



KARNATAKA RADIOLOGY EDUCATION PROGRAM

2025



RADIOLOGY AND IMAGING STANDARDS AND QUALITY

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PROF DEPARTMENT OF RADIO DIAGNOSIS

PRINCIPAL

SRI CHAMUNDESHWARI MEDICAL COLLEGE HOSPITAL & RESEARCH
INSTITUTE

CHANNAPATNA



Introduction



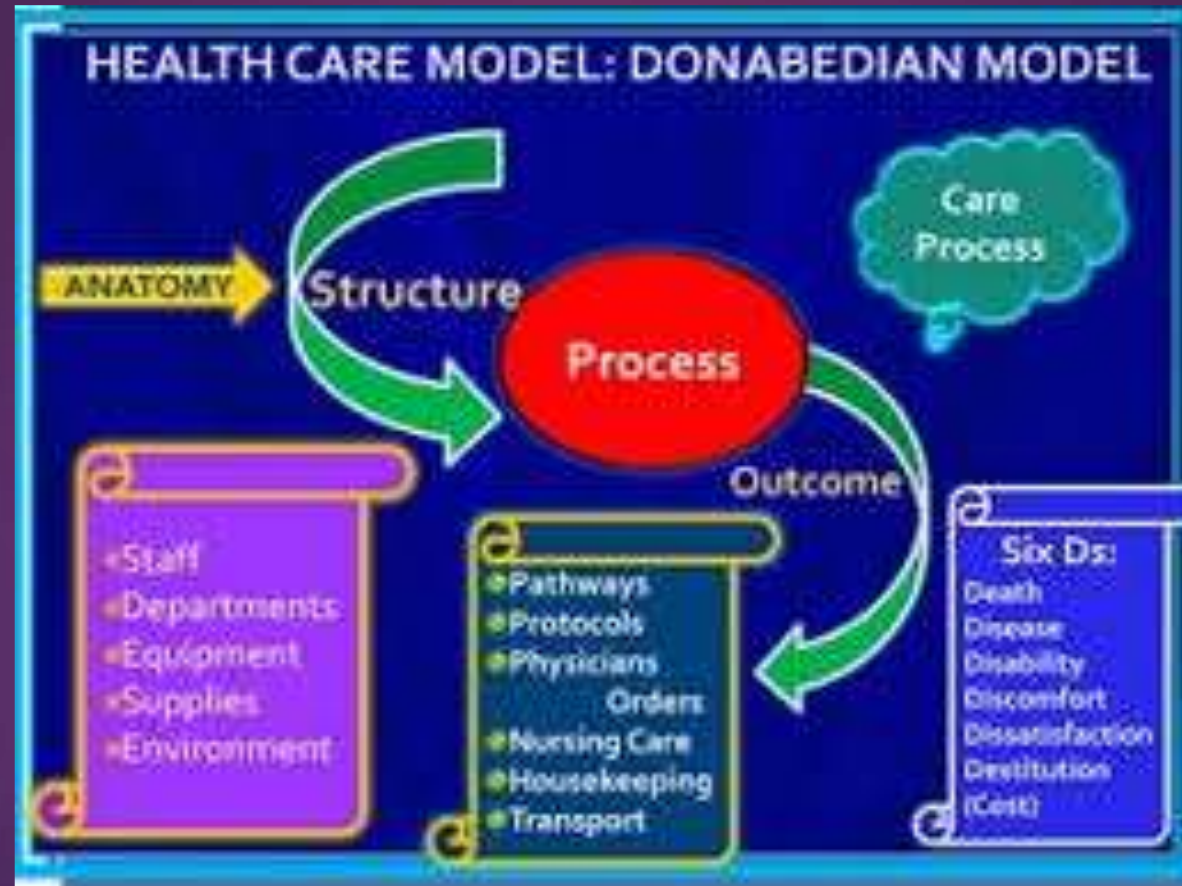
- ▶ Imaging department is one of the pivotal department for diagnosis of diseases. It includes both radiation based and non-radiation based imaging modalities. The key result areas (KRAs) for imaging departments are availability of required **tests, accuracy of diagnosis, safety of patients and staff**, maintenance of turn-around time and optimal utilization of equipment. NABH standards for imaging revolves around these KRAs.



