Report on the

Intercountry meeting of the Chairpersons of National Committees for Certification of Poliomyelitis Eradication

Cairo, Egypt
3 May 2010
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1. INTRODUCTION

An intercountry meeting of the chairpersons of National Committees for Certification of Poliomyelitis Eradication was held in the WHO Regional Office for the Eastern Mediterranean on 3 May 2010. The objective of the meeting was to clarify the role of the National Certification Committees (NCCs) in the certification efforts both at the country level and in relation to regional certification.

The meeting was attended by the chairpersons of the NCCs or their representatives from 14 countries of the Eastern Mediterranean Region, 6 members of the Regional Certification Commission and WHO staff from headquarters and the Regional Office.

The meeting was opened by Dr Mohamed Helmy Wahdan, who delivered a message from Dr Hussein A. Gezairy, WHO Regional Director for the Eastern Mediterranean. In his message, the Regional Director welcomed the participants and thanked them for attending the meeting. He noted that only 7 of the chairpersons present had attended the first meeting 8 years earlier, while the remaining 15 chairpersons were new. Hence it was essential to organize the meeting and clarify the roles expected from the NCCs in the certification process.

The Regional Director referred to certification efforts and indicated that they were gaining momentum with 15 countries having had final national documentation accepted by the Regional Certification Committee. In addition, two countries were expected to submit their final documentation soon and another two in the near future. The remaining 3 countries included the two endemic countries (Afghanistan and Pakistan) and Sudan, which had been requested to resubmit its national documentation after cessation of transmission following importation.

Professor Najwa Khuri-Bulos (Jordan) was nominated as Chairperson for the meeting. The programme of the meeting and the list of the participants are given as Annexes 1 and 2, respectively.

2. POLIO ERADICATION SITUATION AND STRATEGIES

2.1 Highlights of global developments

In Asia, wild poliovirus (WPV) transmission now persists in a relatively small number of districts (<60) in just three countries: India, Pakistan and Afghanistan. From these districts, the indigenous WPV1 and to a lesser extent WPV3 has recurrently re-infected other, polio-free parts of the same country. In the case of India, since 2005 indigenous poliovirus has been exported to the bordering countries of Nepal, Bangladesh and Myanmar, as well as Angola in Africa. In the case of Pakistan and Afghanistan, each country has recurrently re-infected the other, although it appears the latter is now receiving a higher share of the importations.
These persistent transmission districts constitute two distinct groups, requiring different strategic approaches. The first group of districts is characterized by very large populations, high birth rates and high population density, often with suboptimal sanitation, and requiring very high population immunity (>95%) to interrupt transmission. This group includes the persistent transmission districts of western Uttar Pradesh and central Bihar in India and the city of Karachi in Pakistan.

The second group of districts is characterized by a lower population density and, in all likelihood, a lower immunity threshold to stop transmission, but with compromised access for supplementary immunization activities due primarily to lack of security or outright conflict. This group includes in Pakistan the adjoining districts of Quetta, Pishin and Killah Abdullah in the province of Balochistan, three Federally Administered Tribal Agencies (Bajour, Khyber, Mohmand), and Peshawar in North West Frontier Province (NWFP). In Afghanistan, this group includes 13 districts of Helmand, Kandahar and Uruzgan provinces in the southern region.

By comparison, the transmission of both indigenous and imported WPVs in Africa has been sustained over larger geographic areas, such as provinces/states or groups of provinces/states, as opposed to districts. Furthermore, polio outbreaks due to imported WPVs in Africa have generally resulted in more polio cases over longer periods of time than in Asia. Both of these phenomena are primarily due to the weaker health systems in the remaining polio-infected countries of sub-Saharan Africa, resulting in low routine immunization coverage levels and suboptimal outbreak response. However, these challenges are in part offset by the consistently high per-dose efficacy of OPVs in sub-Saharan Africa, and by the substantially lower population immunity threshold needed to stop WPV transmission as compared to Asia.

