ELEVENTH MEETING OF THE REGIONAL COMMISSION FOR THE CERTIFICATION OF POLIOMYELITIS ERADICATION

Report on a WHO Meeting

Copenhagen, Denmark
13–16 February 2001
ABSTRACT

The Eleventh Meeting comprised three sections: a consultation on supplementary poliovirus surveillance, a review of documentation from the Russian Federation and Ukraine, and an informal consultation meeting of the Regional Reference Laboratories of the European Regional Poliomyelitis Laboratory Network.

The Regional Commission had stated that a supplementary surveillance system not based on acute flaccid paralysis (AFP) might prove extremely valuable in assuring the absence of indigenous poliovirus circulation. At present there were 34 accredited and 3 provisionally accredited laboratories in the Regional Network. In 2000, a total of 6661 stool specimens from AFP patients and 2660 specimens from contact cases had been examined. A total of 281 polioviruses had been isolated and no wild poliovirus had been found. It had been more than 2 years since the last endemic wild poliovirus had been found in the WHO European Region.

The Regional Commission was very impressed with the activity presented and appreciated the continuing improvement in the quality of AFP surveillance and laboratory performance in the Russian Federation and Ukraine. Nevertheless, further improvements were necessary and many questions needed to be answered before the Region could be certified poliomyelitis-free. The Commission formulated general recommendations as well as country-specific comments, and discussed the status of the containment process reviewed at the meeting of containment coordinators held in Prague in December 2000. The regional plan of action for wild poliovirus containment was also discussed and approved by the Commission.

Keywords

POLIOMYELITIS – prevention and control
EPIDEMIOLOGIC SURVEILLANCE – standards
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NATIONAL HEALTH PROGRAMS
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Introduction

Two meetings were organized by the WHO Regional Office for Europe and took place in Copenhagen, Denmark 13–16 February 2000 to inform the Regional Certification Commission on the status of progress towards certification of the Region as poliomyelitis-free.

- The Eleventh Meeting of the Regional Commission for Certification of Poliomyelitis Eradication (14–16 February 2001), which included a consultation on supplementary surveillance for polioviruses (14 February) and review of documentation for the Russian Federation and Ukraine (15–16 February)

- Informal consultation meeting of the Regional Reference Laboratories (RRL), European Regional Poliomyelitis Laboratory Network (13 February 2001);

The scope and purpose of these meetings were as follows:

**Eleventh Meeting of the Regional Certification Commission:**
- to discuss criteria for enterovirus surveillance in providing data towards certification;
- to discuss possibility of implications and potential for environmental surveillance data towards certification;
- to review and discuss the national documentation on certification from two recently poliomyelitis endemic countries – the Russian Federation and Ukraine;
- to review the latest situation with regard to the certification of poliomyelitis eradication in the Region, in particular outstanding questions on the documentation from selected national certification committees;
- to review and discuss the regional plan for laboratory containment of wild polioviruses;
- to discuss and update the action plan for certification of the region as poliomyelitis-free.

**Informal Meeting of the Regional Reference Laboratory Virologists:**
- to review the development of global and regional situations of poliomyelitis eradication;
- to further coordinate the activities of the network;
- to review the status of progress towards laboratory containment in network laboratories;
- to review the current knowledge in environmental surveillance and in circulation of Sabin-derived strains.

These meetings were attended by 50 participants from selected European countries, members of the European Certification Commissions, poliomyelitis laboratory specialists, temporary advisers, WHO headquarters and WHO Regional Office for Europe staff.

Sir Joseph Smith was Chairman of the Eleventh Meeting of the Regional Certification Commission. Dr George Oblapenko, Dr Steve Wassilak and Dr Galina Lipskaya were the Secretaries, and Dr Eugene Gavrilin and Dr Nikolai Chaika were the Rapporteurs. The programme of the meeting and the list of participants are attached as Annex 1 and Annex 2, respectively.
Consultation on supplemental poliovirus/enterovirus surveillance (14 February)

The meeting was opened by Sir Joseph Smith who welcomed the participants and outlined the purposes of the meeting and the significance of the supplemental poliovirus surveillance data towards the certification of the European Region as poliomyelitis-free.

Global overview

The global eradication process is moving towards its final stage. As noted by Dr Raymond Sanders, the 2000 data show that the total number of reported poliomyelitis cases does not exceed a figure of 3500 with only 800 cases being virologically confirmed during the year. The Indian subcontinent and some countries of western and central Africa remain as the predominant reservoirs of wild poliovirus. The target date for global certification remains 2005, indicating the target of cessation of wild polioviruses circulation by the end of 2002. It was pointed out during the meeting that the task would be difficult but not insurmountable.

Data was presented on the Hispánola outbreak of more than 12 proven cases of poliomyelitis with vaccine-derived poliovirus strains isolated. This situation occurred due to the chronic low immunization coverage of children on the island.

Regional issues in supplementary surveillance

The system of acute flaccid paralysis (AFP) surveillance has been a highly effective way of detecting poliomyelitis cases as well as providing evidence towards the absence of virus circulation. However, some countries of the region do not carry out routine AFP surveillance. For these countries a supplemental surveillance system may become a way of monitoring that there is, indeed, no circulation of polioviruses. Furthermore, with increasing use of inactivated poliomyelitis vaccine (IPV) the number of vaccine-associated AFP (vaccine-associated paralytic poliomyelitis, VAPP) will inevitably decline which will limit one means of assessing the sensitivity of AFP surveillance. Since non-symptomatic poliomyelitis is far more common than a paralytic presentation (which represents approximately 0.1–1.0% of infections), a supplementary surveillance system not based on AFP may prove to be of extreme value in providing the assurance of the absence of indigenous poliovirus circulation.

Sensitivity of poliovirus surveillance systems

A thorough comparison of AFP-based vs. supplemental surveillance systems based on clinical specimens testing for non-poliomyelitis enteroviruses (NPEV) was presented by Dr Pallansch. The steps needed in finding virus through event-driven disease surveillance are as follows:

- infected individual develops illness;
- enters healthcare system;
- adequate specimens collected;
- virus isolated and identified;
- results reported.

