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Vision
To be one of the most trusted hospital in India by providing personalized care for best patient experience

Mission

Care
Innovation
Manage Lives
Save Lives

To provide superior quality Health Care using Innovation to Manage and Save lives.

Values

- Patient's well-being: It will be our topmost priority
- To serve with smile
- Adopt and encourage ethical practices
- Provide a safe and comfortable working environment to employees and associates
- Embrace technology and innovation in the delivery of healthcare
- Provide socially responsible and safe healthcare
- Comply with all applicable laws and regulations
Board of Directors

Dr. Keyur Parikh
Chairman

Dr. Milan Chag
Managing Director

Dr. Anish Chandarana
Executive Director

Dr. Hemang Baxi
Director

Dr. Urmil Shah
Director

Dr. Ajay Naik
Director

Dr. Satya Gupta
Director

Dr. Dhiren Shah
Director

Dr. Ashit Jain
Director, USA

Mr. Kirti Patel
Director, UK

Dr. Kamlesh Pandya
Director, USA

Dr.(Prof.) Dilip Mavlankar
Director, India
<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Full Form</th>
</tr>
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<tbody>
<tr>
<td>3-D USG</td>
<td>3 Dimension Ultra Sonography</td>
</tr>
<tr>
<td>4D</td>
<td>4 Dimension</td>
</tr>
<tr>
<td>ACC</td>
<td>American College of Cardiology</td>
</tr>
<tr>
<td>ACL</td>
<td>Anterior Cruciate Ligament</td>
</tr>
<tr>
<td>ADR</td>
<td>Adverse Drug Reaction</td>
</tr>
<tr>
<td>AHA</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>ASD</td>
<td>Atrial Septal Defect</td>
</tr>
<tr>
<td>ATLS</td>
<td>Advanced Trauma Life Support</td>
</tr>
<tr>
<td>AVM</td>
<td>Arteriovenous Malformation</td>
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<td>AVR</td>
<td>Aortic Valve Replacement</td>
</tr>
<tr>
<td>BAS</td>
<td>Balloon Atrial Septostomy</td>
</tr>
<tr>
<td>BAV</td>
<td>Bicuspid Aortic Valve</td>
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<tr>
<td>BLS</td>
<td>Basic Life Support</td>
</tr>
<tr>
<td>CABG</td>
<td>Coronary Artery Bypass Grafting</td>
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<tr>
<td>CAD</td>
<td>Coronary Artery Disease</td>
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<td>CAE</td>
<td>Carotid Artery Endarterectomy</td>
</tr>
<tr>
<td>CAS</td>
<td>Carotid Artery Stenting</td>
</tr>
<tr>
<td>CCB</td>
<td>Calcium Channel Blocker</td>
</tr>
<tr>
<td>CHF</td>
<td>Congestive Heart Failure</td>
</tr>
<tr>
<td>CME</td>
<td>Continuing Medical Education</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>CO</td>
<td>Cardiac Output</td>
</tr>
<tr>
<td>CPAP</td>
<td>Continuous Positive Airway Pressure</td>
</tr>
<tr>
<td>CPK-MB</td>
<td>Creatine Phosphokinase Muscle Brain</td>
</tr>
<tr>
<td>CPR</td>
<td>Cardiopulmonary resuscitation</td>
</tr>
<tr>
<td>CRI</td>
<td>Chronic Renal Insufficiency</td>
</tr>
<tr>
<td>CRRT</td>
<td>Continuous Renal Replacement Therapy</td>
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<tr>
<td>CRT</td>
<td>Cardiac Resynchronization Therapy</td>
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<tr>
<td>CRT-D</td>
<td>Cathode Ray Tube Defibrillator</td>
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<tr>
<td>CT Scan</td>
<td>Computed Tomography Scan</td>
</tr>
<tr>
<td>CTG</td>
<td>CardioTocography</td>
</tr>
<tr>
<td>CUSA</td>
<td>Cavitation Ultrasonic Surgical Aspirator</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Dilatation And Curettage</td>
</tr>
<tr>
<td>DCGI</td>
<td>Drug Controller General of India</td>
</tr>
<tr>
<td>DHS</td>
<td>Dynamic Hip Screw</td>
</tr>
<tr>
<td>DMLC</td>
<td>Dynamic Micro Multileaf Collimeter</td>
</tr>
<tr>
<td>DORV</td>
<td>Double Outlet Right Ventricle</td>
</tr>
<tr>
<td>DVR</td>
<td>Double Valve Replacement</td>
</tr>
<tr>
<td>DWI</td>
<td>Diffusion-Weighted Imaging</td>
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<tr>
<td>EC</td>
<td>Ethics Committee</td>
</tr>
<tr>
<td>ECG</td>
<td>Electrocardiogram</td>
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<tr>
<td>ECMO</td>
<td>Extra Corporeal Membrane Oxygenation</td>
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<td>ECO</td>
<td>Echocardiogram</td>
</tr>
<tr>
<td>EF</td>
<td>Ejection Fraction</td>
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<td>EP</td>
<td>Electrophysiology</td>
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<td>ER</td>
<td>Emergency Room</td>
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<tr>
<td>ERCP</td>
<td>Endoscopic Retrograde Cholangiopancreatogram</td>
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<td>EUS</td>
<td>Endoscopic Ultrasound</td>
</tr>
<tr>
<td>EVD</td>
<td>External Ventricular Drain</td>
</tr>
<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
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<tr>
<td>FFF</td>
<td>Field-Flow Fractionation</td>
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<tr>
<td>GERD</td>
<td>Gastroesophageal Reflux Disease</td>
</tr>
<tr>
<td>GI</td>
<td>Gastrointestinal</td>
</tr>
<tr>
<td>GIST</td>
<td>Gastrointestinal Stromal Tumor</td>
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<tr>
<td>HF</td>
<td>Heart Failure</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>HMD</td>
<td>Hyaline Membrane Disease</td>
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<tr>
<td>HTN</td>
<td>Hypertension</td>
</tr>
<tr>
<td>I&amp;D</td>
<td>Irrigation and Debridement</td>
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<tr>
<td>IABP</td>
<td>The Intra-aortic Balloon Pump</td>
</tr>
<tr>
<td>ICD</td>
<td>Implantable Cardioverter Defibrillator</td>
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<tr>
<td>ICR</td>
<td>Intracardial Repair</td>
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<tr>
<td>ICU</td>
<td>Intensive Care Unit</td>
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<tr>
<td>IDET</td>
<td>Intradiscal Electrothermal Therapy</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>JIC</td>
<td>Joint International Conference</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
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<tr>
<td>L.S.C.S.</td>
<td>Lower Segment Cesarean Section</td>
</tr>
<tr>
<td>LDH</td>
<td>Lactate Dehydrogenase</td>
</tr>
<tr>
<td>LED</td>
<td>Light Emitting Diode</td>
</tr>
<tr>
<td>LOS</td>
<td>Length Of Stay</td>
</tr>
<tr>
<td>LV</td>
<td>Left Ventricle</td>
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<tr>
<td>LVEF</td>
<td>Left Ventricle Ejection Fraction</td>
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<tr>
<td>MARDS</td>
<td>Montgomery-Asberg Depression Rating Scale</td>
</tr>
<tr>
<td>MAVRIC</td>
<td>Multiacquisition Variable-Resonance Image Combination</td>
</tr>
<tr>
<td>MI</td>
<td>Myocardial Infarction</td>
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<tr>
<td>MICS</td>
<td>Minimally Invasive Cardiac Surgery</td>
</tr>
<tr>
<td>MLC</td>
<td>Mixed Lymphocyte Culture</td>
</tr>
<tr>
<td>MR</td>
<td>Mitral Regurgitation</td>
</tr>
<tr>
<td>MRI</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>MV</td>
<td>Mitral Valve</td>
</tr>
<tr>
<td>MV Repair</td>
<td>Mitral Valve Repair</td>
</tr>
<tr>
<td>MVR</td>
<td>Mitral Valve Replacement</td>
</tr>
<tr>
<td>MWD</td>
<td>Molecular Weight Distribution</td>
</tr>
<tr>
<td>NCDR</td>
<td>National Cardiovascular Data Registry</td>
</tr>
<tr>
<td>NIBP</td>
<td>Non-Invasive Blood Pressure</td>
</tr>
<tr>
<td>NT Pro BNP</td>
<td>N-Terminal Pro B-Type Natriuretic Peptide</td>
</tr>
<tr>
<td>O2</td>
<td>Oxygen</td>
</tr>
<tr>
<td>OT</td>
<td>Operation Theatre</td>
</tr>
<tr>
<td>PACS</td>
<td>Picture Archiving and Communication System</td>
</tr>
<tr>
<td>PAH</td>
<td>Pulmonary Artery Hypertension</td>
</tr>
<tr>
<td>PAMI</td>
<td>Percutaneous Arterial Myocardial Infarct</td>
</tr>
<tr>
<td>PAP</td>
<td>Pulmonary Artery Pressure</td>
</tr>
<tr>
<td>PCI</td>
<td>Percutaneous Coronary Intervention</td>
</tr>
<tr>
<td>PCNL</td>
<td>Percutaneous Nephro Lithotomy</td>
</tr>
<tr>
<td>PDA</td>
<td>Patent Ductus Arteriosus</td>
</tr>
<tr>
<td>PET Scan</td>
<td>Positron Emission Tomography</td>
</tr>
<tr>
<td>PFT</td>
<td>Pulmonary Function Test</td>
</tr>
<tr>
<td>PICU</td>
<td>Pediatric Intensive Care Unit</td>
</tr>
<tr>
<td>PPHN</td>
<td>Persistent Pulmonary Hypertension</td>
</tr>
<tr>
<td>PSG</td>
<td>Polysomnography</td>
</tr>
<tr>
<td>PT</td>
<td>Prothrombin Time</td>
</tr>
<tr>
<td>PTCA</td>
<td>Percutaneous Transluminal Coronary Angioplasty</td>
</tr>
<tr>
<td>PTSMA</td>
<td>Percutaneous Trans Luminal Septal Myocardial Ablation</td>
</tr>
<tr>
<td>QoL</td>
<td>Quality of Life</td>
</tr>
<tr>
<td>RAS</td>
<td>Reticular Activating System</td>
</tr>
<tr>
<td>RCT</td>
<td>Root Canal Treatment</td>
</tr>
<tr>
<td>RFA</td>
<td>Radiofrequency Ablation</td>
</tr>
<tr>
<td>RIS</td>
<td>Radiology Information System</td>
</tr>
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<td>RTA</td>
<td>Renal Tubular Acidosis</td>
</tr>
<tr>
<td>SICU</td>
<td>Surgical Intensive Care Unit</td>
</tr>
<tr>
<td>SpO2</td>
<td>Saturation of Peripheral Oxygen</td>
</tr>
<tr>
<td>STEMI</td>
<td>ST Elevation Myocardial Infarction</td>
</tr>
<tr>
<td>SVR</td>
<td>Surgical Ventricular Restoration</td>
</tr>
<tr>
<td>TAPVC</td>
<td>Total Anomalous Pulmonary Venous Connection</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TEE</td>
<td>Tread Mill Test</td>
</tr>
<tr>
<td>TEVAR</td>
<td>Thoracic Endovascular Aortic Repair</td>
</tr>
<tr>
<td>TOF</td>
<td>Tetralogy of Fallot</td>
</tr>
<tr>
<td>TURP</td>
<td>Trans-Urethral Resection of Prostate</td>
</tr>
<tr>
<td>TV</td>
<td>Triple Vessel</td>
</tr>
<tr>
<td>URS</td>
<td>Ureteroscopic Lithotripsy</td>
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<tr>
<td>V.P.</td>
<td>Venticuloperitoneal Shunt</td>
</tr>
<tr>
<td>VLBW</td>
<td>Very Low Birth Weight</td>
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<tr>
<td>VSD</td>
<td>Venticular Assist Device</td>
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</tbody>
</table>
CIMS-II

WE ARE BIGGER & BETTER

| 9 Class 100 Green OTs and labour room | 350 beds | 138 ICU and critical care beds | Organ Transplant Centre: Kidney Coming up: Heart, Liver, Bone Marrow |

FIRST Fully Integrated digital hospital with fully digitized ICU Operation Theatres and high acuity diagnostics for better and faster patient care in Western India.

- Latest IGS - 520 System Cathlab, only hospital in Western India with 3 high-end cathlabs
- Dedicated Radial Lounge for day care angiography
- First hospital in Asia with Elekta Versa HD Linear Accelerator for radiation therapy with the second Linac Machine (Elekta Synergy) commissioned within one year.
- Dedicated ECMO Suite
- ECMO and IABP compatible high end ambulance for the transfer of critically ill patients
- CT Scan - Revolution EVO 128 Slice (First in India) low-dose, high-resolution images useful for trauma patients, cancer patients and neuro angiography suite
- MRI - Signa Explorer - first in Gujarat - silent suite and cardiac package with 3D motion correction system for non-contrast coronary angiography as well as intravascular oncology/chemotherapy
- Neuroensdsoscope, CUSA (for safe brain, spine and GI surgery)
- Continuous Renal Replacement Therapy (CRRT)
- Segmental body composition analyzer
- Dedicated facility for neutropenic patients and radio therapeutic care
- State-of-the-art dedicated women and child care floor with best IVF suite
- PACS / RIS - Digitized systems for seamless continuity of care across all specialties
- Certified first GREEN OT in Gujarat

Digitalized Private Beds in Emergency and Trauma Room
### INFRASTRUCTURE DETAILS

<table>
<thead>
<tr>
<th></th>
<th>Licensed Beds</th>
<th>Total Beds (Operational)</th>
<th>Operation Theaters</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>300</td>
<td>211</td>
<td>12</td>
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#### Bed Distribution - Care Institute of Medical Sciences

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>East</th>
<th>West</th>
<th>Total Beds</th>
</tr>
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<tbody>
<tr>
<td>General Ward</td>
<td>27</td>
<td>24</td>
<td>51</td>
</tr>
<tr>
<td>Twin Sharing</td>
<td>14</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Single</td>
<td>6</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Suite</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Paediatric Ward (Twin Beds)</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Coronary Care Unit</td>
<td>0</td>
<td>13</td>
<td>13</td>
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<tr>
<td>Premiere Coronary Care Unit</td>
<td>0</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Surgical Intensive Care Unit (SICU 1)</td>
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<td>13</td>
<td>13</td>
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<tr>
<td>Surgical Intensive Care Unit (SICU 2)</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>General Intensive Care Unit (GICU 2)</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Intensive Care Unit (ICU East)</td>
<td>17</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>NICU</td>
<td>7</td>
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<tr>
<td>PICU</td>
<td>9</td>
<td>0</td>
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<tr>
<td>Step Down NICU 2</td>
<td>2</td>
<td>0</td>
<td>2</td>
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<tr>
<td>Septic NICU</td>
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<td>0</td>
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<tr>
<td>Septic PICU</td>
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<tr>
<td>High Dependancy Unit (HDU)</td>
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<tr>
<td>Neutropenic Room</td>
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<td>0</td>
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<tr>
<td>Isolation Room</td>
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<tr>
<td>Transient Care Unit (TCU)</td>
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<td>4</td>
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<tr>
<td><strong>Total Beds</strong></td>
<td>94</td>
<td>117</td>
<td>211</td>
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#### Non census Beds

<table>
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<tr>
<th></th>
<th>East</th>
<th>West</th>
<th>Total Beds</th>
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<tbody>
<tr>
<td>Dialysis</td>
<td>0</td>
<td>4</td>
<td>4</td>
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<td>OT Hold</td>
<td>4</td>
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<td>8</td>
</tr>
<tr>
<td>Cath Hold</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>0</td>
<td>11</td>
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<tr>
<td>Day Care (1st floor)</td>
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</tr>
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<td>Sleep Lab</td>
<td>0</td>
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<td>1</td>
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<tr>
<td>Radial Lounge</td>
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<tr>
<td>Chemotherapy Ward</td>
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<td>4</td>
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<td>Day Care / Observational Beds</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Post Operative Area GOT</td>
<td>7</td>
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<td>7</td>
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<tr>
<td><strong>Total Beds</strong></td>
<td>16</td>
<td>45</td>
<td>61</td>
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<tr>
<td><strong>Total beds</strong></td>
<td></td>
<td></td>
<td>272</td>
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</tbody>
</table>
SCAPE OF SERVICES

- Anesthesia and Anesthesiology
- Arthroscopy and Sports Medicine
- Cardiology
- Cardio-Thoracic Surgery
- Cosmetology
- Critical Care
- Dentistry
- ENT
- Family Medicine
- Gastroenterology
- GI Surgery
- Gynecology and Obstetrics
- Haemato Oncology
- Health Checkup and Preventive Healthcare
- High Risk Pregnancy Unit
- Infectious and HIV disease
- Internal Medicine
- Joint Replacement Surgery
- Laproscopic Surgery
- Medical Oncology
- Neonatal and Pediatrics
- Nephrology
- Neurology
- Obesity Management
- Ophthalmology
- Orthopedics
- Pathology and Microbiology
- Pediatric Surgery
- Physiotherapy and Rehabilitation
- Pulmonology
- Radiation Oncology
- Radiology
- Renal Transplantation
- Spine Surgery
- Surgical Oncology
- Trauma and Emergency Care
- Urology
- Vascular Surgery

Non clinical department in house and outsource (AUXILLARY SERVICES)

- Administrative Office
- Ambulance Services
- Biomedical Engineering Department
- Blood Storage Center
- Central Sterile and Supply Department
- Emergency Services
- Front Office and Reception
- General Maintenance Department
- Hospital Management Information System
- Infection Control Department
- Kitchen
- Medical Gases (Cylinders and Piped medical gases)
- Medical Record Department
- Mortuary Services
- Clinical Research Department
- Security
- Stores (General, Medicine)

Future Scope:

- Corneal, Heart, Liver, Stem Cell Transplant
- PET Scan
- Bone Marrow Transplant
- CT Coronary Angio
- Nuclear Medicine
State Authorization Committee, Transplantation of Human Organ Act
Government of Gujarat

No/D-2/CIMS/Kidney Transplant/Registration/15          Date: 27/2/2015

FORM-16

CERTIFICATE OF REGISTRATION FOR PERFORMING RENAL TRANSPLANTATION
(See rule 24 (2))

This is to certify that *Care Institute of Medical Sciences*, located at Near Shukan Mall, off Science city road, Sola, Ahmedabad-380060 has been inspected and Certificate of registration is granted for performing Kidney Transplantation under the Transplantation of Human Organs Act, 1994 (42 of 1994).