By the end of 2009, indigenous wild poliovirus circulation in Africa was restricted to a group of eight to 12 states of northern Nigeria, though a further four countries were known (Angola, Chad) or suspected (Democratic Republic Congo, southern Sudan) of having re-established transmission on a national or subnational scale. In early 2010, an additional six West African countries in the ‘WPV importation belt’ still had ongoing outbreaks due to recent importations. Encouragingly, WPV1 cases fell by 90% in Nigeria in 2009 due to a combination of a) higher vaccine-induced immunity following the major improvements in supplementary immunization activities performance in 2009, and b) a certain degree of natural immunity as a result of the large outbreaks in 2007–2008. Consequently, by early 2010 the risk of new exportations from Nigeria had been substantially reduced. In addition, Democratic Republic of Congo and southern Sudan had not reported a case of polio due to their re-established virus for over six months (i.e. since August 2008 and June 2009, respectively).

In 2008, recognizing delays in achieving eradication, the World Health Assembly requested the development of a new strategic plan. Since then, a major
independent evaluation of barriers to polio eradication, trials on new vaccines, and new approaches for reaching previously missed children helped inform the development of the new global poliomyelitis eradication initiative strategic plan 2010-2012, which was produced in broad consultation with stakeholders and governments of the remaining polio-affected countries. The new plan incorporates lessons learnt since the global poliomyelitis eradication initiative began, and includes new approaches for achieving its major objectives:

- interrupting wild poliovirus transmission in Asia and in Africa
- enhancing global surveillance and outbreak response
- strengthening immunization systems.

<table>
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<tr>
<th>By mid 2010</th>
<th>By end 2010</th>
<th>By end 2011</th>
<th>By end 2012</th>
<th>By end 2013</th>
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<tr>
<td>Cessation of all polio outbreaks with onset in 2009</td>
<td>Cessation of all “re-established” poliovirus transmission</td>
<td>Cessation of all polio transmission in at least two of the four endemic countries</td>
<td>Cessation of all wild poliovirus transmission</td>
<td>Initial validation of 2012 milestones</td>
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The four major milestones of the new global poliomyelitis eradication initiative strategic plan 2010–2012 (see above) will be internationally analysed in every quarter and graded as ‘on-track’, ‘progressing but with issues of concern’ or ‘at risk for completion’ to alert countries and stakeholders as to emerging risks and guide mid-course corrections. For milestones which are ‘progressing but with issues of concern’ or ‘at risk for completion’, the appropriate national or international Technical Advisory Group (TAG) will be asked to work with the relevant national authorities to establish a corrective plan within two weeks. A new global poliomyelitis eradication initiative advisory body will evaluate the milestones and major process indicators, monitor corrective action plans and provide overall guidance on policy, strategy and priorities.

By the first quarter of 2010, the application of the operating principles of the new global poliomyelitis eradication initiative strategic plan 2010-2012 was already showing results. In northern Nigeria, all but four states had reduced the proportion of ‘0-dose’ children (i.e. children who had previously never been immunized) to <10% by the end of 2009, with a subsequent 90% decline in polio cases due to WPV1, as a result of new engagement of state politicians and traditional leaders.

In western Uttar Pradesh, India, serological surveys demonstrated that >95% of very young children were now protected against type 1 polio; and the government’s rapid scale-up of health infrastructure in the Kosi river areas of Bihar, combined with the identification and systematic vaccination of more than five million children from migrant groups, had by the end of 2009 eliminated all but one genetic lineage of WPV1.
In Pakistan and Afghanistan, the systematic application of objective supplementary immunization activities monitoring criteria, combined with environmental sampling in Karachi and Lahore (Pakistan), facilitated accurate identification and heightened political oversight of the remaining ‘reservoir’ districts, while the piloting of a range of new strategies in conflict-affected areas of Afghanistan demonstrated the feasibility of reaching sufficient children to interrupt the residual WPV transmission in these areas.

Furthermore, by the first quarter of 2010, 10 of the 15 countries which had suffered new outbreaks due to WPV importations in late 2008 and 2009 had again stopped transmission, while two of the four ‘re-established transmission’ countries (Democratic Republic of Congo and southern Sudan) had not had a new case due to their re-established virus for more than six months.

2.2 Basic eradication strategies and indicators

The main strategies used for eradication included routine immunization, supplementary immunization activities and acute flaccid paralysis (AFP) surveillance. While it was possible to interrupt poliovirus transmission in some developed countries using high routine immunization coverage, it became clear that vaccine efficacy for 3 oral poliovaccine (OPV) doses in developing countries cannot interrupt transmission and that this is only possible through both good routine OPV3 coverage and supplementary doses. Experience also proved that the full effect of supplemental immunization depends on good routine coverage, i.e. polio eradication strategies worked most effectively where OPV3 coverage was high and multiple national immunization day campaigns (NIDs) were needed to interrupt transmission where routine coverage is low. High routine is also needed to maintain achievements and guard against spread of virus after importation.

