



مدينة الملك فهد الطبية  
King Fahad Medical City

## Executive Administration of Medical Affairs



# KFMC SCOPE OF MEDICAL SERVICES

**KFMC Scope of Medical Services****Table of Contents**

<b>Title</b>	<b>Page Number</b>
<b>KFMC Mission, Vision and Objectives</b>	<b>3</b>
<b>Introduction</b>	<b>4-9</b>
<b>Key Performance Indicator (KPI)</b>	<b>10</b>
<b>Chapter 1- Main Hospital</b>	<b>11-15</b>
<b>Chapter 2- Children's Specialized Hospital</b>	<b>16-21</b>
<b>Chapter 3- Women Specialized Hospital</b>	<b>22-34</b>
<b>Chapter 4- Rehabilitation Hospital</b>	<b>35-55</b>
<b>Chapter 5- National Neuroscience Institute</b>	<b>56-60</b>
<b>Chapter 6- Comprehensive Cancer Center</b>	<b>61-78</b>
<b>Chapter 7- Prince Salman Heart Center</b>	<b>79-84</b>
<b>Chapter 8- Obesity, Endocrine and Metabolism Center</b>	<b>85-90</b>

## KFMC MISSION, VISION & OBJECTIVES

### KFMC Mission:

Dedicated to provide highly specialized, evidence-based and safe health care, enhanced by education, training and research.

K: known as highly specialized healthcare provider.

S: Safe and evidence based context.

A: Advance medicine through Education, Training and Research

### KFMC Vision:

- To be benchmark in provision of specialized healthcare.

### KFMC Aims to:

- Contribute toward elevating and enhancing citizen's healthcare.
- Contribute toward the consolidation of high level standards of practicing medicine.
- Diagnose and treat complicated cases referred by other hospitals and health facilities.
- Develop Human Resources in all administrative and health fields through education and training of different levels.
- Conduct research and health studies.
- Provide specialized medical consultations for other healthcare establishments.
- Contribute in health enlightenment and education.

### We are Committed to:

Contribute toward elevating and enhancing citizen's healthcare.

- Work harder and smarter to respond to the interests and needs of our patients faster, and to serve them better.
- Support KFMC's mission, vision and achieve its objectives by team-spirit, dedication and synergizing with others.
- Advocate a culture of learning and growth that promotes strategy focused organization, result-oriented performance, excellence, quality, transparency, originality and creativity.
- Promote a working environment that cultivates individual virtues and institutional integrity.
- Maintain a personal character of honesty, loyalty, and integrity in all we say and in all we do.

## INTRODUCTION

### 1. EXECUTIVE ADMINISTRATION OF MEDICAL AFFAIRS

#### KFMC is providing its medical services through 4 hospitals:

One of the 4 hospitals in KFMC is the **Main Hospital**. It provides Surgical Services, Medicine Care, Dental Services, Pulmonary and Critical Care and Family Medicine and Employee Health. The **Children's Specialized Hospital** provides Neonatology Services, Pediatric Sub-specialties services, Pediatric Intensive Care, Pediatric Surgery, General Pediatrics and Adolescent. The **Women's Specialized Hospital** offer Gynecology & Obstetrics Services, Maternal Fetal Medicine, Gyn-Oncology, Urogynecology, Reproductive Endocrine and Infertility Medicine services. The **Rehabilitation Hospital** provides the following services: Physical Medicine & Rehabilitation, Communication & Swallowing Disorders, Comprehensive Rehabilitation Care, Rehabilitation Technology & Physical Therapy.

In addition to the 4 hospitals, KFMC providing its core competence services through 4 centers of excellence, the **National Neuroscience Institute** offers the following services: Neurology, Neurosurgery, Spine, Mental Health, Neurophysiology, Pediatric Neurology, Neuro-Critical Care, Pediatric Neurosurgery Services. The **Prince Salman Heart Center** offers Adult Cardiology, Pediatric Cardiology, Adult Cardiac Surgery, Pediatric Cardiac Surgery, Vascular Surgery Services. The **Comprehensive Cancer Center** offers Adult Hematology and BMT, Adult Medical Oncology Hematology/BMT, Medical & Radiation Oncology, Pediatric Hematology and Oncology & Palliative Care services. The **Obesity, Endocrine and Metabolism Center** provides Obesity services, Endocrine and Diabetes.

All these hospitals and centers are provided with excellent nursing services 24 hours/7days a week, and supported by Medical Administrations to facilitate the diagnosis and treatment interventions for patients. Patients affairs services serving all patients visiting KFMC for in-patients or outpatients.

The Executive Administration of Medical Affairs is responsible for the management and development of all the medical affairs including:

#### A. 4 HOSPITALS

##### 1. The Main Hospital providing the following clinical services:

- Surgical Specialties are divided into 7 divisions; General Surgery, Ophthalmology, ENT, Thoracic Surgery, Orthopedic, Urology and Plastic Surgery.
- Medical Specialties Department divided into 6 divisions; General Medicine, Gastroenterology,

Infectious Diseases, Dermatology, Rheumatology and Nephrology.

- Pulmonary and Critical Medicine Department divided into 2 sections; Critical Care medicine and Pulmonary Medicine Section.
- Dentistry Department has three sections: Hospital Dentistry, Orocraniofacial Section and Pediatric Dentistry Section.
- Family Medicine and Employee Health Department

The Main Hospital services are composed of highly trained surgeons, consultants, associate consultants, assistant consultant, resident, nursing and technicians. These services are available for 24 hours a day.

2. Children's Specialized Hospital providing the following clinical services:

- Inpatient Services
  - Intensive care Units
  - High Dependency Unit
  - Special Care Baby Unit
  - Normal Newborn
  - Allergy and Immunology
  - Developmental Behavior
  - Endocrinology
  - Gastroenterology
  - General Pediatrics
  - Infectious Diseases
  - Medical Genetics
  - Nephrology
  - Pediatric ICU
  - Pulmonology
  - Rheumatology
- Clinical Services Programs - provide comprehensive, multidisciplinary fully coordinated clinical service to a group of patients. Program currently running are:
  - High-risk Neonatal Follow-up Program
  - Neonatal Clinic

- Asthma
  - Child Protection Program
  - End stage of renal diseases and peritoneal dialysis
  - Autism
  - Neighborhood Rights
- Collaboration Program-Health care services to Children's national and international level.
  - Community Participation- Actively participate in public education to increase about health awareness and professional training.

3. Rehabilitation Hospital provides its clinical services through the following departments:

a) Physical Therapy Department serving:

- Out-patient
- Acute In-patient
- In-patient Rehabilitation
- Pediatrics

b) Physical Medicine and Rehabilitation Department

c) Rehabilitation Technology Department consisting of the Assistive Technology unit with following services:

- Seating.
- Vehicle accessibility.
- Environmental and accessing control.
- Computer Access. Adaptive Aids.
- Augmentative and Alternative communication systems.
- Sensory Aids.

d) Communication and Swallowing Disorder Department (CSD)

e) Comprehensive Rehabilitation Care Department

- All rehabilitation hospital patients.
- Pediatric and adult outpatients.
- Daycare program.

4. Women's Specialized Hospital providing the following clinical services:

- General Obstetrics and Gynecology
- Abnormal Uterine Bleeding Clinic
- Ante natal diabetic Clinic
- Chronic Pelvic Pain Clinic
- Colposcopy Clinic
- Endoscopy Clinic
- Gynecology/Oncology
- Menopause Clinic
- Recurrent Pregnancy Loss
- Maternal Fetal Medicine and Ultrasound Unit
- Uro-gynecology and Pelvic Floor Reconstructive Surgery
- Reproductive Endocrine and Infertility Medicine
- Day Care Unit

## **B. 4 CENTERS OF EXCELLENCE**

1. Comprehensive Cancer Center providing the following clinical services:

- Radiation Oncology
- Hematology/BMT
- Medical Oncology
- Palliative Care
- Pediatric Hematology and Oncology

2. National Neuroscience Institute providing the following clinical services:

- Neurosurgery/Spine (Adults and Pediatrics)
- Neurology/Neurophysiology (Adults and Pediatrics)
- Psychiatric/Psychology Referrals from within KFMC

3. Prince Salman Heart Center providing the following clinical services:

- Adult Cardiology
- Cardiac Surgery

- Vascular Surgery
- Pediatric Cardiology
- Electrophysiology
- Cardiac Catheterization Laboratory
- Non-Invasive Laboratory
- Pediatric Cardiac Surgery
- Pediatric Cardiology Non-Invasive Labs

3. Obesity, Endocrine and Metabolism Center providing the following clinical services:

- Adult Diabetes Clinic
- Adolescent Diabetes Clinic
- Diabetes in Pregnancy Clinic
- Retina Unit
- Vascular and Podiatry Unit
- Insulin Pump Unit

## **C. 3 Associate Executive Directorate Administrations**

### 1. Medical Administrations

- Emergency Medicine & Employee Health Administration
- Anesthesiology & Operating Rooms Administration
- Pathology & Clinical Laboratory Medicine Administration
- Medical Imaging Administration
- Infection Control & Environmental Health Administration
- Pharmacy Services Administration

### 2. Patient Affairs

- In-Patient Services Administration
- Out-patient Services Administration



- Patient Registration and Support Services Administration

### 3. Ancillary Medical Services

- Respiratory Care Administration
- Home Healthcare Administration
- Clinical Nutrition Administration
- Health Education Administration

## 2. EXECUTIVE ADMINISTRATION OF NURSING SERVICES

The Executive Administration of Nursing Services is responsible for delivering services to:

- A. Main Hospital
- B. Children Hospital
- C. Women's Specialized Hospital
- D. Rehabilitation Hospital
- E. Prince Salman Heart Center
- F. Comprehensive Cancer Center
- G. National Neuroscience Institute
- H. Obesity, Endocrine and Metabolism Center
- I. OR/PACU

**KFMC KEY PERFORMANCE INDICATORS (KPI)**

<b>Key Performance Indicators</b>	<b>2012</b>	<b>2013</b>
Number of Referred Cases	49,915	46,519
% of Accepted cases	61%	59%
Bed turnover rate per Month	2.59	2.74
Bed occupancy rate	78%	81%
Average length of stay (ALOS)	9.1	9.0
Admitted Patients	28,702	29,586
ER Cases (visits)	139,173	138,231
Admissions from ER	14,602	11,411
OPD visits	245,078	231,031
OPD No-Show Rate	30%	33%
OR Procedures	11,864	9,972
% of OR Cancellation Rate	17%	25%
% of Increase in no. of day care cases	17%	17%
Number of patients for home healthcare services	226	255
% Medication Error/Per 10000 Inpatient Doses	5.9	3.6
Sentinel Events	8	6
% of Complaints per patient encounter	978	950
Retention Rate	88 %	91%
Staff to bed ratio	6.66:1	7.50:1

**Chapter 1**

**MAIN HOSPITAL**

**MAIN HOSPITAL ADMINISTRATION  
SCOPE OF SERVICE**

The Main Hospital is a specialized hospital that provides Medical Care, Surgical Specialties Services, Dental Services, Intensive Care Services and Family Medicine & Employee Health to our Society .

**Vision:**

To be recognized by patients and families for compassionate healthcare, and by staff for respect, responsibility and collaboration.

**Mission:**

Committed to high quality patient-centered health care that are continuously developed by training and research.

**Patients Served:**

The Main Hospital serves all adult patients eligible to KFMC. We provide inpatient and outpatient services to patients with varying levels of intensity to offer them advanced care from medical, surgical, and dental disease from preventive to curative. The Main Hospital provides services to the population of patients who are managed by various Centers and Hospitals of KFMC and in need of tertiary care service. Because of its state of the art facilities and complete services Main Hospital accepts critical cases referred by other Hospital. For 2013 the Main Hospital total OPD seen is 87,800 and 5,745 in-patient admissions.

**Physical Facility Where Services Are Provided:**

The Main Hospital provides the following Support Services categorized in five departments:

1. Surgical Specialties are divided into 7 Sections: General Surgery, Ophthalmology, ENT, Thoracic Surgery, Plastic Surgery, Orthopedic, and Urology Surgery.

**GENERAL SURGERY SECTION:**

The General Surgery Service is in the Male Surgical Ward located on the 2nd Floor of the Main Hospital.  
The General Surgery Service is in the Female Surgical Ward located on the 3rd floor of the Women's Hospital.

**OPHTHALMOLOGY SECTION:**

The Ophthalmology Surgery Service is in the Male Surgical Ward located on the 2nd floor of the Main Hospital.

The Ophthalmology Surgery Service is in the Female Surgical Ward located on the 3rd floor of the Women's Hospital.

**OTORHINOLARYNGOLOGY SECTION:**

The ENT Surgery Service is in the Male Surgical Ward located on the 2nd floor of the Main Hospital.  
The ENT Surgery Service is in the Female Surgical Ward located on the 3rd floor of the Women's Hospital.

**THORACIC SURGERY SECTION:**

The Thoracic Surgery Services are provided in the Male Surgical Ward located in wards 3 & 4, 2nd floor of the Main Hospital.  
The Thoracic Surgery Services are provided in the Female Surgical Ward located in Ward 3, 3rd floor of the Women's Hospital.

**PLASTIC SURGERY SECTION:**

The Plastic Surgery Service is in the Male Surgical Ward located on the 2nd floor of the Main Hospital.  
The Plastic Surgery Service is in the Female Surgical Ward located in the 3rd floor of the Women's Hospital.

**ORTHOPEDIC SURGERY**

The Orthopedic Surgery Services are provided in the Male Surgical Ward located on the 2<sup>nd</sup> floor of the Main Hospital.  
The Orthopedic Surgery Services are provided in the Female Surgical Ward located on the 3<sup>rd</sup> floor of the Women's Hospital.

**UROLOGY SECTION:**

The Urology Surgery Service is in the Male Surgical Ward located on the 2nd Floor of the Main Hospital  
The Urology Surgery Service is in the Female Surgical Ward located on the 3rd floor of the Women's Hospital.

2. Medical Specialties Department divided into 6 sections; General Medicine, Gastroenterology, Infectious Diseases, Dermatology, Rheumatology and Nephrology.

Inpatient Service: The Department of the Internal Medicine is located in the 3rd floor of the main hospital in wards 5, 6, 7, & 8.

Outpatient Clinics: For General Medicine, Infectious Disease, Nephrology and Rheumatology are held in clinic no.5 in the ground floor. Dermatology clinics are held in clinic no. 8

GI Clinics & Endoscopy Unit: are located ground floor in clinic no. 1.

Renal Dialysis Unit: is located in the second floor in the main hospital.

3. Pulmonary and Critical Medicine Department divided into 2 sections; General Intensive Care Medicine and Pulmonary Medicine. The Intensive Care Unit (ICU) is located on the first floor of the Main Hospital. The ICU is strategically located in close proximity to the Operating Room. ICU has a capacity of 31 beds which are equipped with state –of the art monitors, total care beds ,ventilators continues and resuscitation equipment .The unit primarily admits patients requiring monitoring post-surgery, from emergency department, medical floor and from other hospitals.