This Certificate of registration is valid for a period of Five years from the date of issue.

This permission is being given with the current facilities and staff shown in the present application form. Any reduction in the staff and/or facility must be brought to the notice of the undersigned.

Appropriate Authority &
Additional Director
Medical Education & Research,
Gandhinagar

Place: Gandhinagar
Date: 27/02/2015

Address:- Chairman, Authorization Committee & Additional Director of Medical Education & Research, Block, No-4, ground floor, Dr. Jivraj Mehta Bhavan, Gandhinagar
Renal Transplant Team
1. Renal transplant programme co-ordinator for counseling sessions for patient and relatives
2. Renal Transplant Committee constituted by subject matter experts and key opinion leaders for transparent, non-objectionable ethical review
3. Best infection control practices while harvesting kidney to be transplanted and also throughout the procedure.

State-of-the-art procedures for kidney transplantation include:
I. Living donor kidney transplants
II. Cadaveric renal transplantation

Renal Transplant Silent features
◆ The center will be functional under the able hands of experienced and efficient urologists and transplant surgeons so as to perform minimally invasive surgery, with minimum post-operative recovery time and hospitalization.
◆ The already existing state-of-the-art-operation theaters will offer a sterile, post-operative environment, controlling infections and continuous patient monitoring.
◆ In house diagnostic services-pathology and radiology will make the procedure ABO and Human Leukocytic Antigen (HLA) compatible and compliant.
◆ As renal transplantation is very much an interdisciplinary field, the integrated team at CIMS Transplant Center includes doctors trained in many areas, including urologists, transplant urgeons, immunologist, nephrologist, cardiologist, hematologists, radiologists, pulmonary and critical care specialists, psychologists and psychiatrists, anesthesiologists, endocrinologists, dietician and pharmacist.
◆ The transplant center has established its organ assessment guidelines so that a good-quality organ is guaranteed and expectation of success in the recipient is reasonable.
◆ The kidneys would be well transplanted such that cold and warm ischemia times are as short as possible.
◆ The stringent infection control practices, immunosuppressive protocols and proactive vigil for complications and their prompt management will reduce post-operative complications and morbidity, making the service a huge success.
◆ The health and well-being of living donors will be monitored in a follow-up register to document any long-term medical problems due to donation.
◆ The ethical/legal committee reviews and permissions will be implemented.
◆ The operating protocol will be certified ethically and legally.
The incidence rates of heart failure are rising due to population, epidemiological and health transitions. Based on disease-specific estimates of incidence rates of heart failure, we conservatively estimate the incidence of heart failure in India to range from 1.3 to 4.6 million, with an annual incidence of 491,600–1.8 million.

Heart failure occurs when the heart is unable to pump enough blood to meet the needs of the body. The typical symptoms of heart failure are shortness of breath, poor exercise tolerance, cough (especially at night), fatigue, and fluid retention. If heart failure symptoms and heart function cannot be improved by medications or surgery, heart transplant may be beneficial.

Because of awareness to organ donation in India, treatments for heart failure and heart transplants are increasing across the country.

A heart transplant is a surgery to remove a damaged or diseased heart and replace it with a healthy donor heart. The transplant should be performed within 2 hours from the brain death. A heart transplant, or a cardiac transplant, is a surgical transplant procedure performed on patients with end-stage heart failure or severe coronary artery disease when other medical or surgical treatments have failed. It is not considered to be a cure for heart disease, but a life-saving treatment intended to improve the quality of life for recipients.
Heart transplant is indicated in those who've experienced heart disease or heart failure due to a variety of causes, including:

- A congenital defect
- Coronary artery disease
- Valvular heart disease
- A weakened heart muscle, or cardiomyopathy

Heart transplant surgery lasts for approximately four hours. During that time, patient is placed on a heart-lung machine to keep blood circulating throughout the body. The surgeon removes recipient's heart and replaces it with the donor heart and the heart begins beating. Recovery from a heart transplant can be a long process, spanning up to six months for many people.

Recipient is monitored for infection, and medication management. Anti-rejection medications and cardiac rehabilitation are crucial to ensure that body doesn't reject donor organ. Frequent follow-up appointments are crucial to the long-term recovery and management of a heart transplant. Medical team performs blood tests, heart biopsies through catheterization, and echocardiograms on a monthly basis for the first year after the operation to ensure that new heart is functioning properly.

Receiving a new heart can improve quality of life considerably, but one has to take good care of it. In addition to taking daily anti-rejection medications, the recipient need to follow a heart-healthy diet and lifestyle as prescribed by doctor. This includes not smoking and exercising on a regular basis. Survival rates for people who've had a heart transplant vary according to their overall health status, but averages remain high. Rejection is the main cause for a shortened life span.
Reproductive Endocrinology and Infertility Treatment

CIMS Infertility Centre is backed up by state-of-the-art equipment and team of highly experienced obstetricians, embryologists, reproductive endocrinologists, neonatologists, endoscopic surgeons, pathologists, pharmacist, psychologists, lab technicians, nurses and allied health professionals.

Conceived patients are taken care in high risk pregnancy unit with continuous CTG monitoring and facility for painless delivery (Epidural analgesia).

CIMS offers various Female Infertility treatments:
1) Medication treatments for female infertility
2) Surgical treatments for female infertility
   Either conventional open surgery or keyhole surgery

Surgery performed
◆ If fallopian tubes are blocked
◆ Fibroids, mild endometriosis or another condition that affects the uterus, tubes or ovaries
◆ Polycystic ovary syndrome (PCOS) that has not responded to drug treatment
◆ Surgically sterilized and want to reverse the procedure.

3) Assisted Conception
   I. Intrauterine insemination (IUI)
   II. In vitro fertilisation (IVF).
   III. Intracytoplasmic sperm injection (ICSI)
CIMS has come up with advanced technologies of SIGNA Explorer MRI 1.5 T, which helps to explore new horizons in imaging. With features like Silent Suite and 3D motion correction, the system delivers exceptional image quality, enhanced patient comfort, and also helps improve workflow and simplify operations.

- SIGNA Explorer is designed to be cost efficient with energy-saving features, zero-helium boil-off technology and a smaller footprint meaning less space needed.
- The Silent Suite and OpTix Optical RF technology improve image quality and make the experience more comfortable for patients.
- Motion correction techniques like propeller help minimize the effects of motion artifacts, potentially reducing the need for rescans and the impact of patient movement on workflow.
- Volumetric imaging acquisitions like Cube replace cumbersome, slice-by-slice, plane-after-plane 2D acquisitions with a single 3D volume scan.
- Additional time-savers include READY Brain, an automated brain exam wherein even non-expert MR users can operate, and simplified whole body diffusion imaging with eDWI in as little as seven minutes.

Enhanced clinical capability

1. 3D motion correction with PROMO
2. Imaging around metal with MAVRIC SL
3. High-resolution diffusion with FOCUS
4. Exclusive SilentSuite!

Advantages of MRI

- MRI does not use ionizing radiation, and is thus preferred over CT in children and patients requiring multiple imaging examinations
- MRI has much greater range of available soft tissue contrast, depicts anatomy in greater detail, and is more sensitive and specific for abnormalities within the brain itself
- MRI scanning can be performed in any imaging plane without having to physically move the patient
- MRI contrast agents have a considerably smaller risk of causing potentially lethal allergic reaction
- MRI allows the evaluation of structures that may be obscured by artifacts from bone in CT images
Advantages of perfusion cardiac MRI
- Higher spatial resolution
- Shorter exam time
- Absence of soft tissue attenuation artifacts
- No radiation
- The ability to assess other aspects of the heart better and more quantitatively, such as myocardial viability and ventricular and valvular function.

Neurological indications for cranial MRI
- Vascular (ischemic and hemorrhagic stroke, AVM, aneurysm, venous thrombosis)
- Tumor (primary CNS and metastatic)
- Infection (abscess, cerebritis, encephalitis, meningitis)
- Inflammatory/Demyelinating Lesions (multiple sclerosis, sarcoidosis, etc.)
- Trauma (epidural hematoma, subdural hematoma, contusion)
- Hydrocephalus
- Congenital Malformations

MR imaging in spinal disorders
- Assess spinal anatomy and alignment.
- Detect congenital anomalies of vertebrae or the spinal cord.
- Detect bone, disc, ligament or spinal cord injury after spine trauma.
- Assess intervertebral disk disease (degenerated, bulging or herniated) and intervertebral joint disease, both frequent causes of severe lower back pain and sciatica (back pain radiating into lower leg).
Explore other possible causes of back pain (compression fracture or bone swelling, such as edema).

Assess compression and inflammation of spinal cord and nerves.

Assess infection involving the spine, disks and spinal contents including spinal cord or its coverings (meninges).

Assess tumors that arise from or have spread to the vertebrae, spinal cord, nerves or the surrounding soft tissues.

Help plan spinal surgical procedures, such as decompression of a pinched nerve, spinal fusion, or the injection of steroids to relieve spinal pain. Such injections are usually performed under CT guidance.

Monitor changes in the spine after an operation, such as scarring or infection.

**In Breast MRI**

In Breast MRI, acquiring a useful image is all about technique. Our MRI offers visionary techniques to help capture visible results, even in the presence of challenges such as motion and water/fat separation. With VIBRANT/VIBRANT Flex dynamic T1w imaging, enhanced DWI, BREASE MR Spectroscopy, dedicated 16 channel coils, and advanced postprocessing, one can see exactly the information needed to help the clinician deliver a confident diagnosis — and strive for a positive patient outcome.
Blood transfusions are a critical part of everyday life and assist in saving countless lives each year. The blood bank has a vast array of state-of-the-art equipment for its smooth functioning, which include: Deep Freezers which maintain temperatures of -30°C and -80°C, heavy-duty refrigerated centrifuge for the separation of components at different speeds, Platelet agitators, Cryobath, Tube Sealers, and Blood Collection Monitors.

All the above equipments have automatic temperature monitors and digital readout systems as well as automatic alarms, with continuous temperature surveillance, which ensure the safety of the blood and components issued from the Blood Bank.

**Services Provided**

Round the clock transfusion services

- Facilities for the issue of whole blood, packed red cells, fresh frozen plasma, platelet concentrates, and cryoprecipitate
- Paediatric/Divided blood units.
- Direct and Indirect Coombs test (Antiglobulin test).
- Kleihauer Betke’s test for the detection of fetomaternal haemorrhage in Rh incompatibility.

**Autologous (Self Donations)**

Some patients who are scheduled for elective surgery have the option of donating their own blood at the Hospital blood bank for temporary storage before it is transfused back to them during or after surgery. For those patients who are physically able to donate, autologous donation provides the safest and best matched blood for their transfusion.

**Direct Donations**

We understand the concerns that some patients have about blood transfusion and allow directed donations from friends for patients who request it. We avoid directed donations from blood relatives due to the rare possibility of a Graft versus Host Disease (GVHD). Women of childbearing age should not receive blood from their husbands.
CIMS Ophthalmology unit is a state-of-the-art, free-standing outpatient facility with 24 fully-equipped examination area and a surgical suite with four ophthalmic operating rooms, preoperative area, and post-operative recovery space.

**Our Eye Care Clinic Services**
- Adult Strabismus and Eye Motility Disorders Clinic
- Comprehensive Ophthalmology and Optometry
- Corneal Disease and Surgery
- Glaucoma
- Laser Vision Center
- Neuro-Ophthalmology Clinic at the Ambulatory Care Center
- Neuro-Ophthalmology Clinic at the Vision Care and Research Unit
- Ocular Oncology
- Ocular Plastics and Reconstructive Surgery
- Optometry
- Prosthetic Replacement of the Ocular Surface Ecosystem (PROSE) Clinic
- Retina and Vitreous Clinic
- Vision Optical
CIMS cancer center is a comprehensive and perhaps India’s best cancer care facility equipped with state-of-the-art facilities under one roof and with a vision to provide world class quality care to patients of Western India.

CIMS cancer center offers comprehensive multidisciplinary cancer care including surgical oncology, medical oncology, radiation oncology, pathology, radiology, rehabilitation, nursing care and many other ancillary services.

**Services**

**Radiation Oncology Centre**
- External beam radiation therapy
- Internal beam radiation therapy (brachytherapy)
  - First Versa HD Linear Accelerator by Elekta in Asia
  - Agility - High focus 160 leaf MLC, newly launched by Elekta

**Uniqueness of CIMS Radiation Centre**
- First Versa HD Linear Accelerator by Elekta in Asia
- Agility - High focus 160 leaf MLC, newly launched by Elekta
- APEX DMLC - A High definition 2.5mm leaf width for brain tumors
- First FFF mode treatment in Asia by Elekta
- 3 times higher dose rate than any other normal Linac dose rate
- Hexapod-6 dimensional motion correction by robotic couch
- Minimal treatment setup error by correcting 3 rotational & 3 transverse motions during the treatment.
CIMS Cancer Center

- Active Breathing Coordinator™ System
  Exactly track the position of moving target like lung tumor because of breathing motion & reduce the dose to normal tissue.
- 4D Symmetry
  Symmetry TM provides acquisition and in line reconstruction of 4D volumetric data, utilizing unique patented technology for sorting each projection image into a phase based bin. This sorting occurs by reviewing the moving anatomy within the projection images and calculating a respiratory trace directly from the internal anatomy.

Medical Oncology Centre
- Chemotherapy for all solid cancers
- Endocrine therapy
- Latest biological and targeted treatments for solid tumors

Haemato-Oncology Centre
The Department of Hematology serves as a center for diagnosis and multidisciplinary treatment for many hematologic diseases such as malignant blood diseases like leukemia, lymphoma and common myeloma; clotting diseases and hereditary blood diseases; Hodgkin’s disease and thrombocytopenia. With the most appropriate drug therapy and advanced diagnostic methods we are able to give the best possible results.

