



**RAMAIAH**  
Medical College

**RAMAIAH MEDICAL COLLEGE**

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# **SUBSPECIALTY CLINICS**

**DEPARTMENT OF PAEDIATRICS**

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## SUBSPECIALITY CLINICS

1. Respiratory (Asthma/TB) clinic
2. Adolescent Clinic
3. CCRU
4. Epilepsy Clinic
5. Genetics Clinic
6. Pediatric Nephrology Clinic
7. Pediatric Endocrinology Clinic
8. Rheumatology Clinic
9. Child development clinic
10. Pediatric Cardiology Clinic
11. Thalassemia clinic

## 1. PAEDIATRIC RESPIRATORY CLINIC

Asthma which is known to be one of the most common chronic diseases in the world has become more prevalent and more severe in recent years. Asthma causes chronic hyper responsiveness of airway leading to “Narrowing” further causing the lining of airway to swell. This inflammatory change in the airway causes difficulty in breathing and characteristic symptoms such as cough, shortness of breath, wheezing, chest tightness due to excessive mucus production. Prevalence of asthma in Bangalore is noted to be 30% which is a significant proportion, as quoted by IAP .In such children emergencies are seen, commonly called as “STATUS ASTHAMATICUS (Acute Severe, asthma)

At Ramaiah Medical College Hospital Paediatric Clinic Respiratory centre, we offer advanced diagnostic testing and innovative treatments for children with asthma. For those with asthma and co-existing conditions, such as sinusitis, Gastroesophageal reflux, vocal cord dysfunction, we also coordinate other care with specialists in gastroenterology, otolaryngology, and Sleep Medicine And Other Allied Specialities, Our integrated approach to patient care provides you with state-of-the-art diagnostic and treatment services and opportunities to try new medications and therapies, which is evidence based.

### AIMS AND OBJECTIVES

Dept. of Paediatrics- Respiratory division gives full range of clinical services including

- Comprehensive consultation services and on-going care for refractory asthma (poorly-controlled asthma)
- Comprehensive consultation services and management of tuberculosis in children

### SERVICES PROVIDED

- Comprehensive consultation services and on-going care for refractory asthma (poorly-controlled asthma)
- Comprehensive consultation services and management of tuberculosis in children
- Occupational and environmental asthma evaluation.
- Testing for suspected sensitivity to foods, food additives, aspirin and allergens
- Specialized testing to determine how well your asthma is being controlled
- Measuring the obstruction with spirometry.
- Evaluation of Respiratory infections.
- ENT Evaluation, Gastroesophageal reflux & sleep studies.
- Bronchoscopic evaluation to identify, potential chronic causes of asthma.
- Paediatric imaging.

## TREATMENT APPROACHES

Treatment of Asthma requires a multidisciplinary approach, Especially treatment at home requires effective education formed by the basis of good communication about warning signs, the do's & don'ts about asthma.

Education is offered here using a family-centred care approach. The family-centred care approach values principles of respect, information sharing, collaboration and confidence building. Education is considered an essential component of asthma care and effective education is defined as providing a child, youth or family with the appropriate tools to self-manage their asthma. The components of effective asthma education are:

- An effective treatment plan that includes an action plan.
- Follow-up visits that assess current management and build on previous education
- Good communication with families and primary care providers
- Effective therapy (asthma education is effective only in the presence of effective therapy).
- Treatment for asthma, and coexisting conditions that complicate asthma control.
- Newer treatment like Anti-IgE therapy.
- Initial management plans for newly diagnosed asthma cases and continued care when needed.
- Comprehensive patient education



