



**INTER-COUNTRY TECHNICAL
CONSULTATION ON
MANAGEMENT OF
NEUROLOGICAL CONDITIONS
IN CHILDREN**

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ABSTRACT

The WHO/UNICEF Integrated Management of Childhood Illness and Making Pregnancy Safer strategies were developed with the objective of reducing neonatal and child mortality and morbidity and promote healthy growth and development of children. Assessment of selected first-level hospitals in Kazakhstan, the Republic of Moldova and the Russian Federation has come up with relatively identical results with regard to the unified structure of health care and child care systems, showing that the institutions deliver a high level of health care. However, prolonged and unnecessary hospitalization of children is still common and children receive unneeded treatment (ineffective drugs and therapies). In particular, there are widespread problems in defining, diagnosing and treating neurological conditions in children under the age of one. This was the basis for organizing an inter-country technical consultation on management of neurological conditions in children, with the participation of representatives (neurologists and paediatricians) of all the Commonwealth of Independent States who share similar approaches to evaluating the neurological status of children. The goal of the consultation was to review issues related to the diagnoses and treatment of paediatric neurological conditions in children in the European region and identify a way forward for improving both diagnoses and management of this condition.

KEYWORDS

NERVOUS SYSTEM DISEASES - DIAGNOSIS - THERAPY
CHILD HEALTH SERVICES
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Glossary

ADHS	Attention deficit hyperactivity syndrome in children
ARM	Armenia
BLR	Belarus
CESP	Confederation of European Specialists in Paediatrics
Echo CG	Echo cardiogram
CIS	Community of Independent States
CSF	Cerebral spinal fluid
CT	Computer tomography
DSM	Diagnostic and Statistical Manual of Mental Disorders
EBM	Evidence-based medicine
EEG	Echoencephalography
EPNS	European Paediatric Neurology Society
GEO	Georgia
ICD	International classification of disease
IH	Intracranial hypertension
IMCI	Integrated Management of Childhood Illnesses
KAZ	Kazakhstan
KGZ	Kyrgyzstan
MDA	Republic of Moldova
MoH	Ministry of Health
MPS	Making Pregnancy Safer
MRI	Magnetic resonance imaging
NSG	Neuro sonography
PE	Perinatal Encephalopathy
RUS	Russian Federation
SCPE	Surveillance of cerebral palsy in Europe

TJK	Tajikistan
TKM	Turkmenistan
UKR	Ukraine
UNICEF	United Nations Children's Fund
UZB	Uzbekistan
WHO	World Health Organization

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1 Executive Summary

The WHO/UNICEF Integrated Management of Childhood Illness (IMCI) and Making Pregnancy Safer (MPS) strategies have been introduced in an ever-increasing number of countries in the WHO European Member States since being launched in the late 1990s. IMCI and MPS were developed with the objective of reducing neonatal and child mortality and morbidity and promote healthy growth and development of children.

Assessment of selected first-level hospitals in Kazakhstan, the Republic of Moldova and the Russian Federation has come up with relatively identical results with regard to the unified structure of health care and child care systems. The assessment shows that the institutions deliver a high level of health care and, in consequence, mortality rates are low. However, despite this, prolonged and unnecessary hospitalization of children in these countries are still common; most hospitalized children are given unnecessary treatment, such as ineffective drugs and therapies, while supportive treatment and monitoring are often inadequate. In particular, there are wide-spread problems in defining, diagnosing and treating neurological conditions in children under the age of one.

This situation was the basis for organizing an inter-country technical consultation on management of neurological conditions in children, with the participation of representatives (neurologists and paediatricians) of all the Community of Independent States (CIS) who share similar approaches to evaluating the neurological status of children. The goal of the consultation was to review issues related to the diagnosis and treatment of paediatric neurological conditions in children in the European region and identify a way forward for improving both diagnoses and management of this condition.

2 Objectives

- Introduce participants to an evidence-based approach to clinical management of neurological conditions in children.
- Review current issues in definition, terminology, diagnosis and treatment of neurological conditions such as *perinatal encephalopathy (PE)*, *intracranial hypertension (IH)* and *myotonic syndrome*, in order to address gaps and ways of improvement.
- Increase awareness among policy-makers, leading clinicians and academicians of current efforts to introduce evidence-based practice in countries of the European region.
- Reach a consensus on ways forward of addressing gaps and identifying possible solutions for evidence-based management of neurological conditions in children.

3 Expected outcomes

- Improved understanding of existing knowledge of evidence-based management of neurological conditions and current existing problems, to serve as the basis for further policy and action development.
 - Agreement among policy-makers, leading clinicians and academicians of existing gaps or inconsistencies in policy, legislation, definitions and clinical guidelines that result in the inadequate management of neurological conditions in hospitalized children and possible solutions to these problems.
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- Development of a list of recommendations for ways to update/change policy, legislation, definitions and clinical guidelines on management of neurological conditions in children.
- Development of recommendations for a way forward to change respective policies and clinical guidelines on management of neurological conditions in children, including possible technical contribution from WHO and partners.

4 Organization

The consultation took place in St Petersburg, the Russian Federation, over a period of three days.

5 Participants

Officials from the Ministries of Health of twelve CIS countries from the areas of health care and mother and child health, leading national experts in paediatrics, neonatology and paediatric neurology, WHO experts and international organizations. A list of participants is included as Annex II.

6 Proceedings - Day 1

6.1 Results from the WHO-Europe hospital assessment study and examples through illustrative cases of neurological conditions (M Weber and G Tamburlini).

Results from the assessment of the first-level hospitals in Kazakhstan (KAZ), the Republic of Moldova (MDA) and the Russian Federation (RUS) were presented.

On the whole, access to hospital care, hospitalization capacity and number of health care staff were considered satisfactory. Due to the health care system that existed in the old USSR, the CIS countries still share similar hospital care systems and treatment methods. In view of this, the findings from the three countries evaluated are probably similar to other countries in the region and it is reasonable to assume that common principles apply.

The following negative aspects of hospital care were found:

- wide-spread unnecessary and prolonged hospitalization;
- children can receive excessive and/or ineffective treatment; and
- methodology and approaches to diagnosing and assessing childhood conditions are not based on up-to-date clinical guidelines; this is mostly related to an excessive number of diagnoses of neurological conditions in children based on weak concepts, leading to prolonged and excessive treatment for *neurological pathological conditions*.

The findings of the hospital assessment were published in the *Lancet*, 2006: *Quality of hospital care for children in Kazakhstan, Moldova, and Russia: systematic observational assessment*. The participants to the consultation were given a translated version of this article.