Surgical Oncology Centre
- Early detection and prevention programs and cancer-related health check-up
- All types of surgery according to latest protocols
- Organ preserving surgery for different cancers (mandible i.e. jaw, voice box in throat cancers, breast cancers, anal valve in rectal & anal cancers, limb preservation in bone cancers)
- Reconstructive surgery and prosthesis for jaw, breast, limbs and other defects
Types of Cancer Surgeries performed
- Radical and Conservative Head and Neck Surgery and Reconstructive Surgery
- Breast Cancer Surgery and Breast Conservation with Reconstructive Surgery
- Thyroid Surgery, Parathyroid Surgery, Parotid Surgery
- GI Onco surgery, GI Laparoscopy Surgery
- Hepato-biliary and Pancreatic Surgery
- Gynec-onco Surgery
- Uro-onco Surgery
- Ortho-onco Surgery
- Thoracic Onco Surgery
- Microvascular Reconstructive Surgery

Palliative and Rehabilitative Services
- Stoma care
- Lymphedema therapy
- Speech and swallowing rehabilitation therapy
- Nutritional counseling
- Dermatological care during and after treatment
- Pain management
- Psychological counseling for patients and their family including, but not limited to cognitive testing, sexual health, fertility and tobacco cessation
- Oral & para-oral prostheses and orthoses for cancer patients with head and neck region

Ancillary Support
- Meditation & Yoga
- Art therapy
- Music therapy
- Nutritional counseling
- Medical social worker
- Transportation & stay
- Patient recreation
- H2H (hospital to home) service
Care At Homes refers to medical services being provided to the patient at home, especially for those who require exclusive attention and consistent assistance. It includes a range of services including branches such as Physiotherapy, Psychotherapy, dietary and nutrition, speech assistance and nursing. CIMS have an exceptional team of care givers including nurses, attendants, physiotherapists, etc. who will take care of the patient at home.

CIMS Care At Homes, ensures that patients receive care that is comforting, safe, and secure. Our services range from 24-hour complex clinical care to weekly patient visits regardless of the situation.

CIMS offers below Care at Home Services

- 24 x 7 Specialized Nursing Service
- Escort nurse to improve mobility of patients
- Wound care and dressing
- Intravenous (IV) infusion therapy, Intra Muscular (IM) and Sub Cutaneous (SC) injections, Catheter (urinary) insertion and care, Traecheostomy care, tube insertion in food pipe (Ryle’s Tube Insertion)
- Skilled nursing in Chronic Illnesses like: Diabetes
- Nephro Care, Neuro Care, Post transplant Care, Parkinson’s Disease, Mental Illnesses.
- Post Discharge Care
Care At Homes

- Cancer Care, Geriatric Care, Pediatric Care, Maternity Care
- Dressing, Bathing, grooming and toiletry services
- Escorting patients for appointment
- Mobilization and ambulation with walker and wheel chair
- Nutrition assistance with eating
- Picking up prescription and medication reminder
- Physiotherapy (Occupational Therapy and Rehabilitation center)
- Psychotherapy, Speech therapy
- Nutritional assessment (with qualified Dietician)

Other Services
- Equipment Rental and Sale
- Home Health Aids - Pharmacy at door step with appropriate discount rate.

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<th>Services</th>
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<td>Ryles Tube Insertion or removal</td>
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<td>Suction Machine</td>
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At all times organization performances need to be documented and evaluated, thereby extending scope for improvement. Performance documentation and analysis stands critical more so in healthcare since it is related to life and living.

CIMS is the only INDIAN center to be part of The National Cardiovascular Data Registry (NCDR) CathPCI Registry compiled by the American College of Cardiology to gather percutaneous coronary interventions (PCI) data of hospitals across 2400 US and 6 international (non- US , including CIMS ) centres. The current NCDR CathPCI version has 252 data fields encompassing patient demographics, medical history and risk factors, hospital presentation, initial cardiac status, procedural details, medications, laboratory values, and in-hospital outcomes to create and implement protocols that improve care for patients nationwide. It also provides test metrics for assessment of the appropriate use criteria for coronary revascularization.

CIMS the only INDIAN center voluntarily submits complete, consistent, and accurate data of both diagnostic catheterization (angiography) and angioplasty procedures to NCDR CATH PCI registry so as to identify and close gaps in the quality of care; reduce wasteful and inefficient care variations; and implement effective, continuous quality improvement of clinical practice improving patient outcomes and lowering health care costs.

Since it is a transparent public reporting, not only does it benchmark outcomes, but also serves as a potent repository of clinical data to answer research questions. CIMS receives quarterly reports reflecting their aggregate data and a rolling summary of previous quarters.

The tabular data and figures presented summary data for 6 consecutive calendar quarters beginning October 2014 and ending March 2016. Data includes 2 groups viz. patients undergoing only angiography (n = 4516) and patients undergoing angioplasty (n = 2338).

CIMS averages at 1636 angioplasty procedures annually standing comparative among the top 132 US group facilities in terms of volumes (Table 1) A benchmark of experience (Fig 1).
CIMS and US Comparative Angioplasty (PCI) Procedure Volumes
According to NCDR Cath PCI report CIMS stands as a high volume intervention cardiology centre. Annually at an average 1636 angioplasties are performed at CIMS. Such high volumes (1001-2000) of angioplasty are performed at 132 US centres only of the total 2400 participating centres and CIMS stands as one of them (Table 1).

These high volumes at CIMS establishes the expertise of the practicing cardiologists who with time are experienced to perform diagnostic angiography in 7 seconds- an achievement that comes with experience. Contributing to this expertise CIMS is the only CARDIAC Centre in GUJARAT and WESTERN INDIA with well-equipped 3 Fully digitized latest CATH LABS, 2 CT SCAN with full CT angiography facilities and first of its kind NON CONTRAST M R I f o r C O R O N A R Y ANGIOGRAPHY, Full ECMO facilities with in-house experienced team.

CIMS follows ACC/AHA guidelines driven practices performed by a group of expert cardiologists including interventional cardiologists, electrophysiologists, cardiac surgeons, cardiac anesthetists, experienced cathlab technicians and nurses.

Radial Intervention – A Day Care Procedure
- Reduces Exposure To Radiation
- Post Procedure Immobility
- Has Shorter Hospital Stay
- Reduced Medical Costs

At CIMS most of the angiographies and angioplasties are performed through the Radial artery as compared to US where femoral approach is preferred.

CIMS has a radial lounge the first of its kind in India. It allows ease of catheter passage even in over weight patients reducing complications.
Heart Disease Occurs At Young Age In Indians As Compared To US Population.

Door to balloon time averages about 64 minutes-shorter than the protocol of 90 minutes.
Following diagnostic catheterization, based on ACC guidelines CIMS has developed its own quality metrics for treatment. Depending on severity of disease, associated risk factors, patient characteristics the treatment matrix is individualized for best outcomes.

This could range from no treatment to medical therapy or angioplasty with stenting or if three vessels are involved bypass surgery may be recommended. CIMS treats its patients in similar fashion as treatment offered in US facilities.
In general, drug-eluting stents are preferred over bare-metal stents for most patients. The reduced risk of re-blocked arteries from drug-eluting stents reduces the need for repeat angioplasty procedures, which carry the risk of complications such as heart attack and stroke. The choices of intracoronary device were similar at CIMS and US facilities relating similar patient treatment.

As per ACC guidelines on hospital discharge, nearly all patients without a contraindication were receiving aspirin and a statin medication. CIMS care continues at home through its Care at Homes department.
NCDR: Comparative data with US Hospitals

Medications Prescribed at Discharge

- Angiotensin converting enzyme (ACE) inhibitors: 61.2% (CIMS), 48.9% (US Facility)
- Angiotensin II receptor blocker (ARB): 16.7% (CIMS), 17.6% (US Facility)
- ACE or ARB w/ EF < 40%: 77.3% (CIMS), 79.9% (US Facility)
- Beta blockers: 91.6% (CIMS), 88.8% (US Facility)
- Aspirin: 99.8% (CIMS), 98.4% (US Facility)
- Lipid lowering agents (any): 98.2% (CIMS), 94.5% (US Facility)

Discharge Status of Patients

- Percentage: 99.7% (CIMS), 98.7% (US Facility)
- Discharge status Alive: 99.7% (CIMS), 98.7% (US Facility)
- Discharge status Expired: 0.3% (CIMS), 1.3% (US Facility)

PCI in-hospital risk adjusted rate of bleeding events (all patients)

- Percentage: 1.75 (US Hospitals)
- CIMS Hospital: 0.09
- US Hospitals: 0.2
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## Departmental Overview

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CIMS Cardiology Department provides safe, comprehensive high-quality specialist cardiology services to prevent, detect and treat cardiovascular disease. The overall aim of the service is to reduce cardiovascular morbidity and mortality, and to improve quality of life.

CIMS outstands in the country as a cardiology group practice. The group comprise of interventional cardio, cardiac surgeries, cardiac anesthetics, physiotherapist, dietician, cath lab technicians.

**Angiography at CIMS**

Number of Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<td>Patients</td>
<td>3834</td>
<td>4554</td>
<td>4755</td>
<td>4819</td>
<td>4892</td>
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</table>

Legend:
- Red: 2011
- Blue: 2012
- Purple: 2013
- Green: 2014
- Blue: 2015
Angiographic volumes have increased every year. Majority of patients who underwent cardiac catheterization were of age group 51-60 years followed by 61-70 years.

These statistics show that when patients have both hypertension and diabetes, which is a common combination, their risk for cardiovascular disease doubles.
Of the total angiographic investigations, about 30-35% underwent Percutaneous Coronary Intervention (PCI).

Proportion of male patients undergoing coronary intervention was almost 5.2 times more than females.
Various Risk Factors Among Angioplasty Patients

Number of Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>Hypertension</th>
<th>Diabetes</th>
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<tr>
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<td>428</td>
<td>338</td>
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<td>2012</td>
<td>586</td>
<td>442</td>
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<tr>
<td>2013</td>
<td>695</td>
<td>502</td>
<td>180</td>
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<td>2014</td>
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<td>338</td>
<td>226</td>
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<tr>
<td>2015</td>
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<td>489</td>
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Various Risk Factors Among Angioplasty Patients

Number of Patients

<table>
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<tr>
<th>Risk Factor</th>
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<tr>
<td>Age &gt;75</td>
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<td>489</td>
<td>180</td>
<td>226</td>
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</table>

Legend:
- 2011(N=1298)
- 2012(N=1519)
- 2013(N=1683)
- 2014(N=1695)
- 2015(N=1687)
At CIMS, PCI through Radial artery is more commonly performed. Angiography through Radial approach is a walk-in procedure at CIMS Radial Lounge.

<table>
<thead>
<tr>
<th>Year</th>
<th>Single Vessel Disease</th>
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<tr>
<td>2012 (N = 1519)</td>
<td>1119</td>
<td>354</td>
<td>46</td>
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<tr>
<td>2013 (N = 1683)</td>
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<td>355</td>
<td>36</td>
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<tr>
<td>2014 (N = 1695)</td>
<td>1386</td>
<td>286</td>
<td>23</td>
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<tr>
<td>2015 (N = 1687)</td>
<td>1288</td>
<td>330</td>
<td>69</td>
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</table>
At CIMS, we have implanted 99.5% US FDA (and DCGI) approved stents for the treatment of ischemic heart disease, of which 1932 were Drug Eluting Stents and 120 were Bare Metal Stents (BMS).

DES are usually coated with anti-neoplastics (zotaralimus, everolimus, sirolimus, tacrolimus, leflunomide), anti-proliferatives (pacitaxel, methotrexate, vincristine), migration inhibitors (probucol, batimisatat) or enhanced healing factors (BCP 671,VEGF, estradiols) which inhibit instent restenosis and intimal hyperplasia.

We have also used Bioresorbable Vascular Scaffold (BVS) system stents, pericardium covered stents and various newer modalities as part of DCGI approved clinical trials.

Sirolimus Drug coated balloon (Magic Touch Balloon) has been designed to address specific needs of treatment. Its robust yet highly deliverable coating ensures minimal drug loss in transit. We have implanted 40 Sirolimus Drug coated balloon in patients. At the inflation site, Magic Touch delivers the required quantity of drug in single inflation with higher in-tissue uptake.
As per ACC guidelines on hospital discharge, at CIMS nearly all patients without a contraindication were receiving aspirin and a statin medication.
Cardiac Investigations

CIMS is well-equipped with latest technologies to help make right treatment decisions. The well experienced cardiology team and validated diagnostics offer best treatment to its patients.

Cardiac investigations cater the treatment plan.

Diagnostic Cardiology

- Electrocardiography (ECG)
- Treadmill Test (TMT)
- 2D-echo and 3D-echo with Color Doppler
- Transesophageal Echocardiography (TEE)
- 24 hr. ambulatory blood pressure monitoring
- Tilt Table Test
- Signal Averaged ECG
- Non-invasive EP study (NIEPS)
Cardiac Rhythm Disorders

A dynamic and dedicated cardiology sector committed to excellence in cardiac electrophysiology.

“Our mission is to advance the understanding and management of heart rhythm disorders with the aim of improving health and wellbeing in the country.”

The treatments we provide to our patients encompass all aspects of rhythm abnormalities. These include:

- Electrophysiology Studies (EPS)
- Implantable cardiac pacemaker (Pacemakers)
- Implantable Cardioverter Defibrillators (ICD)
- Cardiac resynchronization therapy (CRT)
- Radiofrequency Ablation (RFA)
- 3-D Mapping and Ablation
- State-of-the-art in Cardiac Rhythm Disorder Management

These are designed to treat slow and rapid heart rhythm abnormalities to prevent blackouts and sudden death.

Our electrophysiologists work closely with our cardiothoracic surgeons and heart failure specialists to treat patients who may require heart surgery or whose heart rhythm disorder is related to heart failure.
Cardiac Rhythm Disorders

### Pacemaker Implantation

**Number of Implants**

- 2011: 79
- 2012: 85
- 2013: 89
- 2014: 94
- 2015: 95

### Device Implantation

**Number of Patients**

- **CRT**
  - 2011: 16
  - 2012: 15
  - 2013: 13
  - 2014: 9
  - 2015: 11

- **ICD**
  - 2011: 23
  - 2012: 19
  - 2013: 21
  - 2014: 8
  - 2015: 9

- **CRT-D**
  - 2011: 17
  - 2012: 16
  - 2013: 17
  - 2014: 16
  - 2015: 16

### EP Study

**Number of Patients**

- **EP Study**
  - 2011: 196
  - 2012: 212
  - 2013: 204
  - 2014: 203
  - 2015: 238

- **RFA**
  - 2011: 180
  - 2012: 171
  - 2013: 168
  - 2014: 162
  - 2015: 191
Cardiac Surgeries

CIMS cardiac sciences unit is equipped with all surgical tools, equipment and skillful resources for better clinical outcomes with least surgery associated morbidity and mortality with orientation of patient safety.

CIMS Cardiac Sciences Unit has been designed with two dedicated modular, laminar airflow surgical OT for cardiac surgeries. With persistent efforts in progressive direction, we have attained the benchmarks of more than 3000 Isolated CABGs and more than 500 valvular procedures.