4. Dentistry Department has 3 sections: Hospital Dentistry, Craniofacial Anomalies Section and Maxillofacial Surgery Section. It is located at Main Hospital Ground Floor with 8 Dental Surgeries , 2 dental hygiene clinics, dental laboratory, x-ray room, dental dispensary and work room. Pediatric Dentistry located in Children's Hospital: (Dental Surgery and X-ray Room)

5. Family Medicine and Employee Health Department. It is located at 1<sup>st</sup> floor, Main Hospital with the following rooms (8 clinics, triage room, treatment room, immunization/vaccination room, registration section/nurse station, secretary's office.

On top of all above, Main Hospital is building bridges with local hospitals through outreach programs and with national and international tertiary care centers through collaboration and research projects.

### **Hours of Operation:**

The Main Hospital Services are composed of highly trained consultants, associate consultants, assistant consultants, residents, nurses and technicians. Their subspecialized inpatient services are available to patient twenty four hours seven days a week, while outpatient are on two sessions from 8:00-11:30 a.m. and 1:00-4:30 p.m. from Sunday to Thursday.

### **Service Provided:**

- Medical Specialties Department
- Surgical Specialties Department
- Dentistry Department
- Pulmonary and Critical Care Medicine Department
- Family Medicine & Employee Health Department

**Admission Criteria:**

Patient Admitted into the Main Hospital should be above twelve years of age (pending revision of childhood age). For the individual departments admission criteria please refer to their departmental Manual.

**Chapter 2**

**CHILDREN'S SPECIALIZED HOSPITAL**



## CHILDREN'S SPECIALIZED HOSPITAL ADMINISTRATION

The **Children's Specialized Hospital** provides Neonatology Services, Pediatric Sub-specialties services, Pediatric Intensive Care, Pediatric Surgery, General Pediatrics and Adolescent.

### **Vision:**

To be the leading Children's Specialized Hospital in Gulf area in providing specialized, comprehensive healthcare and professional training.

### **Mission:**

Dedicated to provide the best specialized health care, research, training, education and human resource development in a child friendly environment with honesty, loyalty and teamwork.

### **Patients Served:**

Patients from birth to 12 years old, both genders. Total number of patient seen for the year 2013 was 32,584.

### **Physical Facility Where Services are Provided:**

- Services rendered for outpatient services are located at ground floors clinics 1 and 2.
- In patient services are located in the following:
  - First floor
    - Pediatric Intensive Care Unit
    - Day Care Unit
  - Third floor
    - General Pediatric Wards (Ward 1 and Ward 2)
    - Endocrinology Section, Metabolic Section and Nephrology Section (Ward 4)
  - Fourth floor
    - Infectious Diseases Section and Gastroenterology Section (Ward 3)
    - Allergy and Immunology Section, Developmental Behavioral Section, Pulmonology Section and Rheumatology Section (Ward 5)
  - Basement
    - Administration, Consultant's and Nursing room

## Hours of Operation:

- Services cover 24 hours coverage 7 days a week and provide 24 hours consultation and on-call basis.

## Service Provided:

- **Inpatient Services**
  - Intensive Care Units
  - Special Care Baby Unit
  - Normal Newborn
  - Allergy and Immunology
  - Developmental Behavioral
  - Endocrinology
  - Gastroenterology
  - General Pediatrics
  - Infectious Diseases
  - Medical Genetics
  - Nephrology
  - Pediatric Intensive Care Unit
  - Pulmonology
  - Rheumatology
- **Clinical Services/Programs** provide comprehensive, multidisciplinary fully coordinated clinical service to a group of patients. Program currently running are:
  - High Risk Neonatal Program
  - Neonatology Clinic
  - Asthma Program
  - Child Protection Program
  - End Stage of Renal Diseases and Peritoneal Dialysis
  - Autism Program
  - Neighborhood Rights
- **Collaboration Programs** – Health care services to Children's national and international level.
- **Community Participation** – Actively participate in public education to increase about health awareness and professional training.

## Admission Criteria:

- **General Consideration**
  - Fever in infant under age of 2 months
  - Fever in looking sick/septic child
  - Fever of Unknown Origin (FUO)
  - Persistent fever due to poor response/intolerance to oral treatment
  - Dehydration moderate to severe
  - Dehydration with intolerance
  - Shock or impending shock with poor improvement
  - Hypotension with different etiology
  - Altered level of consciousness, lethargy
  - Severe headache of acute unexplained cause
  - Acute poisonings and medication ingestions
  - Electrolyte imbalance
  - Severe acidosis diagnosed/investigated
  - Procedures require sedation or monitoring
  - Feeding problem in neonate
  - Failure to Thrive (FTT) admitted for social or weight and calories monitoring
  - Suspected child abuse
  - Social reasons for admission to benefit the child
  - Animal/snake bite with complication
  - Acute life threatening event
  
- **Immunology**
  - Suspected Primary Immunodeficiency
  - Diagnosed primary immunodeficiency with fever/infection
  - Primary immunodeficiency for IVIG infusion in selected cases who needs assessments every 3 months.
  
- **Rheumatology**
  - Acute arthritis for Inv
  - Suspected osteomyelitis
  - Suspected Kawasaki disease
  
- **Metabolic**
  - Organic acidemia
  - Urea cycle defect
  - Undiagnosed metabolic disorder

- **Endocrinology**
  - Diabetic Ketoacidosis (DKA)
  - Persistent hypoglycemia
  - For challenge test
  
- **Pulmonary**
  - Respiratory distress/regardless of the etiology
  - Needs for supplemental oxygen
  - Respiratory acidosis
  - Suspected pertussis in young infant
  - Pneumonia with significant morbidity or need IV treatment
  - Status Asthmatics
  - Moderate to severe acute asthma exacerbation failed treatments response
  - Aspiration pneumonia
  - Suspected Pulmonary TB
  - Cystic fibrosis with complication
  - Foreign body aspiration
  - Patient needs bronchoscopy
  - Hemoptysis
  - Thoracic cavity masses/Lymphadenopathy
  - Hematemesis
  - Melena
  - Acute Arthritis for Inv
  - Acute pulmonary disease requiring supplemental oxygen
  - Acute respiratory acidosis
  - Suspected pulmonary TB (not necessary)
  - Newly diagnosed cystic fibrosis or CF complication
  
- **Gastrointestinal**
  - Acute abdominal pain
  - Persistent severe vomiting
  - Severe diarrhea acute or chronic
  - Acute abdomen
  - Suspected intestinal obstruction
  - Intussusception post reduction
  - Inflammatory bowel disease
  - Esophageal varices
  - Cholestatic jaundice in young infant
  - Acute pancreatitis
  - Hepatomegaly
  - Abdominal masses
  - Liver biopsy

- Endoscopy with sedation
- Acute hepatic failure
- **Nephrology**
  - Hypertension
  - Acute nephrotic syndrome
  - Complicated relapsed nephrotic syndrome
  - Glumerulonephritis (GN) with complication
  - Urinary Tract Infection (UTI)/Pyelonephritis acute or recurrent
  - Acute renal failure
  - End-Stage Renal Disease (ESRD) with acute complication
  - Hyperkalemia
  - Acute dialysis
  - Gross hematuria
  - Renal biopsy
  - Hemolytic uremic syndrome
  - HSP with complication

**Chapter 3**

**WOMEN SPECIALIZED HOSPITAL**

## WOMEN SPECIALIZED HOSPITAL ADMINISTRATION

### SCOPE OF SERVICE

The **Women's Specialized Hospital** offer Gynecology & Obstetrics Services, Maternal Fetal Medicine, Gyn-Oncology, Urogynecology, Reproductive Endocrine and Infertility Medicine services.

#### **VISION**

To be the most trustworthy women's tertiary health care service provider in the Kingdom of Saudi Arabia.

#### **MISSION**

To provide tertiary level health care services to women guided by evidenced based practice.

#### **PATIENTS SERVED:**

We serve patients of all age groups. We are accepting internal referrals, from other departments within King Fahad Medical City, and external referrals within the Kingdom of Saudi Arabia for women with obstetrics and gynecology diseases who are referred from the Eligibility Office and meet the eligibility criteria for the Women's Specialized Hospital. Total number of patient seen in OPD for 2013 was 28,611.

#### **PHYSICAL FACILITY WHERE SERVICES ARE PROVIDED:**

Patients are served in the Out Patient Department (WSH Ground Floor) through 22 General and Sub-specialty Clinics.

Women's Specialized Hospital has a total of 175 beds distributed to:

- WSH 1<sup>st</sup> Floor
  - Labor and Delivery
  - High Risk Ward
- WSH 2<sup>nd</sup> Floor
  - Antenatal Ward
  - Gynecology Ward
  - Post Natal Ward
  - Post Cesarean Section Ward
- WSH 3<sup>rd</sup> Floor
  - Private Medical Service

- Day Care Unit
- WSH Ground Floor
  - Emergency Room Unit

## **HOURS OF OPERATION:**

Emergency Room and In-patient services are covered 24 hours, 7 days a week. After working hours Emergency Room is served by the on-call team. Out Patient Clinic hours are from 08:30 to 16:30 daily, Sunday to Thursday.

## **SERVICE PROVIDED:**

### 1. General Obstetrics and Gynecology:

- Obstetrics – Diagnostic, therapeutic, monitoring and follow-up services for women and high risk pregnancies that require tertiary care level. This include the following:
  - Major degree of placenta previa
  - Polyhydramnios
  - Oligohydramnios
  - Multiple pregnancy
  - Preterm Premature Rupture of Membranes (PPROM)
  - Gestational hypertension
  - Pregnancy complicated with Rh-Isoimmunization and other atypical antibodies, e.g. anti-Kell.,
  - Pregnancy complicated by any malignancy
  - Recurrent pre-term labor
  - Recurrent fetal loss
  - Pregnancy with 3 or more C/S,
  - Pregnancy with fibroid/adenexal mass
  - Pregnancy complicated by chronic medical illness such as:
    - Diabetes Milletus (DM)
    - Thyroid disease
    - Epilepsy
    - Hypertension
    - Asthma requiring hospitalization or steroids treatment
    - Anemia requiring blood transfusion or due to hemoglobinopathies
    - Heart disease
    - Renal disease
    - Platelet disorders
    - Connective tissue disorders e.g. (Systematic Lupus Erethematosus) SLE
  - Intrapartum care for high risk labor and deliveries



- General Gynecology – diagnostic, therapeutic, monitoring and follow-up of patients with the following gynecological problem:
  - Trophoblastic diseases
  - Ectopic pregnancy requiring medical treatment or endoscopic surgery
  - Endometriosis
  - Benign myometrial and endometrial disease
  - Adenomyosis
  - Benign adenexal (complicated/uncomplicated) masses that require endoscopic treatment
  - Severe adhesive disease

## 2. Abnormal Uterine Bleeding Clinic

This highly specialized clinic has been offering diagnostic, therapeutic, monitoring and follow-up of patients with abnormal uterine bleeding. The clinic offers, medical management with various hormonal treatments, various surgical procedures including hysteroscopy (diagnostic and therapeutic), endometrial ablation, laparoscopic (diagnostic and therapeutic) and hysterectomy via different routes.

- Uterine Artery Embolization (new service) has been added to this clinic in collaboration with Invasive Radiologist

## 3. Ante Natal Diabetic Clinic

Multidisciplinary medical approach for management of women with gestational and pre-gestational diabetes through the organization of diabetic care with close cooperation between obstetrician, endocrinologist, dietitian, diabetic nurse, and ultrasound services

## 4. Chronic Pelvic Pain Clinic

Optimal care of patients with pelvic pain (greater than six months duration) through diagnosis and management of chronic pelvic pain through a multidisciplinary approach

## 5. Colposcopy Clinic

Specialized clinic has been offering variety of treatment for abnormal cervical/lower genital tract diseases including but not restricted to:

- Management of abnormal Pap smears
- Colposcopy for diagnosis of Atypical Squamous Cells of Undetermined (ASC-US)

- Vulval and vaginal lesions
- Diagnose the current status for LSIL and HSIL and the management options for each

## 6. Endoscopy Clinic

Provides care for patients who require minimally invasive procedures for diagnosis, management and treatment of conditions like:

- Ectopic pregnancy
- Ovarian benign tumors
- Endometriosis

## 7. Gynecology/Oncology:

Offers service for diagnosis, management and follow-up of patients with gynecological malignancies. This includes:

- Trophoblastic diseases
- Chemotherapy for low risk gestational trophoblastic disease
- Vulvar or vaginal cancers
- Cervical cancer and cervical precancerous lesions
- Uterine tumors
- Ovarian tumors
- Palliative care for terminally ill patients
- Advanced laparoscopic procedures (e.g. lymph nodes dissection, total hysterectomies, etc.)

## 8. Menopause Clinic

Multidisciplinary clinic for assessment and treatment of symptomatic pre and postmenopausal women e.g.:

- Vasomotor symptoms
- Abnormal uterine bleeding in pre and postmenopausal women.
- Osteoporosis in pre and postmenopausal women.
- Pre-malignant lesions of lower genital tract in pre and postmenopausal women.
- Urogenital atrophy in postmenopausal women.
- Dyslipidemia in pre and postmenopausal women.
- Pre-mature ovarian failure.

## 9. Recurrent Pregnancy Loss

Specialized clinic to provide diagnostic, management and follow-up services for patients with recurrent abortions such as:

- Medical treatment (heparin, aspirin, progesterone, IVIG)
- Cervical and abdominal cerclage
- Uterine anomalies (septate uterus, bicornuate uterus, etc)

## 10. Maternal Fetal Medicine and Ultrasound Unit

- Maternal Fetal Medicine Clinic:  
Specialized clinic caring for women with high risk or complicated pregnancies including:
  - Chronic maternal medical conditions (e.g. SLE, DM, HTN)
  - Previous poor pregnancy outcome
  - Complicated current pregnancy (e.g. PPRM)
  - Fetal complications (IUGR, Rh-immunisation, fetal infection)
- Fetal Development Clinic:  
Specialized clinic only for pregnancies complicated by fetal congenital anomalies or chromosomal aneuploidy
- Multifetal Pregnancy Clinic:  
Specialized clinic for twins and higher order multiple pregnancies
- Ultrasound Unit
  - Ultrasound level I: Assessment of early pregnancy, placental localization, fetal biometry, and fetal assessment
  - Ultrasound level II: Level II anomaly scanning, Doppler imaging and fetal echocardiography
  - Invasive procedures: amniocentesis, chorionic villous sampling, fetal blood sampling and other fetal diagnostic and therapeutic procedures
  - General and advanced gynecology ultrasound examinations and hysterosonography
  - 3D/4D ultrasonography

## 11. Uro-gynecology and Pelvic Floor Reconstructive Surgery:

It is the first of its kind in Saudi Arabia, it started as a clinic in year 2004, and now it is a department that includes comprehensive and state of the art investigations and treatments for women with different lower urinary tract dysfunctions.