Supplementary immunization activities include NIDs, SNIDs and mop-ups. The main purpose of supplementary immunization activities is to interrupt transmission of wild poliovirus through simultaneous boosting of humeral and mucosal immunity together with ‘displacement’ of the wild virus. Focal transmission may persist despite NIDs especially in areas with high population density, poor sanitation levels and in presence of ‘susceptibles’ when children are repeatedly missed by both routine and supplementary immunization. In these cases, mopping-up immunization done house to house with more intensified resources and supervision are needed. Mop-ups are also done as outbreak response in polio-free areas.

With intensification of eradication efforts over time all supplementary immunization activities are being implemented house to house after proper bottom-up, detailed microplanning with maps to ensure reaching every child. Extensive efforts are made to ensure high quality through proper selection and training of vaccinators, effective supervision and intensified social mobilization. In addition, commitment of politicians and community leaders are enlisted to ensure their support.
As well, multisectoral approaches are implemented to involve governmental and nongovernmental sectors.

To ensure accuracy of the immunization coverage of supplementary immunization activities, finger-marking is being used and independent monitors are employed. Monitoring data help to pinpoint problems for action by the responsible authorities.

Different types of vaccines are used in supplementary immunization activities. Since 2005, in addition to tOPV, monovalent vaccine and most recently bOPV were used to maximize type-specific immune response. In many cases, supplementary immunization activities are coordinated between neighbouring countries and are used to provide services such as delivering lifesaving vitamin A and deworming tablets.

High AFP surveillance quality and use of surveillance data are essential in all countries. In polio endemic countries, surveillance is vital in monitoring progress and in guiding strategy implementation towards interruption of transmission. In polio-free countries surveillance is used to monitor polio-free status to allow early detection of and response to importations. In addition to immediate notification of cases, regular routine ‘zero’ reporting and active surveillance visits to main health facilities are the most important component in AFP surveillance.

Several indicators are used to monitor sensitivity, quality and timeliness of the surveillance system. Routine surveillance data are regularly analysed and reported at country level in the form of weekly presentations and monthly bulletin with sub-national level analysis. At regional and global levels weekly and monthly updates are regularly published. However, good indicators does not necessarily mean good system and supervisory field visits together with surveillance reviews (desk and field reviews) are regularly done.

2.3 Supplementary surveillance activities

In addition to routine reporting of AFP cases, and active surveillance visits, there are some additional strategies for AFP surveillance which can be implemented as and when required. They include active case searching, looking for AFP cases during supplementary immunization activities, using a network of community informants. In addition, stool surveys are conducted to look for WPVs. These include collecting samples from healthy children, non-AFP cases, particularly contact sampling and environmental monitoring.

Stool samples should be collected from contacts of all AFP cases with inadequate stool specimens. Additionally it is recommended to collect samples from contacts of hot cases, from AFP cases from hard to reach areas, and in case of investigation of a polio outbreak, or an AFP cluster or appearance of VDPV cases. Some countries like Somalia and southern Sudan collect contact samples for all AFP
cases. A contact is defined as a child less than 15 years of age who has been in direct contact with the index AFP case at any point in time from one week prior to the onset of paralysis up to two weeks after onset of paralysis. These should be direct close contacts, such as siblings and children in the same household; otherwise playmates or neighbours. One stool sample should be collected from at least three contacts. They are collected within 2 months from date of onset of paralysis in the index AFP case. An index AFP case whose contacts are found to be positive for wild poliovirus should be classified as confirmed a wild polio case even if the case is laboratory negative.

Environmental monitoring entails testing sewage samples for the presence of enteroviruses including wild poliovirus. It can be used when there are doubts about AFP surveillance, where there is persistent circulation or high risk for importation. These should be accessible sewage collection network. Generally sites are selected to represent high risk areas/populations with preferable size of 100 000 to 300 000. The frequency of sampling is usually once a month but can more frequent. Training and written instructions should be provided to persons collecting the samples. Overall performance of the environmental surveillance is evaluated by the ability to detect non-polio enteroviruses or Sabin viruses in the samples. Isolation of WPV from an environmental specimen should result in similar response to an isolation of wild virus from an AFP case (in polio-free countries it is an importation). Negative results are more difficult to interpret and should be assessed in relation to the sampling design and efficiency of laboratory procedures. Laboratory results should always be compared to those from AFP cases where matching results gives more confidence in the AFP system.