Services at CIMS:
- Congenital heart surgery
- Mitral valve repair
- Single and double valve replacement
- Aortic root replacement
- Off pump coronary artery bypass grafting (CABG) on beating heart
- Minimally Invasive Cardiac Surgery (MICAS) CABG for LV dysfunction
- Patent ductus arteriosus (PDA), Atrial septal defect (ASD), Ventricular septal defect (VSD), Tetralogy of Fallot (TOF)
- Combined carotid and bypass procedure

Assessment of process measures of cardiac surgery at CIMS

Standard protocols for CABG:
- Optimum use and selection of antibiotic prophylaxis
- Preoperative beta blockade
- Use of internal mammary artery in CABG
- Preoperative medical optimization of LV dysfunction
- Anti-lipid treatment at discharge
- Anti-platelet medication at discharge
- Beta blocker at discharge

Assessment of outcome measures of cardiac surgery includes risk adjusted for:
- Operative mortality
- Deep sternal wound infection rate
- Postoperative renal failure
- Prolonged intubation (ventilation)
- Stroke/cerebrovascular accident
- Surgical re-exploration
Cardiac Surgeries

Total Volume of CABG

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<th>Year</th>
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<th>2014</th>
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<td>580</td>
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Total Volume of CABG+MV Repair

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<td>Volume</td>
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<td>15</td>
<td>33</td>
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Total Volume of CABG+VSD

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Cardiac Surgeries

**Total Volume of CABG+SVR**

- Number of Patients:
  - 2011: 2
  - 2012: 3
  - 2013: 3
  - 2014: 3
  - 2015: 4

**Off Pump / On Pump CABG**

- Percentage of Off Pump CABG:
  - 2011: 97.26%
  - 2012: 2.74%

**Total Volume of Pericardiectomy + Myxoma**

- Number of Surgeries:
  - 2011: 5
  - 2012: 3
  - 2013: 2
  - 2014: 2
  - 2015: 2

**Bentall Surgery**

- Number of Patients:
  - 2011: 1
  - 2012: 6
  - 2013: 6
  - 2014: 5
  - 2015: 11
Cardiac Surgeries

**Total Volume of CABG + Carotid Endarterectomy**

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<tr>
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**Age Distribution in Years Among Patients Undergoing Cardiac Surgeries**

- <20: 0.63%
- 20-30: 2.03%
- 30-40: 5.07%
- 40-50: 10.4%
- 50-60: 35.65%
- 60-70: 31.72%
- 70-80: 13.32%
- >80: 1.14%
Gender Distribution of Patients undergoing Cardiac surgeries

- Males: 83.03%
- Females: 16.97%

LVEF among Patients undergoing cardiac surgeries

- <25: 4.45%
- 25-35: 17.45%
- 35-45: 23.75%
- 45-55: 37.22%
- >55: 17.08%
The mission of CIMS Heart Failure Clinic is to reduce the incidence of cardiovascular disease through exceptional education, prevention and delivery of quality care.

CIMS provides ongoing education, support, and management to patients who have been diagnosed with heart failure. From inpatient consultations to our outpatient tele-management program, heart failure patients receive assistance through every phase of cardiac care.
Heart Failure

Surgical Treatments at CIMS include:

Coronary Artery Bypass Graft (CABG)
High-risk: blocked or damaged arteries are repaired or replaced through surgery,
Complex Valvular Reconstruction procedures to reconstruct heart valves (e.g., separating fused leaflets or repositioning valve chords) so that valves open or close better.

Ventricular Remodeling Surgery can help some patients avoid the necessity for a heart transplant by restoring the heart to normal size, shape and function following injury to the left ventricle by a previous heart attack.

Left Ventricular Assist Device (LVAD) Bridging to Transplantation. CIMS is one of the first hospitals in the region to offer a potentially life-saving treatment. Option for severe heart failure patients too sick to undergo Surgical interventions. The device serves as a temporary bridge. So that a patient can recover some life-sustaining degree of heart function prior to transplantation.

![Different Surgeries for Heart Failure (N=170)](chart.png)
Currently, no medicines can cure heart valve disease. However, lifestyle changes and medicines often can treat symptoms successfully and delay problems for many years.

When possible, it's generally best to repair a valve and preserve a person's own tissue in the heart. However, when the tissue is too damaged, a replacement valve may be used from another human heart, an animal or a manufactured mechanical valve.

The Mitral Valve Repair at CIMS Hospital is one of the most advanced in the country. The superiority of mitral valve repair over mitral valve replacement with a mechanical or bioprosthetic valve is well established.

In patients with mitral valve prolapse, our success rate in avoiding mitral valve replacement approaches 100%. We also have mitral valve repair expertise for patients with advanced cardiomyopathy. If patients have associated atrial fibrillation, we offer the latest in concomitant arrhythmia surgery, including the MAZE procedure. We also perform mitral valve repair surgery with minimally invasive approaches, when appropriate.
Minimally Invasive Cardiac Surgery (MICS)

CIMS is the first official center to launch a fully equipped MICS program in Ahmedabad and Gujarat.

MICS Surgeries at CIMS include:
1. Atrial Septal Defect (ASD)
2. Mitral valve repair / replacement
3. Aortic valve replacement
4. Selected cases of CABG
5. Hybrid CABG

Potential Benefits of MICS CABG
- Improved satisfaction among patients and referring physicians
- Complete revascularization can be achieved through a small thoracotomy

For the Patient
- Reduction in pain
- Lower risk of infection
- Shorter ICU and hospital stay
- Lower risk of bleeding
- Early mobilization
- Cosmetic incisions
- Preferable in high risk patients
Minimally Invasive Cardiac Surgery (MICS)

**Patient Selection**
- Advanced age
- Long-term steroid use
- Severe COPD (Chronic Obstructive Pulmonary Disease)
- Severe deconditionings
- Need for other major operative procedure
- Patients with severe arthritic or orthopedic problems

**Contraindication**
- Reoperations
- Urgent or emergent cases
- Advanced peripheral vascular disease
- Morbid obesity

### MICS Procedures (N= 18)

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<th>Procedure</th>
<th>Number of Patients</th>
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<tr>
<td>MVR MICS</td>
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Congenital heart disease is defined as the structural, functional or positional defect of the heart in isolation or in combination, present from birth, but may manifest at any time after birth or may not manifest at all.

CIMS Hospital offers the families of infants and children with heart disease the benefit of a world-class team including pediatric cardiologists, pediatric cardiac surgeons, anesthetist, perfusionist, physiotherapist and trained nurses. We provide a full range of diagnostic studies and therapeutic interventions that cover all pediatric heart problems.

The general reported incidence congenital cardiac disease varies from 8-10 per 1000 live newborn population. There are eight common lesions, which account for 85 percent of all cases. They are:

- Ventricular Septal Defect (VSD)
- Patent Ductus Arteriosus (PDA)
- Atrial Septal Defect (ASD)
- Pulmonary Valve Stenosis
- Aortic Valve Stenosis
- Coarctation of the aorta
- Tetralogy of Fallot
- Transposition of great arteries

The remaining 15 percent account for a variety of more rare and complex lesions.
Our team has produced tremendous impact on outcome of several hundred small infants and children born with heart disease since birth. This includes all varieties of catheter interventions, device closure, closed and open cardiac surgeries, neonatal and infant cardiac surgeries, cardiac surgeries in adults (Grown up Congenital Heart Disease), redo operations and hybrid cases.

**Pediatric Interventional Cardiology**
- Complete range of neonatal and pediatric interventions
- Pediatric Cath lab with ICU for 'after care'
- Pediatric electrophysiology and RF (Radio Frequency) ablation and pacemaker therapy

**Pediatric Cardiac Surgery**
- Exclusive staff (surgeon, anesthetist, perfusionist, intensivists) for complete neonatal and pediatric surgery
- State-of-the-art post operative cardiac ICU
- Availability of advanced techniques and therapeutics for life support
**Total Pediatric Surgeries**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td>Number of Patients</td>
<td>110</td>
<td>124</td>
<td>160</td>
<td>169</td>
</tr>
</tbody>
</table>

**Pediatric Cardiac Surgeries (N=169)**

- VSD: 45
- ASD: 36
- ICR for TOF/DORV: 33
- Fontan Procedure: 9
- B.T.Shunt: 9
- TAPVC Repair: 7
- PDA Ligation: 6
- Coarctation Repair: 5
- BDG with Arterial Speptectomy: 5
- Truncus: 3
- Arterial Switch: 3
- PA Band +Speptectomy: 2
- MV Repair: 2
- Vascular Ring: 1
- ALCAPA Repair: 1
- Aortic Valve Repair: 1
- Pericardectomy: 1

**Number of Procedure**
Pediatric Cardio Vascular Thoracic Surgery
Average Length of Hospital Stay

Pediatric Cardiac Catheterization Procedures (N =131)

- PDA Clousures: 39
- Diagnostic Study: 32
- BAV: 15
- ASD Dense: 13
- Coarctation Angioplasty: 13
- VSD: 10
- PDA Stenting: 3
- Renal Plasty: 3
- BAS: 2
- Coil ambolyzation: 1

Number of Procedures
Carotid artery surgery is a procedure to restore proper blood flow to the brain. There are two procedures to treat a carotid artery that has plaque buildup in it. This can be treated by endarterectomy (CAE) or by stent placement (CAS).

Selection of asymptomatic patients for carotid revascularization should be guided by assessment of comorbid conditions, life expectancy, and other individual factors and should include a thorough discussion of the risks and benefits of the procedure with an understanding of patient preferences.
All patients with significant (>80%) bilateral stenosis or stenosis in a solitary functioning kidney are candidates for revascularization, regardless of whether they have renal insufficiency.

**Guideline Indications for Renal Artery Revascularization**

<table>
<thead>
<tr>
<th>CARDIAC DISTURBANCE</th>
<th>RESISTANT HYPERTENSION</th>
<th>ISCHEMIC NEPHROPATHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemodynamically Significant RAS with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Recurrent unexplained CHF OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sudden, unexplained pulmonary edema.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class I, LOE B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS and Unstable Angina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIA; LOE B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Accelerated, Resistant or Malignant HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• HTN with unilateral small kidney</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• HTN with medication intolerance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIA; LOE B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS and CRI with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Bilateral RAS OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RAS to a solitary functioning kidney</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIB; LOE B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS and CRI with unilateral RAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2 kidneys present).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIB; LOE C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asymptomatic bilateral or solitary viable kidney with hemodynamically significant RAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIB, LOE C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asymptomatic Unilateral hemodynamically significant RAS in a viable kidney</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Class IIB, LOE C)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At CIMS, Duplex ultrasound or magnetic resonance angiography (MRA) as well as other imaging and pathological tests are used to suggest the diagnosis but the gold standard is conventional renal angiography.

**Renal Doppler Study**

![Graph showing the number of procedures from 2011 to 2015](image)
At CIMS, surgeons have expertise and experience in diagnosing and treating common, complex and rare vascular diseases. We offer the full spectrum of diagnostic and interventional medical procedures, including noninvasive vascular laboratory testing, state-of-the-art axial imaging techniques and the latest minimally invasive technologies to treat conditions such as:

- Aortic aneurysms
- Arterial occlusive disease of the carotid, renal/mesenteric and lower extremity arteries
- Cerebrovascular disease
- Complex aneurysm disease
- Varicose veins
At CIMS, Vascular Surgery Includes:
1. Carotid Endarterectomy for Stroke prevention
2. Open Repair of Aortic and Peripheral aneurysms
3. Aorto – Femoral – Popliteal Bypasses
4. A – V Access (Fistula) surgery
5. Diabetic Foot Care Clinic

Endovascular Interventions
Angioplasties and stenting for Peripheral Vessels Occlusive Diseases.
Thoracic Surgery encompasses the operative, perioperative, and surgical critical care of patients with acquired and congenital pathologic conditions within the chest. Included are the surgical repair of congenital and acquired conditions of the heart, including the pericardium, coronary arteries, valves, great vessels and myocardium.

The surgeons within CIMS Hospital Department of Thoracic Surgery are leaders in the surgical treatment of diseases of the lung and esophagus, including lung cancer, chronic obstructive pulmonary disease (COPD), lung failure, esophageal cancer, Barrett’s esophagus, achalasia, thoracic outlet syndrome and hyperhidrosis.

We provide care for all diseases of the chest, including:

- Esophageal Cancer
- Hyperhidrosis
- Lung Cancer
- Chronic Pleural Effusion
- Other Chest Tumors

The Range of such operations, routinely done include:

- Lobectomy
- Pneumonectomy
- Thoracotomy
Thoracic Surgery

**Thoracic Procedures**

- **Thoracotomy**: 2011 (6), 2012 (13), 2013 (11), 2014 (8), 2015 (5)
- **Lung Decortication**: 2011 (4), 2012 (9), 2013 (11), 2014 (10), 2015 (12)
- **Embolectomy**: 2011 (16), 2012 (13), 2013 (13), 2014 (7), 2015 (4)
- **Lobectomy**: 2011 (15), 2012 (4), 2013 (7), 2014 (1), 2015 (1)
- **Pneumonectomy**: 2011 (5), 2012 (1), 2013 (7), 2014 (3), 2015 (1)
- **Foreign Body Removal**: 2011 (1), 2012 (2), 2013 (3), 2014 (5), 2015 (2)
- **Thyroidectomy**: 2011 (2), 2012 (3), 2013 (1), 2014 (1), 2015 (1)
- **Others**: 2011 (99), 2012 (16), 2013 (10), 2014 (13), 2015 (13)

**Age Distribution of Thoracic Patients**

- **2011 (N = 28)**
- **2012 (N = 49)**
- **2013 (N = 55)**
- **2014 (N = 78)**
- **2015 (N = 104)**

- **<30**: 2011 (4), 2012 (8), 2013 (17), 2014 (12), 2015 (13)
- **30-60**: 2011 (8), 2012 (13), 2013 (27), 2014 (29), 2015 (27)
- **>60**: 2011 (11), 2012 (14), 2013 (9), 2014 (18), 2015 (21)
Gender Distribution of Thoracic Patients

- 2011 (N = 28)
- 2012 (N = 49)
- 2013 (N = 55)
- 2014 (N = 78)
- 2015 (N = 104)

Cardio Vascular Thoracic Surgery Average Length of Hospital Stay

- 2011: 9.02 days
- 2012: 8.90 days
- 2013: 8.38 days
- 2014: 7.61 days
- 2015: 7.34 days
At CIMS, the Department of Orthopedic Surgery is committed to deliver the highest quality of diagnostic and therapeutic patient care to both adults and children for a diverse spectrum of orthopedic disorders.

Also CIMS has the most advanced medical equipments required for emergency care to provide the right support by a leading team of full-time orthopedic surgeons, highly experienced in complex and high velocity trauma care.

CIMS provides a comprehensive, multidisciplinary approach to care for the evaluation and treatment of joint replacement. The most common condition that results in the need for joint replacement surgery is osteoarthritis. Other causes of joint pain include trauma, such as a serious fracture or an injury that doesn’t heal properly.

The Department of Orthopedic Surgery focuses on patient care in each of these orthopedic subspecialties: adult reconstruction and joint replacement, spine surgery, surgery of the hand and wrist, surgery of the shoulder and elbow, surgery of the foot and ankle, musculoskeletal, orthopedic trauma Surgery, pediatric orthopedics, and physical medicine and rehabilitation.
Orthopedic Surgery

Our services
◆ Primary Knee and Hip Replacement Surgeries
◆ Revision Knee and Hip Replacement Surgeries
◆ Shoulder Replacement Surgeries
◆ Elbow Replacement Surgeries
◆ Attune rotating platform knee replacement
◆ Bilateral (on both the knees) revolutionary minimally invasive knee replacement (resurface) surgery (MIKRS) using orthoglide medial knee system
◆ Evolution of painful joint replacement
◆ Osteonecrosis of the hip and knee
◆ Post-traumatic arthritis
◆ Arthritis secondary to childhood hip disorder
◆ Osteoarthritis
◆ Rheumatoid arthritis
◆ Infective arthritis

Treatment flow at CIMS

Pre-surgery
- Patient education and pre-surgery counseling
- Meeting with a surgeon or nurse
- Carbohydrate drink prior to surgery
- Use of epidurals for pain control

During Surgery
- Goal-directed fluid management
- Judicious use of opioid pain medications
- Shorter incisions and use of laparoscopic approach when possible
- Careful consideration of blood transfusions

Post-Surgery
- Early post-procedure mobilization
- Early removal of tubes and drains
- Early transition to oral pain medications
- Early allowance of food intake

Better Outcomes
- Increased patient satisfaction with care
- Decreased perioperative complications
- Decreased length of hospital stay
- Improved use of hospital resources
Orthopedic Surgery

Number of Patients

Orthopedic Surgery Average Length of Hospital Stay

In Days

2011 2012 2013 2014 2015

Others

Elbow / Ankle Fixation
Multiple Trauma
Facial Bone Fracture
Shoulder Arthroscopy + Fixation /...
Hip Joint Arthroscopy + DHS...
Knee Arthroscopy + ACL...
Total Hip Replacement
Amputation of Limbs and Digits
Humers and Radius Ulnar Nailing
Femur and Tibia Nailing
Total Knee Replacement

2011 (N=99)
2012 (N=502)
2013 (N=538)
2014 (N=515)
2015 (N=731)
CIMS Critical Care is dedicated to the emergency and urgent healthcare needs of critically ill patients. We provide dedicated and continuous monitoring and care for all serious patients. Constant availability and comprehensive care by qualified and trained intensivists with a multi-disciplinary team approach at CIMS hospital ensures best possible care and outcome of all complex medical and surgical cases.