Both surveillance systems have many components and the sensitivity of each component contributes to the overall sensitivity of the system. For NPEV clinical specimen testing, there is a wide range of possible sensitivities of finding wild poliovirus if it were circulating. The longer the period for which high quality data can be reported, the more sensitive the system becomes. It was proposed that as a minimum, five years of data should generally be sought from sources
other than AFP surveillance. The lowest assumed sensitivity makes NPEV surveillance equivalent to random stool surveys, whereas in the best assumed case NPEV specimens testing may reach the sensitivity of AFP surveillance in detecting wild poliovirus circulation.

There are two groups of factors that affect surveillance population sensitivity – biological and surveillance system factors:

- **Biological factors:**
  - Rate at which infected individuals develop a particular clinical condition
  - Property of virus and immunity of population

- **Surveillance system factors:**
  - Rate at which individuals with a specific clinical condition are identified
  - Proportion of identified individuals with a specific clinical condition from whom specimens are collected
  - Number and type of specimens collected
  - Procedures used to detect poliovirus.

During the discussion session it was indicated that the proposed format and depth data collection represent an “ideal” situation and as such the requested data are very often unavailable. Such lack of data will cause the calculated system sensitivity to decrease. In the Region, over 30% of the childhood population (over 100 million children under 15 years of age) are in countries relying solely or in major part on enterovirus surveillance for data supporting the lack of poliovirus circulation. Some of the countries are historically free of reported cases of poliomyelitis for decades. To interpret the data available, there is a need of a narrative from each of the countries that would describe the current enterovirus surveillance system.

It was suggested that NPEV specimen testing system could provide more information when coupled with environmental surveillance in some circumstances.

**Current findings in environmental surveillance pilot projects: Egypt, Turkey, Georgia and Israel**

The results of pilot testing of environmental samples in the Upper Egypt (Minya and Asyut governorates), Turkey (Diyarkabir) and Georgia (5 regions) coordinated and supervised by Dr T. Hovi show overall that, although, such a surveillance system requires a large sampling (therefore a high workload), good planning and accurate laboratory performance, it can reveal the “silent” circulation of polioviruses (Egypt).

A thorough analysis of environmental surveillance efficiency has been done in Israel. Based on the sampling frame and several assumptions, one isolate of poliovirus from sewage sample represents up to thousands of potentially infected individuals. The plaque-purification technique has been used in this sampling. The correlation between the number of plaques isolated from each sample and the number of excretors is undetermined. The sensitivity of the current methods available allows detecting 50 PFU/litre. With the assumptions made, about 100–1000 people in a sampled community of 100 000 must excrete virus simultaneously in order to allow detection by analysing a single specimen. One excretor can be found in $2 \times 10^6$ litres of sewage based on excretion of $10^8–10^9$ PFU/day. The sensitivity drops in inverse relationship to the target population size but can be increased by repeated sampling if sampling frequency remains the same: to maintain or increase the sensitivity more frequent sampling should be performed. The sensitivity of the environmental surveillance used in Israel, based on the sampling frequency and
the laboratory methods used, is assumed to surpass the sensitivity of an AFP surveillance system; the number of infected people required to maintain poliovirus transmission at the appropriate extent to allow effective detection of paralysis would be larger than the number of infected persons to allow detection of excretion. It can be concluded that environmental surveillance system might become a sensitive tool in other settings as well but only if systematic not sporadic sampling will be performed.

**Significance of reported outbreaks of polio due to Sabin-derived polioviruses for the European situation**

Several laboratory studies of surveillance samples have shown that Sabin-derived polioviruses can circulate over a prolonged period in under-vaccinated populations and lead to paralysis. It has been also shown that long chains of “silent” transmission can be established in areas with weak AFP surveillance. These data, along with a possibility of introduction of Sabin-derived, wild-like neuropathic poliovirus from long-term excretors (patients with common variable immunodeficiency syndrome or other forms of hypoglobulinemia) provide a serious dilemma for the eradication of wild poliovirus. The issue is then the need to develop a consensus on the strategy to stopping vaccination with OPV.

Under the current procedures for laboratory testing, all poliovirus isolates, regardless of origin, should be forwarded to WHO-accredited Regional Reference Laboratories for intratypic differentiation (ITD) by at least two approved methods. All laboratories performing ITD should possess methods allowing detection of Sabin-derived strains. All poliovirus isolated showing non-Sabin-like phenotype (ELISA) or genetic divergence from Sabin strains (PCR) should be immediately forwarded for genomic sequencing. All laboratories performing genomic sequencing should have the capacity to provide complete (or agreed portion) sequence of the genomic region corresponding to the capsid viral protein VP1 plus limited sequence of selected other regions and report the sequence after 28 days of receipt of isolate. Potentially, all Sabin-like poliovirus isolates will undergo genomic sequencing to determine low-level deviation. AFP surveillance should not be the only source of isolates for sequencing – an additional 2000 isolates may be expected from supplemental surveillance provided current OPV usage is maintained. Finally, a genetic bank of sequences of vaccine-derived polioviruses will be developed and maintained at WHO headquarters.

**Regional Certification Commission – Conclusions and recommendations on enterovirus surveillance**

1. WHO Regional Office for Europe staff should contact countries performing supplemental EV surveillance and encourage complete submission of available data.

2. Submission to the Commission should consist of a narrative description of the surveillance system including history and administrative responsibility, system structure and reporting sites, laboratory network groups, quality assurance systems, and years for which data are reported. When possible, data should include size of population covered, clinical condition, specimen collection types and virological testing results. At a minimum, data must include the population under 15 years of age covered by the system, the frequency at which stool specimens are tested and the EV/poliovirus results.

