



CERTIFICATE COURSE IN  
DIABETOLOGY  
(RECOGNISED BY RSSDI)

### **AIM OF THE COURSE**

To provide participants with the skills necessary to provide best diabetes care to patients.

### **PROGRAMME OBJECTIVES**

Provide a stand-alone, up-to-date course relevant to any Post MD/ post MBBS doctor wishing to improve the quality of their diabetes care. The fellowship certificate course covering clinical and organizational aspects of care of this chronic illness.

## **CERTIFICATE COURSE DETAILS WITH SYLLABUS**

**DURATION** : 2 yrs –Post MBBS & 1 yr-Post MD / DNB ( Gen-Medicine )\*

**EDUCATIONAL QUALIFICATION** : A candidate must possess MBBS degree from ANY of the recognized university approved by Medical Council of India (\*The duration of the RSSDI course is 1 yr for those with MD in Internal Medicine. Candidates having MD degree in other specialties will have to do the course over 2 years)

**AGE LIMIT** : To be decided by the university.

**NUMBER OF SEATS**: 2 per year for every eligible teacher as per Medical council rules. Accreditation committee will decide on the number of seats per Institute based on eligibility criteria.

**METHOD OF SELECTION OF CANDIDATES** : Selection for the Fellowship course is through a 3 stage performance evaluation:

**Stage 1** : Theory test for 90 marks (90 minutes duration and subject specific). The result will be displayed the following day on the notice board of the institute. No individual communication will be sent.

**Stage 2** : Based on the performance in the theory test, candidates 3 times the number of available seats will be called for the clinical assessment on the third day for a practical exam. A maximum of 90 marks will be scored for this assessment.

**Stage 3** : Those who have scored 50% in both stages will be finally interviewed on day five or six for final selection under the chairmanship of the course Director.

**NOTE** : Selection can also be based on just an Interview if less number of candidates apply. Post MD (Internal Medicine) will be given preference.

**Course Fee** : University related expenses , Administrative expenses, Examination Expenses, Library related expenses only can be taken by the institute from candidates. All candidates will be paid a stipend & this varies . For more details, candidates can directly communicate with the Institute head.

## **BACKGROUND TO SYLLABUS**

### **DIABETES PREVALENCE -THE BURDEN OF A GLOBAL EPIDEMIC**

Diabetes, and particularly the type 2 is positioned to be one of the largest epidemics in human history and certainly, it is one of the major threats to human health in the 21st century. According to the International Diabetes Federation in official relations with the World Health Organization and the United Nations (UN) (representing over 190 diabetes associations in more than 150 countries), diabetes is a global killer rivalling HIV/AIDS in its deadly reach. The disease kills some 3.8 million people a year. Every 6 seconds a person dies from diabetes-related causes. Diabetes hits all populations, regardless of income. It is becoming increasingly common. More than 240 million people worldwide now have diabetes. This will grow to more than 380 million by 2025.

### **INDIA- THE EXPANDING DIABETES CAPITAL**

India, crowned appropriately as *Diabetes capital of the world*, next only to China has the largest diabetic population and one of the highest diabetes prevalence rates in the world. Based on a compilation of the studies from different parts of the world, the World Health Organization have projected that, the maximum increase in diabetes would occur in India. The prevalence rates for type 2 diabetes in India are still increasing sharply with the number of sufferers predicted to rise from 70 million currently to 100 million in 2030. Considering the large population and high prevalence of the diabetes, the burden of diabetes in India would become enormous.

There is also a large pool of individuals with impaired glucose tolerance (IGT), many of who will develop type 2 diabetes later in life. The largest increases in the diabetic population in developing countries including India are projected to be in the most economically productive age groups. Indians are more prone to develop diabetes and its complications at a younger age. With the current high mortality and morbidity rates associated with diabetes, this represents a real threat to the economic productivity of countries such as India.