CIMS Critical Care is well-equipped to cater to all needs which extends to:

- Well planned specialty ICUs for cardiac, medical, surgical and trauma patients
- Noninvasive ventilation (NIV) and invasive ventilator with bedside echo, sonography, bronchoscopy, GI endoscopy, tracheostomy, etc.
- ICU cubicle system with advanced central monitoring system and 1:1 nursing staff
- Multimodality ICU care for sepsis, poisoning, multi organ failure, neuro, cancer, gynaec, gastro surgery cases
- ICU supportive areas like ER, trauma, ICU on wheels, diet rehab, physiotherapy, microbiology & pathology and interventional radiology services
- Complete and comprehensive care of any cardiac emergencies- cardiogenic shock, cardiac arrhythmia, with rapid- door to balloon time
- Multi-disciplinary, intensivist driven extracorporeal membrane oxygenation (ECMO) program
Critical Care

Critical Care in
- Management of all types of shock state
- Management of cardiorespiratory arrest by dedicated CPR team
- Thrombolytic therapy for acute pulmonary thrombo-embolism and acute ischemic stroke
- Renal and hepatic failure care
- All kinds of sepsis including oncology, post-transplant, immuno-compromised patients
- Neurological emergencies
- All kinds of surgical and obstetrics emergencies
- Poly trauma & burns care
- Care for pre-operative high-risk patient, intra and post-operative complicated patient (including care of complicated GI, orthopaedic, neuro, onco, bariatric surgeries, acute pancreatitis)
- TPN (total parental nutrition)
- Care of poisoning patient
- Palliative care (pain relief) for terminally ill
- Intermediate care at high dependency unit (HDU)

Emergency Room Services
- All medico legal case management
- Trained, enthusiastic ER staff
- Well-equipped ICU ambulance services ready to handle any emergency during transport

ECMO
- First in Gujarat, Rajasthan, Madhya Pradesh ECMO ECLS (Extracorporeal Membrane Oxygenation - Extracorporeal Life Support) System
- Hundreds of lives are saved worldwide by ECMO system
- When lungs no longer oxygenate and heart cannot perfuse the oxygen in spite of maximum efforts, the consequences are multi organ failure and loss of life. Till date we were helpless, but now there is a ray of big hope brought for precious patients by CIMS Hospital.
- Hundreds of lives are saved worldwide by ECMO system. Many sick patients are transported from peripheral hospital to tertiary care center with ECMO support every year.
- Critical care beds with adult & neonatal units
Critical Care

- Fully electronic patient trolley beds
- Web enabled high end central monitoring system for patient vitals
- High frequency ventilator for neonates
- Neonatal warmers having ceramic heater with reflector and safety grill. Overhead patient examination light, baby tray with X-ray cassette holder.
- Positive and negative pressure isolation rooms
- 24 x 7 ambulance service including ICU on wheels
- Compartmentalized ICU beds

**Indications of ECMO**
ECMO machine would be helpful in following situations

**Heart problems**
- Heart failure
- Before or after bypass surgeries
- Before or after heart transplant
- After complex heart surgeries
- Congenital heart problems
- After major heart attack
- Before or after complex angioplasties

**Lung problems**
- Adult respiratory distress syndrome (ARDS)
- Swine flu
- Pneumonia
- Status asthmatics
- Chemical pneumonitis
- Inhalational pneumonitis
- Near drowning
- Acute chest syndrome (sickle cell anemia)
- Bronchiolitis
- Persistent air leak syndrome
Infectious Disease

CIMS infectious disease unit with help of a full-time dedicated Infectious Diseases consultant, provides in-patient and out-patient care for:

- HIV and AIDS (Acquired Immunodeficiency Syndrome)
- Pulmonary and extra pulmonary tuberculosis, including MDR (Multi-drug resistant) and XDR (Extensively drug-resistant) TB
- Community acquired infections like upper respiratory infections, pneumonia, urinary tract infections, brain infections, etc.
- Tropical infections like malaria, dengue, typhoid fever, chikungunya
- Opportunistic fungal infections like candidiasis, aspergillosis, and mucormycosis in immuno-compromised patients
- Hospital acquired infections, post-surgical infections
- Infections in cancer patients
- Infections in organ transplant recipients

Additionally, we also practice antimicrobial stewardship programme at CIMS.

Washing hands is not just a procedure, but also a scientific step-wise technique. It is globally recommended to follow the method given below for hand washing to avoid chances of infections maximally.
SIX STEPS OF HAND HYGIENE

Step 1: Palm to Palm

Step 2: Right palm over left dorsum with interlaced fingers and vice versa

Step 3: Palm to palm with finger interlocked

Step 4: Back of fingers to opposing palms with fingers interlocked

Step 5: Rotational rubbing of right thumb clasped in left palm and vice versa

Step 6: Rotational rubbing backwards and forward with clasped finger of right hand in left palm and vice versa
Various procedural and surgical treatments offered at CIMS include:

- Cardiopulmonary rehabilitation
- Atypical mycobacterial infections
- Pulmonary fibrosis
- Balloon dilation and stent placement to open windpipes
- Laser treatment for palliation
- Bronchoscopy including interventional treatments with lasers and stents
- Mesothelioma
- Lung volume reduction surgery (LVRS)
- Nicotine dependence
- Emphysema
- Chronic cough and bronchitis
- Pulmonary embolism
- Pulmonary vasculitis
- Sleep apnea
- Flolan infusion

Testing facilities at CIMS include:

- Highly equipped sleep laboratory with
- Allergy testing
- Pulmonary function test including - spirometry, lung volume measurements by Nitrogen wash out and helium dilution, body plethysmograph, diffusing capacity measurements by CO diffusion, bronchoprovocation testing, respiratory muscle strength testing, impulse oscillmetry, rhinomanometry.
### Total Number of Patients in PFT Study

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1208</td>
</tr>
<tr>
<td>2012</td>
<td>1765</td>
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<tr>
<td>2013</td>
<td>2183</td>
</tr>
<tr>
<td>2014</td>
<td>2185</td>
</tr>
<tr>
<td>2015</td>
<td>2783</td>
</tr>
</tbody>
</table>

### Total Number of Patients in Sleep Study

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>18</td>
</tr>
<tr>
<td>2012</td>
<td>17</td>
</tr>
<tr>
<td>2013</td>
<td>24</td>
</tr>
<tr>
<td>2014</td>
<td>34</td>
</tr>
<tr>
<td>2015</td>
<td>52</td>
</tr>
</tbody>
</table>

### Pulmology Average Length of Hospital Stay

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Length (in Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>4.64</td>
</tr>
<tr>
<td>2012</td>
<td>5.42</td>
</tr>
<tr>
<td>2013</td>
<td>5.45</td>
</tr>
<tr>
<td>2014</td>
<td>4.24</td>
</tr>
<tr>
<td>2015</td>
<td>4.56</td>
</tr>
</tbody>
</table>
CIMS neurosurgical team is focused on treating the most complex medical and surgical conditions including malignant and benign brain tumors, skull based tumors, epilepsy, movement disorders and vascular malformations.

**Skull Based Surgery Services**
- Skull base tumor excision:
- Acoustic neuromas, Chordomas
- Cerebro spinal fluid leaks
- Cranio facial deformities
- Cranial base osteomyelitis
- Micro vascular decompression for trigeminal neuralgia, hemi facial spasm

**Pediatric Neurosurgery**
- Hydrocephalus: Endoscopic ventriculostomy, Shunt surgery
- Pediatric brain and spine tumor surgery
- Spinal dysraphism and tethered cord surgery
- Craniosynostosis correction
- Occipitocervical decompression for Chiari malformation

**Brain Surgery Services**
- Cranial trauma
- Brain tumor surgery
- Microscopic/ endoscopic transnasal pituitary tumor excision
- Neuro vascular lesions: aneurysm, AVM

**Stroke Surgery**
- Brain hemorrhage, carotid endartrectomy
- Stereotactic surgery
- Cranioplasty
- Epilepsy surgery
Spinal surgeries performed at CIMS include -

1) Trauma of Spine
2) Spine tumors both intra and extra medullary:
3) Congenital spine problem
4) Degenerative disc disorder

Non-surgical treatments – Not all patients with pain from degenerative disc disease require surgery. For mild to moderate pain, more conservative treatment methods can include medications, physical therapy, and chiropractic care.

Spinal fusion – A procedure called a spinal fusion can be used to surgically treat degenerative disc disease.

5) Endoscopic spine surgery

Endoscopic spine surgery is performed with minimal trauma to any surrounding tissue, as muscles, ligaments and tendons need not be disrupted

**Faster recovery of the patient:** Clinical studies have shown shorter hospital stays and a quicker return to work after endoscopic disc surgery.
Spine Surgery

**Total Volume of Spine Surgeries**

- 2011: 19
- 2012: 80
- 2013: 143
- 2014: 186
- 2015: 199

**Spine Surgeries**

- Lumber: 3, 38, 34, 30, 3, 45, 12
- Cervical: 14, 37, 34, 6, 17
- Microdissect.: 2, 5, 9, 1, 15
- Dorsal: 5, 47, 3, 72
- Spine: 19, 37, 1, 45
- Others: 89, 55, 32, 1, 71

Legend:
- Red: 2011 (N=19)
- Teal: 2012 (N=80)
- Purple: 2013 (N=143)
- Green: 2014 (N=186)
- Blue: 2015 (N=199)
Age Distribution of Patients with Spine Surgeries

Gender Distribution of Patients of Spine Surgeries
The goal of our expert trauma center in Ahmedabad is to provide treatment to a child within 30 minutes (Platinum Hour) and Treatment to an adult within 60 minutes (Golden Hour)."

The Trauma Team at CIMS Hospital follows the world renowned ATLS (Advanced Trauma Life Support) protocol as per recommendations from American College of Surgeons for treatment of all types of Trauma cases.

At CIMS, skill, speed and teamwork are the vital ingredients for dealing with trauma and multiple injuries. We not only recognize this critical aspect but are also fully-equipped with a dynamic poly trauma team to handle such critical situations. Its multi-disciplinary specialty approach is a unique attempt in reducing mortality and morbidity rates in poly trauma patients.

Facilities at CIMS

- BLS and ATLS trained doctors, nurses and technicians
- 24 X 7 services round the year
- 10-bed state-of-the-art emergency department with back up of Trauma ICU
- Triage area equipped with facilities of a world class emergency room
- Mobile unit with a defibrillator, multipara monitor and ventilator
- Excellent communication facilities backup
- Emergency team gets activated according to CODE YELLOW, when called for
- All staff is trained in patient resuscitation so that they are helpful to save patients
- Highly experienced team of other super specialist surgeons
- All Medico legal cases are accepted
- About 85 Critical Care Units with pediatric and neonatal ICU and 8 well equipped state-of-the-art operation theatres
- ICU-ON-WHEELS and other Ambulance services run forth to collect trauma and emergency patients from the site
- Facilities of directly shifting patients with MI for PAMI to cathlab.

We performed 217 trauma surgeries in 2015
Goals achieved at CIMS Trauma Centre

◆ To assist in improving the care of the injured patient by providing emergency consultation and comprehensive trauma care under one roof according to Resources for Optimal Care of the Injured Patient.

◆ To assist in the ongoing assessment of trauma patients for Optimal Care of the Injured Patient for appropriateness, timeliness, and efficient management.
Trauma Center

Trauma due to RTA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>36</td>
</tr>
<tr>
<td>2012</td>
<td>170</td>
</tr>
<tr>
<td>2013</td>
<td>271</td>
</tr>
<tr>
<td>2014</td>
<td>179</td>
</tr>
<tr>
<td>2015</td>
<td>98</td>
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</table>

Trauma Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Assaults</th>
<th>Burn</th>
<th>Fall from</th>
<th>Fall from</th>
<th>Electrical</th>
<th>Other</th>
<th>Poisoning</th>
<th>Polytrauma</th>
<th>Industrial</th>
<th>Household</th>
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<tbody>
<tr>
<td>2011</td>
<td>12</td>
<td>2</td>
<td>1</td>
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<td>0</td>
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<td>2012</td>
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<tr>
<td>2014</td>
<td>11</td>
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<td>8</td>
<td>3</td>
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<td>2</td>
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<td>2015</td>
<td>13</td>
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<td>3</td>
<td>5</td>
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Trauma Average Length of Hospital Stay

<table>
<thead>
<tr>
<th>Year</th>
<th>In Days</th>
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</thead>
<tbody>
<tr>
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<td>2013</td>
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<td>2014</td>
<td>3.60</td>
</tr>
<tr>
<td>2015</td>
<td>3.76</td>
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</table>
The gastro and intestinal surgery department is equipped to give the best medical advice and services for the patients with gastro-intestinal problems as well as those requiring abdominal, laparoscopic surgeries, weight loss and hernia surgeries. The doctors have wide experience to treat these conditions.

**Surgeries Performed and Diseases Treated**

**Basic Laparoscopic Surgeries**
- Appendectomy
- Cholecystectomy

**Advanced Laparoscopic Surgeries**
- Inguinal and ventral hernia repair
- Peptic and enteric perforation repair
- Fundoplication
- Heller’s cardiomyotomy
- Cystogastrostomy / cystojejunostomy
- Minimally invasive surgery for acute necrotising pancreatitis
- Rectopexy
- Colectomy
- Thoracolaparoscopic esophagectomy

**Esophagus and Stomach**
- Corrosive oesophageal and gastric stricture
- Esophagus and stomach malignancy
- Gastric GIST
- Esophageal motility disorders including Achalasia Cardia
- Acid peptic diseases
- GERD
Gastro-Intestinal and General Surgery

Biliary and Liver Diseases
◆ Gallstone disease
◆ Choledochal cyst
◆ Biliary and hepatic malignancy
◆ Bile duct injuries and post cholecystectomy biliary structure
◆ Hydatid liver disease
◆ Liver tumour
◆ Shunt surgeries for portal hypertension

Pancreas
◆ Pancreatic malignancy
◆ Chronic pancreatitis
◆ Pancreatic neuroendocrine tumour
◆ Acute necrotising pancreatitis

Small and Large bowel
◆ Carcinoma colon and rectum
◆ Ulcerative colitis
◆ Fecal fistula
◆ Rectal prolapse

At Cims
Liver Transplant is planned in time to come
**Gastrointestinal and General Surgery**

**Gastroenterology And Hepatology**

Gastroenterology and Hepatology unit deals with digestive system and associated disorders. Treatment of functional disorders, liver cirrhosis, fatty liver, hepatitis “B” and “C”, jaundice etc. is done in this department by our highly qualified personnel with latest Olympus endoscopic technology.

**Services**

- Ultramodern endoscopy from gastroscope for upper GI tract i.e. oesophagoscopy, gastroscopy and duodinoscopy
- Colonoscope to examine large bowel i.e. Colon, rectum (large intestine) - colonoscopy.
- ERCP to evaluate bile duct and pancreatic ducts
- Capsule endoscopy for small intestinal diseases
- Liver biopsy
- Colorectal Cancer Screening

At CIMS, department of General Surgery comprise of board-certified surgeons who provide evaluation and treatment for a full range of general surgery conditions.

The breadth of surgical services include hepatobiliary, transplant, surgical oncology and general surgery procedures. Moreover, the staff works closely with other medical specialties to provide optimal patient care. Collaboration with referring physicians is essential to patient management.
Surgeries carried out at CIMS include
- Fistulectomy
- Incision and drainage
- Biopsy
- Excision of Tumor
- Haemorroidectomy
- Cyst Excision
- Debridement
- Amputation
- Circumcision
- Cholecystectomy

“At CIMS, approximately 800 General surgeries have been performed till 2015.”