## PUBLICATIONS

1. Dr A.R. Somashekar,KG Ramakrishnan:Evaluation of asthma in children using childhod-asthma control test (C-ACT) and asthma therapy assessment questionnaire(ATAQ):Indian paediatrics:2017;54:746-748.
2. Dr A.R. Somashekhar,Ashwini B Prithvi,M.N Vanitha gowda:Vitamin D levels in children with bronchial asthma:Journal of clinical and diagnostic research:2014;8(10):4-7.
3. Dr A.R. Somashekhar,Ramakrishnan KG and Vanitha Gowda:Role of serum magnesium in asthamatic with children:Arch Asthma Allergy Immunol.2018;2:003-005.
4. Dr.Chandika Rao, KG Ramakrishnan,Dr A.R. Somashekhar;Patterns of health care for children A qualitative study:International review of paediatric research:2017;Vol 4,No 07:1-10.
5. Dr A.R. Somashekhar,Ramakrishnan KG and Vanitha Gowda:Complement factor (C3) level as a marker of inflammation in paediatric asthma:J Lung health dis;2019;3(2);36-38.
6. Dr A.R. Somashekhar,Ramakrishnan KG:A summary of evaluation of asthma control in children using childhod-asthma control test (C-ACT) and asthma therapy assessment questionnaire(ATAQ):J Lung Health Dis:2019;3(2);1-2.
7. A R Somashekar,S A Nagarajan,Sanketh,H B Mallikarjuna,B M Sunil kumar:Lung functions in children with Type 1 diabetes mellitus:A cross sectional study:Indian J Child Health.2014;1(2):49-53.
8. Somashekar Anakanahalli Ramu,Arpitha Panduranga,S.Akarsh:A study to assess the psychosocial problems and quality of life of parents with asthamatic children in OPD's of Ramaiah hospitals,bengaluru:Open journal of paediatrics:2018;8:1-8
9. A.R Somashekar et al.,Effect of Yoga(Pranayama)in improving pulmonary function tests in pediatric age groups:one year prospective study.EJMED.2020;4(2):1-4



## 2. ADOLESCENT OPD / CLINIC

The term adolescent (10 years to 19 years) is derived from the Latin word “adolescent”, meaning to grow, to mature. Critical behavior habits and skills are formed, which create a strong foundation for healthy adult life. Health services include routine checkups, school and sports physical examinations, dental and ophthalmic care substance abuse and medical care for illness and chronic conditions. The adolescent OPD services are delivered by a team of dedicated physicians who are trained in adolescent care. Additional faculty include psychologist, nurse, dieticians and other specialists including physiotherapists. Parents and adolescent attend the initial appointment. The team assesses the needs of the adolescent and family. Counselling for the adolescent is done in confidence. Medical history, psychosocial history, complete examination is performed. Feedback is provided to parents. Individual plan is developed and the family is guided for follow up.

### Goals

- To assess the issues that concern adolescents coming to Ramaiah Hospitals for any clinical or mental health problem.
- To evaluate the adolescent in a comprehensive manner to cover all issues.
- To aid in transition of adolescents having chronic illness to adult care.
- Provide health information to parents and people working with adolescents.
- Take a leadership role when planning and developing policies for adolescent programs.
- Promote new knowledge and competence in adolescent health.
- Monitor efforts to make health services easy to access, effective and of high quality.
- Support research that promotes adolescent health.
- To train undergraduates and postgraduates in adolescent health.

## Goals

1. Growth issues, growth monitoring.
2. Pre – sports participation
3. Eating disorder
4. Medical chronic problems: epilepsy, asthma etc
5. Obesity
6. Nutritional assessment
7. Immunization
8. Counselling
9. Life skill classes
10. Poor school performance
11. Screen for depression, anxiety, bullying, anger
12. Behavioral problems
13. Screen for eating disorders
14. Child abuse and sexual abuse screen, respond to disclosure and management

Parents may attend an initial appointment where background information is collected. The team will assess the needs of the adolescent and the family, and determine whether **Adolescent Services** is the most appropriate service.

Referrals to other services may be recommended.

Counselling is done individually and feedback is provided to parents.

The team develops an individualised plan for each session and provides interventions.

**Confidentiality:** All information is kept confidential

Involves a multidisciplinary team of specialists including

- Adolescent physicians
- Psychologists
- Counsellors
- Dieticians
- Physiotherapists



## Publications

1. Chandrika Rao, AR Somashekar, PP Maiya , Depression in adolescents with chronic medical illness, International Journal of Adolescent Medicine and health, Sept 2011, Vol 23, Issue 3, Pages 205-208.
2. Vishnu Girish, Somashekar, A., Rao, Chandrika . and Murthy, N. (2014) Correlation of Cognitive Performance and Thyroid Hormone Levels in Adolescents with Subclinical Hypothyroidism. Open Journal of Pediatrics, 4, 169-175
3. Effect of central adiposity on lung function tests in adolescents. Chandrika Rao, Varun B Renukappa, AR Somashekar, NS Murthy. Indian J Child Health Vol 4/ Issue 3/ Jul-Sep 2017, 306-309
4. Mamta S Chhabria, Aditi Rao, Chandrika Rao, Somashekar AR. Prevalence and Forms of Bullying Perpetration and Victimization in Indian Adolescents. Int J Med. Public Health. 2020; 10(4):213-216.
5. Adolescent Sexuality, Dr. Chandrika Rao, Indian Journal of Practical Pediatrics,
6. Text book chapter- Postgraduate Text book of Pediatrics, By Dr. Piyush Gupta, Adolescent Sexuality. Chapter 17, section 2.1, first and second edition .