Discussion

Participants brought up the major reasons for this methodology still being used for child health care:

- In the old USSR, all sick infants were admitted to hospital. Nowadays, hospitalization has been considerably restricted; however, the number of beds available remains unchanged, with the need for complete hospital bed usage resulting in unnecessary and prolonged hospitalization of children. This practice is wide-spread in the Russian Federation and is still current in the Ukraine (UKR) and KAZ as well as in Georgia (GEO). It is less wide-spread in the MDA and Armenia (ARM) (where the number of beds has been reduced).
- Health system and welfare regulations that tie the duration of hospitalization to insurance or financial reimbursement make prolonged stays of children beneficial. This is particularly true of the RUS, Belarus (BLR) and KAZ, but less evident in ARM, MDA, Uzbekistan (UZB) and Turkmenistan (TKM) – countries where insurance reimbursement does not exist.
- There is a lack of evidence-based clinical guidelines, regulations and *prikazes* that meet international requirements. This is common to all countries, and has been mentioned by all speakers.

6.2 Common neurological conditions in the European region: issues in definition and epidemiology

6.2.1 Idiopathic intracranial hypertension: definition and diagnosis on a forthcoming UNK survey of new cases (C. Kennedy)

Data on definition, clinical treatment, epidemiology and approaches to therapy of *idiopathic IH* were presented. It was emphasized that this illness differs from *symptomatically acute IH* associated with acute illnesses such as brain tumours, traumas and infections (meningitis), which require immediate measures to reduce the pressure. Periodic fits are characteristic of idiopathic hypertension. Intracranial hypertension can be identified by measuring intracranial pressure.

Discussion

Participants felt that the following issues needed to be considered: the role of ventricular dilatation and hypertension; probability of development of chronic IH as a result of ventricular dilatation; possibility of diagnosing hypertension based on data provided by neuro-sonography and magnetic resonance imaging (MRI); and the need to carry out these tests on all newborns and infants to allow diagnosis.

Emphasis was placed on clinical manifestations of IH. Some clinical symptoms, such as possetting, insignificant increase in muscle tone and trepidation, are wrongly used to diagnose IH, resulting in high rates of inadequate diagnoses.

The discussion included approaches to therapy, in particular dehydration therapy. Professor Kennedy said that the evidence-based multicentre trial has not shown the efficacy of dehydration drugs, particularly carbamazepine (diacarb) used to relieve intracranial pressure. This resulted in a negative reaction from some participants, followed by an animated discussion as neurologists pointed out the clinical effects of prolonged use of similar drugs in treatment of hydrocephalus and IH.

6.2.2 Common neurological conditions in RUS: definition and epidemiology (V. P. Zykov)

Professor Zykov made a presentation on the most wide-spread neurological conditions in children, approaches to diagnoses and treatment used in RUS. On the one hand, he pointed out that organic pathology related to perinatal damage, such as birth trauma, intraventricular haemorrhage, periventricular leukomalacia and ischemic stroke, can manifest themselves in premature infants and in the vast majority of cases lead to cerebral palsy, mental retardation, sensorineural lesion, epilepsy and childhood disability. On the other hand, there is over-diagnosis of neurological conditions in young children who show slight neurobehavioral disorders; for instance, perinatal encephalopathy is diagnosed without any obvious clinical symptoms. Professor Zykov highlighted the importance of keeping control over the ventricular dynamics and the necessity of neonatal neuro-sonography screening.

Discussion

Participants exchanged opinions on advisability of NSG screening and approaches to therapy. WHO-Europe experts expressed doubts that the use of drugs such as Cortexin, Cerebrolysin, and B vitamins, etc., is evidence-based. The effectiveness of these drugs has been proven through clinical empirical experience, non-evidenced based scientific papers and doctors' experiences in caring for severe cases. No restrictions on the age-specific administration of these drugs have been identified (however, it is important to establish whether it is reasonable to use these drugs in the neonatal period or for motor disturbances resulting from organic brain damage).

6.2.3 Common neurological conditions in Armenia: definition and epidemiology (V. Jaladyan)

Dr Jaladyan presented results from the Republican Paediatric Epilepsy Centre in ARM. She showed how such centres help improve diagnoses, develop approaches to therapy, promote the use of nationally approved clinical guidelines and protocols, as well as disseminate experience. All this contributes to stricter approaches to diagnoses and differential therapies able to prolong remission and reduce disability. It is obvious that the health care system in ARM has improved both through modernisation and practical experience.

Discussion

The various approaches to therapy were brought up. Special emphasis was put on the use of Phenobarbital in treating seizures in children and how long treatment should last. To prevent onset of epilepsy, most CIS neurologists administer Phenobarbital during its first year to a child who has experienced seizures in the neonatal period. Dr M Weber presented findings from epidemiological trials showing that preventive use of Phenobarbital does not reduce the frequency of subsequent seizures but may even increase these. Besides, the prolonged use of Phenobarbital can lower the amount of calcium in the blood. Calcium is accumulated in the kidneys, causing formation of calcified concretions; i.e., the therapy is not safe and has an insufficient effect on basic pathologic condition.

6.2.4 Hydrocephalus prevalence and outcome in a Swedish population-based cohort of children born between 1989-1998 (H. Hartmann)

Dr Hartmann presented epidemiological data on incidence and treatment of hydrocephalus in Swedish children based on publications by a Gothenburg group. Overall incidence was calculated as 0.66 per 1000 live births in the study cohort 1999-2002. The most common causes of hydrocephalus in preterm infants are intra-ventricular haemorrhages and in term infants meningomyelocele and other malformations. There was a slight increase in the trend in preterms associated with better survival of very low birth weight infants and a decrease in term infants attributed to prenatal diagnosis of malformations and termination of pregnancy. In the majority of infants, a ventriculo-peritoneal shunt was inserted, while in a minority endoscopic third ventriculostomy was performed. A high incidence of complications required shunt revisions.

Discussion

A number of issues were raised, such as the importance and availability of imaging – neurosonography and MRI – in diagnosing hydrocephalus, problems with treatments, particularly indications for operative or conservative therapy. Disputes arose regarding a role for diuretic therapy. Different opinions were raised regarding operative measures, particularly in the neonatal period, and cases when spontaneous compensation is possible.

6.2.5 Epidemiology and classification of cerebral palsy – data from *Surveillance of cerebral palsy in Europe* (SCPE) (H. Hartmann)

Dr Hartmann presented data on epidemiology of cerebral palsy in Europe and the diagnostic and classification algorithm put forward by SCPE.