2.4 Role of laboratory in surveillance and laboratory containment

The Global Polio Laboratory Network (GPLN) comprises three tiers, each with specific functions: Global Specialized Laboratory, mainly responsible for genomic sequencing, training and development of methods; Regional Reference Laboratory (RRL), responsible for virus isolation and intratypic differentiation (ITD); and National Polio Laboratory (NPL), responsible for virus isolation.

The performance of the polio laboratory network is monitored and assessed by measuring a set of laboratory performance indicators, which are mainly addressing timeliness of results reporting for various stages of testing: virus isolation, ITD etc. Network laboratories are accredited annually by WHO through on-site visits and by testing a panel of unknown viruses for virus isolation and ITD. AFP surveillance is supplemented with environmental surveillance in only two countries of Region (Egypt and Pakistan). The National Certification Committee is responsible for reviewing and validating polio laboratory data and laboratory performance.

The global action plan for laboratory containment of polioviruses and other potentially infectious material is divided into 3 phases. Phase 1 of containment activities includes developing a list of laboratories functioning in the country,
surveying these laboratories, collecting and collating data, identifying those laboratories storing WPV material/potential infectious material, developing a national inventory of laboratories storing WPV or potentially infectious materials and ensuring that they are implementing BSL-2/ polio. All countries of the Region except Afghanistan, Pakistan and Somalia have already completed phase 2. In addition, the national containment coordinator is requested to submit to the NCC a comprehensive self-assessment report of containment activities including tables of relevant data. This report should be submitted to RCC by the NCC.

It is expected that the NCC, in addition to monitoring the performance of NPL, verifies data submitted by the laboratory and also containment activities. As well, the NCC is expected to support the laboratory and containment activities at national level through advocacy with higher national authorities for smooth functioning.

3. VACCINE-ASSOCIATED PARALYTIC POLIO AND VACCINE-DERIVED POLIOVIRUSES

Vaccine-associated paralytic polio (VAPP) and vaccine-derived polioviruses (VDPVs) are different entities and are both very rare. VAPP cases are single cases of paralytic polio caused by a neurovirulent Sabin-strain virus (less than 1% divergence from Sabin strain). VDPVs are polioviruses which differ from the original Sabin vaccine strain, showing 1% or more difference from Sabin strain in one particular region (VP1 region) of the virus genome. The 1% demarcation between OPV-like isolates and VDPVs is based on the average rate of evolution (mutation) of the poliovirus capsid (~1% per year), implying that VDPVs have been replicating for at least one year since administration of the initial OPV dose.

VAPP cases are extremely rare, occurring at 2–4 VAPP cases per million birth cohort (with some variation). However they represent serious adverse events associated with the use of OPV occurring in vaccine recipients, or in contacts of recipients immunized with OPV. In endemic and recently polio-free countries, the risk posed by continued wild poliovirus circulation or importation of WPV is much higher than the VAPP risk.

VAPP cases are temporally associated with OPV immunization. The risk is relatively higher in those receiving the first dose of OPV, and some VAPP cases are associated with immune deficiency. VAPP should be a ‘diagnosis of exclusion’, which should be made by the National Expert Committee only after ruling out other causes, and if the following conditions are met:

- adequate stool specimens, tested in a WHO-accredited polio laboratory yielded Sabin virus, but were negative for wild poliovirus;
- there was an exposure history to OPV between 4 and 30 days before onset of AFP; and
- there is polio-like residual paralysis at 60 days after onset of AFP.
VAPP has been over-diagnosed in a number of countries, based on the wrong assumption that AFP cases with isolation of vaccine virus were actually caused by the vaccine. Over-diagnosing VAPP has the potential to damage public confidence in vaccines; it may also lead to an inappropriate, premature switch of national immunization schedules from using OPV to using IPV.