Eligibility criteria:

1. Any form of urinary incontinence (including urogenital fistulae)
2. Cases of anal incontinence
3. Recurrent urinary tract infections
4. Genital prolapse
5. Irritative voiding symptoms, such as frequency, urgency, burning urination
6. Cases of hematuria (bloody urine)
7. Cases of benign vaginal or urethral lesions, such as urethral diverticulum, vaginal or perineal inclusion cysts.

## 12. Reproductive Endocrine and Infertility Medicine:

It is a purpose built specialized outpatient unit providing investigations and treatment for couples with fertility problem.

- Facilities include:

- Outpatient services
- Embryology Laboratory
- Clinical psychology services
- Urology services

- Services Offered:

- Ovulation induction
- Intrauterine insemination
- In-vitro fertilization
- Intracytoplasmic sperm injection
- Cryopreservation
- Surgical sperm recovery

- Eligibility criteria:

1. To be eligible for any form of assisted reproduction treatment at the RMU the couple must satisfy the following criteria:
  - 1.1 They must be eligible for treatment at KFMC.
  - 1.2 The woman must be less than 40 years of age.
  - 1.3 They must have no more than 2 living children in their current relation

- 1.4 The woman must have had no more than 2 completed IVF cycles.
2. When evaluating a couple's eligibility for treatment, accurate information must be used:
  - 2.1 The woman's age must be based on her date of birth as it appears in the Family Card/Iqama.
  - 2.2 The type and number of previous fertility treatments (IUI, IVF, and ICSI) must be taken from a medical report and such details must be requested from the referring physicians. If such information is not available or denied by the couple &/or the referring physician the RMU has the right to offer a maximum of only one IUI/IVF treatment.
3. The following treatment allowances must strictly be adhered to:
  - 3.1 A maximum of 3 IUI treatments when IUI is a suitable option.
  - 3.2 A maximum of 3 IVF treatments for women who never had IVF.
  - 3.3 A maximum of 2 IVF treatments for women who had 1 previous IVF.
  - 3.4 A maximum of 1 IVF treatments for women who had 2 previous IVFs.

### 13. Day Care Unit:

To provide tertiary level health care quality diagnostics and therapeutics services to female patients of all age groups with obstetrical or gynecological complaint that needs minor surgery and meet the criteria of admission in the Day Care Unit.

- Eligibility criteria:
  - All women that need minor obstetrics and gynecological medical and surgical intervention who are all cleared from medical, anesthesia condition are eligible for short hospital admission (maximum of 8 hours).
- Obstetrics:
  - Pregnant low risk women for fetal surveillance
  - Pregnant women who had amniocentesis, cordocentesis and external cephalic version
  - Pregnant women with diabetes for blood sugar monitoring
  - Pregnant women with mild to moderate hyperemesis gravidarum that need intravenous hydration
- Gynecology:
  - Diagnostic hysteroscopy and laparoscopy for infertility evaluation

- Diagnostic hysteroscopy and laparoscopy for chronic pelvic pain and abnormal uterine bleeding patients
- Therapeutic hysteroscopy and laparoscopy e.g. tubal ligation, removal of IUCD, simple ovarian cystectomy
- Cervical conization
- Transvaginal tension tape insertion
- Diagnostic and Therapeutic dilatation and curettage

**ADMISSION CRITERIA:****1. Patient eligibility criteria for management in Obstetrics (maternal conditions):**

- 1.1. Medical disease associated with pregnancy:
  - 1.1.1. Neurological disease (e.g. epilepsy)
  - 1.1.2. Heart disease (e.g. rheumatic heart, arrhythmia)
  - 1.1.3. Chronic Hypertension
  - 1.1.4. Hematological disorders (e.g. Sickle cell anemia, beta-Thalasemia, Severe anemia <8gm/dL)
  - 1.1.5. Malignancy
  - 1.1.6. Chronic lung disease (e.g. Bronchial Asthma on steroid)
  - 1.1.7. Renal disease
  - 1.1.8. Inflammatory bowel disease
  - 1.1.9. SLE or chronic rheumatologic diseases
  - 1.1.10. Pre-gestational Diabetes mellitus
- 1.2. Poor Obstetric history:
  - 1.2.1. Previous preterm delivery before 32 weeks
  - 1.2.2. Recurrent pregnancy loss (3 or more)
  - 1.2.3. Cervical incompetence
  - 1.2.4. Intrauterine fetal death, stillbirth, or neonatal death
  - 1.2.5. Children with genetic or inborn error of metabolism disease
  - 1.2.6. Rh-isoimmunization
  - 1.2.7. Two or more previous cesarean sections
  - 1.2.8. Previous myomectomy
- 1.3. Complications in the current pregnancy:
  - 1.3.1. Gestational Diabetes requiring insulin
  - 1.3.2. Pregnancy induced hypertension
  - 1.3.3. Obstetric hemorrhage
  - 1.3.4. Multiple pregnancy
  - 1.3.5. Exposure to radiation or teratogenic medication

2. Patient eligibility criteria for management in Obstetrics (fetal conditions):
  - 2.1. Intrauterine Growth restriction
  - 2.2. Intrauterine fetal death
  - 2.3. Severe oligohydramnios or severe polyhydramnios
  - 2.4. Congenital anomalies
  - 2.5. Congenital infection
  - 2.6. Fetal Arrhythmia
  
3. Patient eligibility criteria for management in Gynecology and Gyne-oncology:
  - 3.1. Vulval diseases
    - 3.1.1. Dystrophies
    - 3.1.2. Malignancies
    - 3.1.3. Warts
  
  - 3.2 Vaginal diseases
    - 3.2.1 Bartholin cyst/abscess
    - 3.2.2 Vaginal septum
    - 3.2.3 Cystocvele/rectocele
    - 3.2.4 Imporforate hymen
    - 3.2.5 STD
  
  - 3.3 Cervical diseases
    - 3.3.1 Cervical incompetence
    - 3.3.2 Polyp
    - 3.3.3 Carcinoma
    - 3.3.4 Abnormal cervical smear
  
  - 3.4 Uterine diseases
    - 3.4.1 Utreine anomalies
    - 3.4.2 Uterine prolapse
    - 3.4.3 Uteine fibroids
    - 3.4.4 Endometrial polyp
    - 3.4.5 Endometrial hyperplasia
    - 3.4.6 Endometrial carcinoma
    - 3.4.7 Menstrual disturbances

3.5 Tubal diseases

- 3.5.1 PID
- 3.5.2 Ectopic pregnancy
- 3.5.3 Tubal obstruction
- 3.5.4 Salpingitis
- 3.5.5 Adnexal masses

3.6 Ovarian diseases

- 3.6.1 Ovarian cyst
- 3.6.2 Ovarian cancer
- 3.6.3 PCO

3.7 Chronic pelvic pain

3.8 Early pregnancy complications

- 3.8.1 Missed abortion
- 3.8.2 Molar pregnancy
- 3.8.3 Ectopic pregnancy

4. Patient eligibility criteria for management in the Reproductive Endocrine & Infertility Medicine

Department:

- 4.1 Reproductive endocrine disorders
- 4.2 Infertility

5. Patient eligibility criteria for assisted reproductive treatment:

- 5.1 Saudi Nationality
- 5.2 Woman must be under the age of 40
- 5.3 No more than two living children in couple's current relation
- 5.4 Woman must have had no more than two previous In Vitro Fertilization treatments

6. Patient eligibility criteria for management in Urogynecology and Pelvic Reconstructive Surgery Department:

- 6.1 Any form of urinary incontinence (including urogenital fistulae)
- 6.2 Cases of anal incontinence
- 6.3 Recurrent urinary tract infections
- 6.4 Genital prolapse
- 6.5 Irritative voiding symptoms, such as frequency, urgency, burning urination
- 6.6 Cases of hematuria



6.7 Cases of benign vaginal or urethral lesions, such as urethral diverticulum, vaginal or perineal inclusion cysts.

## 7. General Obstetrics and Gynecology Department

### Admission Criteria

1.  $\geq 20$  weeks
2. In active labor:
  - a. contracting
  - b. ruptured membranes
  - c. cervical dilatation  $\geq 4$  cm
3. Induction of labor (oxytocin or augmentation)
4. High risk patients for decisive management:
  - a. antepartum hemorrhage
  - b. severe pre-eclampsia on MgSO<sub>4</sub> or eclampsia
  - c. abnormal fetal heart tracing for close fetal monitoring
5. Suspected preterm labor
6. Removal of cervical cerclage and observation
7. Birth outside Labor Room with:
  - a. perineal trauma requiring suturing
  - b. retained placenta
  - c. excessive vaginal bleeding
  - d. unstable patient condition

### Discharge Criteria

1. Postpartum patients with:
  - a. vital signs stable and within normal parameters
  - b. fundus firm and central
  - c. lochia moderate or scanty
  - d. has passed urine
  - e. partogram and documentation completed
  - f. pain relief ordered
2. Antenatal patients with:
  - a. stable vital signs
  - b. no vaginal bleeding
  - c. no uterine contractions (not in labor)
  - d. cervical dilatation  $\leq 4$  cm

Patients who come to the Emergency Room will be evaluated and accepted according to their condition.

**Chapter 4**  
**REHABILITATION HOSPITAL**

**REHABILITATION HOSPITAL ADMINISTRATION**  
**SCOPE OF SERVICE**

The Rehabilitation Hospital provides the following services: Physical Medicine & Rehabilitation, Communication & Swallowing Disorders, Comprehensive Rehabilitative Care, Rehabilitation Technology and Physical Therapy.

**VISION**

To become the model system for interdisciplinary rehabilitation services, medical education and a center of excellence.

**MISSION**

To provide holistic state of the art medical rehabilitation services in Saudi Arabia.

**PATIENTS SERVED:**

Rehabilitation Hospital provides services to all eligible patients at KPMC who have a disability secondary to illness, injury, loss of a body part, or congenital abnormality, but who are medically stable. Total OPD patient seen for 2013 was 10, 203. Our inclusion criteria are:

- Referrals based on priority:
  1. KPMC – other hospitals/center
  2. Secondary and Tertiary care Ministry Of Health Hospitals
  3. Any other hospital.
- No patient is accepted from the Emergency Room, or on a walk-in basis.
- The patient must be willing and able to actively participate in the rehabilitation program.
- The patient must have goals in at least two of the three major therapy areas (physical and occupational therapy, and speech-language pathology).
- The patient must have the endurance to tolerate at least three hours of therapy over the course of the day.
- The patient must demonstrate the ability to carry over new information.
- Cognition: must be oriented either to place, time or person, and must be able to obey one step command.
- The patient must be medically stable which is as follow:
  1. Patient must be afebrile for 48 hours; may have low grade temperature if a source has been identified and a treatment plan is in place.
  2. Patient must not require suctioning more frequently than every four hours.
  3. Patients need to have a stable cardiac rhythm.

4. Patients who require oxygen must have adequate oxygen saturation on portable oxygen.
  5. Patient must have no chest tube.
  6. Patient must be off continuous positive airway pressure (CPAP), except for treatment of sleep apnoea.
  7. The patient's medical work-up must be completed.
  8. If a patient has nutritional, pain, or wound issues, they must be manageable and not interfere with therapies.
- The person should be 13 years or over, however the patient from 4-12 years old will be admitted (with adult family member watcher) under the memorandum of understanding between the Children's Hospital and Rehabilitation Hospital.
  - All patients with psychological conditions will be accepted if controlled by medication.
  - Patients will not be accepted if they exhibit violent behavior that places them and the staff in an immediate danger or behavior that would disrupt the normal flow/interaction of rehab process (i.e. agitation, aggression, non-directed screaming)
  - Non-Saudi are eligible to receive rehabilitation services through the following
    1. Business Center
    2. An order (Royal order, Minister of Health Decision, CEO Decision)

## Physical Medicine & Rehabilitation (PM&R)

PM&R provides services to all eligible patients (children, adolescents and adults) at KFMC who have significant functional limitation as a result of acquired or congenital impairment and are medically stable. These services ensure care focusing on preventing further impairment, reducing activity limitation, and minimizing participation restrictions. The following are patient categories managed in the Rehabilitation Hospital of KFMC:

### Group One:

Neurological cases who have never received any type of rehabilitation within 12 months of onset of injury/illness. These patients will be managed for a maximum of two years for the initial reason of referral and treatment diagnosis. The chronic patient will be managed upon referral for a specific illness/reason. This group includes patients with traumatic brain injury and/or spinal cord injury. For patients suffering stroke or who have other neurological disorders, management will be for the duration of one year only. Patients with chronic illness will be managed on an individual basis upon referral for a specific illness/reason that is acute in nature.

For patients with cerebral palsy (CP), a specific program has been designed in collaboration with other KFMC hospitals/departments/units. The acceptance and rejection criteria for CP as follow:

1. Acceptance criteria:
  - CP diagnosis confirmed.
  - CP with no associated severe mental or behavioral illness.
  - Age two to sixteen years.
  - Medically stable.
  - Patient requires a minimum of two rehabilitation services.
  - Family commitment to participate in CP program guidelines through disclosure statement.
  - Family commitment to continue taking care of the patient after completion of the CP program
2. Rejection criteria:
  - Medically unstable, example:
    - a. Uncontrolled seizures
    - b. Ventilator dependent
  - Mental illness (active phase)
  - Third and fourth degree pressure ulcers
  - Severe mental retardation
  - Behavioral disorders
  - CP as a secondary diagnosis
  - Patient enrolled in another KFMC program

Group Two;

Musculoskeletal disorders including joint replacement, polytrauma, amputation, mechanical spine disorders, polyarthritis, rheumatoid arthritis and acquired and/or congenital deformities. These patients will be accepted for rehabilitation management (within 6 months of onset) and once the expected outcome following rehabilitation has been established. Rehabilitation management will be determined on an individual basis for those patients who have the potential for active rehabilitation and who demonstrate the ability and willingness to participate in the rehabilitation process.

Group Three;

Includes other medical disorders such cardiopulmonary disorders and cancers. Patients with these conditions will be accepted for rehabilitation management once the expected outcome following rehabilitation has been established. Rehabilitation management will be determined on an individual basis for those patients who have the potential for active rehabilitation and who demonstrate the ability and willingness to participate in the rehabilitation process. This group of patient is only limited for patient transferred within King Fahad Medical City.

## Consultation

The Physiatrist is responsible for providing consultation to the other departments at KFMC and taking decision regarding the Rehabilitation interventions necessary for patients admitted in other wards and requiring rehabilitation. In addition they are responsible for the outreach program.

A few services provided by Physiatrists appear to overlap with services provided by other departments, sections or units in KFMC as follows:

### 1. Spasticity:

The trained Physiatrist is competent to provide management to the spastic patient. However, the more complicated cases are referred to the KFMC Spasticity Program.