<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Volumes</th>
</tr>
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<tbody>
<tr>
<td>Debridement</td>
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Gastro-Intestinal and General Surgery

**Age Distribution of General Surgery Patients**

![Age Distribution Chart]

**General Surgery Average Length of Hospital Stay**

![Length of Stay Chart]
Designed for the privacy and comfort of our patients, The Endoscopy Unit at CIMS Hospital is a dedicated, state-of-the-art unit for therapeutic and diagnostic procedures.

CIMS provides a 24x7 care in all fields of gastroenterology including, endoscopy, colonoscopy and therapeutic endoscopy procedures like ERCP and EUS.

Procedures done by the Endoscopy Unit help physicians detect and screen for colon cancer, diagnose stomach and gastrointestinal problems, and find and remove polyps, tumors, treat ulcers and other diseases and disorders.

CIMS has an expertise of nation's leading and good specialists in gastrointestinal diseases. Our gastroenterologists are the best and nationally recognized for providing breakthrough care of complex digestive diseases.

At CIMS, all efforts are made earnestly to make the patient happy. A commitment to ethical medical practice plays a key role and to ensure that the patient receives the best available treatment at an affordable cost.

**Endoscopy services at CIMS include:**

- Gastroscopy and Duodenoscopy
- Capsule endoscopy for small intestine diseases
- Stone removal : Biliary and pancreatic
- Upper and lower GI hemorrhage management
- Oesophagoscopy
Expert surgical oncology team offers optimum multimodality tailored treatment to the need of every patient.

**Facilities**
- Powerful surgical oncology team that offers optimum multimodality treatment tailored to the need of every patient
- State-of-the-art facilities for diagnosis and staging of all types of cancer
- Trained nurses to handle patients who are on aggressive chemotherapy and patients with aplastic anaemia
- Experienced team of nursing staff, medical officers backed by high-end infrastructure, ICU set-up for high risk and major operative procedures
- Round-the-clock availability of intensivists
- Back-up of an efficient pathology department.
- Modular, joint less operation theaters with anti-fungal paint application.
- LED OT lights
- Harmonic scalpel
- Enseal vessel sealing equipment
- Inbuilt OT cameras for direct relay and transmission of cases in auditorium
Services

- Early detection and prevention programs and cancer-related health check-up
- All types of surgery according to latest protocols
- Organ preserving surgery for different cancers (Mandible i.e. jaw, voice-box in throat cancers, breast cancers, sphincter preserving rectal surgeries, pouch surgeries, limb preservation in bone cancers)
- Chemotherapy for all solid cancers
- Protocol based chemotherapy for hemato-oncology disorders
- Reconstructive surgery and prosthesis for jaw, breast, limbs and other defects and rehabilitation
- Specially trained doctors and intensivists for medical management of patients
- Nutrition plan guided by dietician before and after surgery
- Physiotherapy and functional rehabilitation
- Radiation therapy

Oncology Surgeries

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Legend:
- Red: 2011
- Blue: 2012
- Purple: 2013
- Green: 2014
- Dark Blue: 2015
**Different Oncology Procedures**


**Gender Distribution of Oncology Patients**

Age Distribution of Oncology Patients

Onco Surgery Average Length of Hospital Stay
Nephrology

- State-of-the-art department to provide all kidney related care under one roof
- 6 Hemodialysis HD machine and 1 CRRT machine for the patients
- Facility for CRRT (Continuous Renal Replacement Therapy) for critically ill patients
- Adherence to international standards for infection control and quality in dialysis
- To reduce incidence of hepatitis B and C, rigorous precautions are taken and such patients are dialyzed on separate machines.

Services
- Management of acute renal failure, chronic renal failure, acute and chronic nephritis, nephrotic syndrome, reno-vascular hypertension, and collagen vascular disorders involving kidneys etc.
- 24 x 7 Dialysis
- CRRT for dialysis in critically ill patients.
- Tunneled cuffed catheter insertion (PERM CATH) for patients having difficulty in constructing-working-AV Fistula
- Management of difficult vascular access (AV Fistula)
- Salvation of failing AV Fistula, fustulography and fistuloplasty
- Renal biopsy
- Plasmapheresis
Urosurgery

- CIMS urologists perform minimally invasive surgical procedures resulting in shorter hospital stays, less discomfort and bleeding, and a shorter recovery period including less time away from work and regular activities.
- These include minimally invasive surgery for kidney operations and endoscopic procedures used to diagnose and treat upper urinary tract disorders.

Well Established Dedicated Treatment Program Plan for Laparoscopic (keyhole) and Prostate Surgeries.

Services provided:

(I) Surgical Procedures For Enlarged Prostate
- Trans-Urethral Resection of the Prostate (TURP) with Holmium laser
- Prostatic Biopsy

(II) Prostate Cancer Diagnosis And Treatment
- Radical Prostatectomy
- Laparoscopic Prostatectomy

(III) Bladder Cancer
- Flexible Cystoscopy
- Transurethral Resection of Bladder Tumor (TURBT)
- Open Radical Cystectomy
- Laparoscopic Radical Cystectomy
- Radical Cystectomy and Neobladder Formation

(IV) Kidney Cancer
- Partial Nephrectomy
- Laparoscopic Radical Nephrectomy
- Open Radical Nephrectomy
- Percutaneous Nephrolithotomy Surgery (PCNL) /Ureteroscopic Lithotripsy (URS) / Flexible URS / Cystolitholepexy for Urinary Stones.
- Visual Internal Urethrotomy (VIU) – for Stricture Urethral.
- Pediatric Endoscopic Surgeries.
- Tension-free Vaginal Tape (TVT) / Transobturator Tape (TOT) for Stress Urinary Incontinence.
- Plastic Surgery for Hypospadias, Hernia, Hydrocele Operations and Mesh Repairs. Orchiopexy, Varicocelectomy, Vasectomy
Age Distribution of Urology Surgery Patients

Gender Distribution of Urology Surgery Patients

Urology Average Length of Hospital Stay
Bariatric Surgery

Bariatric (Obesity) surgery, or weight loss surgery, includes a variety of procedures performed on people who are obese. Weight loss is achieved by:

- **Gastric Banding**: The size of the stomach is reduced with an implanted gastric band.
- **Sleeve Gastrectomy**: Through gastric restriction (reduce stomach volume) thus reducing hunger.
- **Gastric Bypass Surgery**: By creating a smaller stomach pouch, it limits the amount of food that can be eaten at one time.
- **Biliopancreatic Diversion With Duodenal Switch (BPD-DS)**: The stomach is reduced to roughly the size and shape of a banana, there is less of an opportunity for the absorption of calories, which results in weight loss.
- **Intragastric Air Balloon**: Intragastric Air Balloon is filled inside the stomach to create short term and rapid weight loss. This balloon is temporary and has to be extracted after six months.

**Roux-en-Y Gastric Bypass** is a procedure wherein a small stomach pouch is created which is connected directly to the small intestine bypassing the rest of the stomach and upper small intestine, helping patient to lose weight.
CIMS Plastic surgery department provides exceptional and extensive services for its patients in several aspects of plastic surgery. Our plastic surgeons team utilize the latest techniques and provide a wide variety of aesthetic and reconstructive procedures for both men and women with safe, successful outcomes.

Hand surgery is concerned with acute injuries and chronic diseases of the hand and wrist, correction of congenital malformations of the upper extremities, and peripheral nerve problems (such as brachial plexus injuries or carpal tunnel syndrome).

Microsurgery is generally concerned with the reconstruction of missing tissues by transferring a piece of tissue to the reconstruction site and reconnecting blood vessels. Popular subspecialty areas are breast reconstruction, head and neck reconstruction, hand surgery/replantation, and brachial plexus surgery.

Craniofacial surgery is divided into pediatric and adult craniofacial surgery.

Pediatric craniofacial surgery mostly revolves around the treatment of congenital anomalies of the craniofacial skeleton and soft tissues, such as cleft lip and palate, craniosynostosis, and pediatric fractures.

Adult craniofacial surgery deals mostly with fractures and secondary surgeries (such as orbital reconstruction) along with orthognathic surgery.

Post Cancer surgery is done for cancer of the breast, head and neck and other regions.
Plastic Surgery

Plastic Surgeries

Gender Distribution of Plastic Surgery Patients

Different Surgical Procedures of Plastic Surgery

- Abdominoplasty
- Head & Neck
- Upper & lower Extremities
- Skin grafting
- Others
At CIMS Obstetrics and Gynecology offers a spectrum of services with a view to expanding the horizon of hi-tech care. The latest advances in both the field of Obstetrics and Gynecology accompanied by highly qualified, senior and experienced gynecologists make this department one of the best. The department can handle Gynec or obstetric emergency; besides handling of routine problems and problems of adolescence, reproductive age group patients and problems related to menopausal women.

**Gynecological and pregnancy related services provided at CIMS include**

- Preventive services and outpatient treatments for disorders of the female reproductive and urinary systems
- Gynecologic oncologists treat women who have cancers of the female reproductive tract
- Personalized care before, during and after pregnancy
- Care for women experiencing high-risk pregnancies related to obstetric, medical, surgical or genetic complications
- Manages problems related to infertility, including fibroid tumors, recurrent pregnancy loss, abnormal uterine bleeding, endometriosis and risk of genetic disorders in offspring

Our team of experienced gynecologists along with round-the-clock medical and paramedical staff provide tender care to pregnant females and gynec patients.

At CIMS besides, pregnant and gynec patients Comprehensive Woman Health checkup program are arranged and conducted successfully.
Our full range of medical care for women includes:

- High-risk pregnancy
- Infertility
- Urogynecology
- Gynecologic cancer screening and treatment
- Pelvic pain
- Women's mental health needs
- Women's wellness and exercise
- Wellness examinations
- Pap smear
- Preventive gynecology
- Contraceptive choices
- Management of birth control options
- Chronic pelvic pain
- Pre and post menopausal disorders
- Fetal Echocardiography
- Advanced Laproscopic & hysteroscopic surgery
- Menorrhagia
- 3-D USG & Color Doppler
Neonatal mortality accounts for most infant mortality in India. Neonatal mortality is closely associated with low birth weight (<1400gms, 30 weeks) and VLBW (<500gms, 26 weeks) premature babies. Social disadvantage is associated with pre term delivery.

The neonatal center at CIMS is a specialized center for children having medical complications during or immediately after their birth. The center assess critically ill newborn or premature infant requiring immediate attention for extremely low birth weight, birth defects or medical conditions that may lead to developmental delay.

Every premature baby or infant who suffers from any health problem is sent to the neonatal unit for close care and supervision. The unit is equipped with state-of-the-art incubators and equipment to closely monitor the infant's vital signs.

The unit is staffed by skilled nurses and doctors who provide comprehensive treatment and deal with all difficulties involved in the care of premature infants and in newborns suffering from various illnesses.

Key features of CIMS Neonatal & Pediatric Critical Care unit are:
◆ Highly qualified intensive care team to treat critical neonates
◆ State-of-the-art 12 bedded advanced neonatology setup, well equipped with conventional as well as high frequency oscillatory ventilation (HFOV-SLE5000) with nitric oxide compatibility
◆ Special respiratory care of premature babies with non-invasive ventilation (i.e. bubble CPAP)
◆ Well equipped designated PICU (4 bedded-pediatric ICU) & 5 bedded pediatric surgical ICU
◆ Special care for infection control with 0.3 micron Hepa filters in ICU
◆ Facilities for multi para invasive monitoring, Peritoneal dialysis, bedside Ultrasonography, Total Parenteral Nutrition, Phototherapy
◆ Multidisciplinary intervention program with facilities like in-house pediatric surgery, F.O.Bronchoscopy, Radiology
◆ State-of-the-art care for critical subset of disease i.e. HMD, PPHN, Prematurity
◆ 24 x 7 emergency support and transport team equipped with pediatric ventilators
◆ Perinatal high-risk pregnancy consultation
Goal of CIMS Neonatal care unit

- To improve clinical care of the critically ill neonate.
- To reduce the neonatal morbidity & mortality.
- To provide continuing in-service training of medical & nursing personnel in the care of newborn.
As medical advances in otolaryngology occur, CIMS are at the forefront at offering new techniques and treatments.

CIMS otolaryngologists work as a team in diagnosing and treating patients.

Our goal is not only to provide comprehensive diagnostic care, but also to offer a wide variety of medical and surgical treatments for all kinds of ear disease, whether it be a congenital problem or chronic infection.

At ENT department, CIMS hospital offers facilities not only for routine surgeries but also for complicated surgeries, revision surgeries and medically high risk patients where optimum use of surgical skill, technological advancement and multidisciplinary approach is needed.

The three primary missions of CIMS ENT are:
- To provide the highest possible quality of care to patients with complicated ear, nose, and throat disorders.
- To discover new insights into the pathophysiology of otolaryngological disease.
- To invent new technological applications designed to optimize therapy of challenging clinical problems as well as to overcome disabilities brought on by illness.
Pain management at CIMS is a new concept to overcome the inconveniences improving quality of life.

**The primary goals of treatment include**

- Reducing pain
- Improving mobility
- Diminishing dependency on pain medication
- Decreasing medical complications of pain
- Decreasing length of hospital stay and frequency of visits

The pain management team of CIMS Hospital provides the latest technology in the ever-changing field of pain management. These conditions include the management of intractable pain syndromes, failed back syndromes, cancer pain, trigeminal neuralgia, occipital neuralgia, among others.

**At CIMS, we do very high end procedures like:**

- Selective nerve root blocks
- Radio frequency ablation
- Facet joint block
- Trigeminal RF ablation
- Cervical procedure
- Disk procedures (Nucleoplasty, IDET)
- Spinal cord stimulator
- Intra-thecal drug delivery system
- Vertebroplasty, Kyphoplasty, Acupuncture and Low level laser therapy
New approaches of pain management at CIMS:

- Preemptive Analgesia
- Multimodal Analgesia
- Fentanyl Delivered by Transdermal Iontophoresis
- Peripheral Nerve Blocks
- Extended-release Epidural Morphine Delivery Systems
- Bupivacaine collagen sponge
- Epidural Steroids
- Cryoneurolysis or Cryoablation
- Intrathecal Drug Therapy
Dentistry

At CIMS, we improve the quality of life with DENTAL IMPLANTS
1. Improved aesthetic
2. Preserved facial structure
3. Improved chewing function and confidence
4. Improved dental hygiene
5. Replacement of a whole missing tooth (root)
6. Avoiding the need to prepare adjacent teeth, since a conventional bridge is not used

Dentistry for cardiac patients:
Special care should be taken for patients who have cardiac disease and need dental treatment. We do all dental treatment safely for cardiac patients.

We excel in providing dental treatment to patients with serious cardiac diseases like:
◆ Valvular heart disease (with ACC/AHA Guidelines).
◆ Cardiac failure or heart attacks.
◆ Arrhythmias or implanted pacemaker
◆ Implanted coronary stents and on antiplatelet/anticoagulant treatment
◆ Procedures to these patients are done under continuous cardiac/NIBP and SpO₂ monitoring on dental chair only.
◆ Backup support of cardiologist/ intensivist / physician.

Smile Makeover
A good smile contributes immensely towards a good personality. Smile designing is truly a work of art. The term smile design applies to the enhancement of a smile using a combination of methods.
We can enhance each and every smile with latest technology in cosmetic dentistry. For a perfect aesthetic outcome proper planning and combination of one or more treatments are needed.
Full Mouth Rehabilitation
Full mouth rehabilitation has changed the smile and confidence of so many of our patients which involves correction of every tooth in both jaws.

Full mouth restoration is a good option for people whose teeth are excessively worn down, damaged, missing or for people who have problems with their Temporo - Mandibular joint (jaw joint). Worn or damaged teeth are more than just unattractive; they can cause difficulty in chewing, poor nutrition, gastrointestinal upset; Temporo-Mandibular Joint (TMJ) problems, headaches, pain and facial collapse. Treatment includes multiple crowns and bridges, implants, various fillings and endodontic procedures which are usually accomplished in four to six visits.

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Besides these procedures, 1110 diagnostic dental procedures have been performed at CIMS in 2015.
Dental Procedures

Number of Patients

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Legend:
- 2011 (N=1158)
- 2012 (N=2223)
- 2013 (N=3151)
- 2014 (N=4660)
- 2015 (N=5164)
The Pathology Department at CIMS is well-equipped to carry out the latest test on patients and assist clinicians in evaluation and diagnosis of diseases.

