



## **Rules, Regulations, Guidelines and Curriculum for Fellowship in Pediatric Neurology under the aegis of Indian Academy of Pediatrics, Neurology Chapter**

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## **Section I**

### **Statement of Goals and Specification of Objectives**

#### **A. Eligibility and Organization**

##### **Trainee:**

Any student of Indian nationality who has completed the **M.D / D.N.B** course in Pediatrics from a **Medical Council of India or State Medical Council recognized University** in India is eligible for this fellowship program. Preference would be accorded to MD / DNB passed Candidates. If such candidates are not available then a DCh qualified candidate may be selected for the course . While the course tenure would be **one year for MD / DNB candidates**. At the time of application the trainee would have to produce – 1) A bonafide certificate from the Head of Department of Pediatrics of his / her institution where he / she has completed the post graduate training in Pediatrics, 2) Photocopies of the certificate of the post graduate degree from the University concerned, and 3) Certificate of registration with the appropriate State Medical Council or Medical council of India.

Any foreign student or a non-resident Indian student who wishes to apply should be a degree holder in Pediatrics post-graduate training and would have to produce a bonafide certificate from the Head of Department of Pediatrics of his / her institution where he / she has completed the post graduate training in Pediatrics, along with photocopies of the certificate of post graduate degree from the University concerned. The undergraduate and postgraduate degrees should be **recognized by the Medical council of India**.

All trainees joining the Neurology fellowship program shall work as Full Time Residents during the period of training for one year/

##### **Institution:**

The institution that wishes to take up the Fellowship program should be able to fulfill the following criteria:

1. The Institution should be in existence with a PEDIATRIC NEUROLOGY DEPT/ Unit for **at least five years**.
2. The institution should have a Pediatric Neurology Unit/ department, which provides tertiary level care to Children with Neurologic disorders. The PEDIATRIC NEUROLOGY DEPT/UNIT should fulfill the following criteria:
  - a) At least 10 separate beds
  - b) Faculty with a Professor of Pediatric neurology , Associate professor and an assistant professor
  - c) Separate EEG machine with technician dedicated for doing pediatric EEG
  - d) Complete Electrophysiology Lab
  - e) Facility for doing physiotherapy and speech therapy.
  - f) Intensive care facility.
  - g) At least two OP per week with minimum attendance of 30 per week
  - h) Standard equipment for procedures such as lumbar tap,
  - i) 24- hr service of X-rays ,CT scan and MRI in the attached Hospital
  - j) 24-hr service for basic laboratory investigations

- k) At least 30 admissions every month
- l) **At least two** fulltime or honorary staff members who have completed either MD/DNB peditrics with **DM** in Neurology / pediatric Neurology (Recognized by MCI) with **at least five years** of postgraduate practice or **MD / DNB in Pediatrics** with **at least ten years** of post graduate practice with fellowship training of 2 yrs in pediatric neurology at a reputed national or international centre.
- m) A **ratio of one qualified (as above) teacher to one fellowship candidate** is necessary
- n) **All teachers** at the Institute should be **Life members of Central IAP** (They are required to furnish their Life membership number) and Neurology chapter of IAP .
- o) **All fellowship candidates** must also be **Life members of Central IAP and Neurology chapter of IAP.**

3. The institution should have a full fledged pediatric department and neurosurgery dept.

4. The institution should also be providing the following services to children either within its premises or have a link-up with another institute for the following services:

a) Ophthalmologic evaluation of children who require it

5. Auditory evaluation

6. institute should be **registered** with the **local health authorities.**

**Only three new institutes** will be enrolled as centers for fellowship training **every year** and the **selection and allotment of seats will be based on inspection of the institutes** by a team of one / two inspectors appointed by the IAP neurology chapter. The cost of travel and lodging of the inspectors will be the responsibility of the applying institutes, irrespective of their enrollment or otherwise as fellowship Institutes. An Institute scoring system is in place, and if there are more than three applicants, then the three highest scoring Institutes will be accorded the fellowship program

#### **B. a) Goal**

The goal of Neurology Fellowship program is to provide specialized training in Neurology to produce competency in all the various fields of medical management of children with Neurological disorders, by obtaining specialized training in Institutions that have specialized Neurology departments with the above specifications, over a stipulated period of one year. These specialists will be capable of providing subsequent such care of children with Neurological disorders in the community as well as clinical tertiary care centers. They shall recognize the health needs of the community and carry out professional obligations ethically and in keeping with the objectives of the National Health Policy.

#### **C. OBJECTIVES**

D. The aim of the course is to impart thorough and comprehensive training to the candidate in the various aspects of the specialty to enable him:

E. 1. To function as Faculty/consultants in the specialty

F. 2. to plan and set up independent Pediatric Neurology Unit catering to clinical and investigative Pediatric Neurology

G. 3. To carry out and help in conducting applied research in Neurosciences.

H. The candidate should gain knowledge, learn skills, and solve problems related to all common pediatric neurology disorders. Upon successful completion of program, the trainee should demonstrate competence in the following areas:

I. A) Knowledge:

J. - Anatomy, physiology, and embryology of the central and peripheral nervous system.

K. - Pathophysiology, diagnosis, management, and prognoses of children presenting with developmental delay or regression, cerebral palsy, mental retardation, epilepsy, head injury, headache, stroke, metabolic disorders, neuromuscular problems and movement disorders in children.

L. - Acute management of seizures, coma, and raised intracranial pressure and other neurological emergencies including ventilation, plasmapheresis etc.

M. - Pharmacology of CNS medications

N. B) Research:

O. Develop the basic skills required to perform clinical studies such as case reports and series, retrospective studies, and proposals for prospective studies. The candidate will be required to conduct at least one investigative project during the course and present at least one paper/poster in National conferences

P. C) Skills: the trainee should be able to: i.) Achieve competence in the neurological examination and neurodevelopmental assessment of the newborn, infant, and older children.. ii) Know the utility, limitations, and interpretation of the results of lumbar puncture, EEG, EMG, evoked potentials, Cranial US, CT, MRI, MRA, MR Spectroscopy, Cerebral Angiography, and Isotope scans.