## Paper awards

Dr. Nimrat Sandhu, Dr. Chandrika Rao - Profile of Adolescent Sexual Assault in Tertiary care hospital , PEDICON, Bangalore, 2018.

Dr. Charita , Dr. Chandrika Rao - Adolescent Prediabetes and its associated factors, Adolescon 2021, Lucknow, First prize, Free paper

Dr. Deepti, Dr. Chandrika Rao - Blood levels of Heavy metals (Cadmium, Arsenic, Chromium, Mercury, Lead) in adolescents , Adolescon 2021, Lucknow, Second prize, Award paper

### 3. COLLABORATIVE CHILD ABUSE MANAGEMENT IN RAMAIAH HOSPITAL

#### I. Introduction

A hospital-based multidisciplinary team can recognise, manage and support any child who has undergone abuse, and uphold the dignity and best interests of the child. The hospital is responsible for ensuring it has clear-cut policy for the management of child abuse and neglect, regular training for staff in the policy, processes to ensure the policy is adhered to, such as clinical audit, and adequate support and supervision for staff, through formation of a child protection committee with representation from all involved departments and administration.

#### II. Objectives

- To provide medical consultation and guidance to cases referred, diagnosed or suspected as child abuse in a multidisciplinary team approach, provide teaching and training on medical, social and legal aspects of child abuse
- To conduct prevention programs to impact child abuse outcomes.
- To aid in research activity advancing knowledge and management of child abuse.
- To function as a centre to network and facilitate stakeholders roles in management of child abuse
- To develop into a centre of training for trauma informed care and all forms of child abuse.

#### Protocol

The departments of Gynecology, Pediatric, Forensic, Community Medicine, Radiology, Psychiatry, Casualty Medical Officer, Accident and Emergency department, Medical social work and all units who provide care for children will work for child abuse cases and form the CCRU- Collaborative Child abuse Response unit.. Pediatric department will coordinate cases for overall management. Gynecology department will examine for sexual abuse. The forensic department will help in medicolegal doubts and assessment of alleged perpetrator.. The psychiatry department will aid in counselling the case. Trained staff in each department will be available at any time to attend to these cases and discharge individual responsibilities as per speciality.

All doctors, nurses, ward staff in above departments as well as in administration have responsibility for the management of suspected abuse and be conversant with Child Abuse Management, understand the referral and management protocols of suspected abuse and neglect, honour the dignity of the child and maintain strict confidentiality.

### III. Publications, thesis

Vyjayanthi Kanugodu SrinivasaS ubramaniyan, Anukant Mital,<sup>1</sup> Chandrika Rao,<sup>2</sup> and Girish Chandra<sup>3</sup>, Barriers and Challenges in Seeking Psychiatric Intervention in a General Hospital, by the Collaborative Child Response Unit, (A Multidisciplinary Team Approach to Handling Child Abuse) A Qualitative Analysis, Indian J Psychol Med. 2017 Jan-Feb; 39(1): 12–20.doi: [10.4103/0253-7176.198957]

**Thesis** - Social and clinical characteristics of adolescent presenting with history of abuse

**Award Paper** - Dr.Nimrat Sandhu, Dr. Chandrika Rao-Profile of Adolescent Sexual Assault in Tertiary care hospital , PEDICON, Bangalore, 2018.



## 4. COMPREHENSIVE PAEDIATRIC EPILEPSY CLINIC

### Introduction

Seizures constitute the commonest neurological problem in children with significant epilepsy having its onset in childhood. A considerable treatment gap exists in developing countries due to poverty, stigmatization, and lack of trained manpower. Evidence-based clinical practice guidelines can improve the quality of care. Fear, misunderstanding, discrimination and social stigma have surrounded epilepsy for centuries. This stigma continues in many countries today and can impact on the quality of life for people with the disease and their families.