### **UNMET HEALTHCARE NEEDS IN INDIA**

Looking at the diabetes epidemic, as healthcare gives it becomes imperative that medical fraternity train and equip itself with the necessary expertise to deal with this epidemic at primary, secondary and tertiary levels. The care in diabetes is becoming increasingly complex, at a time when numbers are rising rapidly and patients are affected at a steadily younger age. It is interesting to know that 90% of the Diabetic population is covered by Post MBBS doctors (GPs), about 7-8% by Physicians only about 2% by specialists comprising of Diabetologists & Endocrinologists. *A Changing Demand of Physicians/ post MBBS doctors with a rising epidemic*

The general practitioners or Physicians are the first contact (primary) health care providers to most of the people with diabetes and other co-morbid conditions. Their responsibility in this role will be more demanding in the time to come, when a fiercely growing diabetes epidemic in our country will need early treatment with changing paradigms to address tight Glycaemic control.

However, the undergraduate medical curriculum and the internship training in medical colleges across India do not provide adequate education and clinical training to the post MBBS doctors to provide quality diabetes care. Physicians with Internal Medicine as their specialty also suffer from inadequate training as their curriculum is not structured toward any one specialty. Quality diabetes care is structured, follows established protocols and is amenable to audit and continuous quality improvement. It is very essential that post MBBS doctors / Post MD doctors be trained in quality diabetes care as the burden of diabetes is so huge that not all people can be cared for by specialist centers.

In several states in India, many eminent specialist diabetes practitioners with qualifications in endocrinology/Diabetology have been imparting structured education programs for general practitioners (with/without affiliation of professional bodies). Past experiences in the private sector by few colleagues demonstrates that such care is entirely feasible in all states across India. It will be a boon to persons with diabetes in all the states as they will have easier access to quality diabetes care. Even though we are conducting a "Certificate Course" at various Institutes, the recognition from Medical University will now give a stamp of authority, Respectability & acceptability for these doctors to Practice Diabetology.

This course covers theoretical, clinical, administrative and practical aspects of good diabetes care, to enable rapid improvement in the quality of care being delivered in practice.

The course features new, innovative formats for peer and tutor support and evaluation; implementation in practice is encouraged by the completion of tasks throughout the course. It is suitable for any primary care professional (Physicians & Post MBBS) currently providing or preparing to provide routine care for their patients with diabetes. All this will now have a new meaning as the Certificate Course programme is recognized by RSSDI.

### ***AFTER COMPLETING THE COURSE, PARTICIPANTS SHOULD BE ABLE TO***

Organize and deliver more structured care in the practice.  
Diagnose and manage type 2 diabetes.  
Recognize type 1 diabetes and refer appropriately or treat.  
Early diagnosis of management of Gestational Diabetes  
Manage risk factors and detect early diabetes complications.  
Recognize when insulin is needed in type 2, and initiate it.  
Deal with emergencies in type 1 and 2 Diabetic Patients.  
Support and advise all patients with diabetes and their families.  
Understand different models of diabetes care provision available in primary care.  
Set up and manage a medical records system  
Help in research at all levels of care

## **SYLLABUS**

The training period is designed to meet the maximum requirement for training in Diabetology prior to certification.

### ***CLINICAL DIABETOLOGY WILL INCLUDE***

Basic Sciences as related to Diabetology.  
Carbohydrate Metabolism  
Protein & Fat Metabolism  
Islet Cell Development & Function  
Hormone action & the regulation  
Blood Glucose & Glycosylated Hemoglobin assays  
History of Diabetes  
Definitions, Genetics & Pathogenesis  
Obesity & Lipoprotein Disorders  
Hypertension in Diabetes  
Treatment of Diabetes –Current to Future  
Biology of the complications of Diabetes  
Clinical aspects of Complications  
Hypoglycemia & Islet cell tumors  
Patient education, Diet & exercise modules  
Medical statistics  
Clinical & Laboratory Research  
CGMS, Insulin pumps, Glucometers & other delivery devices.  
Technology use in Diabetes  
Setting up of a structured Diabetes care unit

### ***DOCTORS SELECTED FOR THE COURSE WILL HAVE TO WORK IN 3 SHIFTS***

**Shift 1:** This period involves seeing New patients coming as Out Patients. Taking of detailed medical History, Examination, writing of investigations, Dietary History, Education, Fundus examination & final counseling of each new patient goes on during this period. Review patients are also examined & counseled when education session goes on for the new patients. Selected Candidates will learn the work under the supervision of the senior consultant & over a period of 3 months will start working independently.