3. Focused and elaborate research should be done to reveal the extent of risk that the highly diverged neurovirulent Sabin derivates may pose in regards to the global poliomyelitis eradication programme.
Review of documentation from the Russian Federation and Ukraine (15–16 February)

This portion of the meeting was opened by Sir Joseph Smith who greeted participants, reviewed briefly the scope and purpose of the meeting, and explained the procedure of two-day discussions. Sir Joseph Smith informed participants briefly about the RCC executive session reviewing the documentation in advance, thanked the two National Committees for their activity and expressed appreciation for the progress achieved by countries since the 10th Meeting of the Regional Commission in Chisinau (October 2000). Sir Joseph Smith also expressed satisfaction on the openness with which information was proposed by the Russian Federation and Ukraine for the meeting.

Country Presentations

Russian Federation

The Russian Federation consists of 89 subnational territories. The population size is over 145 million people including 26.6 million children under 15 years of age, around 6.5 million children under 5 years of age and 1.2 million children under one year of age.

Thousands of poliomyelitis cases had been reported before introduction of mass immunization against poliomyelitis. Nearly 80% of the population (above 100 million people) were vaccinated in 1960–1961. By 1967, the poliomyelitis morbidity rate decreased by more than 99.5% and in the 1970s an annual number of cases reported varied from 18 to 69. In the 1980s and 1990s only sporadic cases were reported, and over 80% of administrative territories of the country were free of reported poliomyelitis.

The last poliomyelitis outbreak was registered in the Chechen Republic in 1995 when 150 cases were diagnosed including 5 cases in the neighbouring Republic of Ingushetia. Over 90% of cases were reported in children up to 4 years of age. The case-fatality ratio was about 4.5%. Forty-one strains of wild poliovirus type 1 were isolated, identified as genotype T1 that circulated in the central Asian republics of the Former Soviet Union and produced outbreaks in Tajikistan in 1991 and 1994. In the Russian Federation this genotype was never isolated before; the route and time of virus importation to the country was not identified. In the Russian Federation, the last poliomyelitis case associated with wild poliovirus isolation was registered on 7 September 1995, in the village of Samashki, Chechen Republic. Two rounds of vaccination were implemented in October–November 1995; over 70 thousand children were immunized with OPV. Two last cases of clinical poliomyelitis were reported in the spring of 1996 in the Republic of Ingushetia. Active house-to-house case finding was undertaken but no new poliomyelitis cases were diagnosed. Results of virological studies of stool samples from 43 contacts were negative.

The Russian Federation has fully adopted and implemented the WHO poliomyelitis eradication strategy and policy. As a result, basic immunization and surveillance indicators that meet certification criteria recommended by WHO were achieved in the country. The population of the country is provided with primary, secondary and territory medical care. All population groups have access to free medical care including in-patient services, as well as high risk sub-groups, including migrants and their children, refugees, foreigners, residents without citizenship, etc.

Very high coverage with poliomyelitis immunization of children (above 95%) has been achieved and maintained in the country. The coverage was over 95% during all supplementary vaccination activities – national immunization days in 1996–1999, sub-national immunization days in 1999–
2000 and “mopping-up” operations in 2000. Special attention was paid to immunization of children from all high-risk groups — families of migrants, refugees and internally displaced persons. High immunization coverage is confirmed with results of supervisory on site visits and with data of serological survey demonstrating the high level of population immunity to poliovirus.

AFP surveillance has been operational since 1996. Active epidemiological surveillance has been organized in more than 5000 health facilities. Special attention is paid to areas reporting no cases of AFP. Such territories were visited by teams of specialists for thorough assessment of the surveillance quality and for additional virological studies.

During last 3 years the National Expert Committee for Classification of Poliomyelitis Cases analysed data on 1125 AFP cases. All these cases were classified by the Committee as non-polioymelitis cases. As a result of all these organizational and practical activities, the basic indicators of AFP surveillance have reached the standards recommended by WHO. During the first 9 months of 2000, the AFP morbidity rate over 1.0 per 100 000 children up to 15 years old was registered in 48 territories. Assessment visits were made to all silent regions. Adequate stool samples were collected from 85.5% of AFP patients.

The national network of poliovirus laboratories includes one national laboratory and six sub-national laboratories. At present, the National Laboratory and one sub-national laboratory in St Petersburg are accredited as members of the Regional Poliomyelitis Laboratory Network; other laboratories had high scores in proficiency testing (80–100%) and are expected to be accredited in February 2001.

All isolates of poliovirus are forwarded for mandatory ITD; since 1995 no wild poliovirus strains were isolated. Enterovirus surveillance was established in 1965. Virological studies are performed by 68 virological laboratories of state sanitary-epidemiological centres and at the research institutes. There is at least 93% population coverage with enterovirus surveillance in all geographical areas of the country.

The process of polioviruses containment was initiated several years ago. According to a special order of the Ministry of Public Health, 1996, all strains of wild poliovirus were mandated to be destroyed. The National plan of action for laboratory containment of wild polioviruses was developed. Different aspects of poliovirus containment are included also in the national plan of action for poliomelyitis eradication in the Russian Federation and national plan of organizational and control measures for the case of wild polioviruses importation. A national coordinator on containment was nominated in 2000 and an interdisciplinary commission on containment will be organized in 2001.

A special inventory was conducted among 31 000 laboratories and laboratory units belonging to 33 different ministries to identify laboratories that have infectious or potentially infectious specimens and materials. At present only 96 of 302 virological laboratories belonging to 10 ministries continue to work with poliovirus strains. According to WHO recommendations, a special questionnaire was developed to check the presence of infectious or potentially infectious specimens at virological laboratories, as well as to verify the destruction of all wild poliovirus strains.
The absence of wild poliovirus circulation in the Russian Federation is confirmed with the following data:

- very high level of immunization coverage with OPV3 was achieved and maintained in the country;
- supplementary vaccination activities of children (including such high risk groups as refugees, internally displaced persons) were conducted in 1996–2000;
- highly efficient and sensitive AFP surveillance was organized in the country;
- special poliovirus laboratory network was organized and currently functions at high professional level;
- no cases of poliomyelitis were reported since 1996;
- no wild poliovirus strains were isolated from human or environmental specimens since 1995.

