SOCIETY FOR INDIAN ACADEMY OF MEDICAL GENETICS

Building a Healthier Tomorrow with Genetic Insights and Research

SIAMG

Clinical Genetics Fellowship

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ABOUT IAMG

The Indian Academy of Medical Genetics (IAMG) is a professional organization established by qualified medical geneticists from all over India. It is run by the Society for Indian Academy of Medical Genetics, registered under the Societies Registration Act, 1860, at Lucknow, specifically formed for this purpose in January 2012.

The main objectives of the organization are to improve the quality and accessibility of clinical genetics services in the country, to promote medical genetics education and research, to help integrate medical genetics research into patient care, and thereby to promote the overall advancement of this medical discipline in India. The IAMG serves as a forum of interaction for medical genetics centres across the country to enable coordinated patient care, research and teaching in the field of medical genetics. This expert group is also meant to act as an advisory body to the government and the society in matters pertaining to medical genetics.

The main guiding principle of the Indian Academy of Medical Genetics is to promote the science and practice of medical genetics in India. In keeping with this, the principal objectives of the IAMG are as follows:

- To stimulate and support patient care, education, and research in the field of
- medical genetics.
- To foster the development and implementation of methods of diagnosis, treatment, and prevention of genetic diseases.
- To promote uniform standards of laboratory quality assurance and proficiency testing for genetic diseases.
- To improve the accessibility of medical genetics services for the general public.
- To improve medical genetics training facilities for clinicians.
- To improve the quality of patient care and diagnostic services related to
- medical genetics by publishing guidelines (clinical and laboratory).
- To serve as an advisory body to the government and the society in matters pertaining to medical genetics
- To serve as a forum to promote and coordinate research in the field of medical genetics
- To serve as a forum for medical geneticists to discuss the issues pertaining to their professional activity
- To conduct and co-ordinate meetings, seminars, conferences, and workshops to impart and spread awareness and knowledge regarding medical genetics
- To co-ordinate with the government agencies, corporate bodies, institutions, societies, associations and groups which pursue similar objectives

PROGRAM OVERVIEW

As part of a capacity building initiative for Clinical Genetics in India, SIAMG started a three (3) month program in Clinical Genetics in 2013.

The clinical genetics fellowship program is offered at select premier medical institutes across India.

These premier institutes offer the clinical expertise as well as the diagnostic infrastructure and capabilities in the area of clinical genetics to program participants to learn and observe. The fellowship is open to post graduate degree holders or final year students of MD/MS/DNB or an

equivalent degree holder in Pediatrics, Internal Medicine or Obstetrics & Gynecology or clinical specialties like Dermatology, Ophthalmology, Radiology, Surgery, Orthopedics specialty, recognized by the Medical Council of India. Medical professionals with super-specialization (DM) can also apply for the course. Eligible applicants will be screened by a committee established by SIAMG to select participants for the fellowship programme. The application form is to be filled only through the SIAMG website: https://iamg.in/fellowship-application-form

FELLOWSHIP BACKGROUND & OBJECTIVES

SUMMARY

The purpose of the SIAMG Clinical Genetics fellowship Award Program is to:

1. Advance education, research and standards of practice in medical genetics.

2. Develop and expand clinical expertise in medical genetics in India

BACKGROUND

Medical genetics is a relatively new field of medicine but in the last few years has found ramifications into almost all fields of clinical medicine. Although significant advances have happened world over in genetics, particularly in application of genetic knowledge in clinical practice, there has not been a parallel increase in trained manpower in this field. There is a striking paucity of medical professionals involved in the practice of clinical genetics in India and an urgent need is felt to provide exposure and training in the diagnosis as well as management of genetic disorders to clinicians across all specialities at various stages of their careers. SIAMG envisages to overcome this gap with this short duration fellowship program for clinicians.

Eligibility Criteria & Selection Process

ESSENTIAL QUALIFICATIONS

The applicant must have a basic medical qualification recognized by the Medical Council of India (i.e. MBBS or an equivalent degree) and a postgraduate medical degree in Paediatrics/Internal Medicine/Obstetrics and Gynaecology or clinical specialties like Dermatology, Ophthalmology, Radiology, Surgery, Orthopedics recognized by the Medical Council of India (i.e. MD/MS/DNB or an equivalent degree). Candidates with super specialization (DM) are also encouraged to apply.

ACTIVITIES

Fellowship activities of the Awardees will focus on significant clinical care of patients with genetic disorders and genetic counseling for families with genetic diseases.

SUBMITTING AN APPLICATION

The application form in this brochure can be used for submitting the application. Alternately, it may be downloaded from the website "www.iamg.in".