After completing the Neurology Fellowship course the trainee will be able to -

1. Provide primary, secondary, and tertiary care to all children with Neurological disorders including intensive care of a high standard to the critically sick children with Neurological disorders and children with neurological disabilities using advanced therapeutic and supportive modalities and skills. In this regard:

a) He / she will also be able to effectively plan therapeutic, rehabilitative, preventive & promotive measures or strategies.

b) He / she will have the ability to set up Pediatric neurology units independently.

- c) He / she will be able to take rationale decision in the face of ethical dilemmas in various –pediatric neurology diseases.
  - d) He / she will demonstrate empathy & humane approach towards patients & their families.
  - e) He / she will exhibit communication skills of high order and demonstrate compassionate attributes in the field of Neurology.
  - f) He / she will use and maintain the essential pediatric neurology/ electrophysiology equipments and keep abreast with advances in pediatric neurology care technology.
2. The trainee will implement a comprehensive follow up and early intervention program for cerebral palsy and similar developmental disorders, counsel and advice rehabilitation of the neurodevelopmentally and physically challenged infants.
  3. The trainee will be able to seek and analyze new literature and information on Neurology, update concepts, and practice evidence based Neurology. The trainee will be able to demonstrate adequate managerial skills.
  4. The trainee will participate in the community programs and at the secondary level of health system and will educate the public on epilepsy and related disorders.
  5. He / she would work as a productive member of the interdisciplinary team consisting of Physiotherapist, Occupational Therapist ,speech therapist, Neurosurgeons, other doctors, nurses and grassroots functionaries providing care to the pregnant mother, the fetus and newborn and children

## **Section II**

### **Course Content**

#### **4.2. TEACHING PROGRAMME**

The following teaching schedule is prescribed for the course:

The Outpatient service - 2 days a week

Major ward rounds - 3 days a week

Seminars - Once a week

Practice parameters/views and reviews – on alternate weeks.

Journal club - Once a week

Neuroradiology (teaching session) - Once a week

**Neurosurgery -1 wk**

During the Neurosurgery posting which is for one month, the candidate is required to attend all the operations and see for himself/herself, the surgical techniques. Postoperative care and complications and selection of cases for surgery are also taught.

#### **Neuroradiology**

The trainee is made conversant with the technique and interpretation of CT scan and MRI scan, Hands on training on Neurosonogram by Weekly/ fortnightly sessions - once a week

#### **Neurophysiology**

The fellow is imparted training in the technique of application of EEG/EMG/evoked response electrodes. He/She learns to detect various types of artifacts in the EEG and evoked response results.

He also learns the handling of EEG/EMG and evoked response machines, under the guidance of technical assistant and the consultants. During the course, training is imparted in the interpretations of nerve conduction studies, EMG, evoked response and ultrasound studies. He/she is taught the interpretation of EEG records and reports under the guidance of senior colleagues and consultants in the beginning and independently in the second year of training.

The trainee is made well conversant with each and every aspect of known knowledge about Neuroanatomy, Neurophysiology, Neurochemistry, Neuroradiology, Neuropharmacology and Applied Pediatric Neurology by the end of two year training. Related neuropathology and neurosurgery is also taught through bedside, teaching rounds lectures, seminars and group discussions.

### **Research**

The trainee shall be required to undertake research and write papers under the guidance of consultants. A pediatric neurologist should be trained to design and undertake research protocols. The candidates will have to submit one dissertation at least 2 months before the completion of the course. The candidates will have to make periodic presentations to the department on the progress of their dissertation work. The candidate will make at least three formal presentations to the department namely (I) protocol, (ii) mid-course progress and (iii) final report.

The candidate must make sincere efforts to have at least two publications in indexed journals during their fellowship. The candidate must attend continuing education symposia, workshops and conferences.

He should become competent enough to be able to seek and analyze new literature and information on any newer concepts in the field of pediatric neurology.

They should also present at least one paper/poster in international/national conference.

### **Teaching skills**

The Pediatric Neurologist should have the skills of a teacher also. The fellows would be actively involved in teaching the undergraduate and post graduate students. They will take periodic teaching sessions for the nursing students. By the completion of one year they would be involved in the development of clinical neuroevaluation protocols which would facilitate the diagnosis and management of many neurological illnesses. Their teaching skills will be assessed and shall form part of the internal assessment.

### **4.3. PERIOD OF POSTINGS IN VARIOUS UNITS, DIVISION/ DEPARTMENTS**

The trainee will be posted in different specialities as follows:

Pediatric Neurology and Clinical Neurophysiology - 10 months

Neurology (adult) – 15 dys

Neurosurgery – 1 wk

Neuropathology – 1 wk

Child development centre, -1month

**The entire period shall be ‘in service’ training program based on the concept of ‘learn as you work’ principle.**

#### **Section IV**

**Evaluation will be Formative and Summative**

- **Formative**

- Ward work
- Case presentation
- PG lecture
- Journal Club
- Internal assessment
- General assessment of attitude

- **Summative**

- Research project
- Final examination

**Formative evaluation** will be carried out over 5 activities of the P.G resident

- 1) Ward work
- 2) Case presentation
- 3) P.G Lecture
- 4) Journal club
- 5) General assessment: Rapport and attitude

**Summative Assessment** consists of two parts:

- 1) Evaluation of research by the trainee
- 2) Final examination

## ▪ **Research**

The topic for dissertation shall be finalized and discussed in the departmental faculty meeting and allotted to the individual trainees before the completion of one month after admission. The purpose of dissertation is to develop in the trainee, the ability to perform an independent study keeping the principles and research methodology in mind. The trainee will therefore work on a prospective or retrospective project within the department or in collaboration with other departments. There will be continuous monitoring of the research work by the guides and co-guides and by the other department staff throughout the course. The trainee will present the progress of the research to the faculty on the completion of 10 months for monitoring and feedback, which will be given its final shape by the end of 11 months of training. The completed research should be submitted 2 weeks before the final examination.

## ▪ **Final Examination**

### **Eligibility:**

- 1) Attendance: minimum 85%
- 2) Satisfactory Internal assessment
- 3) Approval of research project submitted

Trainees can appear for theory examination only after being certified on the basis of internal assessment.