### 2. EMG:

Although the primary service is provided by the Neurophysiology laboratory, Physiatrists in the Rehabilitation Hospital are using the EMG for their own patients and do not accept any referrals from any KFMC department.

### 3. Urodynamics:

Although the primary service is provided by the urology unit, Physiatrists in the Rehabilitation Hospital are capable of urodynamic evaluation to manage neurogenic bladder disorders for the neurologically disabled individual.

## Clinical Rehabilitation Services

The clinical services are speech-language, swallowing, audiology, physical therapy, occupational therapy, prosthetic and orthotic. All of these services are referral based services with referral being received only from physician within KFMC. To facilitate and expedite the patient care, the Rehabilitation Senior Specialist can refer patient to any other rehab services. The specialized staff provide consultations to medical staff at King Fahad Medical city through both in-patient and out-patient services. Outpatient services are by appointment only.

### Communication and Swallowing Disorders Department (CSDD)

The scope of service of CSDD at King Fahad Medical City is to provide tertiary care speech-language pathology and audiology services in an acute rehabilitative and medical setting. The overall objective of the CSDD's service is to optimize an individual's ability to communicate and swallow, thereby improving quality of life as per the vision of the rehabilitation hospital. This objective is limited to services that can be delivered within a tertiary care facility.

Services:

The CSD department consists of three units:

1. Speech-Language Pathology Unit
2. Swallowing Unit
3. Audiology Unit

The services are provided by three professionals:

1. Speech-Language Pathologists
2. Audiologists
3. Auditory verbal therapists

## A. Speech-language Pathology

Speech-Language Pathologists in the CSDD work with a wide range of speech, language, cognitive, feeding and swallowing disorders in individuals of all ages, from infancy to old age. This division is further split into two units: Speech Language Pathology Unit and Swallowing Unit. Both provide comprehensive diagnostic evaluations, consultations, parent counseling and individual therapy for patients experiencing communication or swallowing/feeding disorders.

Speech-Language Pathology services at KFMC pertain to both typical and atypical communication and swallowing issues including:

1. Speech sound production (Motor Speech/Motor Programming)
  - Apraxia of speech
  - Dysarthria
2. Resonance
  - Hypernasality
  - Hyponasality
3. Voice
  - Phonation quality
  - Pitch
  - Loudness
  - Respiration
4. Language (Comprehension and Expression)
  - Phonology
  - Morphology
  - Syntax



- Semantics
  - Pragmatics (language use, social aspects of communication)
  - Prelinguistic communication (e.g., joint attention, intentionality, communicative signaling)
  - Paralinguistic communication
  - Secondary Language delays (Secondary to medical condition: e.g. cerebral palsy)
  - Cognitive Linguistic
5. Cognition
- Attention
  - Memory
  - Sequencing
  - Problem solving
  - Executive functioning
6. Feeding and swallowing
- Oral and/or Pharyngeal Dysphagia
  - Management of Tracheostomized Patients
  - Pediatric and Neonatal Feeding Problems

The CSDD excludes the following disorders from its scope of service delivery due to the fact that these services are available at secondary care facilities and in educational settings:

1. Speech Sound production: Articulation
2. Fluency: Stuttering and Cluttering
3. Primary Language delay: Language delays of unknown cause.

Speech-Language Pathologists also perform a variety of instrumental diagnostic assessments including, but not restricted to: Modified Barium Swallowing Studies (MBS), Fiberoptic Endoscopic Evaluation of Swallowing (FEES), Stroboscopic evaluation, Nasometric evaluations, VISI pitch and Tracho-Esophageal Prosthesis (PET) Insertion.

Speech-Language Pathologists usually work in collaboration with physicians, nurses, Audiologists, physical therapists, occupational therapists, art therapist, rehabilitation technologists, vocational counselors, and other specialists (e.g. psychologists, , nutritionists, teachers...etc).

Program specific services:

Speech-Language Pathologists in the CSDD are actively involved in many multidisciplinary teams for specialized programs. The teams are comprised of members from many specialty areas within King Fahad Medical City and constitute those fields that are required for specific and in-depth management of certain cases. Through the

teams, specialists are able to keep up with the literature and latest techniques of that specialty area. The team as a whole has preset diagnostic and treatment protocols which have been designed to best service patients' needs.

These specialized programs are:

1. Autism Medical Care
2. Cerebral Palsy (Pediatric Neurological Team)
3. High-Risk Neonatal Follow-up
4. Stroke Program
5. Craniofacial Anomalies
6. Voice and Laryngeal Pathology
7. Cochlear Implant
8. Behavioral Based Feeding Assessment
9. Traumatic brain injury

## B. Audiology

The practice of audiology includes both the prevention of and assessment of auditory, vestibular, and related impairments as well as the habilitation/rehabilitation and maintenance of persons with these impairments. The overall goal of the provision of audiology services should be to optimize and enhance the ability of an individual to hear, as well as to communicate in his/her every-day or natural environment. In addition, Audiologists provide consultative services to individuals with normal hearing who interact with persons with a hearing impairment. The overall goal of audiologic services is to improve the quality of life for all of these individuals.

### Prevention

Promotion of hearing wellness, as well as the prevention of hearing loss and protection of hearing function.

### Identification

- Activities that identify dysfunction in hearing, balance, and other auditory-related systems
- Implementation, supervision, and follow-up of newborn hearing screening programs.
- Identification of populations and individuals with or at risk for hearing loss and other auditory dysfunction, balance impairments, tinnitus, and associated communication impairments as well as of those with normal hearing.
- In collaboration with Speech-Language Pathologists, identification of populations and individuals with or at risk for developing speech-language impairments.

## Assessment

1. The performance and interpretation of behavioral, electroacoustic, and/or electrophysiologic methods to assess hearing, auditory function, balance, and related systems.
2. Preparation of a report including interpretation of data, summary of findings, statement of recommendations and development of an audiologic treatment/management plan.
3. Referrals to other professionals, agencies, and/ or consumer organizations.

## Rehabilitation

1. As part of the comprehensive audiologic (re)habilitation program, evaluates, selects, fits and dispenses hearing assistive technology devices including but not limited to hearing aids;
2. Assessment of the candidacy of an individual with a hearing loss for a cochlear implant and provision of fitting, mapping, and audiologic rehabilitation to optimize device use.
3. Development of a culturally appropriate, audiologic rehabilitative management plan including, when appropriate:
  - Recommendations for fitting and dispensing, and educating the consumer and family/ caregivers in the use of and adjustment to sensory aids, hearing assistive devices, alerting systems, and captioning devices;
  - Availability of counseling related to psychosocial aspects of hearing loss, and other auditory dysfunction, and processes to enhance communication competence.
  - Skills training and consultation concerning environmental modifications to facilitate development of receptive and expressive communication.
  - Consultation and provision of vestibular and balance rehabilitation therapy to persons with vestibular and balance impairments.
  - Provision of training for professionals of related and/or allied services when needed.

Audiology services at KFMC are broad in scope and include the following:

1. Standard assessment
2. Middle ear assessment including otoscopy, tympanometry, acoustic stapedial reflex and acoustic reflex decay
3. Visual Reinforcement Audiometry (VRA)
4. Play audiometry
5. Otoacoustic Emissions (OAE) testing
6. Click Auditory Brainstem Response (ABR) testing
7. Tone burst Auditory Brainstem Response (TABR) testing
8. Videonystagmography/Electronystagmography (VNG/ENG)

9. Auditory Steady State Response (ASSR) testing
10. Hearing aid selection, prescription and fitting for children
11. Hearing aid selection and prescription for adults
12. Bone-Anchored Hearing Aid (BAHA) assessment and fitting
13. Cochlear implant assessment, activation and mapping
14. Electrophysiological assessment for Meniere's Disease
15. Training and Monitoring for the KFMC Universal Hearing Screening Program

Audiologists usually work in collaboration with physicians, nurses, and other specialists, e.g. ENT specialists, Speech-Language Pathologists, Social Workers, Neonatologists, Oncologists, Geneticists, assistive technology department, teachers.

Program specific services:

Audiologists in the CSDD are actively involved in a number of programs, some of which have a multidisciplinary format and others which are interdisciplinary in nature. These include:

1. Universal Hearing Screening Program
2. High-Risk Neonatal Follow-up Program
3. Pediatric Hearing Aid Program
4. Cochlear Implant Program
5. Oncology baseline and follow-up

Scheduling

In addition to what have been reported above, for audiology, every attempt is made to schedule the inpatient for an assessment the same day as their referral or the day after. Scheduling conflicts arise when the assessment tool required is already fully booked (e.g. ABR). If therapy is required, the clinician will continue to follow-up the patient as long as he/she remains in the hospital. If, for Audiology, the inpatient is not well enough to be seen, the nurse on the ward or referring physician is contacted and advised to contact the Audiology unit prior to the patient's discharge home in an attempt to complete the assessment while they are still an inpatient.

Out-patient scheduling is highly dependent on the nature of problem/diagnosis. Out-patient referrals are usually provided with the first available appointment unless they are considered urgent/priority. For example, in the Swallowing Unit, the supervising senior will assign an appointment for urgent out-patient swallowing referrals within 2 weeks of the referral date. In the Audiology Unit, every effort is made to schedule urgent referrals within two weeks of receiving the referral. The head or senior reviews the referral and decides which clinician will have a particular patient scheduled with them depending on subspecialty, expertise, caseload, and/or availability. In the Speech Language Pathology Unit, new referrals are scheduled in the screening clinic to determine the nature of the problem and whether they fit the criteria for regular therapy, family training, or are within the CSDD's exclusion criteria and therefore will be counseled and discharged.

## Rehabilitation Technology Services

The Rehabilitation Technology Department (RTD) consists of three units, Prosthetics, Orthotics and Assistive Devices. Each unit provides services to both inpatients and outpatients at KFMC.

### Prosthetic services

The Prosthetic Unit is staffed by Certified Prosthetist Orthotists and Prosthetic Technicians. The unit works closely with the Orthotic and Assistive Devices Units within RTD, and with other departments in KFMC.

The Prosthetic Unit provides a Prosthetic Rehabilitation Service to amputees and those with congenital limb deficiencies according to KFMC eligibility requirements.

The types of patient commonly seen in the unit include lower limb amputees, upper limb amputees and those with upper or lower limb congenital limb deficiencies. Patients from all over Saudi Arabia are treated in the unit, including those who are unable to find specialist services locally. The Prosthetic Unit will treat patients of any age or gender.

Every patient referred to the Prosthetic Unit is initially assessed by a Certified Prosthetist Orthotist (CPO) who will determine an appropriate prescription and management plan, or will give advice to the patient. The needs of each patient are individual and any management plan will reflect this.

The prosthetic unit designs and fabricates prostheses for both lower and upper extremity amputations and congenital deficiencies. Each prosthesis is custom made according to the patients need. A variety of techniques and technologies are used within the unit and staff are encouraged to keep abreast of changes within the profession. The unit is currently able to supply both conventional and modular lower limb prostheses for low, medium and high activity patients, and cosmetic, body-powered and myoelectric functional prostheses for upper limb amputees or those with upper limb congenital deficiency. Also, silicon prosthesis are provided for a group of patients who met the inclusion criteria. Prosthetic Unit provides all patients with advice regarding their new prosthesis, including instructions for donning/doffing, stump care and maintenance. Repairs and adjustments of prostheses are also carried out within the unit and patients are encouraged to return for annual maintenance checks of their prosthesis.

### List of prosthesis provided

- Silicone toe prosthesis (cosmetic)
- Partial foot prosthesis
- Silicone partial foot prosthesis
- Through ankle prosthesis
- Trans tibial prosthesis

- Through knee prosthesis
- Trans-femoral prosthesis
- Hip disarticulation prosthesis
- Extension prosthesis
- Silicone finger prosthesis (cosmetic)
- Silicone partial hand prosthesis (cosmetic)
- Wrist disarticulation prosthesis (cosmetic)
- Trans-radial prosthesis (cosmetic)
- Trans-radial prosthesis (functional)
- Trans-radial prosthesis (myoelectric)
- Elbow disarticulation prosthesis (cosmetic)
- Elbow disarticulation prosthesis (functional)
- Trans-humeral prosthesis (cosmetic)
- Trans-humeral prosthesis (functional)
- Shoulder cap
- Shoulder disarticulation prosthesis (cosmetic)
- Shoulder disarticulation prosthesis (functional)
- Others

## Orthotic Services

The Orthotic Unit is staffed by Certified Prosthetist Orthotists, Orthotic Technicians and Shoe/leather Technicians. The unit works closely with the Prosthetic and Assistive Devices Units within RTD, and with other departments in KFMC.

The Orthotic Unit provides an Orthotic Rehabilitation Service to patients according to KFMC eligibility requirements.

The types of patient commonly seen in the unit include those with cerebral palsy, spina bifida, diabetes, scoliosis, post-polio, traumatic brain injury, stroke, congenital hip displacement, CTEV and leg length discrepancy over 5cm. Patients from all over Saudi Arabia are treated in the unit, including those who are unable to find specialist services locally. The Orthotic Unit will treat patients of any age or gender.

Every patient referred to the Orthotic Unit is initially assessed by a Certified Prosthetist Orthotist (CPO) who will determine an appropriate prescription and treatment plan, or will give advice to the patient. The needs of each patient are individual and any treatment plan will reflect this.

Orthotic devices may be ready made or custom made depending on the patient's condition/requirement. The orthotic unit supplies orthoses for the upper limb, lower limb, spine and cranium. A variety of techniques and technologies are used within the unit and staff are encouraged to keep abreast of changes within the profession.

The unit provides a wide range of corrective and protective devices for patients including but not limited to; ankle foot orthosis, knee orthosis, knee ankle foot orthosis, hip orthosis, hip knee ankle foot orthosis, reciprocating gait orthosis, spinal orthosis, spinal corset, protective helmet, bespoke accommodative footwear, corrective footwear, protective footwear, shoe-raise, upper limb splinting. The Orthotic Unit provides all patients with advice regarding their new orthosis, including instructions for donning/doffing, wearing schedule and maintenance. Repairs and adjustments of orthoses are also carried out within the unit.

In addition to our regular orthotic services, RTD has started an Advanced Orthotics program where patients are fitted with light weight orthoses with electronically controlled stance controlled knee joints.

## List of orthosis provided

- Foot orthosis (FO)
- Diabetic insole
- Medical footwear (Orthopaedic)
- Medical footwear (Diabetic)
- Shoe adaptation
- Foot abduction splint
- Ankle foot orthosis (AFO)
- Knee orthosis (KO)
- Knee ankle foot orthosis (KAFO)
- E-Mag knee joint
- Hip orthosis (HO)
- Hip knee ankle foot orthosis (HKAFO)
- Reciprocating gait orthosis (RGO)
- Cervical collar (CO)
- Cervical thoracic lumbar sacral orthosis (CTLSO)
- Thoracic lumbar sacral orthosis (TLSO)
- Lumbar sacral orthosis (LSO)
- Finger splint
- Wrist hand orthosis (WHO)
- Elbow orthosis
- Brachial plexus orthosis
- Cranial orthosis
- Others

## Assistive Devices Services

The Assistive Devices Unit is staffed by Clinical Rehabilitation Technologists and Technicians. The unit works

closely with the Orthotic and Prosthetic Units within RTD, and with other departments in KFMC.