### Aims and Objectives

- Is to provide quality care for children suffering from seizure, using national and international guidelines.
- To provide easy, quick and practical guidelines for diagnosis and management of Acute symptomatic seizures, newly diagnosed and Refractory childhood epilepsy
- To train Undergraduate and post graduate students to diagnose, investigate and manage seizures.
- Improve knowledge about epilepsy among the people with the disorder and their families.
- To facilitate reduce the stigma, discrimination and social isolation surrounding children with epilepsy.

### Services Provided

Diagnosing epilepsy is essentially a clinical process that can be performed in non-specialized health settings by taking a good clinical history and performing an examination; an international classification is available that facilitates diagnosis.

In the integrated management of people with epilepsy, consideration of psychosocial factors is essential and includes education for self-management; that is, the measures and behaviors that people with epilepsy should adopt and maintain to control their illness. In some cases, complementary measures can also be helpful; these include, for example, the use of relaxation techniques, a healthy diet, religious or cultural activities, and social support; such measures are acceptable as long as the patient continues the basic drug therapy.



The objective of rehabilitation is to improve the quality of life of people with epilepsy and integrate them into society and the work environment. The interventions that are selected will depend on the complexity of the cases; most people with epilepsy enjoy a substantial degree of autonomy and only a minority suffers from serious forms. This group includes persons with disabilities and people who are institutionalized or highly dependent on their families; here, it is essential to develop patients' social and occupational skills.

The facility brings together an expert team of medical and surgical paediatric experts who work together with a compassionate nursing staff to provide children with accurate diagnosis and medical care. Our multi-specialities include Neurosurgery, Neurology, Psychiatry, Psychology, Neonatology, Paediatric Medicine, Paediatric Surgery, Developmental Paediatrics, Critical Care & Emergency Services, and more.

## Services Provided

The hospital has high-end technological infrastructure and medical facilities that allow safer, better, and comprehensive medical care. The facility is equipped with critical care beds, 3 Tesla MRI, operation theatres, 128 Slice CT Scan, EEG, transfusion medicine, nutrition counselling, advanced laparoscopic surgical equipment and day care ward.



## 5. GENETICS CLINIC

Clinical genetic services include the assessment and diagnosis of birth defects and other genetic diseases, and also a provision of genetic counselling. Specialized genetic services are delivered by a genetic physician and their team.

Genetic counselling focuses on the human and medical problems associated with the occurrence or risk of recurrence of a congenital anomaly or genetic disease in a family. This involves discussion of the complications, probable course and treatment of the condition, the recurrence of similar problems in future pregnancies and of options available to avoid recurrence.

The individual or family is counselled to choose the most appropriate course of action in view of their risk, their interpretation of the burden of the condition and their own ethical and cultural orientation. Some birth defects and genetic diseases can be diagnosed in a fetus prior to birth but most conditions are not detectable. Prenatal diagnosis is available to pregnant women who are at an increased risk of having a baby with a serious abnormality that can be identified in the fetus.

### Referrals for genetic clinic

1. Recurrent first trimester abortions
2. Abnormalities detected in routine ultrasonogram
3. Previous sibling with a confirmed or suspicion of inherited genetic disorder
4. Family history of developmental delay of unknown etiology
5. Child with dysmorphic features
6. Prenatal genetic counselling for couple with consanguinous marriage / elderly primigravida.
7. Suspected inherited metabolic disorders
8. Genetic counselling

Research opportunities : ICMR - national registry for rare disease



## 6. PEDIATRIC NEPHROLOGY – DIVISION OF PEDIATRICS

### Introduction

The division of Paediatric Nephrology, came to formal existence in October 2019, as a part of the department of Paediatrics. Though, still taking its baby footsteps, it is one of the few centres in the state of Karnataka to provide exclusive paediatric nephrology services. The unit cares for children with renal diseases, which includes childhood nephrotic syndrome, primary glomerular diseases, urinary tract infections, paediatric hypertension, renal tubular disorders, renal stones, acute kidney injury and chronic kidney disease, including neonatal renal problems.