Discussion:

The issue of age at diagnosis of cerebral palsy and therapy was raised. Regarding the latter, the rationale for drug treatment, terms of therapy, use of physiotherapy and various massage techniques were discussed. The St Petersburg neuro-paediatricians presented the results of their observations on the efficacy of the Vojta method and reflex-therapy.

6.2.6 Introduction to evidence-based clinical practice: tools and methods (G. Tamburlini)

Dr Tamburlini reported on modern guidelines, methodology for the development of principles and treatment patterns based on the findings of large multicentre blind randomised trials on medical issue approaches which may be doubtful. Doubts towards traditional guidelines, principles of maximum safety and efficient therapy constitute the basis for a modern approach to developing evidence-based clinical practices.

6.3 Examples of evidence-based approaches to current issues of paediatric neurology

6.3.1 Diuretic therapy for newborn infants with post-haemorrhagic ventricular dilatation: international trial and systematic review (C. Kennedy)

Dr Kennedy presented an important evidence-based report using the results of the above international trial and facts for maximum objectiveness. The findings of the trial prove that diuretic therapy is inefficient for reducing ventricular dilatation and preventing post-

haemorrhagic hydrocephalus. Further, it can cause severe long-term effects. Special attention needs to be paid to the adverse effects that can result from prolonged use of high dosages.

Discussion

Despite its persuasive and evidence-based material, the report raises serious doubts. Neurologists from BLR, MDA and St Petersburg suggested a less absolute denial of diuretic therapy for post-haemorrhagic ventricular dilatation. The discussion was complicated by the absence of precise pathology type definitions. It was difficult to reach consensus on types of ventricular dilatation – whether hydrocephalus formed during an acute period of haemorrhage or slight, i.e., not severe, ventricular dilatation usually treated over several months by Diacarb. Neurologists prescribe this drug continuously without asking why “the therapy is inefficacious and dilatation is not reduced”. Clinical manifestations of ventricular dilatation that do or do not require ‘drug treatment’, diagnosis issues, the role of neuro-sonography and how frequently it should be carried out were also debated.

All these issues caused disputes and disagreements, though less heated than earlier in the session. It was obvious that the majority of participants had doubts regarding what has to date been their usual practices and felt the need to consider introducing changes. Besides, some countries, such as ARM, RUS (Moscow Research Institute of Paediatrics and Paediatric Surgery), UKR and KAZ have already altered their clinical practices to include these changes although these have not yet been regulated by national level up-dated clinical guidelines or *prikazes* yet.

6.3.2 Febrile seizures – evolution of treatment (G. Tamburlini)

Dr Tamburlini reported on changes in the concept of correct diagnosis and treatment in Italy over the last 30 years. Neurologists doubted the correctness of existing approaches, were not satisfied with findings and continued their trials. The result showed that febrile seizures in infants are quite frequent, represent a benign pathology associated with hyperthermia caused by acute viral infection defined by the stimulation of cerebral bioelectric activity. These symptoms do not require specific investigation or prolonged treatment and do not constitute manifestations of epilepsy.

Discussion

The question was raised on whether febrile seizures are absolutely benign. Neurologists from MDA, TKM and BLR expressed doubts that children with febrile seizures do not need hospitalization. They argued whether it was reasonable to carry out encephalography and educate parents in home care for their children. Many specialists pointed out the lack of rectal Diazepam in their countries, resulting in their administering intramuscular Relanium, which has a long-delayed action and is difficult for parents to inject in children who need immediate care and cannot wait for health care staff.

Neurologists from Moscow and ARM shared their experiences in home management of febrile seizures not requiring treatment, which presupposes parents have been counselled on the benign outcome of febrile seizures and been given training. Emphasis was put on the necessity to conduct dynamic observation and the use of other types of management if febrile seizures change to non-febrile ones. Thus, educated parents should cooperate with the attending paediatrician or neurologist. This is the best way to manage childhood febrile

seizures as it involves two systems of management – the one practiced in RUS (presented by neurologist E.D. Belousova of the Research Institute of Paediatrics and Paediatric Surgery in her report) and the one put forward by Western health care system.

6.3.3 Current treatment practices of common conditions (I Iliciuc)

Dr Iliciuc reported on various approaches to management of neurological conditions used in MDA. He analysed the frequency and prevalence of diagnosing neurological conditions, particularly perinatal encephalopathy, and the use of traditional treatment practices (as used in the former USSR) based on diuretics, nootropics and Phenobarbital. Despite the long-term work of the international organisations, particularly WHO/UNICEF, MDA has not yet implemented modern health care programmes for infants, cooperated with Western countries, changed its national health care system or its approaches to diagnosis and management of neurological conditions.

6.3.4 Current treatment practices of common conditions (I Bogdanovich)

Dr Bogdanovich presented the current situation of the BLR system of neurological child care, treatment and diagnostic practices. On the whole, the system has not changed much since the USSR era.

6.4 Conclusions of Day 1

Day 1 activities were highly intense and brought up a variety of different viewpoints on evidence-based methodology regarding definitions, epidemiology and clinical treatment of common neurological conditions in children, as well as current country practices.

Day 1 showed the need for:

- standard definitions for common understanding of, and unified approaches to, assessing of childhood conditions;
- broader sharing of findings from evidence-based trials on all issues related to paediatric neurology where at present misunderstandings exist;
- definition of standards for age-specific changes in neurological status of children to allow correct assessment of their neurological condition and facilitate differentiation between norm and pathology. Normal child's development confirms the absence of perinatal affliction of the central nervous system; and
- further evidence-based research into the advisability of neuro-sonography screening of neonates and young children in order to detect neurological pathologic conditions.

Day 1 activities provided a picture of a range of neurological care services in different countries and the interventions introduced into health care systems to improve child care quality.

7 Proceedings – Day 2

7.1 Group work: Brainstorming on identification of problems and challenges in current practices

Participants were divided into five groups, each made up of representatives from different countries and professional orientation, which had a positive effect on the intensity and quality

of the group work, giving motivation to discussions, and assisting the group to reach a consensus.

Topics for group work:

- perinatal encephalopathy and IH:
 - diagnosis and epidemiology; and
 - treatment.
- seizures (febrile, neonatal and epileptic):
 - diagnosis and epidemiology; and
 - treatment.
- methods applied for diagnosing neuroimpairments (EEG, ultrasound, Echo cardiogram (CG), rheovasography, CSF analysis).

7.2 Group 1: Perinatal encephalopathy and intracranial hypertension. Diagnosis and epidemiology

- Issues considered during the session:
 - apparent high frequency of diagnosis in the CIS;
 - how long should the diagnosis affect a child and the ‘label’ remain;
 - how objective is the ‘label’ and can it predict prognosis; and
 - what is the difference between the CIS methodology and the western medical approach.