### **A) Theory examination**

- 1) There will be 2 papers, each of 3 hours duration.
- 2) There will be a choice in answering the questions (e.g. 5 out of 6 / 7)
- 3) Each paper will carry 100 marks; all questions will carry equal marks
- 4) Distribution of questions in the 2 papers is usually as follows:

Theory Paper I: Basic sciences, Electrophysiology, Research methods.

Theory Paper II: Case based questions; management protocols

### **B) Clinical or Practical examinations**

There will be one long case & two short cases. Each trainee will be allowed 3/4 hour to prepare the long case and half hour for two short cases. Two examiners will sit together to examine the trainee for the cases and viva voce.

The trainee must pass in theory (both papers included) and practical (aggregate marks) independently by obtaining at least 50% marks in theory as well as in practical exam and obtain an overall percentage not less than 50% (viz 250 / 500). It is essential to obtain 50% marks in the long and short cases. (80/160)

The summary of the examination is shown in Table: (Total marks obtainable = 500)

<b>Theory (Paper I + Paper II)</b>	<b>100 + 100 = 200</b>
<b>Practical</b>	<b>300</b>
Long case	80
2 Short cases	40 x 2 = 80
Viva Voce: drugs, Electrophysiology, procedures	40
Clinical study	50
Spots	50



**Section V****Recommended books and Resource Material**

1. Pediatric Neurology Principles and practice: 4/E, Kenneth F Swaimann, S Ashwal, M Ferreiro
2. Neurology in clinical practice 5/E W G Bradley, R B Daroff, G M Fenichel, J Jankovic
3. Neonatal Neurology J J Volpe
4. Nelson Textbook of Pediatrics, 18/E Kleigmann, Behrman, Jenson, Stanton

**Journals**

Pediatric clinics of North America

Neurology clinics of North America

Child Neurology and developmental pediatrics

Pediatric Neurology

Journal of Child Neurology

NEJM

Lancet Neurology

Neurology

**Websites**

No.	Website
1	<a href="http://www.cochrane.mcmaster.ca/pediatric%20neurology/">www.cochrane.mcmaster.ca/pediatric neurology /</a>
2	<a href="http://www.nichd.nih.gov/cochrane">www.nichd.nih.gov/cochrane</a>
3	<a href="http://www.Neurology.org">www.Neurology.org</a>
4	<a href="http://www.emedicine.com/ped/Neurology.htm">www.emedicine.com/ped/Neurology.htm</a>
5	<a href="http://www.nnfi.org">www.nnfi.org</a>

## **Appendix I: Detailed List of Topics for Training in the Fellowship Program**

### **6. PEDIATRIC NEUROLOGY CURRICULUM**

- a) Every institution undertaking post-graduate training programme shall set up a curriculum Committee under the Chairmanship of the HOD, which shall work out the details of the training programme in their department in consultation with other departmental faculty staff and also co-ordinate and monitor the implementation of this programme. The training programme shall be updated as and when required.
- b) Post-graduate students shall maintain a Log Book of the work assigned to them.

#### *Contents of DM course*

Learning in the DM course will eventually be self directed and will take place while working in the clinics and through interactions in the rounds. Apart from the faculty of the division of child neurology , members of the department faculty and members of other departments will also be involved in the didactic teaching of respective fields as follows.

#### **(I) Development of the Infant and young child**

- (a) Anatomy of Neurodevelopment
- (b) Physiology of Neurodevelopment
- (c) Assessment of normal development
- (d) Variations of the normal development
- (e) The abnormal child; Early markers of CP etc
- (f) Approach to a child with developmental delay

#### **(II) CNS malformations**

- (a) Normal anatomy of the CNS
- (b) Common CNS malformations
- (c) Surgical management of CNS malformations

#### **(III) Seizure disorders in childhood**

- (a) Seizures and non seizures
- (b) Febrile seizures
- (c) Classification /evaluation and management of epilepsy
- (d) Epileptic syndromes
- (e) Status epilepticus
- (f) Intractable epilepsy
- (g) EEG in seizure disorders

(h) Surgical management of seizure disorders

**(IV) Infections of the CNS**

(a) Acute pyogenic meningitis

(b) Neonatal meningitis

(c) Chronic meningitis

(d) Brain abscess

(e) Acute encephalitis

(f) Cerebral malaria

(g) Acute febrile encephalopathy

(h) Neurocysticercosis

(i) HIV encephalopathy

(j) SSPE

(k) Congenital infections

(l) Laboratory diagnosis of CNS infections

**(V) Autoimmune and Post infectious diseases**

(a) primary demyelinating diseases of the CNS

(b) ADEM, optic neuritis, acute transverse myelitis

(c) immunologically mediated diseases affecting the CNS gray matter , peripheral nervous system

(d) systemic vasculitides with nervous system manifestations

**(VI) Neurodegenerative disorders (in co-ordination with the Departments of Pathology and Radio diagnosis)**

(a) Classification, Approach to a patient – gray matter, white matter

(b) Diagnosis (including histopathology and neurogenetics)

(c) Management

(d) Antenatal counseling

**(VII) Neurometabolic disorders including mitochondrial disorders (in co-ordination with the Departments of Pathology and Radio diagnosis)**

(a) Classification, evaluation and approach to a patient

(b) Neurogenetics

(c) Management including antenatal counseling

(d) Role of histopathology

**(VIII) Chromosomal anomalies**

- (a) autosomal abnormalities
- (b) sex chromosomal abnormalities
- (c) Chromosomal abnormalities in various dysmorphic syndromes

**(IX) Toxic and nutritional disorders**

- (a) toxic disorders : lead, thallium, arsenic, mercury, aluminum, organic toxins ,alcohol, bacterial toxins
- (b) nutritional disorders; protein energy malnutrition, Vitamin deficiencies, infantile tremor syndrome

**(X) Neurocutaneous syndromes**

Neurofibromatosis, Tuberous Sclerosis, Sturge Weber Syndrome etc.