The application form may be sent by ordinary/ registered post or courier to the address mentioned below or by email to info.iamg.in, with scanned copies of all the necessary documents pertaining to qualifications. For foreign nationals and for candidates who have undergone training outside India

• Candidates who have undergone medical training outside India have to submit the necessary documents which certify that their qualifications are equivalent to the MD/ MS/ DNB degree

• Foreign nationals have to submit a copy of their passport with the application form.

• Each of the listed centers where the fellowship training can be done has its own criteria for observership for foreign nationals. Therefore, following selection, the candidate would have to complete this procedure as per the norms of the chosen Institute.

Dr Ashwin Dalal

Head, Diagnostics Division

Centre for DNA Fingerprinting and Diagnostics

[Ministry of Science & Technology, Government of India],

Opp. Metro Rail Pillar No. NUP-9B,

Inner Ring Road, Uppal

Hyderabad – 500 039 Telangana INDIA

RECEIPT AND REVIEW SCHEDULE

Applications for this program will be considered based on the following tentative schedule:

ROUND 1

S No	Medical Genetics Centre	Incharge	Email id
1.	All India Institute of Medical Sciences, New Delhi	Dr Neerja Gupta	neerja17aiims@gmail.com
2.	Christian Medical College, Vellore	Dr Sumita Danda	sdanda@cmcvellore.ac.in
3.	Gangaram Institute of Postgraduate Medicine and Research, New Delhi	Dr Ratna Dua Puri	ratnadpuri@yahoo.com
4.	Kasturba Medical College, Manipal University, Manipal	Dr Anju Shukla	anju.shukla@manipal.edu
5.	Nizam's Institute of Medical Sciences, Hyderabad	Dr Shagun Aggarwal	shagun.genetics@gmail.com
6.	Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow	Dr Shubha rao Phadke	shubharaophadke@gmail.com
7.	SAT Hospital, Thiruvanthapuram	Dr Sankar V Hariharan	sankarvh@gmail.com
8.	Division of Medical Genetics, Mazumdar-Shaw Medical Center, Narayana Hrudayalaya Hospitals, Bangalore	Dr S J Patil	drsjpatil@gmail.com

Application Submission Deadline: November end Interview: Early December Award Notification by: December mid Fellowship starting date: January 1

ROUND 2

Application Submission Deadline: February end Interview: Early March Award Notification by: March mid Fellowship starting date: April 1

ROUND 3

Application Submission Deadline: May end Interview: Early June Award Notification by: June mid Fellowship starting date: July 1

ROUND 4

Application Submission Deadline: August end Interview: Early September Award Notification by: September mid Fellowship starting date: October 1

Curriculum

GENERAL OBJECTIVES

The practice of clinical genetics is based on in-depth knowledge of basic genetic principles, a broad range of knowledge of genetic disease as it affects all body systems, and a clear understanding of the principles of genetic counseling. The fellow in Clinical Genetics is to be trained in various aspects of genetics and medicine relevant to the practice of medical genetics, and should be capable of using this knowledge in the diagnosis and management of patients with gene related conditions. After successful completion of the program, the fellow shall be competent to diagnose genetic disorders, interpret genetic laboratory data, and have excellent communication and counseling skills. The fellow should be able to recognize clinical presentations of genetic disorders, evaluate the patient with genetic perspective, understand principles and limitations of genetic tests. This will help in learning clinical diagnosis, indications and interpretation of genetic disorders. Appropriate counseling and communication skills also will be taught. Exposure to prenatal diagnosis techniques also will be provided.

COURSE CURRICULUM

The training will be provided in the following areas: • Eliciting of medical history of the index patient, including developmental and reproductive history

- Eliciting of the family history, including drawing of detailed pedigree chart
- Conduct of physical examination of affected and related individuals with special emphasis on morphological features and anthropometric measurements, and proper documentation of the findings, including photographs
- Recognizing variations in human form (taking into account the features of the parents), and identification of formae frustae
- Following a logical approach in syndrome identification (Dysmorphology) including the use of diagnostic aids e.g. computer assisted diagnosis, literature search
- Recognizing the psycho-social and economic implications of the genetic problem in the family
- Formulation of an appropriate differential diagnosis and a plan of appropriate medical consultations and investigations, and its discussion with the family (pre-test counseling)
- Ordering tests & other medical consultations, and performing current techniques of obtaining samples for genetic study e.g. skin biopsy etc., after obtaining the informed consent
- Interpreting and explaining the results of genetic tests and other diagnostic studies, especially in areas of chromosomal, biochemical and molecular diagnosis (post-test counseling)
- Explaining the diagnosis, etiology, natural history, and management of the condition to the patient and the family
- Providing general, supportive & specific medical care to the affected individuals, including appropriate interventions where necessary
- Understanding implications of abnormal antenatal ultrasound findings, positive screen tests for fetal aneuploidy, teratogenic exposures in pregnancy and other high risk obstetric scenarios pertaining to genetic diseases and birth defects in the fetus.
- Communicating and counseling of couple in the event of high risk pregnancy scenarios and guiding them towards appropriate genetic testing