The present health care systems of the participating countries have many positive aspects, such as emphasis on health of neonates and a well-developed system of care for premature infants. Therefore, the destruction of this system and its achievements is not reasonable.

However, the system is characterised by over-diagnosis in assessing the neurological status in children, lacking a unified approach and up-to-date knowledge of the dynamics of functional development and the significance of certain symptoms (for example, the dynamics of muscle tone development, presence of trepidation, clonus, etc.).

The frequency of over-diagnosis varies between countries and regions, and even between polyclinics in the same city: MDA – 50%; St Petersburg – 50%; Moscow – 80%. Variation between polyclinics (15% to 75%) depends not on national guidelines but on a doctor’s personal understanding of the case and on polyclinic administration.

By the time a child is one year old, the diagnosis no longer affects 90% of children and severe affliction of the nervous system is diagnosed in only 5% of them. The reasons for this are simple: the unified Soviet school (Yakunin), prevalent use of neuroimaging and absence of precise criteria for normal status and pathology (the situation is better in St Petersburg). Besides, there is no integrated approach to diagnosis and assessment of psychomotor development in children.

Children are examined by a series of consultants; there is no integrated management, leading to excessive medicalization. Although it should be possible to involve several consultants, only one paediatrician should be responsible for management of a particular child.

Treatment for ‘ventriculomegaly’ is often based on the results of a cerebral ultrasound examination. Intracranial hypertension (both acute and chronic) should be treated strictly through control of ultrasound cerebral monitoring, approved by the paediatrician and neurologist of the Child Psychomotor Development Clinic and should take the child’s age into consideration.

Discussion

On the whole, participants agreed that over-diagnoses of neurological conditions exist, as well as on the reasons for different interpretations of the paediatric neurological assessment results. The key issue is the neurologist’s role in the management of a child under one year of age, whether he/she should take the main decisions on treatment, preventive immunization or anaesthesia. Prof E.D. Belousova and I.I. Ryumina (both RUS) pointed out that today neurologists’ right to decision making are exaggerated and that the leading role should be taken by the paediatrician. It is not clear why the neuropathologist should decide on immunization. The neurologist should express his/her opinion and justify the diagnosis.

The importance of neuroimaging and its role in diagnosis of IH was also discussed. Some participants supported this diagnostic approach as fundamental in reaching a correct diagnosis, while others doubted this truism. This type of dispute shows the considerable differences between assessment of a neurological condition and approaches to diagnosis.

Dr E.S. Ilyina (Moscow) mentioned that the dynamic assessment of psychomotor skills provides more information on a child’s neurological status than, for example, assessment of muscle tone. This type of assessment requires accessible rating scales and specific training to be carried out correctly. Besides, it can easily be conducted by a paediatrician or a neurologist. In some institutions, for example the Neonatal Development Centre of the Moscow Institute of Paediatrics and Paediatric Surgery (headed by Prof Elena S. Keshishian) a similar assessment is carried out by trained nurses. This approach provides for treatment of the illness (if it develops) and not ‘test results or anamnesis of the child’.

Dr L. Panasyuk (UKR) considers the rejection of the term *perinatal encephalopathy* to be illogical. The term *hypoxic-ischemic encephalopathy* diminishes the concept and can result in children with complex damage (infectious or bilirubinic genesis, etc.) being excluded from this group of patients. Prof E.D. Belousova reiterated that it is very important to differentiate between these two terms, to identify precisely the causes of brain damage to allow correct diagnosis and targeted treatment.

7.3 Group 2: Perinatal encephalopathy and intracranial hypertension - treatment

Issues considered during the session:

- the evidence for the phase-specific treatment of PE or IH;
- the evidence for the use of:
 - diuretics;
 - vitamins;
 - minerals;
 - corticoids;
 - rheological substances; and
 - neurotransmitters, enzymes and ‘cerebrolysin’.

- potential for harm.

Definition: PE and IH are separate nosologic items:

- PE: acute neurological syndrome diagnosed during the first 24 hours after birth; and
- IH: clinical symptoms associated with the increased intracranial pressure.

Treatment for PE:

- acute phase:
 - effective ventilation;
 - maintenance of blood circulation;
 - prevention of hyperthermia;
 - maintenance of normal blood glucose level;
 - maintenance of electrolyte balance;
 - prevention of hypo- and hypervolemia; and
 - rooming-in of mother and child.
- post-acute phase:
 - treatment for seizures, antiepileptic drugs
 - early aftercare in case of motor disturbances
- treatment for IH:
 - no evidence of efficacy of conservative treatment;
 - diuretics: no evidence;
 - vitamins: no evidence except for pyridoxine-dependent seizures;
 - minerals: for electrolyte imbalance;
 - corticoids: no evidence; and
 - neurotransmitters, enzymes and “cerebrolysin”: no evidence
- potential for harm:
 - diuretics: high risk;
 - vitamins: in case of overdose;
 - minerals: administration without monitoring;
 - corticoids: high risk;
 - rheological substances: high risk, depending on composition; and
 - neurotransmitters, enzymes and “cerebrolysin”: high risk.

Solutions presented by Group 2 showed a high level of awareness regarding treatment and identification of PE and IH. Data on treatment conform to modern guidelines based on international evidence-based trials.

Discussion

Some participants defended current treatment of organic damage of central nervous system in children using Cerebrolysin and Cortexin, both widely-used drugs that have undergone scientific tests and whose efficacy is considered to have been proven, as well as continued

treatment with diuretics. However, the issue was raised that, based on modern medical standards, several of these treatments have not been properly validated.

7.4 Group 3: Seizures (febrile, neonatal and epilepsy). Diagnosis and epidemiology

Issues considered during the session:

- apparent high frequency of diagnosis in the CIS;
- how long should the diagnosis affect a child and the 'label' remain;
- how objective is the 'label' and can it predict prognosis; and
- what is the difference between the CIS methodology and the western medical approach:
 - lack of data on prevalence of epileptic syndromes and febrile seizures;
 - lack of unified approaches among paediatricians, neonatologists and neurologists to definition of seizures;
 - febrile seizures, neonatal seizures and epileptic syndromes need to be distinguished for proper diagnosis, hospitalization, examination, treatment and monitoring;
 - with regard to how long such a diagnosis should affect a child, there is no unified approach (anywhere from 1 month to 18 years) and no criteria for cessation of follow-up care;
 - there is a stereotype mentality of doctors and parents regarding the diagnosis 'febrile seizures' or 'epilepsy' and predicted prognosis; and
 - there is a difference in approaches to diagnosis, treatment, and follow-up in CIS and other countries.