**(XI) Movement disorders**

including cerebellar dysfunction Ataxias, chorea, dystonias, Tics etc

**(XII) CerebroVascular disorders**

- (a) Arterial thrombosis
- (b) Venous thrombosis/embolism
- (c) Intracranial bleed
- (d) Stroke
- (e) Role of Radioimaging

**(XIII) Neonatal neurology**

- (a) Neonatal seizures
- (b) Hypoxic encephalopathy
- (c) Intraventricular Hemorrhage
- (d) Clinical neurological assessment
- (e) Role of EEG, Ultrasonography, CT scan
- (f) Neonatal seizures
- (g) ICH
- (h) Brain edema
- (i) Neuromuscular disorders
- (j) Degenerative disorders
- (k) CNS malformations

**(XIV) Brain tumors**

- (a) Features , Classification ,Evaluation and management
- (b) Role of Radiotherapy

**(XV) Spinal cord disorders**

**(XVI) Neuromuscular disorders**

- (a) Evaluation and investigation
- (b) Histopathological changes in different disorders

- (c) Developmental disorders of muscle
- (d) Muscular dystrophies
- (e) Endocrine and metabolic myopathies
- (f) Inflammatory myopathies
- (g) Disorders of Neuromuscular transmission
- (h) Spinal muscle atrophy
- (i) Motor neuron disease
- (j) Autonomic neuropathies
- (k) Guillain Barre syndrome

**(XVII) Mental Retardation**

- (a) Assessment of intelligence quotient
- (c) Causes, Evaluation
- (d) Prevention / Role of antenatal counseling

**(XVIII) Behavioral and Pervasive disorders (in co-ordination with the Departments of Psychiatry and with NGO's in the schools and field)**

- (a) Attention Deficit Hyperactivity disorders (ADHD), Autistic spectrum Disorder
- (b) Learning disability

**(XIX) Coma in Pediatric Patient /Brain Death**

- (a) Intensive care (posting in PICU and lectures by Consultant PICU)
- (b) Monitoring of a comatose child
- (c) Coma in Pediatric population/ metabolic coma
- (d) Brain death

**(XX) Neurological manifestations of systemic diseases**

- (a) metabolic encephalopathies
- (b) disorders of acid/base / electrolyte disturbances
- ©neurological complications of pulmonary, gastrointestinal, hepatic, renal, cardiac, hematological, neoplastic and endocrine diseases

**(XX) Neurological and Neurosurgical emergencies**

- (a) Department of Neurosurgery
- (b) Neurological Emergencies

**(XXII) Clinical Epidemiology**

- (a) research methodology
- (b) biostatistics

**(XXIII) Ethics in Medicine**





**Evaluation form for Postgraduates: Research Work: Score: (        )**

Points to be considered:

- Interest shown in selecting a topic
- Appropriate review
- Discussion with guide and other faculty
- Quality of protocol
- Preparation of Performa
- Regular collection of case material
- Depth of analysis/discussion
- Departmental presentation of findings
- Quality of final output
- Defense in Viva
- Others:

**Evaluation form for Postgraduates: Journal Club: Score: (        )**

Points to be considered:

- Choice of articles
- Cogency of presentation
- Whether he has understood the purpose of the article
- How well did he defend the article?
- Whether cross-references have been consulted
- Whether other relevant publications have been consulted
- His Overall impression of articles
  - If good - reasons:
  - If poor - reasons:
- Audiovisual aids
- Response to questioning
- Overall presentation
- Others:

**Log (Performance record book)**

Maintenance of performance record Logbook is mandatory. Certified and assessed copy should be made available at the time of practical examination for review by examiners

**Log Book should contain:**

- Certificate duly signed by teacher, head of department, head of institute - stating –

Dr..... has worked in department from ..... to ..... for a period of one year.

This performance record book contains the authentic record of work done and assessment for one year.

- Record of training
  - Name of the trainee
  - Name of the Hospital



Training period

Name of teacher

- Posting
- Working schedule
- Teaching program
- Presentation at Journal club: Date, Article Name, Assessment
- Seminars / Lectures: Date, Topic/ Subject, Assessment
- Case presentations: Date, Case, Teacher's signature
- Death Audit / C P C: Date, Case discussed, Assessment & Signature
- Procedures: Date, Name of patient, Type, complications observed
- Teaching activity: Date, Topic, Class
- Participation in Research Activity: Name of project, Duration
- Conferences / Workshop attended / Paper presentation
- Publications

### Appendix III

#### Technical information relating to Academy of Pediatric Neurology fellowship program

- 1) The AOPN fellowship program is **endorsed by the Executive Board of IAP**.
- 2) While there may be several applications from institutes to enroll for IAP Neurology chapter fellowship program, **only three institutes** will be recognized every year by the chapter. This selection will be based on the credentials + location + teaching facility of the institute. All applicant institutes will be **physically inspected** by a team of one or two members appointed by the chapter and the travel and lodging of these inspectors will be arranged by the applicant institute/dept. The institutes will apply for fellowship through the institute head on institute letterhead and endorsed by the head of the Child Neurology unit / fellowship program coordinator. The application will be addressed to the Chairperson of the chapter. The institute should be registered with the local authorities and the registration number and certificate should be attached with the application.
- 3) All teachers at the Institute must be **Life members of Central IAP and Life members of the AOPN** The IAP Life membership number of all teachers at the Institute must be mentioned in the application form.
- 4) Each institute that conducts the fellowship program should advertize the positions as widely as possible to receive applications from all parts of the country and then **choose the best candidates** based on a system of interviews or examination, whatever the institute would prefer. The advertisement can be made in the institute bulletin or on institute notice board and in official instruments of IAP – the Academy today, Indian Pediatrics, and Indian Journal of Practical Pediatrics. Applications may also be invited through other reputed journals published by sister professional organizations.
- 5) Each institute can **register one to four candidates** as fellows (as per allotment by IAP Neurology chapter). While Postgraduates who have **MD / DNB** degrees will take the fellowship examination **one year** after date of enrollment, the candidate with a **DCh** qualification will take the exam **1.5 years** after date of enrollment. Institutes are encouraged to enroll MD / DNB candidates whenever possible. In the absence of such a candidate, a DCh qualified candidate can be selected. However, 1;1 qualified candidate may be enrolled at a given time.