The Assistive Devices Unit provides Services to Spinal Cord Injury, Traumatic Brain Injury, Stroke, and Cerebral Palsy patients.

Every patient referred to the Assistive Devices Unit is initially assessed by a Rehabilitation Technology Specialist who will determine an appropriate prescription and management plan. The needs of each patient are individual and any management will reflect this.

The Unit has many services and once the patient has been assessed, he/she will be directed to the required service(s).

The Assistive Devices Unit provides the following services:

- Wheelchair and Seating: this service provides wheelchair needs to all the above mentioned patients. In addition to wheelchair services, patients are also assessed for and provided with seating systems that prevent or accommodate scoliosis, prevention of pressure sores and encourage correct posture.
- Assistive rehabilitation devices: these include special communication boards for patients who cannot communicate verbally, special keyboards and mice for computers access and special environmental control devices.
- Foot pressure measurement:

## Occupational Therapy (OT)

Occupational therapy is a health profession concerned with promoting health and quality of life through occupation. Occupation is everything people do to occupy themselves, including self-care, leisure, and productivity. The primary goal is to enable people to participate in the activities of everyday life. Occupational therapists work collaboratively with people of all ages and abilities who experience challenges or obstacles to participation. These obstacles may be caused from an impairment of body structure, a change in function, or from barriers in the social and physical environment.

Who do we provide the service to?

Occupational Therapy services are referral based service from KFMC physicians; provided to clients of all age groups and all diagnosis in accordance with KFMC policies. Our services are divided into inpatient and outpatient rehab. Occupational therapy services and specialty programs provided at King Fahad Medical City include:

- Neurological Rehabilitation; that includes but not limited to: Spinal Cord Injuries, Traumatic Brain Injuries & Stroke.
- Musculoskeletal and Orthopedics Rehabilitation



- Oncology Rehabilitation
- Burns and Plastics Rehabilitation
- Cardiac Rehabilitation
- Pediatric rehabilitation
- Out-patient rehabilitation

The following is not within occupational therapy at KFMC scope of practice:

- Driving assessment and rehabilitation
- Home health occupational therapy services
- Home environment assessment and modification
- School and vocational follow ups
- Work placement assessment
- Provision of wheelchairs, OT's at KFMC are only prescribers

## Low Vision Rehabilitation;

Low vision is defined as a visual impairment not corrected by standard eyeglasses, contact lenses, medicine or surgery, which interferes with the ability to perform everyday activities. Visual impairment may present as reduced visual acuity, visual field loss, loss of contrast sensitivity, photophobia, diplopia, metamorphopsia (wavy distorted vision), visual perceptual disorders or as a combination of these. In simple terms, low vision may be thought of as the best-corrected vision, which is insufficient to do what the patient needs to do.

Low vision rehabilitation initiated through an optometrist skilled in low vision rehabilitation that utilizing other rehabilitation disciplines. Patient must be referred only by ophthalmologist through KFMC referral system. The low vision rehab services process includes assessment, prescription and training on the corrective devices, this does not include provision of devices.

## Art Therapy Services;

Art therapy is a human service profession which utilizes art media, images, and the creative art process in conjunction with patient/client responses to create art projects that reflect an individual's development, abilities, personality, interests, concerns, and conflicts.

Art Therapy at KFMC is a referral based service for rehabilitation hospital admitted patients.

## Recreation Therapy Services

The Therapeutic Recreation Services provide goal-directed purposeful activity to assist in the development of adaptive skills and performance capacities by individuals of all ages who are admitted to the Rehabilitation Hospital. Therapeutic Recreation is designed to help maximize independence, prevent further disability and maintain health by providing high quality rehabilitative therapeutic recreation services for all patients in need of Rehabilitation Hospital intervention.

Recreational Therapy at KFMC is a referral based service for rehabilitation hospital admitted patients.

## Vocational Counseling

The Vocational Counselor is responsible for providing the full spectrum of professional counseling services to individuals with disabilities and/or multiple impediments to employment, including those patients in need of rehabilitation planning services to assist them in overcoming barriers to achieve successful employment outcomes.

Vocational Counselors provide counseling to patients in order to assist in alleviating any physical, mental, developmental, cognitive, and/or emotional disabilities in order to achieve the goal of an employment outcome. This specialized counseling includes but is not limited to assessment of individual needs; diagnosis and treatment planning including recommendations; career (vocational) counseling; advocacy with employers; consultation and advice to partner agencies to improve their ability to serve individuals of both genders with disabilities who are old enough to be employed.

Vocational Counselors at KFMC is a referral based service for rehabilitation hospital admitted patients.

## Physical Therapy

The Physical Therapy department provides tertiary care services in an acute rehabilitation medical setting. The overall objective of the Physical Therapy Service is to optimize an individual's function and to enhance the individual's health and welfare.

Physical Therapy major services include:

- Gait training
- Pain management
- Motor control training
- Prosthetics and orthotics training
- Functional mobility training
- Women's health management
- Sport injuries and post surgical rehabilitation
- Provision of canes and crutches

Physical Therapy is provided to patients of all age groups and all diagnoses in accordance with KFMC policies. The PT services are provided on both an inpatient and outpatient basis. The PT services are provided mainly to patients with stroke (CVA), spinal cord injury, head injury, amputation, joint diseases, joint replacement, soft tissue injury, vertebral pain, cerebral palsy, Down syndrome, congenital anomalies, spina bifida, pelvic floor dysfunction.

Physical Therapy department at KFMC does not provide the following services, Weight reduction, wellness and endurance training, complementary and alternative medicine (e.g. Acupuncture, Massage, Aromatherapy, etc).

## Scheduling

Inpatient services are always a priority. All consultations/inpatient referral must be fulfilled within 24 hours of receiving the consultation/referral unless otherwise indicated/clarified (e.g. a patient on meningitis medication referred to the Audiology unit cannot be assessed until the medical treatment has been completed, while post surgery bracing must be done immediately).

Outpatient scheduling is highly dependant on the nature of problem/diagnosis. Outpatient referrals are usually placed on a waiting list and provided with the first available appointment unless they are considered urgent/priority and they should be tertiary care in nature. The head or senior reviews the referral and decides which clinician will have a particular patient scheduled with them depending on subspecialty, expertise, caseload, and/or availability.

## Program specific services

Rehabilitation services are actively involved on many multidisciplinary teams throughout KFMC, addressing the needs of special groups of patients. The teams are comprised of members from many specialty areas within King Fahad Medical City and the specialists/services involved are identified based on the needs of the specialized program or as required for specific and in-depth management of certain cases. Involvement on the teams enables specialists to keep up with the literature and latest techniques pertaining to a specific specialty area. The team as a whole has preset diagnostic and treatment protocols which have been designed to best serve patient needs. The teams include:

1. Autism Medical Care Program
2. Cerebral Palsy Program
3. High-Risk Neonatal Follow-up Program
4. Stroke Program

5. Spasticity Program
6. Craniofacial Anomalies

## **Physical Facility Where Services are Provided**

All services are provided in the Rehabilitation Hospital building. However, there are other services are provided on another location. Total OPD patient seen for 2013 is 10, 203.

1. In Patient Physical/Occupational Therapy Services – Main Hospital
2. Out Patient Pediatric Physical Therapy Services – Children Hospital
3. Out Patient Audiology Services – Main Hospital

## **Hours of Operation**

1. Inpatients: 24 hours/7 days
2. Outpatient: The exact working hours depend on the type of the clinics/services; however, the hospital is generally open Sunday to Thursday, 7:30 AM to 4:30 PM.

## **Services Restrictions**

- Rehabilitation Hospital is a government based services and provides the services only to the eligible Saudi citizen. However, the insured patients (either Saudi or non-Saudi can be accepted through SFFD).
- All patients who their employer provide medical services to them, they will be accepted if referred officially. This includes patients from National Guard, armed forces, security forces, universities.

## **Programs Scope of Services**

### **Limb Loss Program Scope of Service**

LIMB LOSS REHABILITATION TEAM:

The limb loss rehabilitation team strives to help the patient to learn new skills in mobility, body awareness, and to cope with the loss of limb. The program is led by a consultant physiatrist. The other members of the team are as follows:

- Rehabilitation Nurse
- Prosthetist & Orthotist
- Physical Therapist
- Occupational Therapist
- Clinical Psychologist

- Social Worker
- Case Manager
- Recreation Therapist
- Vocational Therapy
- Health Educator
- Patient and Family

In addition to the members above, the Limb Loss Rehabilitation team has access to a full range of specialists in KFMC, who can be referred to for consultations when necessary.

#### LINKED SERVICES:

- Diabetic Centre
- Orthopedics
- Vascular
- Plastic Surgery
- Cardiovascular
- Dietetics & Nutrition
- Podiatry
- Endocrinology
- Nephrology
- Diagnostic laboratory and imaging
- Others (according to patient's needs)

The program facilitates appropriate referrals for children/ adolescents/Adults who do not have a primary care physician – patient will be guided to his regional health authority through the recommendation section of the medical report.

\*\*Patient will be referred back to the referring (treating) physician/hospital if available.

#### ELIGIBLE PATIENTS

The limb loss rehabilitation program offers services to patients who have a congenital limb deficiency, or an acquired deficiency.

Patients are eligible to join the Limb Loss Program if a suitable rehabilitation service is not available in their local region or the referring hospital and the entry point to the program is through the limb loss clinic

Limb loss program is provided on an inpatient and outpatient bases.

The following services are included in the program:

- Pre-amputation(if we get consulted through PM&R)
- Early rehabilitation phase(post amputation or pre-prosthetic)
- Rehabilitation Phase(in addition/extension to early rehab phase)
- Life Long Care: Patient will be given annual appointment with PM&R.

## **Pediatric Rehab Program Scope of Service**

- Who do we accept?

The pediatric rehabilitation program accepts all patients with all diagnosis according to Rehabilitation Hospital general scope of service and acceptance criteria with emphases on age grouping according to the following: children 4-12 years, adolescent 13-18 years of age.

## **Admission Criteria for Acute Inpatient Rehabilitation**

- The patient must be willing and able to actively participate in the rehabilitation program.
- The patient must have goals in at least two of the three major therapy areas (PT, OT and Speech).
- The patient must have the endurance to tolerate at least three hours of therapy over the course of the day.
- The patient must demonstrate the ability to carry over new information.
- The patient must be medically stable.

Continuum of stay criteria: Memo No. 020005/42/30 Dated 23/03/2009

The patient should be:

- Medically stable (as defined by rehab admission IPP)
  - Compliant with therapy
  - Compliant with regulation
  - Continue to show progress in reasonable time
  - Evaluation in progress
  - Continue to require skilled therapeutic intervention.
- Discharge criteria:

As outlined by general RH scope of service

- Working hours:

For inpatient: 24/7 nursing and physicians (physiatrists + pediatricians under MOU)

8 hrs. /day 5 days /week clinicians

- Family involvement:

RH adopts a patient centered approach to its pediatric program with emphases on family/care giver involvement according to the following:

- Pre-admission phase: through the pre-admission meeting
- Admission phase: through patient/family meeting, case conference represented by the CPM, ward round with direct input from patient and his family and significant change patient/family meeting.
- Discharge phase: through pre-discharge family meeting.
- Follow up phase: through every visit with direct involvement of patient and his family.

Significant change

- Patient/family meeting will be called (within 5 working days for inpatient, and immediately informed for OPD) based on the following occurrences which affect the program goals
- Any deterioration in patient medical condition
- Surgical intervention
- Significant decline/improvement in functional level
- For emergencies patient should be sent to ER immediately and primary physician should be informed

- Team composition

Core services: physiatrists, pediatricians, PT, OT, SLP, Psychologist, nutritionist.

Supportive services: all other referral based services according to need

- Access to pediatric program:

OPD, consultation within KFMC and Eligibility (patient accepted directly to inpatient from eligibility will go through ER for Triaging)

**Chapter 5**

**NATIONAL NEUROSCIENCE INSTITUTE**



**NATIONAL NEUROSCIENCE INSTITUTE  
SCOPE OF SERVICES REPORT**

The National Neuroscience Institute offers the following services: Neurology, Neurosurgery, Spine, Mental Health, Neurophysiology, Pediatric Neurology, Neuro-Critical Care, Pediatric Neurosurgery Services.

**Vision**

To be the International Benchmark in providing patient care, training, and research in the field of Neurosciences.

**Mission**

To prevent and treat complex and underserved nervous system disorders, through well integrated highly-sub-specialized multidisciplinary management programs providing state of the art diagnostic and therapeutic services and to conduct specialized training and research in Neuroscience.

**PATIENTS SERVED:**

All patients of all age group with tertiary care medical problems involving the Nervous System or the Spine from any Hospital within the Kingdom of Saudi Arabia. Patients from outside the Kingdom of Saudi Arabia need to go through special arrangements. Total number of OPD patient seen for 2013 was 17,903.

**PHYSICAL FACILITY WHERE SERVICES ARE PROVIDED:**

Main Hospital

Children Hospital

Rehabilitation Hospital

Women's Specialized Hospital

Prince Salman Heart Center

Prince Sultan Hematology & Oncology Center

Specialized Diabetes and Endocrine Center

Critical Care Departments

The Emergency Room (Adult and Children)

All Operating Rooms with in KFMC

## **HOURS OF OPERATION:**

The official KFMC working hours are from 07:30 to 16:30 daily. In addition to the 24 hours coverage by a team in each specialty on call 24/7.

## **SERVICES PROVIDED:**

### Neurosurgery / Spine (Adults and Pediatrics)

- Carpal Tunnel Syndrome
- Brain Tumor
- Cubital Tunnel Syndrome
- Encephalocele
- Head Injury Moderate
- Head Injury Simple
- Hydrocephalus Adults and Pediatrics
- Meningocele
- Myelomeningocele
- Scalp Lesion
- Skull Lesion
- Peripheral Nerve Injury
- Posterior Fossa Tumor
- Spinal Cervical Disc Prolapse
- Spinal Cervical Stenosis
- Spinal Lumber Disc Prolapse
- Spinal Lumber Stenosis
- Spinal Tumor
- Aneurysmal SAH
- Brainstem Tumor
- Cerebral AVM
- CP Angle Tumor
- Intraventricular Tumor
- Skull Base Tumor

- Spinal Scoliosis
- Spinal Spasticity (Rhizotomy)
- Trigeminal Neuralgia
- Epilepsy Surgery
- Plexus Injury
- Spinal AVF & AVM
- Spinal Order Disorder
- Spinal Thoracic Disc Prolapse
- Syringomyelia / Hydromyelia
- Cranial Dural AVF

### Neurology / Neurophysiology (Adults and Pediatrics)

- Stroke Hyper acute, Acute and Subacute
- Guillean Barre
- Multiple Sclerosis
- Peripheral Neuropathy
- Dementia
- Epilepsy
- Sleep Disorders
- Movement Disorders
- Meningitis
- Encephalitis
- Cerebritis
- Myasthenia Gravis
- Muscular Disorders
- Myopathy
- Myositis
- Amyotrophic Lateral Sclerosis
- Motor Neuron Disease
- Benign Intracranial Hypertension
- Entrapment Neuropathy

### Psychiatry / Psychology Referrals from within KFMC in:

- Psychiatric and psychosocial disorders secondary to a general medical condition
- Attention Deficit Hyperactivity Disorder
- Psychometric assessment of children and adolescents
- Neurocognitive assessments of neurosciences center patients

- Psychotherapy, family therapy for adults, children and adolescents coping with chronic medical illnesses.