Donabedian Model



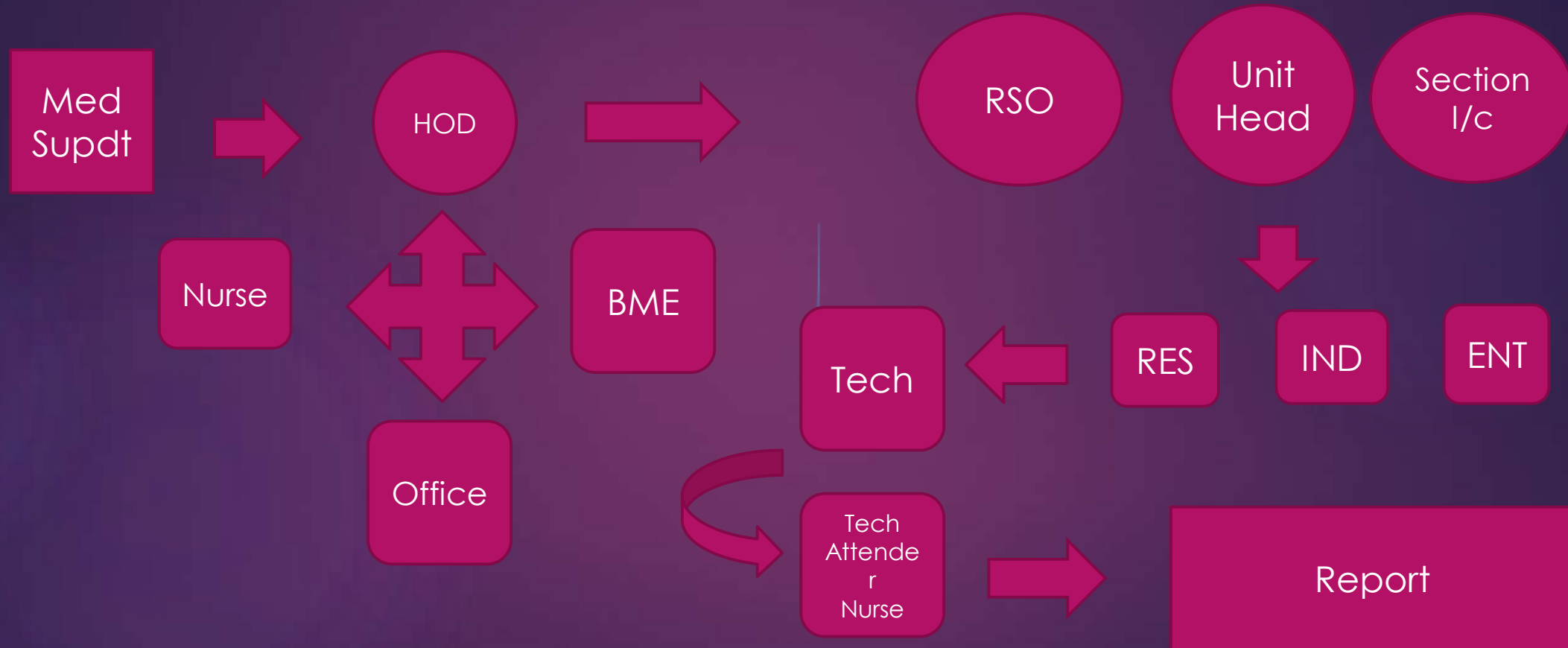
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Infrastructure	Equipments	OPD	Patient waiting	Registration	Report
<p>Department area to be designed as per regulation of AERB/PCPNDT</p> <p>Division of Radiation and Non-Radiation zones</p> <p>Rooms for Doctors, Residents, Technicians, Office staff. Patient changing room and Rest rooms</p>	<p>Radiography including IITV</p> <p>Ultrasound</p> <p>CT Scan</p> <p>MRI</p> <p>PET scan</p> <p>Mammography</p>	<p>Resident/Junior consultant to run OPD check all the requests and suggest any needed inputs ,Details of patient and clinical history.</p> <p>Suggest appropriate Imaging study wherever required.</p>	<p>Spacious waiting area preferably for different modalities with token display and voice to call the patient.</p>	<p>Counter to receive patients with registration of respective imaging study.</p> <p>Tell them the time of study and TOT for collecting the report.</p> <p>Sending to appropriate Imaging study area.</p>	<p>Report dispatch to patients after double verification and inform any suggestions mentioned.</p> <p>To inform if needed any further visits.</p>