In view of possible importation of wild poliovirus into the Russian Federation, a system of measures and a workplan were developed and implemented in the country providing for timely detection of suspected poliomyelitis cases as well as delivery of necessary control and prevention activities.

The Commission was very impressed with the activities and information presented and appreciated the good results in the Russian Federation. At the same time, the Commission members posed a number of additional questions on territorial and age distribution of vaccination coverage, methods and results of serological surveys, quality assurance programmes and proficiency testing of enterovirus laboratories, increased number of VAPP cases in 1999–2000, unexpectedly high AFP rates in same provinces and growth of the number of traumatic neuropathy during last 2 years. Special attention was paid to recent instances of wild poliovirus laboratory containment in the Russian Federation.

WHO representatives underlined the great progress in poliomyelitis eradication activities in the country and called for further improvement of laboratory performance and for interpretation of some discrepancies in the data presented.

Ukraine

Ukraine consists of 28 first-level administrative territories, 490 second-level administrative districts. The population size is almost 50 million people including 9.2 million children under 15 years of age, around 2.9 million children under 5 years of age and 0.4 million children under one year of age.

The realization of the immunization programme is under the constant control of the Ministry of Health. According to Ukrainian legislation free immunization against poliomyelitis is guaranteed for each child. Mass immunization of children with live poliomyelitis vaccine was implemented in 1959–1960. As a result in 1963 only sporadic cases of paralytic poliomyelitis were diagnosed. The existing immunization calendar includes 7 OPV doses for children up to 14 years. During last five years the reported national OPV3 coverage in children under 1 year was 97.5–98.8%.

In 1996 the country joined Operation MECACAR plus. With the support of WHO, Rotary International, Canadian Government, United Nations Children’s Fund and other partners two NID campaigns were conducted (immunization coverage – 98.7–99.1%). In 1998 a “mopping-
"up" immunization was conducted in 8 regions – around 500,000 children were immunized with a vaccination coverage of 97.7–98.7%.

In 1992–1996, 32 cases of poliomyelitis were registered in Ukraine. The last indigenous case of poliomyelitis due to wild poliovirus was reported in 1993. After that no other indigenous or imported wild polioviruses were isolated.

In Ukraine, the surveillance for acute flaccid paralyses (AFP) in children under 15 years old was well implemented since 1998. Previously, such reports included cases of facial paralysis as AFP. In 1999 surveillance indicators approached the WHO-recommended level and "zero" reporting was implemented. In 1999, the non-poliomyelitis AFP rate was 1.34 per 100,000 children under 15 years (1998, 0.67). Each AFP patient was hospitalised and examined by the regional team of qualified specialists (epidemiologist, specialist on infectious diseases in children and neurologist). The final classification of each patient is performed by the National Expert Committee according to results of virologic examination of stool specimens and 60-day follow-up examination. There were no silent territories and the proportion of AFP cases with 2 adequate stool samples in most territories exceeded 95%. Active AFP surveillance consists of weekly visits of epidemiologists to hospitals where children with AFP can be hospitalized.

In the second half of 1998 the poliomyelitis laboratory network was created in the country; the net network consists of three virologic laboratories that are not yet accredited as a part of the Global Poliomyelitis Lab Network. Every year all laboratories perform proficiency testing. All poliovirus isolates from AFP patients and contacts are sent to RRL (Moscow) for intratypic differentiation.

Supplementary surveillance activities were also used in the country. The network consisting of 34 virologic laboratories of regional SES has 40-years experience of enterovirus studies. The intratypic differentiation of poliovirus isolates demonstrated that all 68 strains were vaccine viruses.

Special Operative Programme of Activity in Response to Imported Poliomyelitis Cases, Wild Poliovirus Isolations in People and the Environment was developed. Timely detection of any imported wild poliovirus is ensured by countrywide high-quality AFP surveillance, with special emphasis on immigrants.

The National Certification Committee concludes that the elimination of poliomyelitis in Ukraine is supported by the results of efficient AFP surveillance (absence of indigenous or imported cases due to wild poliovirus) and the results of supplementary enterovirus monitoring (absence of wild poliovirus detected in the environment since 1994). Very high-level of routine immunization coverage among children of the first year of life and in other age groups decrease the possibility for virus circulation.

According to WHO recommendations, the National Coordinator on Poliovirus Containment was appointed by the Ministry of Health in November 2000 and a Special Commission on Poliovirus Containment was organized. This Commission prepared the inventory of all laboratories (2190) possessing infectious or potentially infectious materials. All stocks of wild polioviruses were destroyed in February 1998 and replaced with vaccine strains. In February 2000, all previous vaccine poliovirus strains were replaced for the second time with new vaccine strains received from RRL. The “National plan of action for laboratory containment of wild polioviruses” is in action now. At present, only 2 laboratories have wild polioviruses (Research Institute of
Epidemiology and Infectious Diseases; Department of Microbiology, Immunology and Virology of the National Medical University). The new inventory of all virological laboratories will be finalized by September 2001.

The Commission appreciated the openness with which the information was prepared by the National Committee. Nevertheless, some data should be still updated and clarified. Many questions were posed on case definitions and registration, reasons for high reported VAPP rates and polio-compatible cases, laboratory quality assurance and shipment procedures and results, cases of intra-laboratory contamination, and serological surveys.

WHO representatives underlined many positive results in vaccination coverage, supplementary immunization and AFP surveillance since 1996. Discrepancies in reports of poliomyelitis in adults and the virologies data were discussed.

Recommendations and comments of the Regional Certification Commission on country presentations

General comments and recommendations applicable to both countries – the Russian Federation and Ukraine

1. The Regional Certification Commission appreciates the great efforts made by the Russian Federation and Ukraine and recognises the successes achieved in poliomyelitis eradication and surveillance to date, often in the face of some economic and social difficulties.