**ADMISSION CRITERIA:**

- Patients booked for major procedures
- Emergency admissions that need in-hospital care
- Post-operative care patients
- Patients who are on IV medications for a limited period of time
- Patients that need urgent investigations who might be at danger

**Chapter 6**

**COMPREHENSIVE CANCER CENTER**

## COMPREHENSIVE CANCER CENTER SCOPE OF SERVICES REPORT

The **Comprehensive Cancer Center** offers Adult Hematology and Bone Marrow Transplant (BMT), Adult Medical Oncology Hematology/BMT, Medical & Radiation Oncology, Pediatric Hematology and Oncology & Palliative Care services.

### Vision

To be internationally recognized comprehensive cancer center.

### Mission

To prevent and alleviate suffering of cancer patients and their family through multi-disciplinary approach, health education, psychosocial support and cancer research.

### Patients served:

All patients served according to the different department: Total number of 2013 OPD patient seen, 18,386.

#### **Radiation Oncology Department**

- Radiation Therapy is provided for in-patients and out patients.
- Radiation Therapy provided to all age groups except children younger than 12 months.
- Radiation Therapy provided to both gender.

#### **Adult Hematology and BMT Department**

- Adult patients 14 years and above, with blasts or tissue proven malignancy.
- Hematology service is provided for in-patients and out patients.
- Hematology service is provided as consultation to all hospitals, centers, departments of KPMC.
- Establishing Blood and Marrow Transplant program.

#### **Medical Oncology Department**

- Adult patients with tissue proven malignancy or masses highly suspected for malignancy.

- Medical Oncology service is provided for in-patients and out patients.

**Pediatric Hematology and Oncology Department**

- Providing health care to in-patients & out patients with proven malignancy and other hematological disorders that require tertiary care.
- Patient up to the age 12 years old.
- Working to establish adolescent hematology and oncology unit dealing with patients from 12 to 14 years.

**Palliative Care Department**

- All patients whom they are eligible for admission to CCC, including Pediatrics, and they have pain or other distressing symptoms, psychosocial, and spiritual suffering shall be served by Palliative Care Department.
- Palliative care may be complementary to other therapies that are available and appropriate to the identified goals of care
- Once there is enough manpower and resources are available, patients with life threatening illness other than cancer shall be eligible to be served by palliative care team.
- The Pediatric patients, 1 to 12 years old, can be seen as consultation until there is a Pediatric palliative care team is formed.
- The adolescent patients shall be admitted to adolescent Haematology and Oncology unit and then seen by palliative care team as a consultation.
- The ratio of palliative care consultant to patient is 1:12.
- Currently palliative care service accepts referrals only from CCC consultants.
- The expected average monthly volume of patients is  $10 \pm 2$ .

**Physical facility where services are provided:**

Comprehensive Cancer center administration located in main hospital at KFMC, ground floor and we have different department located as:

- **Radiation Oncology Department**

Radiation Oncology Department is located in the Ground Floor of the Main Hospital with 3 out-patient Clinic Rooms , 2 Simulators, 2 Linear Accelerators, 1 Brachytherapy Room, 1 HIFU, 2 Iodine Therapy Rooms located in the 3<sup>rd</sup> floor-Main Hospital, 1 Treatment Planning Room, 1 Mould Room, 1 RT Workshop and 1 TLD Room.

The services provided are the following :

1. Simulations
2. Treatment Planning
3. External beam radiation treatment including 3D conformal radiation treatment and IMRT (Intensity Modulated Radiation Therapy), Total Body Irradiation (TBI).
4. High Dose Rate (HDR) Brachytherapy
5. Intracavitary Brachytherapy
6. Stereotactic Radiosurgery and Radiotherapy
7. HIFU (High Intensity Focused Ultrasound)
8. Radioactive isotopes prescription and injections for metastatic bone pain (such as: Iodine, Samarium, Strontium, Zevalin and others)

- **Adult Hematology / BMT Department**

Adult Hematology / BMT Department Located at the Main Hospital at KFMC, and we have 8 clinics per week, and clinic located in:

1. Out Patients Clinics – in OPD clinic 4.
2. Out Patient Treatment Unit – on the ground floor (now moved to 3<sup>rd</sup> Floor temporarily).
3. Nursing Clinic – located in OPD clinic 4.
4. BMT clinics - located in OPD clinic 4.

In Patients service: We have Adult Hematology / BMT ward male and female located in the main hospital, 3<sup>rd</sup> floor, in addition we utilize the ICU service in the main hospital.

- **Adult Medical Oncology Department**

Adult Medical Oncology Department Located at the Main Hospital at KFMC.:

- Out Patients Clinics – Located in Ground floor of Main Hospital in the OPD area Clinic 4. With 14 clinics running / week.
  - Multidisciplinary Clinic
  - Speciality Clinics
- Out Patient Treatment Unit – located in the ground Floor near the elevators
- Nursing Clinic – the ground floor in the OPD area , clinic 4.
- In Patients service: We have Adult Medical Oncology ward male and female located in the main hospital, 3<sup>rd</sup> floor, in addition to utilization of the ICU service in the main hospital.
- The visitor oasis : in the third floor facing conference room 5



- **Pediatric Hematology / Oncology Department**  
Located at the children Hospital at KFMC, and we have 7 clinics per week, and clinic located in:
  - Oncology Clinics – in OPD 2 - children hospital
  - Hematology clinic - in OPD 1 - children hospital
  - Out Patient Treatment Unit – 3rd floor, ward 3 - children hospital
  - In-patient located in ward 3, 3<sup>rd</sup> floor, Children Hospital
  
- **Palliative Care Department consists of the following:**
  - Outpatient Clinic  
Palliative Care Clinics consist of Palliative Care clinic, Cancer pain clinic and patient education and planning clinic. These are located in the Main Hospital, OPD Clinic 4.
  
  - Inpatient service  
The inpatient service consists of two types of services; the palliative care consultation and the palliative care unit admission service. Currently palliative care consults are provided to the adult patients admitted to CCC. The admission service has been established within the CCC admission service pool that is located in the Main Hospital 3<sup>rd</sup> Floor. The palliative care team consists of Palliative Care Physician, Palliative Care Associate/Assistant, Palliative Care nurse and Cancer pain nurse.
  
  - Palliative Home Care  
Palliative Home Care Program started in October 2011 to provide a holistic care for palliative care patient at home. Palliative home care program accepts patient referred to palliative care team from inpatient or outpatient setting. Home Care Physician and Home Care Nurse attend weekly Interdisciplinary Palliative Care Team meeting to update palliative care physicians about the current situation of their patient.

### **Hours of Operation:**

1. Follow KFMC working hours.
2. Out-patient services starting from 07:30 to 04:30, Sunday to Thursday.
3. In-patient service 24 hours.
4. OPD & OTU are clinically seen from Sunday to Thursday @ 07:30am to 04:30pm
5. ER coverage 24 hours as consultation.

### **SERVICE PROVIDED:**

All service provided according to the different department;

## Radiation Oncology Department service provided

- Initial consultation
- Follow-up office visits
- Provide quality radiation and high intensity focused ultrasound treatment services in a compassionate and timely manner for the patient.
- Provide support for family or significant others during the course of the patient's treatment.
- Provide cancer education for the patients.
- Improve patient satisfaction as measured by the patient satisfaction survey.
- To provide continuing education to staff.
- Provide Quality Assurance Radiation Therapy.
- Radiation Therapy is primarily used to treat patients with a cancer diagnosis. Radiation is also used for patients with vascular disease, heterotrophic hip disease, keloid scars and other benign diseases.
- All patients with diagnosed tumors or disease that require Radiation Therapy (External Beam Radiotherapy, Brachytherapy, Stereotactic Radiotherapy, Radioactive Isotopes Therapy) as part of their management either with radical or palliative intent including the following:
  - Skin tumor
  - Central Nervous system tumor
  - Head-and-Neck tumor
  - Thyroid tumor
  - Lung tumor
  - Breast tumor
  - Gastrointestinal tumor
  - Hepatobiliary tumor
  - Genitourinary tumor
  - Gynecological tumor
  - Lymphoma
  - Leukemia and other hematological tumor
  - Bone tumor
  - Soft tissue tumor
  - Pediatric tumor
  - All other benign tumors and conditions requiring Radiotherapy

## Adult Hematology / BMT service provided

- Initial consultation
- Follow-up clinic visits
- Provide high quality medical care in a multi-disciplinary team.
- Conduct tumor boards in leukemias, lymphoma & myeloma for treatment decision.
- Conduct hematology / BMT review board on weekly basis (Sunday Morning).
- Attend the weekly BMT review board at King Faisal Specialist Hospital & Research Center.
- Medication delivery including chemotherapy administration as IN and OUT patient.
- Provide patient assessment, planning, interventions and evaluation.
- Bone Marrow aspirations and biopsy.
- Lumbar puncture and intrathecal chemotherapy
- Blood products administration
- Patient / family education
- Pain Care management and narcotics administrations.
- Central line catheters managements.

- Provide support for patient and family during the course of the patient's treatment.
- Participation in providing cancer education to the society.
- Improve patient satisfaction as measured by the patient satisfaction survey.
- Provide continuous medical education to staff.
- Use Quality Improvement measures to improve the service provided.
- We are in preparation of establishing BMT service.

## **Medical oncology service provided**

- Initial consultation
- Follow-up office visits
- Provide quality medical care engagement in multi-disciplinary management team that provide high standard of care equally to all patients referred to CCC.
- Medication delivery including chemotherapy administration and management as IN and OUT patient.
- Provide patient assessment, planning, interventions and evaluation.
- Wound and skin care
- Bone marrow biopsy and aspirations
- Lumbar puncture
- Chest tube management
- Post Tracheostomy Care
- Blood and blood product administration
- Patient / family education
- Pain Care and management
- Narcotic administrations.
- Provide support for patient and family during the course of the patient's treatment.
- Provide cancer education for the patients and society.
- Improve patient satisfaction as measured by the patient satisfaction survey.
- Provide continuous medical education to staff.
- Use Quality Improvement measures to improve the service provided.
- Partially involved in screening program especially for breast cancer and cervical cancer.

## **Pediatric Hematology and Oncology Department service provided**

- Patient centered quality of care service.
- Initial consultations
- Follow-up visit schedule
- Patient & family education
- In-patient daily rounds
- Continuous medical education to all medical staff (weekly topic review, ground rounds, journal clubs, intra-hospital, national and international related meetings).
- Multi-disciplinary team approach;

- Weekly meeting; Hemato-pathology, Neuro-oncology tumor board, Pediatric Tumor Board; Resident Presentation, PHO Fellow Teaching; Neuro-Oncology Multidisciplinary Action; Hematology meeting. Sing in & Sing out handover
  - Bi-Weekly Meeting: Quality Assurance Meeting, Topic Review Meeting
  - Monthly meeting: Departmental Meeting, journal club and Ground round.
  - Bi-Monthly Meeting: Teleconference Meeting.
- 
- Consultant & assistant consultant are rotating on monthly basis to cover in-patient oncology unit, oncology treatment unit, and consultation service and outpatient clinics.
  - Medication delivery including chemotherapy administration as IN/OUT patient.
  - Provide patient assessment, planning, interventions and evaluation.
  - Bone Marrow aspirations and biopsy.
  - Lumbar puncture& Intrathecal chemotherapy
  - Blood products administration
  - Pain Care management and narcotics administrations.
  - Central line catheters managements.
  - Provide support for patient and family during the course of the patient's treatment.
  - Provide cancer education for the patients and society.
  - Improve patient satisfaction as measured by the patient satisfaction survey.
  - Use Quality Improvement measures to improve the service provided.
  - In preparation of establishing BMT, Neuro-oncology program and adolescent services.

## **Palliative Care Department Service Provided**

- Defines immediate and long term goals of care and promotes advance care planning
- Optimizes symptom control
- Optimizes functional status when appropriate
- Promotes the highest quality of life for patient and family
- Educates patients and family to promote understanding of the underlying disease process
- Establishes an environment that is comforting and healing
- Plans for discharge to the appropriate level of care in a timely manner
- Assists actively dying patients and their families in preparing for and managing self-determined life closure
- The palliative care team provide the following
- Serves as educators and mentors for staff
- Promotes timely access to palliative care services
- Collaborates with primary physicians in developing a plan of care
- Provides physical, psychological, social and spiritual support to patient and family
- Facilitates care planning with family to meet physical, psycho-social and spiritual needs caused by life-threatening illness

- Facilitates patient understanding of diagnosis and prognosis to promote informed choices
- Assists patients in establishing goals of care and establishing priorities
- Encourages advanced care planning
- Palliative care patients may undergo any procedures that assist in improving quality of life

**ADMISSION / DISCHARGE CRITERIA****Radiation Oncology Department**

Radiation Oncology patients are referred by Medical Oncologists, Surgeons, Primary Care Physicians, Gynecologists and other specialists. During the initial consultation a Radiation Oncologist or his Assistant will take a detailed history. A Radiation Oncologist will meet with the patient and their significant others to discuss the value of using Radiation Therapy. Once the Radiation Oncologist determines that Radiation Therapy is indicated, the patient will be given the choice of whether or not to proceed with treatment. A treatment planning session is scheduled. At that point the patient will be given a consent form to authorize radiation treatment.

**Adult Hematology / BMT Department**

Adult Hematology patients (14 years and above) are referred by peripheral hematologists, surgeons, Primary Care Physicians, radiation oncologists, gynecologists and other specialists. During the initial consultation a Hematologist or his Assistant/Resident will take a detailed history. A Hematologist will meet with the patient and thoroughly discuss his / her problem. After the comprehensive review of the problems list, meticulous physical examination and review of all radiological and laboratory work up., discussion of the care plan, alternatives and risk benefits of the available treatment options takes place.

If decided to offer chemotherapy as part of the management in this case, proper education about the treatment related morbidity and outcome should be explained to the patient and family.