Department Organization

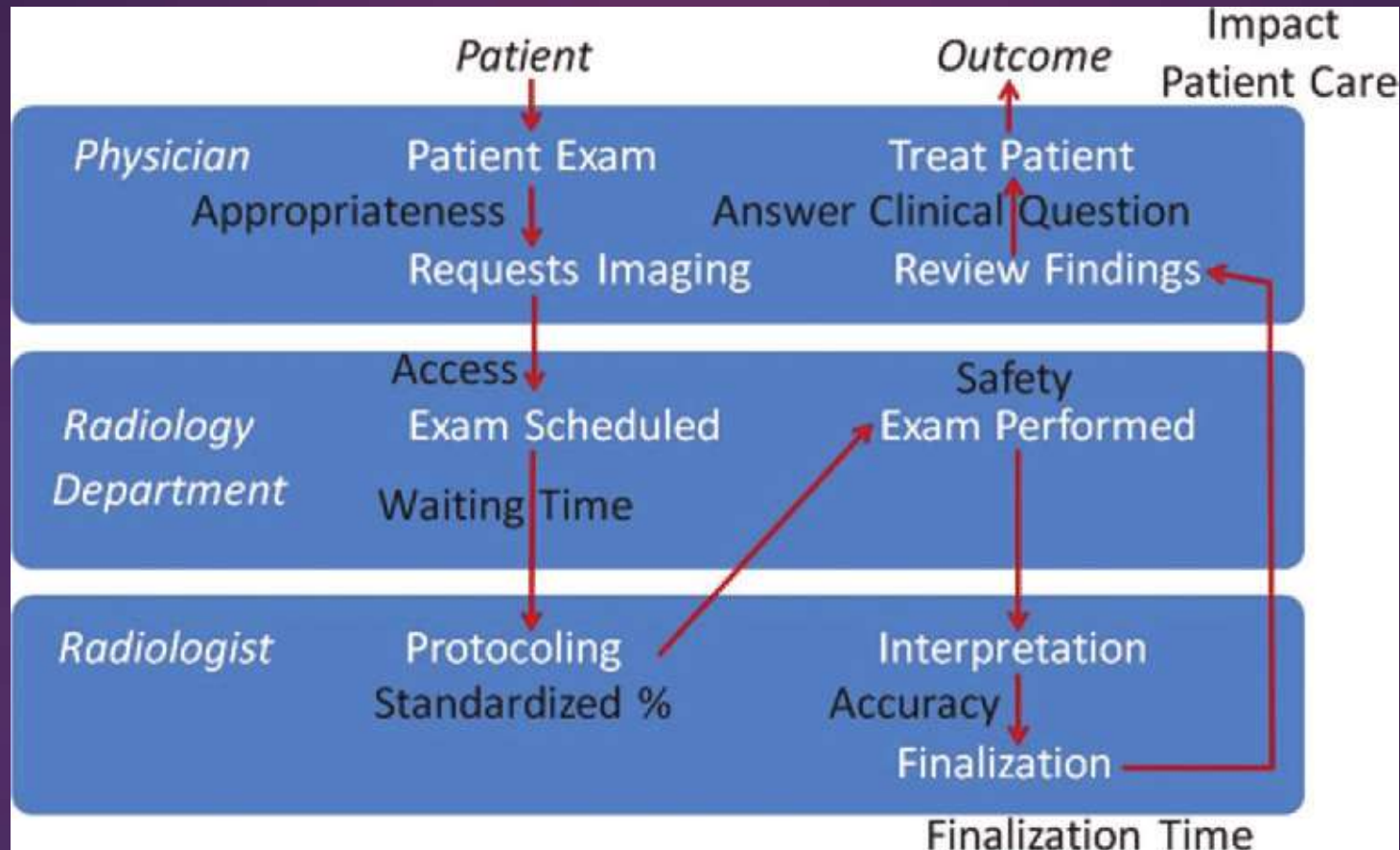




Quality value map



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Quality Process



- ▶ Patient's journey through the clinical imaging

Quality Process

Display – Patient information	Quality manual	Standard Operating Procedures.	Patient education
<ul style="list-style-type: none"> ➤ Services available ➤ Services outsourced ➤ Charges applicable for each service. ➤ Statutory/Regulatory body/Government display policy. ➤ Names of Specialist Doctors. ➤ Signages to services. ➤ Accreditations/Empanelments. ➤ Display of 'No sex determination' ➤ Warning for pregnant ladies and small kids ➤ Warning/hazard lights when radiation equipment is on ➤ Restricted entry signs at appropriate places ➤ Warning signs related to MRI 	<ul style="list-style-type: none"> ➤ Vision and Mission ➤ Quality policy ➤ Scope of services provided. ➤ Quality assurance . 	<ul style="list-style-type: none"> ➤ Patient Identification. ➤ Staff verification. ➤ Staff proficiency . ➤ Consents. ➤ Policy for each procedures/imaging. ➤ Safety policy for HCWs and patients. ➤ Drug reaction. ➤ Bio medical waste 	<ul style="list-style-type: none"> ➤ Rights and responsibility. ➤ During admission. ➤ Before tests ➤ During tests ➤ After tests ➤ Turn Around Time



Quality Process



Report format

- Letterhead with details of hospital , department ,Logo, Address with contact number in case of emergency.
- Referral Doctor name with contact number.
- Date ,Time along with patient ID and details at the time of test .