Aided by state of the art fully automated instruments & highly skilled HPC registered biomedical scientists under constant supervision of consultant pathologist with a high quality assurance. CIMS Pathology provides near-perfect pathology services to all patients.

CIMS Pathology follows high quality standards and is accredited by National Accreditation Board for Testing and Calibration Laboratory (NABL). By timely delivering accurate and clinically relevant results, CIMS Pathology strongly supports clinicians in diagnosing and treating their patients. Customer friendly ambience aids to their experience to a great extent.

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CIMS Radiology department is equipped with state-of-the-art equipment and is led by a team of highly qualified radiologists and technicians. The department is fully furnished to provide support for diagnosis and treatment for every department at CIMS.

Radiology and imaging plays a vital role in determining diagnosis and subsequent planning of treatment. The radio diagnosis of many diseases at early stage of development plays an important role in treatment.

Department of Radiology and Imaging at CIMS hospital offers services of:

- Digital X-ray
- IITV
- Ultrasonography
- Colour Doppler
- Mammography
- Computerised Tomography Scan (CT Scan)

Computerised Radiography (CR) gives excellent X-ray images of various parts of body. Various x-ray procedures e.g. Barium studies, I.V.U. (IntraVenous Urography), Ascending urethrogram, micturating urethrogram, sinogram etc. helps in diagnosis.

Mammography is a specific type of imaging that uses low dose X-ray for examination of breast. It plays central role of early detection of breast cancer. Current guide lines of American cancer society (ACS), American medical association (AMA) and American college of radiology (ACR) recommend screening mammography every year for women above 40 years of age.
Ultra sonography is used to generate soft tissue images of liver, gall bladder, spleen, kidney, prostate, female reproductive organs and of fetus. Ultra sonography is also useful in evaluation of various small parts of body such as eye, neck, knee joint, etc. Trans vaginal USG and trans rectal USG helps in diagnosis and detailed evaluation of pathology. Doppler study is useful for detecting blockages in blood vessels.

Various CT scan services available at CIMS hospital are:

- CT Brain
- CT Thorax, abdomen, pelvis, neck, etc.
- CT IVU (IntraVenous Urography)
- CT coronary calcium scoring
- CT carotid angiography
- CT cerebral angiography
- CT aortography
- CT subclavian angiography
- CT lower limb angiography
- CT renal angiography
- CT mesenteric angiography
- CT brain perfusion, etc
## Radiology

<table>
<thead>
<tr>
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### USG and Doppler

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- **2011**
- **2012**
- **2013**
- **2014**
- **2015**
CIMS provides state-of-the-art dialysis unit with latest hemodialysis machine. The facility is designed in a way featuring real-time, online monitoring, allowing staff to observe person’s treatment progress throughout their dialysis treatment. CIMS has 5 dialysis stations and 1 for ICU department.

At CIMS we provide,

◆ In-center full time hemodialysis care
◆ Advanced dialysis station and R.O system for high quality dialysis
◆ Preventive and Critical Care
◆ Nephrology
◆ 24 hour emergency hemodialysis
  □ 24 x 7 Dialysis Facility is available
  ■ 6 bed dialysis facility with features like blood leak detector
  ■ Settings for pressure limits
  ■ Simple, fast and safe connection for ease of use for clinicians.
  ■ Facility of Dialysis in ICU for critical patients.
◆ Management, treatment, education and support to patients willing to perform dialysis at home
◆ Education and support to patients with chronic kidney diseases
◆ Plasma exchange
◆ Sustained Low-efficiency Dialysis (SLED)

---

**Outdoor Patient Dialysis**

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<th>Year</th>
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<td>2014</td>
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<td>2015</td>
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**In Patient Dialysis**

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<td>2012</td>
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<td>2015</td>
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CIMS Physiotherapy and Rehab center provides necessary training to meet the total range of patient care responsibilities involved in preventing disabilities and promoting restoration of function to the physically impaired, including CABG, Valve Replacement, PTCA, Congenital Heart diseases, Musculoskeletal, Neuromuscular disorders etc. CIMS provides multidisciplinary integrated quality care to patients.

**Geriatric Rehabilitation** provides rehabilitation and treatment for older adults who are experiencing multiple, complex medical and psycho-social problems, or a recent unexplained breakdown in health and function.

**Cardiac Rehabilitation** is specially designed and programmed to provide specific information and planned exercise that helps a cardiac patient to get back to everyday life as efficiently as possible after a heart attack, heart surgery or procedure.

**Orthopedic Rehabilitation and Physiotherapy**—Individuals who undergo joint replacement, musculoskeletal injury, Hip replacement, trauma, amputation or degenerative joint diseases are treated to rebuild strength, restore physical function and enhance the skills needed to perform daily activities.
**Women Wellness Program** - CIMS provide total women fitness program that includes obesity management, pre-natal and post natal (before and after pregnancy) exercises and post-menopausal rehabilitation.

At CIMS Physiotherapy Treatment Includes:
- Manual Therapy (manipulations / mobilizations)
- Electrotherapy Modalities
- Short Wave Diathermy
- Ultrasound
- Traction
- Interferential Therapy
- TENS (Transcutaneous Electrical Nerve Stimulation)
- Muscle Stimulator
- Wax Bath
- Hydrocollater (Hot pack)
- Suspension Frame
- Biomechanical Assessment
- Orthotic and Prosthetic Exercises
- Muscle Imbalance Correction

**Nutrition Centre**
Nutrition is the supply of materials - food - required by organisms and cells to stay alive. Nutrients include proteins, carbohydrates, fats, vitamins, minerals, and water. However, in hospitals, nutrition refers to the food requirements of patients, including nutritional solutions delivered via an IV (intravenous) or IG (intragastric) tube.

A healthy diet may help to prevent certain long-term (chronic) diseases such as heart disease, stroke and diabetes. It may also help to reduce risk of developing some cancers and help to keep a healthy weight and healthy body.
Cardiac arrest in hospital areas is common, and delayed treatment is associated with a lower survival rate. “Code Blue” is generally used to indicate a patient requiring resuscitation or otherwise in need of immediate medical attention, most often as the result of a respiratory or cardiac arrest.

At CIMS, we have rapid response teams or “code blue teams” to reduce preventable in-hospital deaths.

In theory any emergency medical professional may respond to a code, but in practice the team makeup is limited to those with advanced cardiac life support or other equivalent resuscitation training.

**Dial 222 for help.** CIMS, entire staff right from nurses to physicians and workers to employee all are instructed to immediately attend any person with cardiac arrest and call for code blue response team by simply dialing 222 at the specific location.
Through self-assessment, we at CIMS strive to assess our level of performance in relation to established standards and implement ways to continuously improve. Our procedures and policies revolve around evidence-based medicine, medical ethics and quality assurance. We believe that quality improvement requires change and positive change requires systemic approach, concentrated efforts and time. Quality improvement is not just about standard-setting and benchmarking with the best: there are analytical, counseling and self-improvement dimensions to the process.

The CIMS quality cell continuously measures and evaluates performances and outcomes. Errors are readily identified and evaluated, processes are redesigned, and knowledge and skills are polished to achieve a consistent and predictable performance. Since the idea of establishing multi super specialty hospital, it has remained the prime motto of CIMS hospital to provide quality care to its patients. Careful efforts are undertaken by the hospital management to minimize infection and impart high quality standards to patients. Consequently, performance measurement and reporting has become ingrained in our system by establishing Quality Assurance Department. The ultimate goal of it is to improve care and outcome.

The quality of CIMS hospital is measured by its consistent effort of lowering infection rates. Hospital acquired infections at CIMS are very low. The two leading causes of hospital-acquired infections are central line infections and ventilator-associated pneumonia (VAP) which are reduced as a result of consistent protocol following. Reduction in catheter related bloodstream infections has saved many lives and significantly reduced healthcare cost.
**Quality Measure**

**Medication Error:** A medication error is any preventable event that may cause or lead to inappropriate medication use or harm to a patient (US-FDA). Examples include, but are not limited to:
- Errors in the prescribing, transcribing, dispensing, administering, and monitoring of medications;
- Wrong drug, wrong strength, or wrong dose errors;
- Wrong patient errors
- Wrong route of administration errors
- Calculation or preparation errors.

**Adverse Anesthesia Event:** Is any untoward medical occurrence that may present during treatment with an anesthetic product but which does not necessarily have a causal relationship with this treatment.

**Re-scheduling:** Re-scheduling of patients includes cancellation and postponement (beyond 4 hours) of the surgery.

**Incidence of Fall:** The US Department of Veteran Affairs National Centre for Patient Safety defines fall as “Loss of upright position that results in landing on the floor, ground or an object or furniture or a sudden, uncontrolled, unintentional, non-purposeful, downward displacement of the body to the floor/ground or hitting another object like a chair or stair.” It is an event that results in a person coming to rest inadvertently on the ground or floor or other lower level.
**Quality Measure**

**Bed sore:** A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction.

**ALOS:** Length of stay (LOS) is a term used to measure the duration of a single episode of hospitalization. Inpatient days are calculated by subtracting day of admission from day of discharge. However, persons entering and leaving a hospital on the same day have a length of stay of one day.

**Patient Satisfaction:** is defined in terms of the degree to which the patient’s expectations are fulfilled. It is an expression of the gap between the expected and perceived characteristics of a service.

**Waiting Time:** Waiting time for out-patient consultation is the time from which the patient has come to the concerned out-Patient department (it may or may not be the same time as registration) till the time that the concerned consultant (not the junior doctor/resident) begins the Assessment.

<table>
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<tr>
<th><strong>Hospital Committees</strong></th>
<th><strong>Scope</strong></th>
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</thead>
<tbody>
<tr>
<td>Quality Improvement &amp; Patient Safety Committee</td>
<td>Documentation &amp; review of policies, deals with all matters related to quality management system, monitors performance indicators</td>
</tr>
<tr>
<td>Pharmacy &amp; Therapeutic Committee</td>
<td>Managing Hospital Formulary system, monitoring medication usage, to monitor Adverse Drug reactions and to report the same</td>
</tr>
<tr>
<td>Disaster Management and Facility Safety Committee</td>
<td>Planning for handling fire and non – fire emergencies, conducting mock drills, manage disaster events</td>
</tr>
<tr>
<td>Infection Control committee</td>
<td>Training for Infection control, Monitor Hospital associated Infection, ensure compliance to regulatory requirements</td>
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<tr>
<td>Morbidity &amp; Mortality Committee</td>
<td>To review and analyze Morbidity &amp; Mortality records. To take Corrective and Preventive actions, based on analysis</td>
</tr>
<tr>
<td>Patient Satisfaction Committee</td>
<td>Reviewing Feedback Forms and Complaints. Corrective and Preventive Actions based on analysis</td>
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<tr>
<td>CPR &amp; Code Blue Review Committee</td>
<td>To provide continuous CPR training, Analysis of CPR &amp; Code Blue during the period.</td>
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<tr>
<td>Credential Committee</td>
<td>Reviewing and evaluating the qualifications of each practitioner for clinical privileges.</td>
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<tr>
<td>Grievance Redressal Committee</td>
<td>To develop mechanism on employee grievance handling, to handle employee grievances, to take corrective and preventive action</td>
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<tr>
<td>Medical Audit Committee</td>
<td>Reviewing and evaluating Medical records, to discuss relevant quality indicators and analyze, and to discuss corrective and preventive actions.</td>
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<tr>
<td>Radiation Safety Committee</td>
<td>Familiarity with regulations and to ensure that they are followed. To establish program for personnel working in radiation area. Review Radiation safety program</td>
</tr>
<tr>
<td>Hospital Ethics Committee</td>
<td>Monitor hospital practice as per code of medical ethics, to resolve conflict of ethical issues, to monitor clinical research trial</td>
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Patient Experience

Patient's Satisfaction IPD 2015

Patient's Satisfaction OPD 2015
Health Check Up Satisfaction 2015

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<td>I Rate - IMS</td>
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Patient's Say

🌞 K.S : We are very much pleased with the services of your hospital in all areas like nursing staff, doctors, attended staff; all are much co operative. At last when we were discharged from hospital we are happy that all work was done at our bed/room only. We did not have hindrance to wander up and down. We have also received the medical certificate at our room only. And without calling attending staff came with wheelchair and left us at the gate. We are surprise that no one had asked the tip or accept any thing from us. We are very much happy from your services.

🌞 H.T : CIMS hospital has very good Nursing Staff and very experience and high qualified Doctor’s team, due to which CIMS is very popular in Ahmedabad. It is one of the best hospital not even in the India but will be soon global.

🌞 A.K. : I'm very much thankful to CIMS hospital, I recently had undergone Mitral Valve replacement surgery. We’re thankful to Surgeon Dr Dhiren Shah and team for all successful efforts and positive outcome of operation. We are thankful to all CIMS family - Doctors, Sisters, Nurses, Medical Assistants, Lab Staff members, Food Court staff and security staff members for all help and assistance throughout my treatment. We like the innovative H2H (Hospital-to-Home) providing best possible comfort to patient. Also, daily SMS medicine reminders are really impressive. God bless whole CIMS family and wish them great success with their humanitarian / ethical / trustworthy operations to all their patients and their lives.

🌞 P.D. : My grandmother had the surgery of heart and it was successfully done by Dr. Dhaval Naik and according to me the management of the hospital was very good and the service which they provided was also good. The rates of hospital charge etc was comparatively less than other hospitals. I have been through many big hospitals from Ahmedabad and Mumbai but I was satisfied by the CIMS hospital and also by Dr. Dhaval Naik. I have good experience of this hospital.

🌞 S.K : Quality of medical services and monitoring mechanism was superb. No communication gap observed during 5 days of hospitalisation, which gave a complete relief from mental hassle. Team of doctors and their involvements were amazing. Hats off. Very positive environment observed from top to bottom team members of Hospital. Special thanks and compliments to Dr.Shaunak Shah, Dr. Kashyap Sheth, Dr.Amit Chitaliya and Dr. Hiren. Dholakia like to show my gratitude for other doctors of ICU n PICU. Very happy to see a great Team.

🌞 S.M. : We took my 81 year old mom in law to the hospital as she was having problems with breathing and water retention in body. Being a doctor’s daughter myself, I am not so easy to please when it comes to medical treatment. But I must say, we got excellent service with smiles and compassion, later mom was hospitalized in CCU and there too doctors and support staff took great care. Now she is back home and today a doctor even came for home visit. Service beyond expectations! Thank you Dr. Keyur Parikh and all the staff members.
Patient's Say

😊 B.N. : CIMS hospital is heart of all patients. Here is the best doctor team and the best way of treatment. I really and heartily thankful to Dr. Milan Chag who treated me very carefully and nicely, Dr. Milan Chag explained us properly which released our stress. Great experience of treatment, care and expertise

😊 D.S. : Excellent hospital in India. All staffs are fine. Good treatment given by Dr.Urmil Shah. Thanks to all CIMS hospital staff and specially very very thankful to Dr.Urmil Shah for saving my father life.

😊 M.S. : CIMS is the best hospital in India’. All doctors are excellent. Latest machinery and equipment. Dr. Satya Gupta is our doctor. His behaviour is like our family member. I am from Rajasthan but I found best hospital, best doctor and best treatment in Ahmedabad - CIMS hospital, all staff are cooperative and helpful. Every time I thank to CIMS and Dr. Satya Gupta

😊 P.S. : CIMS is the best hospital in India, good doctors and good staff Dr..Vineet Sankhla superb work. Excellent service. I suggest CIMS hospital to others

😊 N.M. : One of my close relative was treated by Dr. Chandarana and we were very much impressed by personal attention of doctor and CIMS staff. Dr. Chandarana is a very knowledgeable doctor who always does the best for his patients. He is friendly, possesses great listening skills, and asks right questions, takes extensive notes and gets down to the bottom of your health concerns. He explains science of the heart in a way that intrigues and doesn’t frighten you as a patient. Also, the best part is that he emphasizes on prevention of disease by educating on good habits (what to eat, working out, weight loss, exercise etc) which is very important for maintaining good health. If you are looking for a great Cardiologist, Dr. Chandarana is definitely one of the very best you’ll ever find!!