Requirements:

- epidemiological trials;
- formation of a unified approach among different specialists;
- awareness among health care staff and training of parents; and
- system for control of the situation.

All participants shared their views on the issue. The basic point brought up during discussion considered the terms under which the child is affected by the diagnosis after episodes of seizures in the neonatal period and prolonged remission in case of epilepsy. It is essential to develop and agree upon universal criteria for cessation of follow-up to provide a unified approach to epidemiological trials.

7.5 Group 4: Seizures (febrile, neonatal and epileptic syndrome). Treatment

Issues considered during the session:

- what is the evidence for the treatment of 'epilepsy syndromes';
 - what is the evidence for prophylactic treatment of children with 'epileptic syndrome'; and
 - what is the evidence for the use of
 - Difenin;
 - Papaverin;
-

- Borax;
 - Ca glucinate
 - Trimetin;
 - Dehydration therapy; and
 - Prednisolone.
- what is the potential for harm?

There is no diagnosis for 'epileptic syndrome'. Before initiating treatment, it will be necessary to identify the type of epilepsy. In some countries, due to lack of rectal diazepam intercurrent prophylactic, Phenobarbital is used to treat febrile seizures. Patients are hospitalized. Treatment varies depending on the cause of illness: it is possible not to treat dysmetabolic seizures. There are certain difficulties in identifying the duration of treatment. In Tajikistan (TJK), a mixture with citral is applied. Basic drugs used are as follows: valproate, carbamazepine, brand name and generic, depending on the type of epilepsy. Duration of treatment also varies. Difenin, papaverin, borax and trimetin are not administered. In some countries, dehydration therapy and Ca glucinate are used. Prednisolone is administered on rare occasions for certain types of epileptic encephalopathy.

Prophylactic treatment of epilepsy does not exist. Antiepileptic treatment can harm the patient. Inadequate dosage and combination of drugs can lead to side effects. It is necessary to identify concentration of antiepileptic drugs in blood irrespective of presence or absence of side effects. Medical treatment is combined with observation of regime practices: sufficient sleep, restriction of time spent in front of computer or television, exposure to light. In TJK, empirical remedies are used, such as porcupine and rabbit meat, low-salt diet and fluid restriction.

Information sources on treatment of epilepsy: recommendations of Moscow and St Petersburg schools; data presented in the international literature; findings of national trials; and personal experience of the doctor.

Discussion

There were not many disputes regarding the treatment of epilepsy. Participants were interested in empirical remedies that are widespread in Asian countries. Dr Sh.F. Rajabaliyev (TJK) elaborated on this topic. However, it was questioned whether all these treatment conform to modern medical care and it was felt that several treatment modalities were not evidence-based.

7.6 Group 5: Use of diagnostic aids for the diagnosis of neurological syndromes (EEG, ultrasound, Echo CG, rheovasography, CSF analysis)

Issues considered during the session:

- which diagnostic modalities are routinely used in the diagnosis and classification of neurological diseases? and
 - what is the evidence for the usefulness or classification and prognostic purposes and as a guide treatment of:
 - EEG;
 - ultrasound;
 - Echo CG;
 - rheovasography; and
-

– CSF analysis.

- what is the potential for harm?

Objectives of diagnosis in paediatric neurology are as follows: identify common mistakes in paediatric neurology and prevent under- and overdiagnosis. Possible solutions considered included making the child's head 'transparent' to doctors.

Algorithm of neurological examination of a child:

1. primary neuro-sonography (93% in infants); and
2. further management depends on neuro-sonography data:

To specify structural damage, apply differential methods as follows: Computer tomography for acute haemorrhage, congenital abnormality, ventriculomegaly; MRI for brain dysgenesis, damage to white matter, tumours and vascular malformations; EEG (daily) monitoring for episodes of seizures; and CSF analysis for meningeal syndrome. Exclude rheovasography and one dimensional Echo CG.

Conclusion: introduce *mobile neuroimaging* into doctors' daily practice, irrespective of age: screening – instant diagnosis. Suggestion: taking into consideration that mobile neuroimaging technology is highly promising, listen to the presentation on this topic during the plenary.

Discussion

Participants debated the advisability of neuro-encephalography screening of all neonates, irrespective of their health status. Dr A Bacci wondered whether this approach was really helpful in identifying the pathology. She was concerned with the economic implications and proposed ways of managing neonates in whom any relative pathology without clinical manifestation was identified.

The group speaker did not have a precise answer to this question. It is probable that the suggestion of conducting universal screening is based on the habitual practice of doctors and parents who prefer using high technology testing methods to assess an infant's status and development, which can provide clear ways of correcting its condition.

The suggestion regarding the presentation of 'mobile neuroimaging' technology aroused interest but could not be investigated due to lack of time in view of the strict programme schedule of the. The correlation of neuroimaging findings with conditions which needed to be rated was doubted.

7.7 Summary of the brainstorming (M Weber)

Summarising the group work, Dr Weber pointed out that participants had been extremely active and were fully aware of the importance of the issues discussed; they had easily focused on the most important points, such as approaches to diagnosis, the role of neuroimaging, development of clinical guidelines and standards based on evidence. He highlighted that the group work, as well as the participation of the audience in discussing the results, showed that country representatives have an interest in finding solutions to the issues, namely, improving the care for children with neurological pathologic conditions, through decrease of excessive medicalization resulting from over-diagnosis of neurological pathologic conditions. There is growing awareness that diagnoses, treatment and concepts need to be revised.

7.8 Plenary session

7.8.1 Current classification (DSM; ICD 10) (T Dua)

Dr Dua reported on the existing international classifications of diseases, their peculiarities, advantages and the disadvantages that require review. Use of international classification of diseases allows carrying out of epidemiological comparisons of frequency and prevalence of different types of diseases. If any type of disease is prevalent in a region where it is not endemic, in-depth analysis can help identify reasons for and validity of the diagnoses made. This can also be applied to management of neurological conditions in children.

7.8.2 How to decrease overmedicalization of care in the management of newborn neuro-behavioural conditions (G-P Chiaffoni)

Dr G-P Chiaffoni discussed selected patterns of observed overmedicalization of neonatal neurobehavioral conditions leading to inappropriate treatments. He presented available WHO-Europe *Essential Perinatal Care* training materials, which have proven useful in decreasing neonatal neurological overmedicalization. Specific attention was given to a number of experiences of hands-on training in this area, successfully combined with formal presentations and case studies. It was recommended that this approach be promoted, reinforcing holistic care, with specific attention to avoiding separating infant and mother, promoting breastfeeding and shortening hospital stays.