3. The Commission emphasises the importance of high routine immunization coverage at the lowest administration level of each country including procedures to ensure that EVERY child receives vaccine at the recommended age.

4. The Commission advises that the classification of AFP cases must follow the procedure recommended by WHO. Every effort must be made to secure stool specimens from cases for rapid dispatch to the laboratory to avoid circumstances that could result in AFP cases being unnecessarily classified as polio-compatible. Nevertheless, any case that cannot be discarded as non-polio, should be responded to and also reviewed in detail and carefully investigated to exclude the presence of wild virus in case-contacts and the population groups concerned.

5. The WHO Regional Office for Europe definition of VAPP should be applied by all countries.

6. The isolation of a wild poliovirus or detection of an AFP case with a high index of suspicion of poliomyelitis must be regarded as a public health emergency. Any such case should be reported immediately to the WHO Regional Office for Europe.

7. The National Plan of Action for response to possible poliomyelitis importation should include plans for giving special attention to the speed, efficiency and quality of the whole chain of action – from specimen collection and transportation to the laboratory to the final report of the reference laboratory - in accordance with WHO guidelines. The Plans should be submitted to WHO Regional Office for Europe by the end of March 2001.
8. Regional certification requires that all polioviruses isolated from any source must undergo intratypic differentiation. In the event of a backlog in laboratory testing, highest priority should be given to isolates from stool specimens of AFP cases.

9. The Commission trusts that the reported progress in the laboratory containment of wild poliovirus will continue.

10. The countries should be aware that the Commission will require an updated report by December 2001, in a format to be advised.

**Country-specific recommendations**

**The Russian Federation**

1. The Commission appreciates the detailed and transparent information provided in the submitted document.

2. The Commission commends the efforts made to ensure high immunisation coverage and effective surveillance among high risk groups, including refugees, migrants, and other mobile sub-populations, and in areas bordering high-risk territories (particularly the Chechen Republic and Republic of Ingushetia).

3. The Commission would like to receive (by June 2001) a summary of the serologic survey data for immunity to poliomyelitis in different age groups and territories for the years 1998–2000.

4. The National Expert Committee should review the reported VAPP cases and provide the Commission (by June 2001) with the rationale for inclusion in the list of the cases that do not meet completely the WHO criteria.

5. The Commission would appreciate (by June 2001) further explanation on the marked increase in the proportion of traumatic neuropathy cases included as AFP in data for 1998–2000.

6. The Commission would appreciate (by June 2001) the detailed explanation of the high number of AFP cases in Sverdlovskaya oblast during the last 3 years.

7. The Commission advises that a quality assessment programme, including proficiency testing, should be introduced in the Federal Laboratory System (68 laboratories involved in enterovirus testing) according to WHO procedures for Poliomyelitis Laboratory Network. The Federal Centre should be responsible for these quality control exercises.

8. Recognizing the recent increase in poliovirus isolation in the Enterovirus Laboratory Network and the resulting increase of workload at the Moscow Regional Reference Laboratory, this burden should be addressed by the Russian Ministry of Health, together with the WHO Regional Office for Europe, in order to find the most effective way for resolving this problem.

9. To avoid inadvertent laboratory contamination, Network laboratories below RRL level should document that all wild poliovirus stocks have been destroyed and replaced with authenticated Sabin reference strains provided by the RRL.

**Ukraine**

1. The Commission appreciates the great care taken in preparation of the documentation presented, but discrepancies were noted not infrequently in the tables and data submitted and also the presented materials. The Commission asks that no questions in the Manual should be omitted and every question be addressed. All discrepancies and mistakes should
be reconciled or corrected as appropriate, and the completed Manual of Operations should be resubmitted by 1 June 2001.

2. The Commission would like to receive more detailed information on the last cases of wild virus poliomyelitis and data on the last isolated strains, for each serotype of poliovirus.

3. The Commission finds difficulty in understanding the basis upon which the two last clinical cases, as well as cases in 1994, were reported as poliomyelitis. The Commission would appreciate additional information (by June 2001).

4. The Commission would appreciate (by June 2001) a revision by the National Expert Committee of all AFP data and provision of the rationale for inclusion of cases that do not meet WHO criteria.

5. The National Expert Committee should review the reported VAPP cases and provide (by June 2001) the rationale for inclusion of the cases that do not meet WHO criteria.

6. The Commission trusts that Ukrainian health authorities will act upon all previous recommendations concerning national and subnational laboratories in order to meet accreditation criteria by mid 2001.

7. The Commission advises that a quality assurance programme should be introduced as quickly as possible in the National Laboratory System involved in enterovirus surveillance. Such a system should include proficiency testing based on WHO procedures for the Poliomyelitis Laboratory Network.

8. The Commission appreciates that the recommendation made at the Chisinau meeting (October 2000) regarding the discontinuation of routine testing of milk, water, and food for polioviruses was recently implemented.

**Status of laboratory containment process in the European Region**

The Commission was briefed on the progress of implementation of the Regional Plan of Action for the laboratory containment of the wild polioviruses. Data presented at the meeting showed that national coordinators were appointed in 27 countries, 26 countries presented plans of action and inventories of virological laboratories containing infectious or potentially infectious materials were being prepared in 22 countries.

The meeting of containment coordinators was organized by the WHO Regional Office for Europe in December 2000 and took place in Prague (Czech Republic). The meeting was attended by the national coordinators from 29 countries of Western and Central Europe (Albania, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the former Yugoslav Republic of Macedonia, Turkey and United Kingdom).

**Main action on containment taken in the European Region by December 2000:**

- Special guidelines for the implementation of laboratory containment of wild polioviruses in WHO European region were developed and published by WHO Regional Office for Europe.