😊 V.B. : When my cough and fever could not be cured by the casual medications, and I starting feeling uneasy too, I contacted Dr. Hemang Baxi the cardiologist at CIMS who just from my voice and symptoms figured out the root cause – inefficient functioning of my heart’s valve; only to be confirmed soon by detailed investigations such as Echo cardiogram, chest X-ray, pathology etc. when I wondered whether he had a third eye, Dr. Baxi said experts do have, and put me in ICU for intense medication and round the clock monitoring. In four days I felt all-well but then Dr. Baxi firmly advised me to go for replacement of defective Mitral valve to avoid any risk of recurrence of the problem which could be worse. Prospects of an open heart surgery are always scaring; so I consulted two other reputed cardiologists in hope of an alternative. But all were unanimous on the need of valve replacement. Dr. Baxi ably guided and oversaw through my open heart surgery and post operative care. Soft spoken but clear headed, and with concern for long term health and interest of his patient, Dr. Baxi along with his colleagues has made CIMS hospital a centre of excellence with human touch.
CIMS Hospital has a full-fledged emergency department. CIMS also has the reputation of being one of the fastest responding hospitals in an emergency.

Round the clock ambulance service is available which is equipped with a mobile ICU-set-up to transport critical patients.

At CIMS, ambulances are fully equipped and are capable of beginning emergency care at the site of incident and through the journey to CIMS.

Ambulance services are available in the hospital for 7x24x365 days.

**CIMS Ambulance Services include**

- Doctor
- Trained Nurse
- ECG
- Emergency Medicines
- Stretcher
- Laryngoscope with all size blades
- Silicon Ambu Bag
- Anatomical face mask (all sizes)
- O₂ Venti mask and nasal cannula and nasal catheter
- Guedel’s Air way (all sizes)
- Stylet
- Magill’s forceps
- Portex Endotracheal tubes
- Laryngeal mask Air way
- Combitube
- Working suction Machine
- O₂ Cylinder with Regulator
- IV Cannula
- I.V. Set and Microdrip Set
- Disposable Syringes and Needles
- Defibrillator
- Multipara monitor
- Xylocaine Jelly 2%, spray

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CIMS houses an ECMO equipped Ambulance Service
The Ethics Committee of Care Institute of Medical Sciences, Ahmedabad is an Institutional Ethics Committee established in the year 2006.

- EC of CIMS registered by Central Drug Standard Control Organization, Government of India
- Registration of an Institutional Review Board (IRB)- ECR/206/Inst/Gj/2013

**Ethics Committee of Care Institute of Medical Sciences**

- Well constituted
- Regular meetings
- Open discussion

**Hospital Ethics Committee (HEC)**

- HEC monitors requirements and responsibilities of physician towards patient care besides checking overall hospital performance.

**Scope of Hospital Ethics Committee**

- Monitoring hospital practice as per code of medical ethics, 2002
- To resolve potential conflict of ethical issues and practice
- Provide opinion on hospital related ethical matters

![Number of Protocols Reviewed and Approved](chart.png)
Depression Adversely Affects Long Term Outcomes in Acute Coronary Syndrome Patients: A Real World Scenario

**Background:** Prevalence of depression and coronary heart disease is high in Indian population. This study presents association of depression and acute coronary syndrome (ACS), contributing factors and long term 4 year outcomes.

**Methods:** A total of 1648 ACS patients were enrolled at CIMS from August 2010 through August 2011. Demographic and socioeconomic parameters were collected. Depression was assessed by Montgomery-Asberg Depression Rating Scale (MARDS) by a clinical psychologist. These patients were followed up to determine the clinical outcomes and Quality of Life (QoL) parameters as assessed by SF 36 Health Survey at 1 year, 3 years and 4 years.

**Results:** Of the total of 1648 patients, 39.8% (n = 655) were depressed, with a MARDS score > 6. Prevalence of depression was higher in patients with hypertension (62%), diabetes (36%), and female gender (52.9 vs. 36.53%). Low socioeconomic status had a direct relationship (p < 0.05) on the prevalence of depression. QoL in terms of physical functioning, emotional stability, social functioning, perception of pain and overall general health was poor (p < 0.05) in depressed as compared to non-depressed patients. Mortality increased to two to three fold in depressed patients over time with higher rate of revascularization during first 12 months (Table -1).

**Conclusion:** Prevalence of depression is high in Indian ACS patients, influenced by socioeconomic parameters which stand responsible for poor long term outcomes.
**Real-world Safety and Outcome Measures of Novel Sirolimus Coated Balloon Catheter**

**Background:** Use of drug coated balloon (DCB) is an emerging approach to treat coronary artery disease (CAD). It also stands as an option to treat small vessels; in-stent restenosis and bifurcation lesions. Currently paclitaxel coated balloon (PCB) are deployed. Use of sirolimus coated balloon (SCB) for in-stent restenosis (ISR) is unknown. Newly developed sirolimus coated balloon with nanoparticles can be advantageous in terms of lower in-transit loss, better drug retention, acute drug transfer, targeted drug delivery, reduced drug rejection ratio, controlled drug delivery and improved bioavailability. We aimed to evaluate safety and performance of SCB in the treatment of CAD.

**Methods:** A total of 329 SCB were deployed in 277 patients to treat 299 lesions. The inclusion criteria were real-world CAD patients which were clinically followed up at 1, 3, 6 and 12 months post-procedure. The primary endpoint was procedural success and MACE at 6 months evaluated by quantitative coronary angiography. Major adverse cardiac events (MACE); defined as composite of cardiac death, non-cardiac death, myocardial infarction (MI), target lesion revascularisation (TLR) and target vessel revascularisation (TVR) were assessed.

**Results:** Out of the total 299 lesions, ISR, bifurcation and small vessels were 44.48%, 8.70% and 63.88% respectively. Mean balloon length and diameter (average ± SD) was 22.4 ± 6.48 mm and 2.70 ± 0.46 mm respectively. Of the total 186 patients follow-up at 12 month, overall MACE was 5.38% (n = 10) which included one non-cardiac death (0.53%) and TLR/TVR 4.84% (n = 9).

**Conclusion:** Present SCB shows satisfactory clinical outcomes at 12 months and offers a novel treatment option in CAD patients with in-stent restenosis and small vessels.
**Background:** Chronic pain following cardiac surgery has been reported in 17% to 56% of patients. Prevalence of depression is high in coronary artery disease patients. Pain and depression hold neurological and psychosomatic association. Objective of the present study was to compare the prevalence of post-operative chronic pain following coronary artery bypass graft (CABG) in patients with and without depression.

**Method:** A prospective consented cohort of 542 patients underwent CABG from June 2014 through June 2015 at CIMS. Prevalence of depression was assessed using MADRS (Montgomery-Asberg Depression Rating Scale) questionnaire by a clinical psychologist on admission. Guideline driven anesthetic and analgesic protocols were followed before, during and after surgery. Pain scores (numeric rating scale 0—10) were recorded during the first 7 post-operative days. Six months after cardiac surgery, 348 patients responded when contacted about presence of chronic thoracic pain and its possible impact on their daily lives by means of a questionnaire based on the numerical rating pain scale.

**Results:** Depression was present in 247 of 542 patients (46%); of which 83% of patients were males with a mean age of 57 years. During the first 7 post-operative days, there was no difference in pain perception between depressed and non-depressed patients (P=0.2853). However, at 6 months following surgery, the two groups differed significantly regarding prevalence of pain (P =0.001). In the depressed group, 29.3% (51 out of 174) patients experienced chronic thoracic pain as compared to 3.4% (6 out of 174) non-depressed patients. Depressed patients also experienced more frequent difficulties during their daily chores and occupational activity (P<0.05 vs. non-depressed patients).

**Conclusions:** Prevalence and severity of chronic pain after CABG was higher in depressed (vs. non-depressed) patients affecting their Quality of Life which could influence health care expenditures including referral to physician and increased use of medicines.
Temporal Trends in Young Indian Heart Failure Patients: A Ray of Hope

**Background:** Heart failure (HF) is a leading cause of admission to hospital and death despite hospital to home (H2H) practices. Incidence of HF with respect to age in relation to associated risk factors is uncertain. No such informative data is available for Western India where prevalence of coronary artery disease (CAD) more so in young patients and its associated risk factors is high. We analyzed this trend at CIMS which houses H2H program.

**Methods:** Patient data from 2010 to 2015 was retrieved using in-built hospital informatics software designed on NCDR variables. Based on low ejection fraction criteria (LVEF < 40%), HF patients were identified for analysis. A subgroup analysis in form of two age groups was performed based on premature CAD criteria (age < 55 years). Risk factor based prevalence was determined for both premature CAD group and elder patients with CAD group. For risk estimation, risk ratio was calculated for both cohorts.

**Results:** From 53619 enrolled patients, 7496 (14%) patients were HF patients; of which 3199 (43%) were young HF patients (age < 55 years). Temporal trends depicted a significant decrease in prevalence of HF in young patients (57%) as compared to elderly (17%). Analysis depicted reduced risk of hypertension, diabetes mellitus and obesity comorbidities in premature CAD cohort by 39% (RR = 0.3927, 95% CI [0.35-0.42]), 25% (RR = 0.3415, 95% CI [0.30-0.38]) and 47% (RR = 0.478, 95% CI [0.43-0.52]) respectively.

**Conclusion:** Although prevalence of HF is high in Young Western Indian patients; temporal trends appear to be improving with time.
Effect of Mono-therapy versus Combinational Therapy on Exercise Capacity of Pulmonary Arterial Hypertension Patients: Actual Care Data

**Background:** Pulmonary arterial hypertension (PAH) is a rare, severely debilitating disease with high mortality. There are limited data available on treatment patterns and burden of disease from conditions of actual care.

**Methods:** This analysis assesses the burden of disease for patients with PAH treated with mono-therapy and combination therapies excluding and including beta blockers, calcium channel blockers, digoxin, bosentan, and sildenafil at CIMS from 2012-2014. The primary efficacy end point exercise capacity was measured by positive change in 6 minutes' walk distance (6MWD) (meters) from baseline at 4 weeks and 8 weeks respectively. Physicians comprised mainly pulmonologists and cardiologists.

**Results:** Data were analyzed from 136 patients (mean age: 43.94 ± 16.62 years; females: n = 73(54%)) receiving ≥ 1 of three PAH-specific treatment classes. Major proportion of patients belonged to age group 34-43 years (n = 35). Patients on mono-therapy (n = 47) had the lowest pulmonary vascular resistance values, the highest recorded 6-min walk distance and the lowest recorded levels of dyspnea; sildenafil was the most effective (p < 0.001). Dual therapy was prescribed in majority of patients (n = 72; sildenafil and CCB p < 0.001). Triple therapy (n = 18, sildenafil, digoxin, bosentan/beta blocker p < 0.001) had better clinical impact in comparison to single and double therapy (Table-1).

**Conclusion:** Combination therapy is preferred in PAH patients under actual care. The disease burden is substantial in young adults, more so in females with greater severity of disease requiring aggressive treatment, necessitating optimizing current therapy and including novel and innovative combination options.

<table>
<thead>
<tr>
<th>Therapy</th>
<th>6 MWD (m), mean ± SD</th>
<th>% Improvement</th>
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<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>After 4 week</td>
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<tr>
<td><strong>Single Medication n = 47 (34%)</strong></td>
<td>285.67 ± 36.83</td>
<td>307.05 ± 42.29</td>
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<tr>
<td><strong>Two Medication n = 72 (53%)</strong></td>
<td>282.15 ± 50.13</td>
<td>309.00 ± 51.21</td>
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<tr>
<td><strong>Three Medication n = 17 (12%)</strong></td>
<td>301.00 ± 39.02</td>
<td>359.00 ± 39.28</td>
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CIMS Foundation

An initiative to offer affordable healthcare for all which includes KIDS, trauma patients, geriatrics patients, cancer patients, heart patients, renal/kidney patients, neuro patients and other needy subjects. Major contribution to the foundation is from the trustees, followed by doctors and other donors.

CIMS Foundation Focus Areas

- To support patients and the family members who are socially, emotionally and financially weak.
- To assist people who cannot complete their medical treatment/care due to financial constraints.
- To establish regular camps for providing medical assistance at doorsteps in the rural areas.
- To promote the welfare of children in need, including children with physical disabilities and/or life threatening diseases.
- To provide care, hope and dignity to all patients to fight against the disease and maintain good quality of life.
- Grant of subscriptions and donations to deserving private and public institutions for administering medical relief to the needy people.
- To interact with patients and relatives on daily basis to collect and maintain patient data required for philanthropy.
- To collect donations from donors for contribution and disburse the donation to under privileged patient.

<table>
<thead>
<tr>
<th>Disbursement of Funds</th>
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<tr>
<td></td>
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<tr>
<td>Number of Patients</td>
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<tr>
<td>0  20  40  60  80</td>
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<td>100 120</td>
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<td>2011 2012 2013 2014 2015</td>
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CIMS FOUNDATION welcomes all contributions in the form of cash/cheque/draft/NEFT/wire transfer in favour of “CIMS FOUNDATION”, YES Bank A/c No: 0650946000000330 IFSC Code: YESB0000650. All the Contributions to CIMS FOUNDATION are exempted u/s 80G (5) of the Income Tax Act, Subject to the limits prescribed therein.
Care Institute of Medical Sciences (CIMS) is pleased to present the CIMS Learning Centre (CLC) Program for the year 2016-17. Growth is driven by curiosity; curiosity is assuaged by knowledge. And knowledge is gained by continuing education.

At CIMS CLC, we recognize that teaching and practice go hand in hand. CLC is founded on that premise. To share what we learn and pursue bigger ideas. In today's constantly evolving field of medicine, there is always new to learn. Rapid advances, newer breakthroughs and technological innovations require continuous updates to impact practices.

We do provide best medical facilities to our patients; but we also are driven by the need to learn and teach... to create a vast body of professionals highly committed to the pursuit of world-class healthcare with knowledge at their fingertips. CLC is born of that need. A dream to create a Learning Centre par excellence, setting the highest standards of medical education.

CIMS Learning Centre Program offers continuing medical education opportunities for a variety of faculty and medical providers, including Physicians, Technologists, Researchers and Nurses. From the last 21 years, we have been holding a continuous stream of workshops, CMEs, Fellowships and Annual conference JIC (hosting more than 2000 delegates) to uphold our academic endeavors. CIMS hospital has been approved as American College of Cardiology (ACC) Centre of Excellence 2014-2015, the first & only one in India.
Publication List


13. Parloop Bhatt, Aditi Patel, Parth Parikh, Jawahar Mehta, Piyush Thakar, Aditi Nanavati, Roosha Parikh, Apurva Patel, Keyur Parikh. Depression and Outcome of Patients with Acute Coronary Syndrome: A 3 Year Follow-up Study. Accepted as a Poster Presentation in American College of Cardiology ACC March -2015


International Task Force for Prevention of Cardiovascular Disease: Determining Factors to Assess Primary Prevention Outcomes in Western India Submitted in American College of Cardiology ACC, March 29-31, 2014 Washington DC, USA.

22. Parloop Bhatt, Parth Parikh, Apurva Patel, Milan Chag, Anish Chandarana, Roosha Parikh, Keyur Parikh: Orbital Atherectomy System in Treating Calcified Coronary Lesions: 3-Year Follow-Up in First Human Use Study (ORBIT I Trial). Accepted as a publication Cardiovascular revascularization medicine: including molecular interventions 06/2014; 15(4). DOI: 10.1016/j.carrev.2014.03.004

23. William Wijns, Ph. Gabriel Steg, Laura Mauri, Volkhard Kurowski, Keyur Parikh, Runlin Gao, Christoph Bode, John P. Greenwood, Erik Lipsic, Farqad Alamgir, Tessa Rademaker-Havinga, Eric Boersma, Peter Radke, Frank van Leeuwen, and Edoardo Camenzind for the PROTECT Steering Committee and Investigators- Endeavour zotarolimus-eluting stent reduces stent thrombosis and improves clinical outcomes compared with cypher sirolimus-eluting stent: 4 year results of the PROTECT randomized trial. Accepted and Published in European Heart Journal Advance Access published 08/2014; 35(40). DOI:10.1093/eurheartj/ehu318

14.72 Impact Factor


