screening in pregnancy and immunization of infants born to antigen-positive mothers, along with adolescent immunization, may well be a more effective approach, in theory. The key issue, however, remains the ability to deliver three doses of hepatitis B vaccine to adolescents. A reasonable indicator of the likelihood of achieving this could be the coverage of rubella vaccine achieved in countries where selective rubella strategies were used, or where a second dose of MMR was given at around 11 years of age. Unless very high coverage can be guaranteed, this approach should not be taken, but be replaced by universal infant immunization. For type 1 countries, universal screening in pregnancy and immunization of high-risk population groups may be sufficient to contain the disease.

Conclusions and recommendations

1. The EAG agreed that it should urgently be reconstituted under the terms of reference set out in Annex 1, with the modification that the EAG may need to meet or be consulted on an ad hoc basis.

The first priority of the new EAG should be to consider the health for all targets whose achievement was causing the previous EAG considerable concern. The targets originally set in 1984 had been most valuable. The 1990 achievement date has passed, however, and new circumstances have arisen within the Region; is is time to set new operational targets.

The EAG's recommendations should be distributed to the EPI National Programme Managers for their views, presented at their next meeting and refined for presentation to the Regional Committee.

The second task for the new EAG would be the setting up of a poliomyelitis certification commission, taking into account the needs and circumstances of the European Region.

2. ***Poliomyelitis eradication.*** Progress continues to be made in the Region despite unexpected problems that have undoubtedly made the poliomyelitis eradication goal more difficult. Four main foci of poliomyelitis are left in Europe, namely the Caucasus, the Balkans, south-eastern Turkey and central Asia. Despite their difficulties, supplemental activities such as campaigns and "mop-up" operations are necessary to interrupt transmission, along with increases in coverage rates. Some countries have initiated AFP surveillance. This should be incorporated into the surveillance activities of all countries. It is important to appreciate, however, that if cases occur in countries where coverage has been high for many years, they may not be among the childhood population but among adults, in whom levels of immunity may not be so high.

3. ***Hepatitis B.*** The EAG endorsed the 1991 recommendations of the Global Advisory Group as well as those of the European Working Group that met in Munich in 1991, on the introduction of hepatitis B vaccine into routine use. The Global Advisory Group recommendations allow countries to adopt strategies best suited to their epidemiological circumstances. Countries needing to implement universal immunization as soon as possible should take account of the operational difficulties that may be caused by the lack of combined hepatitis B vaccine, although some countries have overcome such problems. The schedule for hepatitis B vaccine can easily be adapted to EPI requirements. The

availability of combined products will strengthen the suitability of universal immunization.

The screening of all pregnant women, with infant immunization as appropriate, is recommended.

4. ***Vaccine supply to countries in central and eastern Europe.*** It was clear at the National Programme Managers' meeting in Aosta, Italy, in May 1991 that several of the countries of central and eastern Europe (CCEE) faced uncertainties about the supply and distribution of vaccines. It is now known that this problem extends to the former USSR.

Several international missions, initiated at the highest political levels, will be visiting the former USSR. Their terms of reference include health matters and at least two of the missions will probably have WHO participation.

The immunization programmes in the CIS urgently need to be supported and strengthened. Priority areas are the training/retraining of health workers at middle and local levels, the maintenance of supplies of vaccines and the required logistics, and the strengthening of the cold chain. Immunization needs to be promoted to convince health professionals and the public of the risks of the diseases and the safety of the vaccines. Myths about false contraindications need to be overcome.

The Regional Office, with support from the EPI in headquarters as needed, and in close collaboration with the health authorities in the Russian Federation and the rest of the former USSR should discuss in depth how best to support the EPI in those countries. Workshops should be run for national EPI managers. Their main purposes should be to allow the managers to describe the constraints on their programmes, to identify possible solutions and to develop realistic plans to solve their problems. The first workshop should be held as soon as possible.

Supplementary supplies of certain EPI vaccines will be needed urgently to make good the shortfall in production in the former USSR. Funds will be needed for two to four years, while the production capacity of vaccine producers in the former USSR and the CCEE is being modernized and expanded to ensure a sufficient supply of vaccines that meet international quality requirements. Funds will also be needed to maintain the cold chain. The CIS plans to institute and maintain EPI training for mid-level managerial staff.