Discussion

Dr N.V. Podolchak (UKR) confirmed the above statements. In her report, she showed that introduction of MPS methods, careful management of delivery, presence of partners and continuous contact between mother and infant accelerates adaptation of neonates. This experience has helped doctors change their understanding of the concept of adaptation and pathologic neurobehavioral reactions.

A series of questions put to Dr Chiaffoni concerned specific situations in which he used drugs in treatment. For example, when is it necessary to use intramuscular injections of magnesium sulphate in neonates? Dr Chiaffoni replied that, at present, this method is not recommended at all. When answering other questions, he discussed the appropriate treatment of neonatal seizures using Phenobarbital, non-pharmacological pain relief in neonatal care and effects on neonates of drugs administered to the mother.

7.8.3 Guidelines on infant epilepsy, including neonatal seizures (T. Dua)

Dr T. Dua presented new clinical guidelines for childhood epilepsy and neonatal seizures.

Discussion

Participants brought up the necessity of disseminating these clinical guidelines and develop national protocols based on them.

Prof E.D. Belousova (Moscow Institute of Paediatrics and Paediatric Surgery) pointed out that pharmaceutical companies lobby intensely to have the majority of such drugs used. After registration, the drugs do not undergo sufficient clinical trials, therefore, their efficacy has only 1-2 level of evidence. Besides, most drugs are used for certain pathologies without proper evidence of their efficacy, often on the basis of 'doctor's experience'. Also discussed

were issues of the advisability of simultaneously using several drugs, duration of treatment and criteria for discontinuing use of drugs in management of children with epilepsy.

It is important to use joint protocols when conducting trials in countries ready to adopt international protocols and standards of treatment. It was felt reasonable that these protocols be developed jointly with research institutes so that subsequent trials can be approved by Ministries of Health and used as the basis for developing national protocols. This idea was supported by specialists from ARM, as well as Drs M. Weber and H. Hartmann, who pointed out that drug lobbying is a worldwide problem, handled by a number of countries and, in particular, by WHO through setting up of independent commissions to control clinical trials, their results and demonstrable evidence-based efficacy of drugs and treatment patterns.

7.9 Group work. Session 6. Addressing the gaps and possible solutions. Which gaps can we define ... and how do we cross them?

7.9.1 Group 1. Implementation of international classifications and terminology in paediatric neurology

- Differences between DSM, ICD 10 classification and terminology used in the CIS.
- What epidemiological data do we have?
- What evidence do we have?
- Issues considered during the session:
 - do you consider ICD 10 classifications to be useful?
 - do you already work with ICD 10 or DSM classifications?
 - are epidemiological data collected in your country and, if yes, in which way?
 - if no, are you interested in using such data and what problems do you foresee when introducing them?
 - what input should WHO or other international groups, i.e., ILAE, give?

DSM classifications are exclusively used by psychiatrists. ICD 10 classifications have been approved and are used by paediatricians and neurologists. Two classes of diseases are exceptions: *neuroses* and *attention deficit hyperactivity syndrome in children* (ADHS). According to ICD 10, these disorders are classified as follows:

- F48.0: neurasthenia; certain types of neuroses;
- F98.4: stereotyped movement disorders: hair plucking, onychophagy (nail biting);
- F63.3: trichotillomania; and
- F95: tic disorders refer to psychiatry but children suffering from these disorders are managed by paediatric neurologists.

This is the identical situation to that of ADHS that has a rather higher prevalence. According to ICD 10, ADHS refers to F90-F98: *behavioural and emotional disorders with onset occurring in childhood and adolescence* (F90: *hyperkinetic disorder*; and F90.0: *disturbance of activity and attention*). DSM IV distinguishes three types of ADHS: *prevalence of inattention*, *prevalence of hyperactivity* and *impulsivity, mixed type*.

Epidemiological data are collected at all levels. However, data are relative since the diagnoses do not conform to ICD codes, making it necessary to adapt diagnoses to classification codes. This means there is a lack of unified definitions, diagnoses and terms (G93.4: *encephalopathy, unspecified*). Some countries (e.g., GEO) practice funding of certain nosologies, resulting in doctors altering the true clinical picture: in case of overlapping

symptoms, only the primary diagnosis is encoded. (Example: gestation 30 weeks, IVH 3, pneumonia encoded as intra-ventricular haemorrhage). It is impossible to correctly encode diagnoses for premature infants. ADHS is a great social problem: in 1986-1993, it occurred in 5-17% of children in bulk population (Moscow, L.O. Badalyan and N.I. Zavadenko). In St Petersburg and north-western regions of RUS, prevalence is estimated at 175 cases per 1000 children (G.A. Suslova, 2001). Collecting epidemiological data is necessary to tackle issues related to paediatric neurology.

Participants suggested that WHO and other international groups, such as ILAE, should support these corrections in the next edition of the ICD. Data should be collected based on international definitions of neurological terms in order to develop unified concepts. Training courses facilitated by top specialists on WHO clinical guidelines will be necessary to develop a unified approach and improve the quality of care.

Discussion

Participants agreed on the difficulties inherent in using ICD 10; on the one hand, inconformity of diagnoses and, on the other, appearance of new nosological units (for example, low weight post-neonatal infants).

7.9.2 Group 2. Evidence-based medicine for perinatal encephalopathy

Issues considered during the session:

- Do you consider the principles of evidence-based medicine to be useful?
- Do you work with evidence-based guidelines already?
- If not, are you interested in using them and what problems do you foresee when introducing them?
- What input should WHO or other international groups – ie ILAE – give?

The group came up with the following suggestions:

- Identify problems in management of neurological conditions in children as a priority within the bilateral cooperation between CIS, WHO and other international organizations.
- Organisation of an orientation meeting to promote policies for solving current problems, with the participation of representatives from interested countries.
- Carrying out of situation analysis.
- Support national working groups through counselling assistance.
- Conduct training in development of evidence-based clinical guidelines.
- Technical support and funding from WHO and international groups.
- Develop monitoring indicators for identifying problems.

7.9.3 Group 3. Evidence-based medicine for seizures and epilepsy

Issues considered during the session:

- Do you consider the principles of evidence-based medicine (EBM) to be useful?
 - Do you work with evidence-based clinical guidelines already?
 - If not, are you interested in using them and what problems do you foresee when introducing them?
 - What should be the input from WHO or other international groups – i.e., ILAE?
-

The group agreed that two types of medicine coexist: evidence-based (minority) and experience-based – or non-evidence-based – medicine (vast majority). Most health care institutions do not adopt EBM.