- Pilot studies were performed in five countries (France, Germany, Netherlands, Russian Federation and United Kingdom).
Special letters on the importance of laboratory containment of wild polioviruses were sent to ministers of health asking for their assistance.

Eleven countries were visited by WHO consultants/temporary advisers (to plan future activities, to assist in establishing national laboratory inventories, to make more accurate definitions of infectious and potentially infectious materials, to discuss possible decisions on destruction or storage of these materials).

All National Reference Laboratories were contacted by the WHO Regional Office for Europe for coordination of their activity.

Special meetings on laboratory containment of wild polioviruses were organized by WHO Regional Office for Europe in Copenhagen (January 2000 and February 2001), Vienna (June 2000), Chisinau (October 2000) and Prague (December 2000).

Information on laboratory containment of wild polioviruses was inserted on the poliomyelitis eradication Web site of the WHO Regional Office for Europe.

To advocate the importance of containment process WHO and consultants will use several different additional actions – articles in scientific journals, presentations at relevant scientific conferences and meetings, press conferences for journalists and articles in newspapers and other mass media.

Plan of action in 2001 for laboratory containment of wild polioviruses in the European Region

The forthcoming activities for the WHO Regional Office for Europe are:

- To distribute to all member states the final version of the document on classification of infectious and potentially infectious materials;
- To complete the inventory of materials containing wild poliovirus and infectious/potentially infectious materials within laboratories of the Regional Poliomyelitis Laboratory Network.
- To estimate, in collaboration with the Regional Poliomyelitis Laboratory Network, regional needs for interim repositories for wild poliovirus and infectious/potentially infectious materials;
- To assist National Task Forces/Coordinators on Containment in promotion of containment concept in separate countries, in preparation and updating of National Plans on Containment, and in performance of laboratory surveys;
- To organize visits of WHO consultants/advisers to countries with complicated laboratory systems (France, Germany, Italy, Spain, United Kingdom), to countries with complicated situation (Belgium) and to recently endemic countries with high probability of keeping infectious/potentially infectious materials;
- To finalize recommendations to countries on complete destruction of all wild poliovirus and infectious/potentially infectious materials;
- To monitor the implementation of use of BSL-2 facilities for all laboratories in countries possessing polioviruses;
– To update countries and RCC on the progress of containment activity in the European region;
– To update regularly the Web site page on containment activity in the European Region.

Plan of action for 2001 – towards certification of the European Region as poliomyelitis-free

Dr Oblapenko presented the operational Plan of Action for Certification of the European Region as poliomyelitis-free to the Commission. The Commission discussed and approved a format of the national documentation update and summary that has to be submitted by each member state in December 2001 (Annex 3). The Commission has also approved the documentation that should be prepared by the Regional Office (Annex 4).

The Commission reviewed the status of submissions, updates and responses to Commission comments from National Committee, noting where further follow-up was needed. The Commission has decided to have the next meeting in Turkey in 27–28 September 2001 to review the national documentation of Tajikistan, Turkey, Turkmenistan and Uzbekistan.

Informal Consultation Meeting of the Regional Reference Laboratories, European Regional Poliomyelitis Laboratory Network (13 February)

Dr Galina Lipskaya chaired this meeting with Dr Eugene Gavrilin as Rapporteur. Participants were the director of each Regional Reference Laboratory and WHO staff.

Laboratory data flow

Twenty-seven out of 37 national laboratories of the regional laboratory network were reaching expected criteria for completeness of reporting to the Regional Office. The 10 laboratories that under-reported were mostly from western industrialized countries.

From January 2001, weekly reporting of data by national laboratories (NLs) to the WHO Regional Office for Europe has been introduced. In addition, NLs were requested to refer poliomyelitis virus isolates more regularly and frequently to RRLs. Immediate action and urgent complete virological investigation informing the Regional Office) should be taken for priority (“hot”) cases.

These changes mean that more data will be generated. EURO has been working on an enhanced data management system for both NLs and RRLs. The NL system under development was demonstrated and is shortly to be field-tested. The RRL system is being further developed and ultimately will enable systematic reporting from RRLs to WHO. Training will be provided in use of the tool. The database was complex but could be tailored to suit the needs of individual laboratories. In conclusion, the participants welcomed this initiative and expressed interest in the possibility of using the tool for other types of diagnostic work as well.

Reports on operational activities from RRLs

Dr Crainic, Dr Diedrich, Dr Fiore, Dr Hove and Dr van der Avoort presented reports. Highlights included a report of a VAPP in an immunodeficient patient from Italy, who stopped long-term
P2 excretion in response to immunoglobulin/pleconeril treatment; a report of a new long-term excretor identified in Germany; and the establishment of molecular typing of NPEVs at KTL. Problems encountered included no or poor communications with some linked NLs (e.g. Hungary). Some countries without national laboratories (e.g. Belgium and Luxembourg) have not had any contact with the RLs.

**Virological surveillance in 2000 in Turkey**

The national and subnational poliomyelitis laboratories in Turkey are not yet fully accredited and all shipments of samples are re-tested at National Institute of Public Health and the Environment (RIVM) in Bilthoven. The comparison of results over a five-year period from Turkey and RIVM showed improved performance by the Izmir laboratory but a persistent problem with poor sensitivity in the Ankara laboratory. The Ankara laboratory had also recently participated in a pilot study of environmental monitoring. Unfortunately, many of the samples appeared to have been contaminated by Mahoney strain in the Ankara lab, where Mahoney was being used as a reference virus. Following a recent site visit a complete separation of diagnostic and research work was strongly recommended to prevent future occurrences. This was also recommended in July 2000 during an assessment mission of AFP surveillance.

**Virological Surveillance in 2000 in NIS**

Dr Ivanova presented the status of testing in the Moscow regional laboratory. The total number of stools investigated from AFP cases and contacts had increased in 2000 compared to 1999. The performance of NLs and sub NLs, as judged by both confirmation rates by Moscow RRL and proficiency test results, showed good progress. There were a number of problems however. The interval between collection and receipt of specimens was more than 7 days for 94% of stools in 2000 and was worse than in 1999. Further help was requested from the Regional Office to help solve this on-going problem. The Moscow RRL also experienced workload difficulties through a significant increase in sample throughput. WHO was requested to explore how additional staff could be found for the Moscow RRL.