- 6) Ideally candidates should be enrolled on **January 1/ June 1** of a given year. However for several considerations, the last date for enrollment may be extended to **February 28/ August 31** of that year. No new appointments must be made after these dates. Candidates enrolled in the middle of the year to replace DCh qualified candidates will be enrolled on **June 1**, and latest by **July 15**.
- 7) Institutes will inform the AOPN about change of **fellowship coordinator's name**, if and when that happens. Institutes will also inform the chapter about any **change in teaching faculty**.
- 8) Each candidate must submit a fellowship **fee of Rs. 15,500/-** in the form of a **Demand Draft** payable to **Academy of Pediatric Neurology**. The DD should have the name, and cell number of the candidate, and the name of Institute of attachment written on the back. The fee includes fee for enrolment as Life member of AOPN
- 9) The institute will submit a **fellowship information form** (appended with this document) which should contain information about the institute and candidates along with details of the DDs and copies of qualification certificates of the candidates. Candidate will not submit this information to the chapter individually. All communications regarding the technicalities of the fellowship program and fellowship examination will be done by the fellowship coordinator and not by individual candidates.
- 10) The receipts for the DDs will be posted to the institute / fellowship coordinator and **not to individual candidates**.
- 11) **No refund** will be made if a candidate chooses to abandon the program at any time after enrolment.
- 12) Any dispute between the institute and candidate will be resolved between themselves **without any mediation** by the chapter.
- 13) The **exam fee of Rs. 4000/-** will be paid through a DD in the name of the chapter by each candidate, through the institute, with a covering note (sample appended with this document) after the exam date is announced, to reach the chapter address one month in advance of the examination date.
- 14) The names of candidates who pay the exam fee in time, will be intimated to the exam coordinator in the order of receipt of DDs and roll numbers for exam will be allotted in a likewise order.
- 15) If examination fee is not received **a month in advance of the examination date**, the respective candidate will not be allowed to take the fellowship exam. If a candidate withdraws from taking the exam after paying the exam fee, the fee will not be refunded.
- 16) The **thesis or clinical study** has to be submitted as **2 hard copies** along with CD containing thesis or study in Word document format and the clinical photographs if any with appropriate labeling, in jpeg 300 dpi format. **The work has to be submitted at the time of examination.**
- 17) Each institute will be communicated the **venue and date of the fellowship exam** at least **two months before the exam**, and the details of the theory and practical examinations, roll numbers, and the specific dates allotted to individual candidates for practical exam will be communicated at least one month before the dates of examinations.
- 18) The roll number allotted to each candidate is **non-negotiable**. Individual requests from candidates or institutes for change of roll number or date of practical examination will not be entertained.

- 19) It is essential to obtain **50% marks in theory** (100/200), overall **50% marks in practical** (150/300), **50% marks in clinical case presentations** (80/160) (part of practical exam) and aggregate **50% marks** (250/500) to clear the exam. It is not essential to obtain 50% marks in spots, viva, and clinical study individually.
- 20) Examination result will be **communicated to the institutes** on email immediately as it becomes available. Marks card (with details of marks) and the certificate will be posted to the institutes within 6 weeks of declaration of result. A gold medal will be posted to the candidate securing maximum marks, at a later date.
- 21) Candidates that **fail to clear the exam** may take another exam **after six months**, and reapply to the chapter with a DD for exam fee, whenever the dates and venue are announced.. A failed candidate who may seek **reevaluation** of his / her theory paper marks, may request the chapter for the same, with endorsement from the institute head, and submit a DD for Rs. 500/- for reevaluation of both theory papers, and Rs. 250/- for reevaluation of one theory paper. The theory papers will be reevaluated (re-read and remarked) by an independent examiner (other than the panel of original examiners). Marks will be communicated to the candidate within two weeks from the date of request.

## Appendix IV

### Pattern of Examination

1. The IAP Neurology Chapter office bearers have the discretionary powers to decide the **venue of fellowship examination** based upon the number of candidates to be examined, availability of infrastructure and examiners, and the willingness of Institute to conduct the examination as per the guidelines of the chapter.
2. Examination will be conducted over **2 / 3 / 4 days** depending upon the number of candidates taking the exam.
3. While candidates' convenience will be kept in mind, they may be required to be present on **all days of the examination or only on specific days**.
4. **Four or more examiners** will be invited to conduct the exam. While at least half the number of examiners will be from outside the institute (and maybe outside the city / state), one of the examiners maybe from the institute.
5. The **theory papers** will be set by two sets of examiners independently. The questions will be communicated to the chairperson / fellowship program in-charge of the chapter or an independent authority figure with no interest in the exam, and both sets of theory papers (I and II) will be brought to the examination hall in sealed envelopes. One of the envelopes will be opened for each of theory papers I and II.
6. Each theory paper will be of **3 hours** duration. The basic pattern will be as below; however, this may vary with the examiners.

#### Theory papers: (200 marks) (100 X 2)

- a) Paper – I: Theory questions: There will be choice of answering five questions out of six or seven. Each question will carry equal marks (20 marks). The questions may be long answer questions or multiple short notes, diagrams, or flow charts. Theory paper I will cover topics like community Neurology, demography, embryology, Pathophysiology of illnesses, recent advances, medicolegal aspects, preventive Neurology, fetal therapy, relevant aspects of Electrophysiology and protocols in case of specific illnesses.
  - b) Paper – II: Case-based questions: There will be a choice of answering 5 out of six or seven questions, each question carrying equal marks (20 marks). Theory paper II will contain 7 case illustrations. The purpose of this paper will be to test the candidate's ability to evaluate the case correctly and make correct clinical use of knowledge to make appropriate decisions.
7. Practical examination will consist of one long case, two short cases, ten spots for identification, and viva voce, inclusive of questions on the clinical study. The practical examination components will be staggered to accommodate all candidates, on one / two / three days.
    - a) Long case (80 marks): Each candidate will be given 3/4 hour to prepare for one long case and maximum ½ hr to present the same. Examples: Cerebral Palsy, Degenerative disorders
    - b) Short cases (2 X 40 marks each): each candidate will be given ½ hour to prepare two short cases and maximum ½ hr to present both short cases (15 min each). Examples: DMD. SMA ,spinal dysraphism, Erbs' palsy.
  8. Viva voce by both examiners together (40 marks): 5 - 6 questions will be asked. The topics will cover recent advances, some questions pertaining to the clinical study done by the candidate and on Electrophysiology. There will also be questions on drugs, equipments, Neuroimaging etc.
  9. Spots: (10 X 5 marks each) the candidates will be made to enter the spots' room all at once, one at each spot; a bell will be rung at end of every 2 minutes the candidates will move to the next spot;

the spots' session should be over in about ½ hr time. The spots could include any of the following (examples only)