- Observing invasive prenatal diagnostic procedures
- Learning to interpret prenatal diagnostic test results and communicate the same to couples
- Observation and hands on experience of postmortem evaluation of abnormal fetuses with the aim of identifying genetic disorders and provide appropriate guidance & counseling to these couples
- Providing client-centered counseling and anticipatory guidance
- Providing pre-test and post-test counseling for screening tests for genetic disorders Providing pretest and pot test counseling for screening tests for genetic disorders
- Identifying and using community resources that provide medical, educational, financial and psychosocial support and advocacy
- Determining the mode of inheritance and risk of occurrence and recurrence of the genetic condition/birth defect, and appropriate communication of the same to the patient and family, including availability of antenatal diagnosis and other reproductive options
- Evaluating the client's and/or family's responses to the risk of occurrence
- Promoting informed decision-making about further testing and management of the risk of occurrence/recurrence, including provision of antenatal diagnosis, if possible
- Providing written documentation of medical, genetic and counselling information for families and other health professionals
- Treatment of rare genetic disorders mainly inborn errors of metabolism
- Coordinate interdisciplinary management of genetic disorders
- Organize supportive care of genetic disorders
- Collaborate and communicate with genetic laboratories and act as a link between genetic laboratory and clinical specialties
- All the above activities shall follow the ethical, social, & legal guidelines laid down for the purpose.
- The student will be exposed to approach to the following clinical presentations of the genetic disorders:
- Mental retardation/Developmental delay/Regression of milestones
- Congenital malformations, dysmorphism, multiple malformation syndromes
- Genetic hemolytic anemias
- Genetic disorders of blood coagulation
- Genetic neurological and muscle disorders, including disorders of senses such as deafness • Disorders of male and female sexual differentiation and development, such as ambiguous genitalia, hypogonadism, primary amenorrhea and infertility
- Neonatal hyperbilirubinemia
- Short stature , including genetic disorders of skeleton
- Overgrowth syndromes
- Genetic disorders of eye and skin
- Recurrent spontaneous abortions, stillbirths and perinatal deaths
- Inborn errors of metabolism presenting as acute, intermittent or slowly progressive illnesses presenting during neonatal period, infancy childhood or at any age
- Familial cancer syndromes
- Adult onset neurodegenerative disorders
- Abnormal antenatal ultrasounds
- Positive maternal screen for fetal aneuploidies
- Any familial disorder

- Any congenital disorder
- Teratogenic exposure during pregnancy including drugs, infections and radiation

Duration of Training under the SIAMG Fellowship

The duration of training in the fellowship shall be of 3 months. The trainee should personally participate in the care of at least 50 patients with various genetic disorders, in outpatient and inpatient settings and the record should be maintained in a Log Book of Clinical Training.

Provision shall be made for up to 3 months rotation in genetic laboratories to observe various diagnostic procedures. This includes one month each in cytogenetics, biochemical genetics, and molecular genetics. Laboratory training will be concurrent with clinical training in OPD. The laboratory rotations are aimed at understanding principles of testing, interpreting results and understanding limitations and sources of errors in the tests.

The student will be required to attend academic activities of the department and will be required to present at least 2 seminars, 2 journal clubs and 3 case presentations. The student will be required to attend various additional courses held in the department.

The applicant must have a basic medical qualification recognized by the Medical Council of India (i.e. MBBS or an equivalent degree) and a postgraduate medical degree in Pediatrics/ Internal Medicine/ Obstetrics and Gynaecology or clinical specialties like Dermatology, Ophthalmology, Radiology, Surgery, Orthopedics recognized by the Medical Council of India (i.e. MD/MS/DNB or an equivalent degree). A self-attested photocopy of each degree/ fellowship/ training program mentioned in the form (graduation, postgraduation, etc.) and of the medical registration certificate (should be sent along with the application form.

The decision as to whether an applicant qualifies for the SIAMG fellowship rests solely with the panel of expert reviewers constituted for the purpose.

The application form may be sent by ordinary/ registered post or courier to the address mentioned below or it may be sent as an attachment to the email id

indicated below. In case the application is sent through email, scanned copies of all the necessary documents (pertaining to qualifications) signed by the applicant have to be sent as additional attachments.

Duly filled application forms to be sent by ordinary/ registered post or courier to: Dr Ashwin Dalal

Head, Diagnostics Division

Centre for DNA Fingerprinting and Diagnostics

[Ministry of Science & Technology, Government of India],

Opp. Metro Rail Pillar No. NUP-9B,

Inner Ring Road, Uppal

Hyderabad – 500 039 Telangana INDIA

The application form can also be sent by email, with scanned copies of the necessary documents to:

info@iamg.in