**Containment Activity in RRLs**

Dr van Loon presented a report on implementation of containment activities in the Netherlands. A total of 1150 letters had been sent to laboratories to establish if they held wild poliomyelitis stocks and if so, what was future plans for the stocks. By February 2001, a 64% response rate had occurred and identified 26 laboratories (2.3%) with wild poliovirus. Of those seven wished to retain stocks. A reminder letter was to be sent to non-responders. The lessons learned from this exercise were that considerable personal involvement from virologists in organizations were needed to emphasise the importance of containment in all biomedical laboratories. A global database of frequently asked questions would be very helpful.

**Update on the “Strasbourg poliovirus”**

Dr Crainic and Dr Lipskaya discussed this issue. The press had reported detection of a wild poliovirus in the drinking water of Strasbourg, France in the summer of 2000. However, subsequent sequence analysis of the virus showed it to be PVI CHAT, a reference strain used in a local laboratory that initially isolated the virus. Thus the episode was another example of laboratory contamination of the sample. Lessons learned include the need to know the identity, and preferably sequence of reference viruses used in all laboratories; wherever possible use of live polioviruses should be restricted to authenticated stocks and the need to inform laboratories to substitute Sabin-strain for all wild strains used in reference or model testing. The Regional
Office learned about this detection of supposed wild poliovirus only from the press reports. It was emphasised that the Regional Office should be informed as early as possible of any urgent situation, such as discovery of any wild poliovirus or any highly suspect AFP case under testing.

**Sequence analysis of Sabin Strains**

Findings of isolating Sabin-derived polioviruses from Egypt and Hispañola have definitely shown that Sabin-derived polioviruses can revert to increased transmissibility causing clusters of AFP cases. In view of these findings genomic sequencing of all Sabin-derived isolates has become critically important. The need is to detect promptly any sustained circulation of vaccine-derived polioviruses and provide timely information to the immunization programmes. At present around 2500 polioviruses are isolated globally per year. It is proposed to obtain the complete VPI sequence (or an agreed portion) plus sequences from other selected parts of the genome on each of these isolates. Primary screening methods to exclude all vaccine homologous isolates are available or can be easily further developed. The strategy proposed by headquarters is for all poliomyelitis isolates, regardless of origin, to be forwarded to WHO-accredited lab for ITD (by at least 2 approved methods). ITD laboratories will be provided with methods to screen out Sabin-homologous isolates. All isolates showing atypical reactions (by PCR, ELISA) should be forwarded for immediate sequencing. Additionally, the AFP surveillance system should be analysed monthly for possible clustering of cases, all polioviruses from identified or possible clusters should be sequenced regardless of ITD/screening results. To enable interpretation of the anticipated sequence data, headquarters planned to obtain and publish databases of all known vaccine producers, and vaccine-derived polioviruses.

**Operational Issues for the Regional Laboratory Networks**

Participants agreed the following proposals upon discussion of operational and managerial issues for the network.

(a) **Proficiency tests**
   - RRL’s reminded to contact their linked NLs if the NL exceeds the time limit for reporting
   - Discover reasons for no report.
   - Better coordination of sending of the PT and ITD panel is requested in the future

(b) **Cell cultures**
   - RRLs should enquire twice per year whether the linked NLs need new cells

(c) **Reports from RRL to WHO**
   - These are required monthly; the Regional Office is working on a simplified reporting format but until available the existing form is to be used;
   - Feedback from WHO to RRLs on any reporting problems would be helpful.

(d) **Wider use of environmental surveillance**
   - The pilot project in Turkey should stop (no more collection of samples) until the laboratory contamination problems are solved;
   - The lesson from this episode was not to entrust sophisticated or research activities to non-accredited laboratories.
(e) Containment
   – WHO asks RRLs to complete their inventories of wild poliomyelitis stocks by April 2001 so that the needs for a wild poliomyelitis repository in the Region can be evaluated.

(f) NL visit by RRLs
   – Candidate NL’s to be visited; Albania, Bulgaria, Hungary, Romania;
   – The Regional Office will discuss with the individual RRLs involved

(g) Shipment of stool samples in Russia
   – Samples currently received in glass bottles and isolates are currently received in glass tubes; WHO offered to help supply specimen collection kits and plastic tubes to solve this problem.
Annex 1

PROGRAMME OF MEETINGS

Tuesday 13 February 2001

13.30 Registration
13.30 – 14.00 Coffee Break
14.00 Opening
14.10 Laboratory data flow within the European Region in 2001 – Ms Louise Gare
14.20 Latest development on Laboratory Data Management – Dr Gene Gavrilin
14.35 Latest development on Laboratory Data Management – Mr Silvio Gatti Christensen
Reports on operational activity from RRL’s
   – Dr R. Crainic
   – Dr L. Fiore
   – Dr S. Diedrich
   – Dr T. Hovi
15.10
15.20
15.30
15.40
15.50 Virological surveillance for poliomyelitis in Turkey in 2000 – Dr H. van der Avoort
16.10 Virological surveillance for poliomyelitis in NIS countries in 2000. Achievements and problems – Dr O. Ivanova
16.30 – 17.00 Coffee Break
17.00 Containment activity in RRLs. Pilot of wild poliomyelitis infectious materials inventory – Dr A. van Loon
17.10 Specific features of virological surveillance for poliomyelitis in the European Region, in the absence of wild poliomyelitis circulation, but with high risk of wild poliomyelitis importation. New WHO recommendations on virological surveillance for poliomyelitis at the stage of Regional Certification – Dr G. Lipskaya
17.20 Update on Strasbourg PV isolation – Dr R. Crainic
17.25 Significance of the complete analysis of Sabin-derived poliovirus strains for European Region. WHO headquarters’ recommendations – Dr R. Sanders
17.40 – 18.30 Discussion