- a. Skin lesions e.g. Ashleaf macule
- b. Abnormal Movements
- c. EEG /EMG NCV/BERA/ VEP
- d. CT / MRI / USG plates (with marking of abnormal area(s) and some clinical hint to facilitate diagnosis)
- e. Metabolic disorders
- f. CBC report –
- g. Trisomies – clinical case of Down's
- h. Hypothyroid
- i. Drugs – e.g. IV Methyl prednisolone, AEDs

Beside each spot there will be a question sheet on which one question will be printed out in bold letters and pasted on a stool / table next to the spot or on which the spot is placed

10. The clinical study (Marks – 50) will be evaluated on the following aspects –

- a) Clinical relevance in India, study size and statistical significance 10 marks
- b) Type of study – prospective/ retrospective, comparative, controlled, randomized, blinded etc 10 marks
- c) Presentation – use of flowcharts, clinical photographs, clarity of results 10 marks
- d) Discussion, comparison with similar other studies, ability to analyze the strengths, limitations and scope of the clinical study 10 marks

**Appendix V**

**Sample of request letter for enrolment of Institutes for Academy of Pediatric Neurology fellowship Program. The letter must be typed on the letterhead of the Institute**

Date: \_\_\_\_\_

To,  
The Chairperson / In-charge Fellowship Program,  
Academy of Pediatric Neurology  
Address: \_\_\_\_\_,  
\_\_\_\_\_.

Dear Sir / Madam,

We would like to apply for recognition of our Institute as a center for fellowship in Neurology by IAP Neurology Chapter. We fulfill the criteria for recognition laid down by the chapter, detailed in the attached sheet on 'eligibility criteria'. Our institute is registered with the local health authority, the registration number being \_\_\_\_\_. The relevant certificate is attached.

We have the following teaching / honorary staff associated with the PEDIATRIC NEUROLOGY DEPT/UNIT in our institute. Their qualifications and work experience are mentioned below –

- 1) \_\_\_\_\_  
\_\_\_\_\_
- 2) \_\_\_\_\_  
\_\_\_\_\_
- 3) \_\_\_\_\_  
\_\_\_\_\_
- 4) \_\_\_\_\_  
\_\_\_\_\_

The relevant certificates are attached.

We request you to please consider our center for conduct of IAP Neurology Chapter fellowship. We welcome an inspection of our institute and PEDIATRIC NEUROLOGY DEPT/UNIT. We will arrange for the travel and boarding of inspectors arranged by the chapter. We understand that our center may not necessarily be selected for the program. We have read and understood the guidelines for the fellowship program.

Thank you. Truly,

\_\_\_\_\_

## Appendix VI

### Eligibility criteria for enrollment as Institute for conduct of IAP Neurology fellowship program

- a) At least 10 separate beds
- b) Faculty with a Professor of Pediatric neurology , Associate professor and an assistant professor
- c) Separate EEG machine with technician dedicated for doing pediatric EEG
- d) Complete Electrophysiology Lab
- e) Facility for doing physiotherapy and speech therapy.
- f) Intensive care facility.
- g) At least two OP per week with minimum attendance of 30 per week
- h) Standard equipment for procedures such as lumbar tap,
- i) 24- hr service of X-rays ,CT scan and MRI in the attached Hospital
- j) 24-hr service for basic laboratory investigations
- k) At least 30 admissions every month
- l) **At least two** fulltime or honorary staff members who have completed either MD/DNB paediatrics with **DM** in Neurology / pediatric Neurology (Recognized by MCI) with **at least five years** of postgraduate practice or **MD / DNB in Pediatrics** with **at least ten years** of post graduate practice with fellowship training of 2 yrs in pediatric neurology at a reputed national or international centre.
- m) A **ratio of one qualified (as above) teacher to one fellowship candidate** is necessary
- n) **All teachers** at the Institute should be **Life members of Central IAP** (They are required to furnish their Life membership number) and Neurology chapter of IAP .

## Appendix VII

### Eligibility form to be filled and attached with the application for enrolment as Institute to conduct IAP Neurology Chapter fellowship program

- The institution should have a PEDIATRIC NEUROLOGY DEPT/UNIT which provides tertiary level (level 3) care to children with Pediatric Neurology problems for the last five years.
- The institution should have two DM Neurology Teachers with five years teaching experience / two MD / DNB Teachers with minimum ten years teaching experience in Neurology for two Fellowship Candidates (one teacher: one student)
- All teachers in the Institute should be Life members of IAP and IAP Neurology Chapter
- The PEDIATRIC NEUROLOGY DEPT/UNIT should fulfill the following criteria:
- At least 10 separate beds (y) (N)
- Faculty with a Professor of Pediatric neurology , Associate professor and an assistant professor (y) (N)
- Separate EEG machine with technician dedicated for doing pediatric EEG (y) (N)
- Complete Electrophysiology Lab (y) (N)
- Facility for doing physiotherapy and speech therapy. (y) (N)
- Intensive care facility. (y) (N)
- At least two OP per week with minimum attendance of 30 per week (y) (N)
- Standard equipment for procedures such as lumbar tap, (y) (N)
- 24- hr service of X-rays ,CT scan and MRI in the attached Hospital (y) (N)
- 24-hr service for basic laboratory investigations (y) (N)