VDPVs are divided into:

- Immunodeficiency-associated VDPVs (iVDPVs) isolated from persons with primary immunodeficiencies who usually have prolonged VDPV infections following exposure to OPV (i.e. cannot ‘clear’ the OPV infection);
- Circulating VDPVs (cVDPVs) which are associated with sustained person to person transmission and can cause outbreak;
- Ambiguous VDPVs (aVDPVs); which are VDPV that cannot be easily defined as either iVDPVs or cVDPVs are labelled as ambiguous.

Globally since 2001, cVDPVs have been found to cause 15 polio outbreaks (≥2 cases) reported and investigated in 14 countries. In the Eastern Mediterranean Region during the past 5 years, iVDPV has been isolated from 10 countries. cVDPV was discovered in Somalia in 2009 and a VDPV was isolated from Egypt in 2005, 2006 and 2007 from environmental samples.

Isolation of VDPV should be followed by exhaustive clinical and epidemiological investigation, with assessment of immune status of the case, search for more cases, contact sampling and evaluation of immunization coverage in the area in order to determine the type of VDPV. The detection of an outbreak of poliomyelitis, of any origin, should be considered a public health emergency in any country that is non-endemic or recently endemic, or in any area of an endemic country that is largely polio-free and should be followed by appropriate immunization response.

Since the quality of polio eradication activities usually decreases following regional certification of wild virus eradication, it becomes difficult to maintain high levels of immunity against polio, resulting in increasing immunity gaps. With continued use of OPV, this will increase the risk of cVDPV emergence particularly in polio-free areas with low routine immunization coverage and decreasing frequency of supplementary immunization activities. At the same time, decreasing AFP surveillance sensitivity may make it more difficult to detect cVDPV early. Furthermore, after interruption of wild type poliovirus, continued OPV use would be incompatible with eradication. Hence, OPV cessation must occur at a time when AFP surveillance sensitivity and population immunity are still high.
4. PREPAREDNESS FOR AND RESPONSE TO IMPORTATIONS / OUTBREAKS

Preparedness for importation depends on two pillars: high quality surveillance, which is the key for early detection; and high general population immunity, achieved by routine and supplementary immunization activities with special attention to high risk areas/populations.

The main elements in any national plan include activities for monitoring and early detection of importation, as well as response to importation. Monitoring and early detection of importation depend on high quality AFP surveillance (certification standard surveillance at national and subnational levels). Mobile and minority populations should be identified, at borders and in other locations, and covered with suitable immunization and surveillance activities.

The response to importation includes rapid investigation of importation, enhancing surveillance for AFP and wild poliovirus, immediate and appropriate immunization response, and documenting cessation of transmission.

Rapid investigation includes initial investigation and risk assessment, which should be completed within 72 hours, establishing an emergency plan based on case characteristics, area of transmission, surveillance quality and immunization coverage, and determining origin of the virus.

Enhanced surveillance is conducted to exclude the possibility of missed transmission, determine the extent of circulation and impact of control measures and exclude re-establishment of virus circulation. Enhanced surveillance includes:

- Immediate notification of WHO, partners and neighbours
- Immediate call on the established expert group for importation
- Informing surveillance staff and major health facilities
- Checking quality and doing retrospective search
- Enhancing active surveillance in all districts around the case
  - Appropriate contact sampling
  - Monitoring reports at district, provincial and national levels
  - Daily reports from critical areas
  - Weekly review of situation by experts
  - Providing and disseminating weekly updates.

Enhanced surveillance should continue for at least 12 months after the last wild virus (>2 per 100 000 population under 15 years).

Immediate and appropriate immunization response is essential. The decision on the extent of the response based on the local situation and should be done within 72 hours. At least 3 large scale house-to-house rounds are to be planned using type specific monovalent vaccine (first campaign within 4 weeks of confirmation). The
potential target is expected to be 2 to 5 million children <5 years (according to age of cases). In small populations the entire country and bordering areas are included.

Detailed and comprehensive documentation should be developed to describe epidemiological, clinical and virological data, data on surveillance analysis and quality, as well as surveillance and immunization response.

5. ROLE OF THE NATIONAL CERTIFICATION COMMITTEE IN POLIO ERADICATION AND ITS RELATIONSHIP WITH DIFFERENT BODIES AND COMMITTEES

The National Certification Committee does not have the authority to certify that a country has eradicated polio. It has the responsibility to verify and submit the necessary documentation for certification to the Regional Certification Commission for its consideration.

The National Certification Committee has the following roles in the eradication of poliomyelitis in its country.