### Aims And Objectives

#### Short Term

1. To sensitize the undergraduate students in the field of Paediatric Nephrology.
2. To train postgraduate students in Paediatrics in evaluation and management of common diseases of kidneys in children.
3. To create awareness about the field of Paediatric Nephrology among the local practising paediatricians.
4. To conduct clinical research in the field of Pediatric Nephrology.

#### Mid Term

1. To train the post graduate students in procedures like renal biopsy, hemodialysis catheter insertions, peritoneal dialysis, so they can manage renal emergencies and basic renal problems in children with confidence when they start practising as trained Paediatricians.
2. To conduct camps in rural parts of Karnataka, so that the Paediatric Nephrology services can reach the peripheries.
3. To conduct interdisciplinary research pertaining to Paediatric Nephrology
4. To start Paediatric Renal Transplantation services.
5. To set up an exclusive Paediatric Dialysis - Hemodialysis and Peritoneal Dialysis Unit.



## Long Term

1. To start Fellowship Training Programme in Paediatric Nephrology for post MD candidates.
2. To start DM Pediatric Nephrology training course for post MD candidates.
3. To conduct interdisciplinary and transdisciplinary research pertaining to Paediatric Nephrology and to avail research grants.
4. To build a team of Paediatric nephrologists and establish a standalone department of Paediatric Nephro Urology.
5. To establish a Paediatric Renal Transplantation Centre.

The division of Paediatric Nephrology is one of the few centres in the state of Karnataka to provide exclusive paediatric nephrology services. The unit cares for children with renal diseases, which includes childhood nephrotic syndrome, primary glomerular diseases, urinary tract infections, paediatric hypertension, renal tubular disorders, renal stones, acute kidney injury and chronic kidney disease, including neonatal renal problems.

## Services Provided

Paediatric acute renal replacement therapies including acute peritoneal dialysis, slow low efficiency dialysis (SLED), continuous renal replacement therapies (CRRT), intermittent haemodialysis and Plasma Exchange are all performed. The unit has a very dynamic chronic kidney disease program which includes conservative management of CKD, initiation of maintenance dialysis – Hemodialysis and CAPD (Chronic Ambulatory Peritoneal Dialysis). Since its inception, many children have been initiated on maintenance dialysis; the youngest child being a 9-month-old child with ESRD, secondary to Infantile Nephrotic Syndrome, who has been started on maintenance CAPD. Paediatric renal transplantation services are offered.

The unit works in close association with the other departments/ units of the hospital, including adult Nephrology, Paediatric Surgery, Neonatology, Paediatric Orthopaedics, Physiotherapy and Clinical Psychology. We run Paediatric Nephrourology Clinic, once per week in association with the Paediatric Surgery department, where children with lower urinary tract disorders are evaluated and managed.

The unit intends to become Centre of excellence in Pediatric Nephro - Urology to promote holistic learning and to manage children with kidney diseases under single roof.

## 7. CHILD DEVELOPMENT CLINIC

It is estimated that around 10 % of children face problems in their development in one way or other. Such developmental delays and difficulties can affect one or more areas of development, viz., motor, language, social and intellectual development. They are caused by anything that disrupts the smooth and orderly development of the brain before, during or after the birth of the child. Developmental problems not only affect the children but also their families who struggle to understand what is the problem and what to do about it.

Early detection and intervention of such delays is crucial because the ability of the brain to recover from any insult or injury with appropriate intervention (neuroplasticity) is highest in early childhood. Early intervention can put the child back on the path of optimum development, prevent secondary complications and empower families.

Child development clinic serves both normal children and as well as abnormal children with reference to learning ,proper behavior and other mentally physically challenged children as well. This clinic is more important for families to understand the problem ,educate their children and guide the families towards education and social and emotional stability and development, towards better quality of life. This is one of a kind in Ramaiah institute for medical education of physicians and serving the public.

### Aims And Objectives

- To provide all the necessary evaluations, assessments and services under one roof, so that children with developmental problems such as global delays,intellectual disability, autism spectrum conditions, speech and language delays and cerebral palsy, attentional problems, hyperactivity, school-related problems and theirfamilies can benefit.
- To provide services for children going through behavioral, emotional problems. Focus is on doing a thorough and comprehensive evaluation, make an individualized plan of management, and carry it out through a multidisciplinary team of professionals. Emphasis is on active collaboration with children, parents and facilitate parent-mediated home-based interventions in addition to centre-based interventions.
- Orientation and training of students towards developmental and behavioural paediatrics. The goal is to train future medical graduates in academic developmental behavioral pediatrics. This is accomplished through a broad range of clinical experiences, a comprehensive research training curriculum, and opportunities for teaching and advocacy.