The current criteria for admission includes above 14 years of age patients who are newly diagnosed with Adult Hematology / BMT conditions for investigation, treatment including chemotherapy and follow up. The patient population may also include relapsed patients, high dose chemotherapy patients for peripheral stem cell transplant and post chemotherapy complications (example, nausea, vomiting, dehydration, febrile neutropenia, tumor lysis syndrome,). Patients may be assessed in the hematology Clinic / Emergency Room and other units and are admitted for further investigations/treatment

**1. Patients referred from within KFMC OPD or inpatients**

- Currently we accept patient if he/she has tissue-proven locally verified malignancy or if there is peripheral blood findings highly suggestive of a malignancy (e.g. blasts) or of a serious disease like TTP (low platelets & presence of schistocytes on peripheral blood; and high LDH).
- All consultations related to non-malignant conditions (Thrombosis, Anemia, Cytopenias) should be referred initially to an internist for base line investigations and management. If more specialized investigations/interventions are needed or case is complicated, the internist will be the one who will request the CCC hematologist consultation. This is meant to ensure continuity of future follow ups by them and to ensure that simple cases are routinely dealt by general internist. A CPP (# 1432-79 available at KFMC intranet) has been finalized that clarifies the roles of CCC DAH&BMT, ER and Internal Medicine departments in benign hematological problems management.
- All pregnancy related complications (thrombosis, Hemoglobinopathies, etc...) should be referred initially to internal medicine. If an internist need help or cannot handle the case, he will be the one who will request CCC service consultation and not the obstetrician. This is meant to ensure continuity of future follow ups by the referring physicians once help from hematologist is no more required.
  
- Again, pre-operative consultations for benign hematology conditions should be referred primarily to internal medicine. If more help is needed, the internist will be the one who will request CCC service consultation. A CPP (# 1432-79 available at KFMC intranet) has been finalized that clarifies the roles of CCC DAH&BMT, ER and Internal Medicine departments in benign hematological problems management.
- Referral of non-malignant cases to CCC OPD will be accepted only from internal medicine departments, while other departments (Ob/Gy, surgery, etc...) should refer such cases to internal medicine first.
- All adult patients with thrombosis who are in need for anticoagulation should be referred to internal medicine. CCC does not accept such cases. Cardiac anticoagulation patients will be seen by cardiologist as well. CCC can provide short term consultation with the primary internist for complicated cases only. A CPP (# 1432-79 available at KFMC intranet) has been finalized that clarifies the roles of CCC DAH&BMT, ER and Internal Medicine departments in benign hematological problems management.

**2. Patients coming through the referral system**

Generally all cases requiring tertiary care facility either for diagnostic or therapeutic purposes that is not available in the referring hospital will be accepted and long term follow up shall be decided according to the diagnosis and situation of the referral hospital.

- Non-malignant cases (Bleeding disorders, thrombosis, Anemia, and Hemoglobinopathies) will not be accepted by CCC. Exemptions from this rule are the patients with BM Biopsy – proven primary bone marrow failure syndrome.
- Patients with outside tissue biopsy: CCC will not accept such patients unless the pathology is authenticated by KFMC Pathology Lab Department to be malignancy
- Patients with no tissue biopsy: In routine CCC will not primarily accept them but will be transferred to the concerned department ( medicine or surgery)
- Exception from the above “ tissue proven” rule, are cases of Acute leukemias because they do not need tissue diagnosis ( peripheral blood will suffice if pathognomic) but need urgent intervention and management
- Patients referred from tertiary care centers with well-established oncology services (such KFSH & RC, Military Hospital, NGH, KKUH and also in most cases from KSMC) will not be accepted to CCC.
- Cases referred from Outside Riyadh area who belong to certain military sectors, such as the Armed Forces, security forces and National Guard services, will not be accepted by CCC and instead should go their counterparts located in Riyadh

**3. Patients coming through emergency room**

- All patients known to hematology service and on regular follow-up in hematology clinics shall be admitted under the name of hematology consultant on call or the primary hematology physician.
- As part of residency training and to give the residents more confidence in dealing with various hematology problems we suggest that the admission clerking should be conducted by resident working in Core clinical teaching unit (CCTU) and he/she can report directly to Hematology Fellow /assistant or to the hematology consultant on the service.
- Brand new cases coming to ER and need admission should be first admitted under General Medicine team and will be seen as a consultation by hematology team. Transfer the service to hematology team or follow-up in Hematology clinic after the final diagnosis is confirmed to be decided according to scope of care (see below and also the CPP (# 1432-79 available at KFMC intranet) has been finalized and it clarifies the roles of CCC DAH&BMT, ER and Internal Medicine departments in benign hematological problems management.).
- Patient with hematological manifestation (like pancytopenia) due to underlying primary disorder like infection, metabolic, etc will be admitted under General Medicine or concerned subspecialty and will be seen by hematology service as a consult.

- Patient on regular follow up at other hospitals, if they need admission and can't be transferred back to that hospital like sickle cell anemia shall be admitted under general medicine team and should be advise to continue his follow up at his primary hospital at the time of discharge. A CPP (# 1432-79 available at KFMC intranet) has been finalized that clarifies the roles of CCC DAH&BMT, ER and Internal Medicine departments in benign hematological problems management.

## Medical Oncology Department

Medical Oncology patients are accepted directly from the referral system . Radiation Oncologists, surgical department ,internal medicine department cardiac centre diabetic centre , Primary Care Physicians, and maternity hospital . During the initial consultation ,the Medical Oncologist or his Assistant will do thorough evaluation for the patient ,including history taking , physical examination and workup review then will meet with the patient and his guardian to discuss his / her diagnosis ,stage and treatment plan .

If decided to offer chemotherapy as part of the management in this case, proper education about the traetment related morbidity and outcome will be explained to the patient and family. Initially by the primay consultant then will be reinforced by the healtheducator . Also they will be handed educational material .

## Palliative Care Department

### Indications for Admission:

1. The patient under condition of Do Not Resuscitate (DNR)
2. The patient who is not currently receiving any kind of chemotherapy or having complications that are directly related to chemotherapy such as febrile neutropenia
3. Consultant oncologist, hematologic oncologist, and radiation oncologist shall indicate the reason for transferring the care to palliative support. (e.g failure to respond to chemotherapy, patient can't tolerate chemotherapy ...etc)
4. The life expectancy of the patient is less than 6 months.
5. Palliative care physician covering palliative care unit accept the request of transfer of care from the oncology, haematology and radiation oncology service when the curative treatment is not possible and no farther chemo/radiation is planned.
6. Palliative Performance Scale / Kamofsky < 50% or ECOG > 3



7. For the new palliative care patients, the first two weeks of care should be shared between the Primary Team and Palliative Care Team. Thereafter, the palliative care will take over the full responsibility of patient's care.
8. Transfer of care will not be accepted for patients who are not known to palliative care team and they are gasping or diagnosis of imminent death is made except if the patient is not known to palliative care, haematology, medical oncology and radiation oncology, and has a clear plan of care.
9. Agreement of the family and/or patient to be transferred under the care of palliative service.
10. No admission or transfer of care through Emergency Department except for patient who has been accepted previously as sole Palliative Care patient.
11. Transfer will be accepted if medical report is written before transferring to PCU including DNR, prognosis, family acceptance, and clear plan and fill up Transfer Checklist.

### **Indications for consultation:**

All patients receiving treatment under the CCC with cancer whom they are still receiving modalities of cancer treatments for curative or palliative intent with the following issues:

1. Pain that is not controlled after 24 h from initiating opioids.
2. Chronic non-cancer pain that is not well controlled after 1-2 weeks of trying conventional pain treatment.
3. Patient who is on opioid that need to be switched to other opioids or changing the route of administration.
4. Acute pain crises that needs immediate intervention with opioids.
5. Variety of symptoms such as nausea, vomiting, constipations, shortness of breath etc that are investigated and these symptoms were not well controlled with conventional treatment.
6. Symptomatic brain metastases, spinal cord compression, or neoplastic meningitis
7. Malignant hypercalcemia
8. Patient, family, and/or physician uncertainty regarding appropriateness of treatment options
9. Psychosocial suffering affecting treatment plan
10. Family conflict in regard of DNR and treatment plan
11. Patients whom the plan of care are not certain.
12. Patients with spiritual suffering
13. Conflict regarding the use of non-oral feeding/hydration in cognitively impaired, seriously ill or dying patient
14. Patient, family, and/or physician request for information regarding palliative care appropriateness

### **Pediatric Hematology and oncology Department**

#### **1. In Oncology**

Since we have limited available beds at pediatric oncology unit, we have develop an agreement with the other partner services in children hospital to facilitate the acceptance and admission of new patient referred or landed in emergency department & suspected to have malignancy based on clinical and radiology findings.

- 1) All oncology patients coming through emergency department (ED) and they are on regular follow up & known to pediatric oncology shall be referred directly to oncology on call team for further management.
- 2) all brand new patients coming through emergency department (ED) with hematological manifestations like anemia ,thrombocytopenia and/or leukocyte disorder that associated with/or without splenomegaly and lymphadenopathy and the initial investigation like WBC morphology did not show clear blast cells on the peripheral smear shall be admitted under the care of General Pediatric team until the diagnosis of malignancy is proven or excluded .
- 3) all brand new patients coming through emergency department (ED) with non tissue proven abdomen , chest, and neck masses , like cases of lymphoma ,shall be admitted initially under the care of surgical subspecialty team for diagnostic biopsy or , if it is feasible , complete surgical resection .
- 4) all brand new patients coming through the emergency department (ED) with radiological evidence of head and spinal tumors shall be admitted to neurosurgical ward for diagnostic biopsy or , if it is feasible , complete surgical resection.
- 5) all brand new patients coming through the emergency department (ED) with radiological evidence of diffuse Pontine glioma not requiring a VP shunt shall be referred to radiation oncology team . if the patient need VP shunt shall be admitted to neurosurgical floor and referred later on to radiation oncology.
- 6) All brand new patients coming through the emergency department (ED) with suspected bone tumor other than tumor in the trunk shall be admitted to pediatric orthopedic team.
- 7) Pediatric hematology/oncology team shall be consulted as soon the patient arrives to ED or inpatient floor to share the care and management plan with the other team from the first moment
- 8) Immediate Post surgical care shall be provided by the surgical team pending final result by the pathologist.
- 9) The care of the Patient shall be transferred to pediatric oncology team provided that :
  - the malignant disorder has been approved,
  - the patient has no surgical issue needs immediate re intervention or post surgical care
  - The conditions of the patient allow Chemotherapy to be started.
- 10) If the patient condition/ or type of chemotherapy necessitate hospital staying the patient shall be transferred to Pediatric oncology ward if bed is available.
- 11) If no bed available and the patient condition necessitates urgent starting of chemotherapy agents, the care shall be transferred under pediatric oncology team and arrangement should be done with oncology head nurse for chemotherapy administration by one of oncology certified nurses in the other floor, otherwise the patient can wait for another 24-48 hour until bed is available in oncology ward.
- 12) Patient with biopsy proven non chemotherapy sensitive tumor, for example brain ependymoma, chordoma, and high grade glioma shall be referred directly to radiation therapy.
- 13) All oncology cases should be discussed in the one of the relevant tumor boards for multidisciplinary discussion and management plan.

- 14) Patient with relapsed or refractory malignant disease who was diagnosed and treated elsewhere will not be accepted and will be encouraged to go back to the treating hospital unless additional management can be offered by one of the medical or oncology team like surgical intervention or investigational type of therapy.

## **2. Hematology**

Generally we are also following the patients with complicated and severe sickle cell anemia; hemolytic, aplastic, dyserythropoietic anemia, bone marrow failure, platelet disorder and quantitative leukocyte disorder.

### **Here are some examples of such cases:**

1. All cases of Thrombosis including TTP
2. Bleeding Disorder if
  - Unknown diagnosis
  - Treatment not available at the referral hospital
  - Complicated case like Hemophilia with target joint
  - All new Hemophilia cases diagnosis at KFMC
3. Red Blood Cell Disorder
  - Anemia of unknown etiology that need specialized laboratory for diagnosis.
  - Severe Phenotype Sickle Cell Anemia requires hydroxyurea treatment ,or in future BMT
  - Pure red cell aplasia (Diamond-blackfan anemia)
  - Acquired Aplastic Anemia
4. White Blood Cell
  - Chronic neutropenia or leucopenia
  - Other quantitative WBC disorder
5. Platelet Disorder
  - Chronic & Refractory ITP if the treatment is not available at the referral hospital
  - Chronic Thrombocytopenia of unknown etiology
  - Essential thrombocytosis & other myeloproliferative disorders.

**Cases that will be seen only as a consultation and will not followed in****Pediatric hematology OPD:**

1. In general, all cases on regular follow-up at the other hospital will not be accepted unless something different can be added, to the diagnosis and/or to the treatment, at KFMC.
2. Thalassemia Major or other red blood disorder that require regular blood transfusion program.
3. Patient with Bone Marrow failure syndromes that need Bone Marrow Transplant will not be accepted until the SCT service started.
4. Simple anemia that can be managed at any hospital like G6PD.

**We have agreed on the following issues with pediatric department :**

1. All new cases with Hematological manifestation coming to ER & needing admission should be first admitted under General Pediatrics team and will be seen as a consultation by hematology team. Transfer of Service to Hematology team or follow-up in Hematology clinic, after the final diagnosis confirmed, will be decided according to scope of care (see below).
2. Patient with Hematological manifestation (like pancytopenia) due to known underline primary disorder like infection, metabolic, etc shall be admitted under General Pediatric or primary team and will be seen by hematology service as a consult.
3. All patients known to hematology service and on regular follow-up in hematology clinic except sickle cells anemia (SCA) shall be admitted under the name of hematology attending or primary physician.
4. All SCA on regular follow up at KFMC and require admission for any reason other than CNS crises shall be admitted under general pediatric team and will be seen by hematology service as a consult if needed.
5. Acute cases of immune thrombocytopenic purpura (ITP) shall be admitted under general pediatric team unless it complicated with CNS bleeding.

6. All chronic cases of ITP on regular follow-up at KFMC shall be seen first and managed by Pediatric Hematology and Oncology team. Such patient can be treated in ED/OTU if he/she is stable and has no active bleeding require in patient admission & observation.
  
7. Patient on regular follow up at another hospitals who need admission and can't be transferred back to the primary hospital (e.g. sickle cell anemia, ITP, Thalassemia, etc) shall be admitted under General Pediatric team and will be seen by hematology service as a consult if needed. Care giver should be advised to continue his/her follow-up at his/her primary hospital at the time of discharge.

**DISCHARGE CRITERIA:**

Discharge from the service will include the following if needed and according to each speciality ::

- Completion of planned treatment
- Interrupted treatment because of medical, physical, social and psychological circumstances
- Transportation
- Home care
- Dietary needs
- Social problems
- Special teaching needs
- Therapies
- Access to additional care
- Transfer of care of BMT candidate to another institution.
- Transfer of care of patients to original referring hospital.