Wednesday 14 February 2001

08.30 Registration
09.00 Opening statements
09.15 Global eradication and certification process and overview of Sabin-derived outbreak in Americas – headquarters
10.00 The European Region: towards certification as poliomyelitis free Region in 2002 – Dr G.P. Oblapenko
10:30 – 1100 Coffee Break
11.00 Enterovirus Surveillance: Basis for Revised data collection instrument – *Dr M. Pallansch*

11.20 Results of pilot testing – *Dr M. Pallansch and Dr S. Wassilak*

11.40 Discussion and revision/Approval of the format

12.00 – 13.00 **Lunch Break**

13.00 Countries for which this instrument is needed – *Dr G.P. Oblapenko*

13.20 Evaluating the content – what if expectations are not met – *Dr W. Dowdle*

13.30 Discussion – *Commission*

13.30 Environmental Surveillance: Current findings in environmental surveillance pilot projects – Egypt, India – *Dr T. Hovi*

13.50 Turkey, Georgia – *Dr T. Hovi*

14.10 Specific findings in Israel with respect to wild and Sabin-derived strains – speakers invited, pending

14.30 Significance of Sabin-derivations for European situation

  – Introduction: *Dr G. Lipskaya*
  – Experience of Pasteur Network: *Dr R. Crainic*
  – Experience from Belarus: *Dr E. Samoilovich*

15.00 – 15.30 **Coffee Break**

15.30 Discussion on environmental surveillance, summation on Sabin strains

**Parallel sessions for RCC and Poliomyelitis Laboratory Network**

16.00 – 17.00 RCC: Preparatory executive session on Russian Federation, Ukraine

16.00 – 17.00 Laboratory Network: summing-up session

**Thursday 15 February 2001**

08.30 Registration

09.00 Opening remarks – WHO, *Sir Joseph Smith*

09.30 Russian Federation presentation and discussion

10.30 – 11.00 **Coffee Break**

11.00 Ukraine presentation and discussion

12.00 – 13.00 **Lunch Break**

**Executive Session**

13.00 – Comments and questions on Russian Federation and Ukraine presentations and Manuals of operations

14.00 – Review of Updates and outstanding questions (list to be prepared) – *paired Commission members*

15.00 – 15.30 **Coffee Break**

15.30 Continued and finalized requests to outstanding Member States

17.30 Summary discussions
Friday 16 February 2001

09.00 – 09.30   Review of comments with Ukraine and Russian Federation representatives
09.30 – 10.00   Executive Session
10.00 – 10.30   Containment process, Prague meeting report – Dr D. Reid
10.30 – 11.00   Coffee Break
11.00 – 11.30   Discussion of status of containment process – Commission
11.30 – 12.00   Containment plan for 2001 – Dr G. Lipskaya
12.00 – 13.00   Plan of work for 2001–2002, planning for Cairo meeting
Annex 2

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Annex 3

CERTIFICATION OF EUROPEAN REGION AS POLIOMYELITIS-FREE: OPERATIONAL PLAN OF ACTION FOR 2001–2002

Format of a country update for the RCC: December 2001

1. Summary
2. Updated information for 2001
3. Summary for Supplementary surveillance (where appropriate)
4. Progress report on laboratory containment of wild poliovirus in 2001
6. Report on follow-up actions on previous recommendations of the RCC

Summary
Issues to be covered in this document are:
- main reason why a national certification committee think that transmission of wild poliovirus was interrupted
- previous comments of the RCC and action taken by country (briefly)
- action taken in high risk areas or in high risk sub-populations during 1998–2001

Up-dated information for 2001
To use the format discussed in Vienna, June 2001:
1. Vaccination coverage (average and a list of territories with the level of coverage less than 80%)
2. AFP surveillance indicators
3. Geographic distribution of AFP cases
4. Data on polio-compatible cases (a line list, investigation reports, action taken)
5. Updates on actions in high risk areas and in groups of sub-population
6. Laboratory quality assurance
7. Report on isolation of polioviruses and results of identification
8. Report on the investigation and control of any importation of wild poliovirus
10. Specify any concerns

Summary for Supplementary surveillance (where appropriate)
Recommendations of the RCC meeting, Copenhagen, Feb 2001 should be applied.

Progress report on laboratory containment of wild poliovirus in 2001
Results of a national survey (even preliminary) or a brief progress report.

Report on VAPP (cases reported during 1999–2000–2001)
Case definition used, line list of VAPP cases.

Report on follow-up actions on previous recommendations of the RCC
Briefly comments of the RCC should be pointed out and information should be given on actions undertaken by country to follow up on those recommendations.

Important note: the package of documents should be dated October/November 2001
Annex 4

The WHO Regional Office for Europe package of proposed documentation for the RCC final evaluation of the status of countries

(to be submitted in January 2002)

Regional summary

Brief situation analysis and evidences of absence of circulation of wild polioviruses in the countries of the European Region. The main document will be supported by the set of annexes:

- Table: information by countries on the last case of poliomyelitis (date)
- Package of national documents
- Operation MECACAR – final report
- Special issue of EURO poliomyelitis page on the quality of AFP/EV surveillance
- Summary of the Regional poliomyelitis LABNET
- Table: high-risk/difficult territories (information summary)
- Progress report on laboratory containment of wild polioviruses
- Maps:
  - Geographic zones applying different types of surveillance to prove absence of circulation of wild poliovirus (surveillance for AFP, surveillance for enteroviruses (EV), surveillance for AFP and EV, etc.)
  - The quality of AFP surveillance (index) by countries of the European Region (using subnational administrative territories maps)
  - The level of routine immunization coverage achieved by countries in 2000
  - The regional poliomyelitis LABNET access of countries to accredited laboratories
  - Geographic distribution of polio-compatible cases during 1999–2000–2001