- Long term goal: To create a centre of excellence in developmental and behavioural paediatrics and to undertake research projects related to the field of developmental and behavioural paediatrics

## Services provided

Clinical evaluation and management of such children requires a multidisciplinary team approach consisting of paediatricians, neurologists, orthopaedic surgeons, child psychiatrists, clinical psychologists, physiotherapists, occupational therapists, speech therapists and other specialists.

The emphasis of the clinic is on active collaboration with children and parents to promote not just hospital-based procedures but also facilitate parent-mediated home-based interventions.

Conditions managed in the clinic :

- Kids with neuropsychological disorders like Autism, ADHD, language disorders
- Intellectual disability.
- High risk babies.
- Global developmental delay issues.
- Syndromes like Downs, Guillian-Barre and muscular dystrophies and other neuro-muscular disorders.
- Cerebral palsy and other motor disabilities.
- Neuro-infections like meningitis, encephalitis.
- Children having demyelinating disorders and traumatic brain injury, spinal cord injury
- Children with limp, gait problems (including congenital, traumatic limb and joint abnormalities)

With these in mind, the clinic services is extended under one roof with the inauguration of the **Paediatric Rehabilitation Intervention and Development Clinic (PRIDE Clinic)** with the goal “Empowering children to reach their potential”

Extended services are offered by Child and Adolescent Psychiatrist, Ophthalmologist, Speech and Audiology, Occupational Therapist

## 8. RHEUMATOLOGY CLINIC

Pediatric rheumatology is a clinical discipline that embraces the study of inflammatory and noninflammatory disorders of the connective tissues and joints in children. The multidisciplinary pediatric rheumatology team offers coordinated services for children and their families . This specialty requires a diagnostic and therapeutic approach to the “whole” child and family unit, and careful observation over long periods.

### Aims And Goals

- To provide the highest level of evidence-based, state-of-the-art family-centered care to children with rheumatic disease.
- Early recognition of signs and symptoms of rheumatic disease with timely initiation of treatment.
- Monitoring for disease complications and adverse effects of treatment.
- Coordination of subspecialty care and rehabilitation services with communication of clinical information.
- Child- and family-centered chronic illness care, including self-management support, alliance with community resources, partnership with schools, resources for dealing with the financial burdens of disease, and connection with advocacy groups.
- Planning for transition to adult care providers needs to start in adolescence.
- Research



## Protocol

The clinic provides comprehensive evaluation, diagnosis, management and follow-up of rheumatic conditions including:

- Juvenile Spondyloarthritis
- Juvenile Idiopathic Arthritis (Previously known as Juvenile Rheumatoid Arthritis)
- Inflammatory Bowel Disease associated Arthritis
- Reactive Arthritis
- Fever of Unknown Origin (FUO)
- Henoch-Schönlein Purpura (HSP)
- Juvenile Dermatomyositis
- Juvenile Polymyositis
- Kawasaki Disease
- Morphea (localized scleroderma)
- Periodic Fever Syndromes (Auto-Inflammatory Syndromes)
- Raynaud's Phenomenon
- Sarcoidosis
- Systemic Lupus Erythematosus & related connective tissue diseases
- Vasculitis
- Uveitis (non-infectious)



## 9. ENDOCRINOLOGY

Pediatric endocrinology is a branch of medicine that focuses on the endocrine system in children. The endocrine system creates and controls your child's hormones. The hormones in your child's body regulate everything from their body temperature to their mood, growth, and more. The most common endocrine disorders are related to problems of the pancreas or the pituitary, thyroid, or adrenal glands. These problems can be caused by either a hormonal imbalance or by tumors.

### Aims And Objectives

To train candidates for careers in academic pediatric endocrinology. Specifically, our program is designed to develop the skills necessary to provide state-of-the-art patient care, and to develop skills in research that will allow the subspecialty resident to contribute to the progress of the field of Pediatric Endocrinology.