These changes in central and eastern Europe will impose a burden on the Communicable Diseases unit in the Regional Office; increased support is going to be essential.

Annex 1

TERMS OF REFERENCE OF THE EUROPEAN ADVISORY GROUP (EAG) ON THE EXPANDED PROGRAMME ON IMMUNIZATION (EPI)

1. The main goal in appointing the European Advisory Group on EPI (EAG/EPI) is to accelerate progress towards achieving the regional target 5:

> *By the year 2000, there should be no indigenous cases of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella in the Region and there should be a sustained and continuing reduction in the incidence and adverse consequences of other communicable diseases, notably HIV infection.*

2. The EAG/EPI will:

2.1 periodically review the progress and define the constraints of immunization programmes in European countries;

2.2 recommend approaches for strategies and modifications to them based on new scientific or practical findings;

2.3 advise the Regional Office for Europe on priority areas for action to be taken;

2.4 periodically review the general management of immunization programmes, both at the regional and the national levels;

2.5 make technical recommendations to develop and foster national elimination programmes;

2.6 advise on matters of special importance for submission to the Regional Committee which could result in a resolution calling for action by Member States and the Regional Office.

3. Composition and method of work of the EAG/EPI will be as follows:

3.1 the members of the EAG/EPI will be appointed by the Regional Office;

3.2 the Group will consist of six experts in fields related to immunization (public health, immunology, paediatrics, epidemiology, etc.) nominated on a personal basis, with staff from the Communicable Diseases unit acting as secretary;

3.3 appointment will generally be for a period of one year, with extensions that provide for a turnover of about one third of the Group each year;

3.4 meetings of the EAG/EPI will be held annually;

3.5 the EAG/EPI will be assisted in its work by additional consultants for specific purposes, as required;

3.6 after each meeting a report will be prepared and distributed by the Regional Office.

Annex 2

WORKING PAPERS AND BACKGROUND DOCUMENTATION[a]

Working papers

ICP/EPI 012/6	EPI for the 1990s: a concept paper Dr H. Zoffmann
ICP/EPI 012/7	Progress made during 1990–1991 towards target 5 HFA2000, Slovak Republic Dr I. Masar
ICP/EPI 012/8	EPI in Europe in the 1990s: situation analysis and further developments Dr G. Oblapenko
ICP/EPI 012/9	Immunization in the Russian Federation: results and problems Dr A. Jasinsky and Dr S.K. Litvinov
ICP/EPI 012/10	Immunization in England Dr D.M. Salisbury
ICP/EPI 012/11	Terms of reference of the European Advisory Group (EAG) on the Expanded Programme on Immunization (EPI) Dr G. Oblapenko

[a] Copies are available from the Communicable Diseases unit, WHO Regional Office for Europe, 8 Scherfigsvej, DK-2100 Copenhagen Ø.

ICP/EPI 012/12	Progress made during 1990–1991 towards target 5 HFA2000, Germany Dr J. Hallauer
ICP/EPI 012/13	Progress made during 1990–1991 towards target 5 HFA2000, France Dr C. Roure
ICP/EPI 012/14	Progress made during 1990–1991 towards target 5 HFA2000, Italy Dr M. Grandolfo
ICP/EPI 012/15	Polio eradication: lessons learned, global experience Dr H. Hull
ICP/EPI 012/16	Polio eradication: latest developments in the European Region Dr G. Oblapenko

Background documentation

EUR/ICP/EPI 019	Environmental surveillance of wild poliovirus circulation in Europe, Report on a joint WHO/NPHI Meeting, Helsinki, 5–6 April 1991
EUR/ICP/EPI 016	Working group on the control of viral hepatitis in Europe, Report on a WHO Meeting, Munich, 22–25 April 1991
EUR/ICP/EPI 027	Fourth European meeting of national programme managers on the Expanded Programme on Immunization, Report on a WHO Meeting, St Vincent, Aosta, 20–24 May 1991

EUR/ICP/EPI 028	Consultation on surveillance of poliovirus in Europe, Report on a WHO Meeting, Veyrier-du-Lac, 26–27 August 1991
EPI/GAG 91	Major conclusions and recommendations of the Expanded Programme on Immunization Global Advisory Group (draft), Antalya, Turkey, 14–18 October 1991

Annex 3

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