1. Guide the national surveillance and immunization personnel with respect to the preparation of the national documentation required by the Regional Certification Commission.

2. Review the various documents provided by the national surveillance and immunization staff and advise them of additional requirements and/or details needed.

3. Conduct site visits to surveillance sites and the national laboratory to validate data and also observe routine and supplementary immunization activities as deemed appropriate.

4. Review the work of National Expert Committee for classification of AFP cases and give special attention to compatible cases.

5. Review national containment activities (national inventory and supporting documents) and biomedical laboratories keeping wild poliovirus or potentially infectious material and submit the reviews as part of national documentation.

6. Recommend additional surveillance activities or provision of additional data for certification in consultation with the Regional Certification Commission.

7. Provide the Regional Certification Commission periodically with a summary of difficulties or obstacles facing national certification efforts and potential solutions.
8. Review, endorse and submit to the Regional Certification Commission the national documentation after at least 3 years from the date of onset of the last case of polio with evidence of good surveillance.

9. Continue to submit annual updates until submission of the final national documentation, after which the NCC countries to submit abridged annual updates until regional certification.

10. Contribute in the finalization of the regional certification report by submitting a document summarizing the history of poliomyelitis and the developments in their country to be annexed to the regional certification document.

It is to be noted that although the NCC should work closely with the national programme, none of its members should have any direct responsibility for poliomyelitis eradication in their country.

The discussion that followed showed that the NCCs in all countries of the region are working on voluntary basis without any remuneration, yet they continue to make valuable contributions to the process of certification both at national and regional levels.

6. PREPARATION OF NATIONAL DOCUMENTATION FOR CERTIFICATION

The formats of the various reports that need to be submitted by the NCC were reviewed with the NCC chairs and the necessary clarifications made together with explanation of the most common mistakes or misinterpretations.

Special emphasis was made on the preparation of the executive summary and on presentation of reports to the RCC. The following points were clarified:

1. The report should be received well in advance of the scheduled RCC meeting since it needs to be sent to RCC members at least 6 weeks before the meeting.

2. It should highlight the work of the NCC during the period under review and any change in its composition.

3. It should include a critical review of surveillance and any gaps noted and actions taken to address them. The work of the polio laboratory especially with respect to timeliness of reporting result and quality assessment of its work including accreditation and laboratory containment reports together with quality assurance.
4. It should include critical appraisal of coverage with routine immunization and during supplemental immunization activities conducted during the period under review together with the immunity status of children under 5 years of age.

5. It should include the status of the national plan for importation.

6. It should include any other important issues such as importation or discovery of VDPVs.

The summary and presentation should end with a list of factors on the basis of which the NCC feels confident that the country is free of polio and is able to detect and respond to importation in an appropriate and timely manner.

In the concluding session, the NCC chairpersons expressed their full satisfaction with the meeting and indicated that the dialogue they had with members of the RCC and with the WHO secretariat had been very helpful in clarifying issues related to their work and their relation with other national and regional bodies, as well as clarifying a number of technical issues.
Annex 1

PROGRAMME

08:30–09:00 Registration
09:00–09:15 Opening Session
   Message from RD/EMRO
   Objectives of the meeting / Dr M. Wahdan, WHO/EMRO
09:15–09:45 Basic eradication strategies and indicators / Dr F. Kamel, WHO/EMRO
09:45–10:10 Role of LAB in surveillance and laboratory containment / Dr H. Asghar, WHO/EMRO
10:00–10:30 Highlights of global developments / Dr R. Tangermann, WHO/HQ
10:30–11:30 Discussion
11:30–11:50 Supplemental surveillance activities / Dr A. Elkasabany, WHO/EMRO
11:50–12:10 VAPP–VDPV / Dr F. Kamel, WHO/EMRO
12:10–12:30 Preparedness and response to importations/outbreaks / Dr F. Kamel, WHO/EMRO
12:30–14:00 Discussion
14:00–15:00 Role of National Certification Committee in Polio Eradication and its Relation with Different Bodies and Committees Panel discussion (RCC Members and NCCs of Egypt, Jordan and Saudi Arabia)
15:00–16:00 Preparation of national documentation for certification / Dr M.H. Wahdan, WHO/EMRO
   Types of reports
   Contents - Executive Summary
   Presentation to the RCC
Annex 2

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