Requirements for implementation of EBM:

- availability of evidence-based clinical guidelines;
- adaptation of guidelines to suit specific country needs; and
- support from Ministry of Health (MoH).

Disincentives to introduction of evidence-based clinical guidelines into clinical practice are seen as:

- inflexible mentality of doctors;
- doubts regarding the need for evidence-based principles;
- low awareness of primary health care staff regarding the existence and/or advantages of EBM;
- lack or shortage of specialists trained in EBM; and
- influence of pharmaceutical companies on decision-making.

Possible solutions:

- adaptation and approval of clinical guidelines at the national level;
- introduction of evidence-based clinical guidelines into the medical educational system;
- widespread dissemination of knowledge;
- WHO assistance during implementation;
- evaluation of specific country needs;
- adaptation of evidence-based clinical guidelines on management of epilepsy to country needs;
- promotion of application by all specialists of ILAE epilepsy classification;
- introduction/implementation of evidence-based principles into routine clinical practice;
- introduction of evidence-based principles into curriculum of medical educational system and post-graduate training; and
- training of trainers for ‘cascade’ courses in EBM.

7.9.4 Group 4. The role of paediatric neurology in paediatric health care and primary, secondary and tertiary care

Issues considered during the session:

- should all children with neurological disorders be cared for by a paediatric neurologist?
 - can we define criteria for hospitalization of children with neurological disorders, especially:
 - IH;
 - seizures; and
 - epilepsy.
 - can we define criteria for referral to a tertiary care unit?
-

- in CIS countries, children with neurological symptoms are examined and managed by neurologists; this practice requires revision; and
- age-specific neurological conditions that do not require treatment can be managed by paediatricians (general practitioners) competent in neurological issues.

- can we define criteria for hospitalization of children with neurological disorders?
 - children should be hospitalised with:
 - true IH is caused by severe neurological conditions such as haemorrhages, tumours, etc.), a very rare condition;
 - seizures associated with general brain symptoms and developing focal neurological symptoms;
 - epilepsy: severe catastrophic forms associated with development regress; and
 - ambiguous symptoms and resistance to therapy.

- can we define criteria for referral to a tertiary care unit?
 - inability to set diagnosis at the previous level;
 - lack of suitable equipment and specialists at previous level;
 - rare, e.g., neurodegenerative diseases; and
 - inability to apply certain treatment methods at previous level.

At present, hospitalization is the result of inadequate practice related to over-diagnosis and use of ineffective and probably harmful treatment methods.

Discussion

The following issues were brought up as problems to be overcome: professional interest of doctors in over-diagnosis, parents favouring drug treatment, undeveloped system of parent education and counselling, lack of clinical guidelines and difficulties in training of doctors.

Further, hospitals have a large number of available beds with the result that authorities request hospitalization of children; promotion of early rehabilitation is also an issue of great importance.

Participants (representatives of UKR, KAZ, ARM, and RUS [Research Institute of Paediatrics and Paediatric Surgery]) reiterated their opinion on the inexpediency of frequent examinations of healthy children by neurologists; these should be handled by paediatricians, who can also manage some age-specific non-pathological conditions. Representatives of UKR and ARM shared their experiences. Neurologists from MDA and TJK reported on negative experiences in their countries related to lack of training that affected child care when the neurologist's function devolved to family doctors.

WHO experts pointed out that various solutions are possible: children can be cared for either by family doctors or paediatricians or jointly by paediatricians and neurologists. What is important is uniformity of approach and a universal system of education.

7.9.5 Group 5. Defining a possible training path in paediatric neurology

Issues considered during the session:

- is there a curriculum for paediatric neurology in your country?
 - what is / should be the duration of training?
-

- what modules should be obligatory?
- what additional modules are desirable?
- who is / should be examining future paediatric neurologists?
- are you familiar with the Confederation of European Specialists in Paediatrics (CESP) training syllabus?
- what kinds of support could European Paediatric Neurology Society (EPNS) or others give to promote training in your country?

Participants came up with the following answers:

- post-graduate education in paediatric neurology should address gaps and possible solutions;
 - each participating country (RUS, BLR, UKR, KAZ, TKM, KGZ, UZB, MDA and ARM) has a curriculum for paediatric neurology. Duration of the training varies:
 - primary training
 - UKR: 5 months after 3-year practice as paediatrician and 2 years of clinical residency;
 - RUS: 2 years of residency;
 - UZB: 2 years of master's degree programme; and
 - ARM: 3 years of residency.
 - duration of training (post-graduate):
 - refresher course – minimum once every 5 years; and
 - certification – once every 5 years.
 - duration of courses: from 72 to 288 hours (depending on country):
 - courses for chief medical officers (72 hours); and
 - information technologies facilitate training courses, including distance training, electronic libraries and Internet-sites.
 - who examines / should examine future paediatric neurologists?
 - examination commission, assisted by specialists of related fields (general neurologist, neonatologists).
 - suggested additional modules:
 - diagnosis: improve the level of skills in investigation and clinical interpretation of neuroimaging methodology;
 - psychology of communication with patients and parents; parent counselling skills;
 - neuropharmacology; and
 - European programme of training in paediatric neurology.
 - closer look at the programme
 - cooperation with international centres;
 - standardisation of training and assessment programmes;
 - standardisation of clinical guidelines;
 - assistance in probation of facilitators;
-

- organization of joint topical seminars;
- setting up of a working group under the EPNS to coordinate training programmes and scientific investigations; and
- creation of a site or linking to the European site.

8 Proceedings – Day 3

8.1 Session 7 – Consensus on way forward

8.1.1 Conclusions

- Incorporate the following suggestions into consultation recommendations.
- For the RUS MoH (and MoH in other countries?) – make paediatric neurology a separate specialty or subspecialty of paediatrics.
- development of the approved recommendations (by MoH and Ministries of Education) for standardisation of training, and practical implementation.

Discussion

The debate mainly focused on whether it is advisable to single out paediatric neurology as a separate specialty (suggested by Prof V.P. Zykov, with support from Prof A.S. Iova, Prof T.A. Lazebnik, and others). It was also suggested to recognize separately general specialty neurologist and its subspecialty, paediatric neurologist. Dr Tamburlini and Dr Kennedy pointed out that this issue is handled differently in different countries. In some, neurologists acquire subspecialty in neurology after the basic course in paediatrics; in others, doctors with basic neurological education acquire specialty in paediatric neurology. It has not been established which variant is best for children. It is evident that there should be a unified approach to understanding of diseases.

Dr H. Hartmann summarised the group work. He was positive in assessing the work carried out; discussions and even disputes had proven interesting to participants and helpful in assisting them to thoroughly understand the situation.