**Shift 2 :** This period involves Ward work, coordinating with the Cardiologist, ECHO, TMT, working in the Foot clinic & ward rounds with the consultants. This period also gives adequate scope to interact with the radiologist when procedures are being done by them.

**Shift 3:** Involves ward work, writing of Discharge summary, attending to the emergencies at night & reading in the Library. Morning work ends with ward rounds with the consultant.

Note : timings of each shift will be decided by the Institutional head /Course Director. This may also vary from place to place.

### **ADDITIONAL POSTINGS**

In addition, candidates will spend required number of days in the Ophthalmology & Bio-Chemistry department. They will also be posted in Dietary and Patient education section of the Hospital. Candidates will also be required to work in the free clinics on a regular basis. Separate postings under a Cardiologist, Nephrologists and Neurologist are also being formalised.

Within the Hospital, candidates will also be posted to work in Foot clinic & in the Research Dept under respective heads for a period of 15 days at least to gain extra knowledge.

### **TEACHING & LEARNING ACTIVITIES**

Journal review meetings : Once a month

Seminars: Twice a week

Difficult case discussions : once a month

Community work: 1st Sunday of every month. Free clinic at Binny Mills slum area. Type 1 free clinic once a month at "Bangalore Diabetes Hospital". Many more free camps are getting added for community work. This gives a huge scope to see Patients of diff. types & most importantly the Type 1 DM patients in great numbers.

Clinical rounds : Daily

Participation in Conferences : At least 2 in a year

Paper presentation: Candidate will have to write thesis on one given subject under an Independent Guide. Research Department head or Course director will help them in preparation. Candidates will also undergo GCP training so as to participate in clinical trials as study co-coordinators.

Class room teaching goes on every week on various aspects of Diabetes. Cardiology, Nephrology, Neurology & Ophthalmology and internal medicine topics relevant to Diabetes will also be covered by the respective consultants.

### **HOSPITAL LIBRARY**

Should provides access to all the latest Books in the field of Diabetology & at least 2 journals of International repute (Diabetes care & Diabetes Medicine). Computers with internet access is provided for online journals & other personal work.

### **SCHEME OF THE EXAMINATION**

Written - 1 paper covering basic & clinical science

1 Long & 1 short case discussion in clinical exam

Viva voce

### **ASSESSMENT**

Students selected for the course will have work as outlined in the application form. Assessments are continuous, and formative. It includes:

Participation in course-work and practical sessions.

Record of clinics and seminars attended

Summary of discussions with consultant mentor

Interesting case analysis

Record of self directed learning

Online support from peers and tutors.

Feedback in the form of a training portfolio completed throughout the course by all students.

Final Examination with one internal & one external examiner

## ***SUGGESTED READING***

International Text Book of Diabetes : 3rd Edition  
Text Book of Diabetes : RSSDI  
Joslins Text Book of Diabetes.  
Text Book of Diabetes by Williams & Pickup  
Evidence Based- Diabetes Care by Gersterin & Haynes  
Diabetes & Cardiovascular Diseases, 2nd Edition Johnstones & Veves  
Lipids & Vascular Diseases by D John betteridge  
Nutritive Values of Indian foods by NIN, Hyderabad  
Williams Textbook of Endocrinology.  
Diabetic Footcare by Edmonds, Foster & Sanders.  
Latest updates on Medscape and uptodate.com

## ***JOURNALS***

1. Diabetes Care.
2. Diabetes
3. International Journal of Diabetes in Developing Countries
4. Diabetologia
5. NEJM
6. Nature
7. Science