- At least 30 admissions every month (y) (N)
  - Are the following procedures performed in your PEDIATRIC NEUROLOGY DEPT/UNIT:
    - lumbar tap ( )
    - Plasmapheresis ( )
    - peritoneal dialysis ( )
    - Muscle /N biopsy ( )
  - Are the following facilities available in your PEDIATRIC NEUROLOGY DEPT/UNIT?
    - 24- hr service of X-rays .CT/MRI ( )
    - 24-hr service for basic laboratory investigations ( )
  - How many average admissions every month in the PEDIATRIC NEUROLOGY DEPT/UNIT ( )
  - Approximate number of staff nurses in your PEDIATRIC NEUROLOGY DEPT/UNIT ( )
  - Number of resident doctors who have the minimum MBBS qualification, working in the unit ( )
  - Number of fulltime or honorary staff members who have completed M.D. OR D.N.B in Pediatrics and have at least 7 years of post graduate practice as full timers or in private practice ( )
  - A teacher qualified in D.M. Neurology/pediatric neurology ( )
- Does your institution provide the following services to children with Neurological disorders:
  - Training mothers to provide early intervention ( )
  - Physiotherapy and speech therapy ( )
  - Follow up outpatient services to the children with Neurological disorders ( )
- Does your institution evaluate the children with Neurological disorders for the following
  - Ophthalmologic evaluation of children with Neurological disorders that require it ( )
  - Auditory evaluation of children with Neurological disorders that require it ( )
  - Physiotherapy evaluation of children with Neurological disorders that require it ( )
  - Surgical treatment of emergency surgical situations ( )
- All teachers at the Institute are Life members of IAP, the membership numbers being –  
 \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_



## Appendix VIII

**Submission of information after candidates are selected and appointed for fellowship of AOPN. Institute and Candidate Information Form) (Fill in neat hand)**

### Form 1

Date: \_\_\_\_\_

Name of the Institute: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Contact numbers: \_\_\_\_\_

E mail id: \_\_\_\_\_ Web address: \_\_\_\_\_

Fellowship Coordinator's name: \_\_\_\_\_

Contact numbers: \_\_\_\_\_

Email id: \_\_\_\_\_

Candidate names:

1) \_\_\_\_\_

2) \_\_\_\_\_

Fellowship program fee - payment details:

1) Amount: 15,500/- ; DD number: \_\_\_\_\_ Bank: \_\_\_\_\_

Date: \_\_\_\_\_

2) Amount: 15,500/- ; DD number: \_\_\_\_\_ Bank: \_\_\_\_\_

Date: \_\_\_\_\_

(Details of EACH candidate to be provided in Form 2)

**Form 2 ( for Candidate 1 -4)**

Name of candidate: Dr. \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Age: \_\_\_\_\_ years Sex: M / F

Mailing address: \_\_\_\_\_

Contact numbers: \_\_\_\_\_

Email id: \_\_\_\_\_

Qualifications: \_\_\_\_\_

Qualification details: (Please attach copies of Marks sheet, Degree passing certificates, and Medical Council registration certificates)

S no.	Qualifying exam	Year of passing	Marks obtained	% of Marks	Rank if any	Institute / University	Certificate attached? Y / N
1	MBBS						
2	DCh						
3	MD						
4	DNB						
5	Any Other						
6	Any Other						
7	Medical Council Registration	MCI / _____ State Medical Council					

Past professional experience:

S. no	Institute's name, location	Position held	Tenure in months	Year of working	Teacher's name	Certificate attached? Y / N
1						
2						
3						
4						
5						

---

Candidate's passport size Photograph

---

Candidate's Signature

**List of Certificates and other documents attached (All Candidates together)**

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_
- 7) \_\_\_\_\_
- 8) \_\_\_\_\_
- 9) \_\_\_\_\_
- 10) \_\_\_\_\_
- 11) \_\_\_\_\_
- 12) \_\_\_\_\_
- 14) \_\_\_\_\_

\_\_\_\_\_  
**Institute Head's Signature**

\_\_\_\_\_  
**Fellowship Coordinator's Signature**

## Appendix VIII

### Application to take the AOPN Fellowship Examination

Date: \_\_\_\_\_

To,  
The Chairperson,

\_\_\_\_\_

Dear Sir / Madam,

The below mentioned fellowship candidates training at our Institute, would like to take the IAP Neurology Chapter Fellowship Exam Scheduled on \_\_\_\_\_ at \_\_\_\_\_.

The details of the candidates and their exam fee payment are given below –

1) Candidate's name - \_\_\_\_\_

Qualification - \_\_\_\_\_ Date of Appointment - \_\_\_\_\_  
(Please attach a copy of the appointment letter from Institute)

Completed 85% of the prescribed period of training: Yes / No

Performance / Conduct / Internal assessment – Satisfactory / Unsatisfactory

Clinical study completed – Yes / No

Exam fee amount – Rs. 4000/- (Four thousand only) DD no: \_\_\_\_\_

Bank \_\_\_\_\_ Date of DD: \_\_\_\_\_

2) Candidate's name - \_\_\_\_\_

Qualification - \_\_\_\_\_ Date of Appointment - \_\_\_\_\_  
(Please attach a copy of the appointment letter from Institute)

Exam fee amount - Rs. 4000/- (Four thousand only) DD no: \_\_\_\_\_

Bank \_\_\_\_\_ Date of DD: \_\_\_\_\_

Completed 85% of the prescribed period of training: Yes / No

Performance / Conduct / Internal assessment – Satisfactory / Unsatisfactory

Clinical study completed – Yes / No

\_\_\_\_\_  
Signature of Institute Head

\_\_\_\_\_  
Signature of Fellowship Coordinator

## Appendix IX

### Application for Reevaluation of Theory paper(s) (Use separate forms for each candidate)

Date: \_\_\_\_\_

To,  
The Chairperson

\_\_\_\_\_

Dear Sir / Madam,

Our Fellowship Candidate named \_\_\_\_\_ took the IAP Neurology Fellowship Exam on \_\_\_\_\_ held at \_\_\_\_\_, and obtained the following marks –

Theory - \_\_\_\_\_ / 200

Practical - \_\_\_\_\_ / 300; Clinical case studies - \_\_\_\_\_ / 160

Overall - \_\_\_\_\_ / 500

He / She were not declared PASSED based on the above marks.