International organisations can contribute to improving child care by providing materials, disseminating the results of scientific investigations and scientific articles on paediatric neurology, diagnostic, treatment and assessment of childhood conditions.

8.1.2 Recommendations

The participants to the Inter-country technical consultation on management of neurological conditions in children, based on assessment of paediatric hospital care in MDA, RUS and KAZ and on presentations on current management of common neonatal and paediatric neurological conditions in the CIS countries:

- recognize that, although there are many exceptions, the management of common neurological conditions in children is often suboptimal due to over-diagnosis of conditions such as hypoxic ischemic encephalopathy or ICH, diagnosis of ill defined conditions such as perinatal encephalopathy, myotonic syndrome, epileptic syndrome, etc., and inappropriate use of drugs and therapies. This results in unnecessary and prolonged hospitalization, potential harmful for children,
-

- inappropriate labelling of normal children as abnormal, unnecessary stress and suffering for the child, and an extra burden on the family and health system;
- recognize that the main reasons for this situation are: low compliance with international classification systems such as ICD 10; lack of evidence-based clinical guidelines; health system and welfare regulations that tie duration of admission to insurance or financial reimbursement; labelling of children as suffering from chronic pathological conditions as entitlement to welfare benefits; professional interests in keeping high the number of patients; lack of uniformity among child health professionals such as neonatologists, paediatricians and child neurologists insufficient consideration of children's rights and best interests; inadequate or out of date training; and
 - recognize that in many countries there have already been some encouraging improvements in the management of common neurological conditions in newborn infants as a result of WHO action aimed at improving perinatal care through on-the-job training and joint revision of clinical guidelines for neonatal care.

Consensus was reached among participants that current practices, as well as organization of clinical services, need to be revised based on international classifications, scientific evidence and cost/benefit considerations, each adapted to local health system characteristics.

Participants encourage CIS countries through the MoH, professional organizations and, in particular, neonatologists, paediatricians and child neurologists, as well as other relevant parties, to take action in the following directions:

- set up technical working groups, made up of representatives from the various professionals involved, with the objective of revising classifications, harmonizing them to international standards, and developing clinical guidelines on hypoxic ischemic encephalopathy, ICH and hydrocephalus, febrile convulsions and epilepsy;
- clinical guidelines should set out appropriate use of drugs, particularly psychotropic drugs and anticonvulsants, and diagnostic equipment, such as neuroimaging techniques, EEG, and others.
- clinical guidelines should be complemented by careful assessment and reconsideration of current health system regulations and welfare benefit systems so to avoid incentives to over-diagnosis and overtreatment;
- technical collaboration in areas such as epidemiology and management of the above conditions, both for exchange of experiences and training purposes, should be set up among countries throughout the WHO European Member States;
- professional associations, such as the International Paediatric Association, EPNS, as well tertiary care centres in the United Kingdom, Germany and Italy represented at the consultation, can be supportive by offering technical support and opportunities for training;
- participants commit themselves to take action within their own countries to put forward this agenda in the best interest of the child; and

There were no disagreements between participants regarding the proposed draft of conclusions and recommendations and suggested changes were mostly related to style rather than core decisions taken. Even though an agreement on all issues in management of neurological childhood conditions was not worked out, there is a consensus on the way

forward to improve current practices and, as such, the main goal of the technical consultation was concerned to have been achieved.

Annex 1 – Programme

Day 1 – 22 May 2007

➤ **Session 1. Opening and introduction**

09:00 – 09:30	Opening speeches and introduction of participants (<i>St-P health authority, MoH/RUS, WHO</i>)	<i>Ministry of Health, the Russian Federation, St Petersburg Health Authority, WHO-Europe</i>
09:30 – 09:40	Objectives and expected results of the workshop	<i>A Kuttumuratova</i>

➤ **Session 2. Current issues in common neurological conditions**

09:40 – 10:10	Results from the hospital assessment study in EURO and vignettes for illustrative cases of neurological conditions	<i>M Weber G Tamburlini</i>
10:10 – 10:40	Discussion	
11:10 – 13:00	Common neurological conditions in the European region: issues in definition and epidemiology	
	Idiopathic intracranial hypertension: definition and diagnosis on a forthcoming UNK survey of new cases	<i>C Kennedy</i>
	Common neurological conditions in the Russian Federation: definition and epidemiology	<i>V. Zykov</i>
	Common neurological conditions in Armenia: definition and epidemiology	<i>V Jaladyan</i>
	Hydrocephalus prevalence and outcome in a Swedish population-based cohort of children born in 1989-1998	<i>H Hartmann</i>
	Epidemiology and classification of cerebral palsy – data from surveillance of cerebral palsy in Europe work	<i>H Hartmann</i>
13:00 – 14:00	Discussion	

➤ **Session 3. An evidence-based approach to the clinical management of common neurological conditions**

14:00 - 15:30	Introduction to evidence-based clinical practice : tools and methods	<i>G Tamburlini</i>
	Examples of evidence-based approaches to current issues in paediatric neurology	

	Diuretic therapy for newborn infants with posthemorrhagic ventricular dilatation: international trial and systematic review	<i>C Kennedy</i>
	Febrile seizures – evolution of treatment	<i>G Tamburlini</i>
	Current treatment practices of common conditions- Republic of Moldova	<i>I Iliciuc</i>
16:00 – 17:00	Current treatment practices of common conditions - Belarus	<i>I Bogdanovich</i>
17:00 – 17:30	Discussion	

Day 2, 23 May

➤ **Session 4. Group work: Brainstorming on identification of problems and challenges in current practices**

09:00 – 10:00	Group work	<i>Facilitator: M Weber</i>
10:00 – 11:00	Summary of the brainstorming	

➤ **Session 5. Plenary: Current efforts to introduce evidence-based practice in countries**

11:30 – 13:00	Current classification (DSM; ICD 10)	<i>T Dua</i>
	How to decrease overmedicalization of care in the management of newborn neuro-behavioral conditions	<i>G-P Chiaffoni</i>
	Guidelines on children epilepsy including neonatal seizures	<i>T Dua</i>
	Discussion	

➤ **Session 6. Group work: Addressing the gaps and possible solutions**

14:00 – 17:30	Group work	<i>Facilitator: H Hartmann</i>
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Day 3, 24 May

➤ **Session 7. Consensus on way forward**

09:00 – 10:30	Presentations of group work and discussion	
11:30 – 13:00	Proposed declaration (policy statement) and discussion	<i>Facilitator: G Tamburlini</i>
14:00 – 15:00	Closing	

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