**Radiation Oncology Discharge Criteria:**

From the service will include the following if needed:

1. Completion of planned treatment
2. Interrupted treatment because of medical, physical, social and psychological circumstances
3. Special teaching needs
4. Access to additional care

**Adult hematology / BMT Department Discharge Criteria:**

Discharge from the service will include the following if needed:

1. Completion of planned treatment
2. Interrupted treatment because of medical, physical, social and psychological circumstances

3. Transportation to other facilities
4. Home care
5. Dietary needs
6. Social problems
7. Special teaching needs to be addressed before discharge
8. Therapies / Medications to be provided before discharge
9. Access to additional care needed e.g. Rehab
10. Transfer of care of BMT candidate to another institution.
11. Transfer of care of patients to original referring hospital.

**Medical Oncology Discharge Criteria :**

Discharge from the service will include the following if needed:

1. Completion of planned treatment
2. Interrupted treatment because of medical, physical, social and psychological circumstances
3. Transportation
4. Completion of the planned follow up period .

**Pediatric Hematology / Oncology Department Discharge Criteria:**

Discharge from the service will include the following if needed:

1. Transfer of care of BMT candidate to another institution.
2. Transfer of care of patients to original referring hospital.
3. Transfer of care of patients to another hospital based on family /caregiver request.
4. Final diagnosis is not included in PHO scope of care like cases of thalassemia major, G6PD....etc (see above).

**Palliative Care Discharge Criteria:**

The patient will be discharged to the least restrictive environment when at least one of the following has occurred

1. The discharge plan goals have been met. Services are in place for either home or transfer to another healthcare facilities.
2. Patient has met program goals, stabilized or requires physician intervention less than three times weekly
3. Patient progress has plateau or maximum functional gains have been achieved
4. Patient has returned to either baseline orientation or pre-morbid state, has stabilized or resolution of acute problem and is able to be cared for in a less acute environment.
5. Family and/or patient request for discharge or expend the rest of their life at home or other facilities.
6. Discharge from the service will include the following if needed:
  - a. Transportation
  - b. Home care
  - c. Dietary needs
  - d. Social problems
  - e. Special teaching needs
  - f. Therapies.

**Chapter 7**

**PRINCE SALMAN HEART CENTER**

## PRINCE SALMAN HEART CENTER

### SCOPE OF SERVICES REPORT

The **Prince Salman Heart Center** offers Adult Cardiology, Pediatric Cardiology, Adult Cardiac Surgery, Pediatric Cardiac Surgery, Vascular Surgery Services.

#### Vision

Prince Salman Heart Center strives to be the premier provider in tertiary Cardiac center to residents of the Kingdom of Saudi Arabia.

#### Mission

Prince Salman Heart Center exist to serve the changing Cardiac care needs of the Kingdom of Saudi Arabia by providing excellence in patient care with supportive education and research.

#### PATIENTS SERVED:

We serve patients of all age groups. We are accepting internal from other departments within King Fahad Medical City and external referrals within the Kingdom of Saudi Arabia for patients with acquired, structural, infectious, genetic and congenital heart diseases who are referred from the Eligibility Office to Prince Salman Heart Center once meets the eligibility criteria. Total number of OPD patient seen was 10,313.

#### PHYSICAL FACILITY WHERE SERVICES ARE PROVIDED:

Patients are served in the Out Patient Department (General Hospital Clinic's 5 & 7 and at the Ground Floor of Children Hospital) through 21 General and Sub-specialty Clinics for adult cardiology specialties. Included with these are the 10 clinics for pediatric cardiology and cardiovascular surgery clinics.

Prince Salman Heart Center has a total of 121 beds for Adult Cardiology , Pediatric Cardiology and Cardiovascular Surgery where in distributed to following areas:

- Main Hospital Bldg. 2<sup>nd</sup> floor
  - Telemetry
  - Cardiac Ward One
  - Cardiac Ward Two
  - Cardiac Interventional Unit (CIU)
  - Coronary Care Unit (CCU)



- Adult Cardiac Cath Lab
  - Adult Non Invasive Lab
  - Electrophysiology Lab
  - Adult Cardiovascular Intensive Care Unit (CVICU)
  - Cardiac Ward 5&6, CCU Extension
- Main Hospital Ground Floor
    - Clinics
    - Chest Pain Unit (in planning)

#### Children's Hospital 2<sup>nd</sup> Floor (still under construction)

- 22 beds (6/22 Step Down Unit)
- 13 beds Pediatric Cardiac ICU
- Hybrid Cath Lab
- Pediatric Non-Invasive Lab
- Pediatric CVICU

#### Children Hospital Ground Floor

- Pediatric Clinic
- Pediatric Non-Invasive Lab

#### **HOURS OF OPERATION:**

Emergency room and In-patient services are covered 24 hours 7 days a week. On call team attends to emergency cases after working hours.

Out Patient Clinic hours is from 0830 to 1630 from Sunday to Thursday.

#### **SERVICE PROVIDED:**

##### I. Adult Cardiology

Diagnostic, therapeutic, monitoring and follow-up services for patients with cardiac disease that requires tertiary care level which include the following:

- Chest Pain
- Myocardial Infarction
- Arrhythmia
- Cardiomyopathy
- Pulmonary Hypertension
- Heart Failure
- Hypertension and Diabetes Type II in the context of Coronary Insufficiency

- Adults with Congenital Heart Disease
- Rheumatic valvar Disease
- Structural TAVI

## II. Cardiac Surgery Department

This highly specialized department has been offering therapy and follow-up of patients with cardiac diseases requiring surgical procedures including valvar repair and replacement, implants of pace makers, coronary artery surgery, surgery of structural and congenital heart disease in adolescents and adults via different approaches.

## III. Vascular Surgery Department

Multidisciplinary medical approach for management of patients with mostly acquired vascular abnormalities through the combination of imaging, interventional procedures in specialized cath lab as well as in the surgical OR.

## IV. Pediatric Cardiology Department

Optimal care of pediatric patients with congenital and acquired heart diseases through diagnoses and management.

## V. Electrophysiology Department

Specialized clinic has been offering variety of treatment for abnormal cardiac rhythms in patients with different underlying diseases including but not restricted to:

- Holter Monitoring
- Event Monitoring
- Tilt Table Tests
- Implants of pacemakers and ICDs.

## VI. Cardiac Catheterization Laboratory

Provides care for patients who require invasive procedures for diagnosis, management and treatment of conditions like:

- Coronary stenosis
- Mitral Valve Stenosis Dilatation
- Adults with Congenital Heart Diseases
- Congenital Heart Disease
- Stent Implants in aortic Coarctation and peripheral Pulmonary Stenosis
- Balloon Dilatation of Pulmonary valve stenosis
- Transcatheter Closure of ASD, VSD, PDA etc.
- PFO Closure

## VII. Non-Invasive Laboratory:

Offers service for diagnosis, and follow-up of patients using different diagnostic tools (Echocardiography, TEE, intracardiac Echo, IVUS, dobutamine stress test, 6 minutes walking test, tilt tables, holter monitors, event monitors, ECG etc.)

These studies service the patients with the following diagnosis: function, estimates of gradients across stenosed valves, judging malignancies. This includes:

- Structural Heart Disease
- Congenital Heart Disease
- Cardiac Dysfunction
- Arrhythmias
- Rheumatic Heart Diseases
- Renal Failure Patients
- Patients pre and post Myocardial Infarction
- Patients on chemotherapy
- Patients with neurological diseases
- Patients needing cardiac assessment before cardiac and non-cardiac surgery

## VIII. Pediatric Cardiac Surgery

Highly specialized interdisciplinary service mostly dedicated for the treatment and management of infants, children and adolescents with congenital and acquired heart diseases:

- ASD, VSD, PDA closure
- Valvar repair and replacement
- Repair of complex congenital heart disease
- Palliative surgery like Blalock Taussig shunts, Glenn shunts etc.

## IX. Pediatric Cardiology Non-Invasive Labs

Specialized clinic to provide diagnostic, management and follow-up services for children with congenital and acquired cardiac disease as:

- ASD, VSD, PDA
- Pulmonary valve stenosis, aortic valve stenosis, aortic coarctation
- Renal failure
- Patients on chemotherapy
- Cyanotic babies
- Patients in ICU for management
- Cardiomyopathy patients
- Fetal echocardiography

## **ADMISSION CRITERIA:**

### 1. Patient eligibility criteria for management in Adult Cardiology/Cardiac Surgery/ Vascular Surgery:

#### 1.1 Medical disease associated with or leading to cardiac diseases:

- 1.1.1 Systematic Hypertension
- 1.1.2 Heart disease (e.g. rheumatic heart, arrhythmia)
- 1.1.3 Cardiomyopathies
- 1.1.4 Unstable Angina
- 1.1.5 Arrhythmias
- 1.1.6 Paravalvar leaks
- 1.1.7 Myocarditis or Endocarditis

#### 1.2 Cardio Vascular Surgery:

- 1.2.1. Coronary Heart Disease
- 1.2.2. Valvar Heart Disease
- 1.2.3. Aortic Aneurysms
- 1.2.4. Acute or chronic myocardial infarction
- 1.2.5. Postinfarction VSD

#### 1.3 Complications post cardio vascular intervention (surgery or cath lab):

- 1.3.1 Bleedings
- 1.3.2 Arrhythmias
- 1.3.3 Arterio-venous fistulas
- 1.3.4 Patch dehiscence
- 1.3.5 CVA's
- 1.3.6 Vascular Complications
- 1.3.7 Infections

#### 1.4 Infants, children, adolescents and adults with congenital Heart disease:

- 1.4.1 Congenital heart disease
- 1.4.2 Structural heart disease
- 1.4.3 Rheumatic fever and chronic sequelae
- 1.4.4 Arrhythmias
- 1.4.5 Children needing interventions (cath lab or OR)

Patients who come to the Emergency Room will be evaluated and accepted according to their condition.

**OBESITY, ENDOCRINE AND METABOLISM CENTER  
SCOPE OF SERVICES REPORT**

## OBESITY, ENDOCRINE AND METABOLISM CENTER

The **Obesity, Endocrine and Metabolism Center** provides Obesity services, Endocrine and Diabetes.

### Vision

To be the center of excellence for providing care, education and research in the field of Diabetes and Endocrine.

### Mission

To improve the quality of lives of people with Diabetes and other Endocrine disorders and work towards prevention and cure.

### PATIENTS SERVED:

The center accept male and female patients age 12 years and above, referred from different specialty clinics within King Fahad Medical City or other facilities submitted through the Eligibility Office and pass the criteria of SDEC for the following conditions:

#### Diabetes

- Adolescent Diabetes
- Diabetes in Pregnancy
- Insulin Pump Therapy
- Intensive Insulin Therapy other than Insulin Pump
- Diabetic Foot & Wound Care
- Bariatric Medicine
- Diabetic Patients Education

#### Endocrine

- Thyroid Cancer and Nodule
- Hyperthyroidism
- Metabolic Bone Diseases ( including Osteoporosis)
- Growth Disorders
- Neuroendocrine Tumour
- Pituitary Tumours and Dysfunction

- Adrenal Disorders
- Dynamic Endocrine Test
- Thyroid Ultrasound / FNA

Patients who came to the Emergency Department are subject for evaluation prior to SDEC acceptance according to the condition and criteria.

### **PHYSICAL FACILITY WHERE SERVICES ARE PROVIDED:**

Majority of the service provided to the patients comes from SDEC out –patient clinics conducted every day with a total of 48 clinical sessions per week. The OPD clinics are being manned by consultants, fellows, assistants, residents, educator, nutritionist, nurses and HCAs.

SDEC is also providing 24hrs / 7days a week in-patient services for Diabetes & Endocrine patients. Total number of OPD patient seen for 2013 is 10,700.

### **HOURS OF OPERATION:**

Staff regular working hours daily from Sunday up to Thursday is from 0730 to 1630

Diabetes Clinic – Whole day on Sunday & Tuesday and every Sunday morning, Monday afternoon, and Wednesday morning

Bariatric Clinic – Whole day every Sunday and Tuesday and Monday afternoon

Endocrine Clinic – Every Monday and Wednesday morning

Thyroid Clinic – every Sunday afternoon and Tuesday morning

Thyroid U/S and FNA Clinic – every Monday and Tuesday morning

Morning Clinic starts from 0800-1200

Afternoon Clinic starts from 1300-1600

\*\*\* 24 hours 7 days a week On-Call coverage for Diabetes & Endocrine in-patients.

## **SERVICE PROVIDED:**

### Staffing:

- Medical Director of the Center
- Head of Endocrine Department
- Four Consultant Endocrinologists
- One Part-time Consultant Endocrinologist
- One Bariatric Medicine Consultant
- One Consultant Podiatrist
- Four Fellow Associates
- Fours Assistant Consultants
- Three Administrative Staff
- Nine Staff Nurses
- Six Health Care Assistant

Multidisciplinary team of:

- Clinical Psychologists
- Health Educator
- Clinical Dietitian
- Social Workers

### CME Activity:

The center has a structured weekly meeting composed of the following:

- Case report
- Journal club
- Grand Rounds



Aside from the weekly meeting, a monthly Thyroid Board meeting and monthly combined multidisciplinary meeting from Neurosurgery, Radiology and Endocrine cases are being done to further improved the quality of care provided to the patients.

## Communication:

We are accepting internal and external referrals within the Kingdom of Saudi Arabia for Diabetes and Endocrine disorders and in collaboration with other departments within King Fahad Medical City.

Internal and external communications includes but are not limited to the following:

- Minutes of the Center meetings
- Administrative memos, emails, intranet and faxes
- Policies and procedures and practice guidelines
- Participation in King Fahad Medical City, Specialized Diabetes and Endocrine Center departmental committees:
  - QI Committee
  - M & M Committee
  - Performance Improvement Committee
- Participate on the CME activities of the center.
- Collaborative practice with other departments involved.

## **ADMISSION CRITERIA:**

### Eligibility Criteria:

- 1.1 Adolescents patients (>12-18 years)
- 1.2 Patients requiring insulin pump
- 1.3 MODY (Maturity Onset Diabetes of the Youth)
- 1.4 Diabetes associated with Endocrinopathies (e.g. acromegaly, non – iatrogenic Cushing's syndrome, etc.)
- 1.5 Patients included in certain research projects (Such as islet transplant, implantable insulin pumps, inhaled/nasal/oral insulin, and prevention of diabetes).
- 1.6 Newly diagnosed cases of:
  - 1.6.1 Thyroid cancer
  - 1.6.2 Hyperthyroidism

- 1.6.3 Pituitary Adenomas
- 1.6.4 Hypopituitarism
- 1.6.5 Diabetes Incipidus
- 1.6.6 Growth Disorders
- 1.6.7 Cushing's syndrome
- 1.6.8 Conn's syndrome
- 1.6.9 Neuroendocrine tumors
- 1.6.10 Multiple Endocrine Neoplasia
- 1.6.11 Thyroid Ultrasound / FNA