We would like his theory paper(s) I / II / I and II to be re-evaluated by the IAP Neurology Chapter. Kindly arrange for the same.

We are submitting a DD of Rs 250 / 500 for evaluation of one / both Theory papers. Kindly inform us of the result as soon as it is available.

Truly,

\_\_\_\_\_  
Signature of Institute Head

\_\_\_\_\_  
Signature of Fellowship Coordinator

**Appendix X**

**Application for Life Membership of Central IAP**

*INDIAN ACADEMY OF PEDIATRICS*

Kailas Darshan, Kennedy Bridge (Nana Chowk), Mumbai-400007

**IAP MEMBERSHIP FORM**

Name of the Applicant: .....  
(Surname) (First Name) (Middle Name)

Date of Birth: ..... Sex: M / F

Communication Address:

.....
.....
.....

State: ..... Nationality: .....

Telephones (ISD CODE) .....(city code) .....

Residence: ..... Office: .....

FAX: ..... Mobile: .....

Email ID: .....

<b>Medical / Pediatric Qualification</b>	<b>Name of the University</b>	<b>Qualifying Year</b>

Degrees Registration No & registering Authority (MCI or State Medical Council): .....

.....

Name & Membership No & Signature of the Proposer: .....

.....

Name & Membership No & Signature of the Seconder: .....

.....

Place:

\_\_\_\_\_

Date:

(Signature of the Applicant)



## MEMBERSHIP PRIVILEGES

### The Society provides

- Facilities to Students, Scholars and Institutions for the study of or Research in Pediatrics in any of its aspects by way of scholarships, fellowships, grants, endowments, etc.
- Either through itself or in cooperation with other bodies or persons fellowships, prizes, certificates, diplomas of proficiency in the science of Pediatrics and conduct such tests, examinations or other scrutiny as may be prescribed from time to time.
- Free of cost or at subsidized cost its official journals, books, periodicals or publications on pediatrics and allied subjects which the society thinks is desirable for the promotion of its objects.
- Opportunity to its member to participate in Conferences, Lectures, Meetings, Seminars, Symposia, Workshops, Continuing Medical Education Programs, etc.
- Opportunity to become members of its Branches / Subspecialty Chapters / Groups / Cells / Committees.

### Affiliations / Collaboration

The Society is affiliated to:

- (i) International Pediatric Association (IPA)
- (ii) International Society of Tropical Pediatrics (ISTP)
- (iii) American Academy of Pediatrics (AAP)
- (iv) Asian Pacific Pediatric Association (APPA)
- (v) Asian Society for Pediatric Infectious Disease (ASPID)
- (vi) Pediatric Association of SAARC (PAS)
- (vii) Royal College of Pediatrics and Child Health (RCPCH)

### Categories of Membership

(1) **Student Member:** Applicant who has passed M.B.B.S. and doing Post Graduation allows the applicant to enroll himself/herself at 50% of the prevailing rate of life membership at the time of admission and the balance 50% to be paid within 4 years or earlier. On making full payment, he/she will be entitled to change the "Student" Membership category to either "Associate Life" or "Life" depending on the graduation / post graduation status.

(2) **Associate  Associate Life Member:** Applicant who has passed M.B.B.S. only, have an option to become Annual Member i.e. "Associate" Member (renewable every year) OR "Associate Life" Member by paying life membership amount in one lump sum.

(3) **Ordinary  Life Member:** Applicant holding M.B.B.S. and Post Graduation (such as D.C.H., M.D. (Ped), D.N.B. (Ped) or any other degree recognized by the Executive Board of IAP as equivalent) are eligible to be "Ordinary" Member (renewable every year) OR "Life" Member by paying life membership amount in one lump sum.

### How To Apply for Membership

Application should be made on a prescribed form. Along with the application for membership of IAP, photo copies of the following documents should be submitted

- (i) Photo copies of the M.B.B.S. & Post Graduation Certificates as (as per degrees listed by you in your application).
- (ii) Photo copies of the degrees registration certificates with State Medical Council  Medical Council of India (as the case may be).
- (iii) Certificate from the HOD stating that the applicant is the bonafide student of his/her Medical College (if the application is for "Student" Membership).

### Membership Fee

The Membership Fee Structure is as follows:

Category of Membership	Admission Fee	Membership Fee	Total Amount Payable
Student	Rs.500/- (payable at the time of admission)	Rs.5000/- ( <b>Total payable Rs.5500/-</b> at the time of admission i.e. 50% of the current life membership amount and admission fee) and balance Rs.4500/- on or before completion of 4 years of Student Membership).	Rs.10,000/-
Associate	Rs.500/-	Rs. 1000/-	Rs.1,500/-
Associate Life	Rs.500/-	Rs. 9500/-	Rs.10,000/-
Ordinary	Rs.500/-	Rs. 1000/-	Rs.1,500/-
Life	Rs.500/-	Rs.9500/-	Rs.10,000/-

The Membership Fee should be paid by a crossed bank draft drawn in favor of "INDIAN ACADEMY OF PEDIATRICS" payable at Mumbai.

## Appendix XI

### Application for Life Membership of AOPN

#### AOPN Life membership Application Form

Name: \_\_\_\_\_

Sex: \_\_\_\_\_ Date of birth: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone nos: \_\_\_\_\_ cell no: \_\_\_\_\_

E-mail id \_\_\_\_\_

Central IAP membership no: \_\_\_\_\_

Current Professional affiliation: \_\_\_\_\_  
\_\_\_\_\_

Past Professional affiliation: \_\_\_\_\_  
\_\_\_\_\_

Membership fee paid by cash / check no \_\_\_\_\_ dated \_\_\_\_\_

Drawn on \_\_\_\_\_ bank.

[Check for Rs. 2000/- to be drawn in favor of 'Academy of Pediatric Neurology' Punjaaaaaab  
Nationa bank A/c n- 19602413000139 IFS Code PUNB0196010 and mailed to

Dr Kiran Makhija, Makhija Children Hospitaaal, Fafadeh,Raiipur CG