### Objectives

1. Demonstrate the knowledge, skills, and ability to gather and integrate essential and accurate medical information about their patients and to attain proficiency in history taking and physical examinations as it relates to the endocrine system.
2. Identify pertinent medical problems, establish differential diagnosis, and make informed decisions and therapeutic interventions according to patient information and preferences, up-to-date scientific evidence, clinical judgment, consideration of risks and benefits, and in accordance with protocol guidelines.
3. Develop and implement patient evaluation and/or treatment plans in accordance with protocol guidelines.
4. Provide information and education to referring physician, patients and their families in a timely manner.
5. Provide effective and efficient standardized transitions of care

## Protocol

The clinic provides comprehensive evaluation, diagnosis, management and follow-up of the conditions mentioned below:

1. Short stature
2. Failure to thrive
3. Obesity
4. Nutritional rickets
5. Puberty-normal variations
6. Congenital hypothyroidism
7. Acquired hypothyroidism
8. Precocious puberty
9. Cryptorchidism
10. Turner syndrome
11. Klinefelter syndrome
12. Diabetes mellitus in children
13. Education of the family of a newly diagnosed patient
14. Outpatient management
15. Diabetic ketoacidosis
16. Complications of diabetes
17. Adrenal insufficiency
18. Congenital adrenal hyperplasia
19. Hypoglycemia
1. Thyroid nodules, carcinoma
2. Disorders of the adrenal medulla
3. Adrenal and gonadal tumors
4. Endocrine hypertension
5. Ambiguous genitalia
6. Epidemiology, etiology, and prevention of
7. Autoimmune endocrinopathies
8. Disorders of calcium, phosphate, and Vitamin D (other than nutritional rickets)
9. Parathyroid deficiency states
10. Hyperparathyroidism
11. Metabolic bone disease
12. Neonatal calcium and phosphate disorders
13. Disorders of water balance
14. Diabetes insipidus (central, nephrogenic)
15. SIADH
16. Hyperlipidemia

## 10. PEDIATRIC CARDIOLOGY CLINIC

Children are affected with different heart conditions of which, some can present at birth (congenital) and some which are acquired can present at a later stage. Cardiac ailments in children can take variety of forms, from minor ailments that can be cured by short term medication, to ones that may require surgical intervention.

### Aims And Objectives

1. Diagnosis and management of congenital and acquired heart conditions.
2. Improve cardiovascular health and quality of life through prevention, detection, and treatment of risk factors for heart diseases and stroke.
3. Early identification and treatment of heart diseases and strokes.
4. Prevention of repeat cardiovascular events.
5. Reduction in deaths from cardiovascular diseases.
6. Postgraduate speciality training in clinical diagnosis, ECG interpretation, and observation of procedures like cardiac catheterization.

### Services Provided

In this regard, the department is working in collaboration with the paediatric cardiologist from MSR-NH (Narayana Hrudayalaya).

The clinic caters to extensive echocardiographic work related to children and focuses on early detection of various cardiac diseases.

Paediatric cardiologists diagnose, treat, and manage heart problems in children, including:

1. "congenital heart diseases" – cyanotic & acyanotic.
2. "arrhythmias"

The team specializes in managing cardiac diseases at the time of birth along with other congenital defects. Some of which are mentioned as under:

- Cardiac valve disorders
- Atrial or ventricular septal defects
- Patent ductus arteriosus
- Hypoplastic left heart syndrome
- Tetralogy of Fallot
- Displacement of aorta
- Congenital cardiac defect which might have some life-long effects on the health of the child.





## 11. THALASSEMIA CLINIC

Thalassemia is an important chronic disease requiring continuous monitoring. At our hospital, we have diagnostic facilities. Also, there is provision for free blood transfusions. Blood transfusion when necessary along with frequent monitoring and work up for complications reduces the morbidity and mortality quite significantly in these patients.

### Aims

- Diagnosis, management of thalassemia children
- Undergraduate teaching of Thalassemia.

### Undergraduate Teaching

- To introduce the undergraduates to identify the common haematological disorders such as nutritional anemia, thalassemia and treat them.

### Post Graduate Teaching

- To strengthen the basics of hematology
- Approach to any haematological disease
- To learn the procedures such as Bone marrow aspiration and biopsy.
- To identify and manage advanced haematological diseases such as Malignancies, immunodeficiency.
- To learn regarding newer investigations such as haemoglobin electrophoresis, flowcytometry, etc.
- Encouragement for research.





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Medical College