- Date and time of report generation.
- Radiologist sign with name , registration number, contact number [preferred]



Quality Process



Faculty /Staff professional development programs

- Induction
- Safety Radiation/Emergency codes/Equipment
- AERB/PCPNDT
- HICC
- PPE
- Skill lab
- CME/conference/workshop
- Crash cart



Quality Process



- Layout approval from AERB of each room that houses radiation emitting equipment such as X-ray and CT-scan
- Type approval certificate of all radiation emitting equipment from AERB
- TLD badges for all staff working in radiation areas and 3 monthly report of TLD monitoring results. This is applicable to other areas, which are not within imaging department but has radiation emitting equipment, like Cath lab, C-arm machine in OT etc.
- Designation of a AERB certified radiation safety officer (level 1, 2 or 3) depending upon amount of radiation
- Registration of all ultrasonography machines under PNDT act.
- Registration of personnel doing sonography



Quality Process



Maintenance & Safety

- Regular calibration – maintain register
- Preventive maintenance – maintain file for each equipment
- Breakdown services – maintain log book
- Radiation zone
- Lead apron and Lead door/glass leak verification.
- Fire safety – training to be given.
- One staff to be compulsorily be in Safety committee.



Records and Registers

- ▶ X Ray – IP/OP ,Request, consent, report
- ▶ Sonography – General /OB/ Procedures
- ▶ CT Scan
- ▶ MRI
- ▶ PET
- ▶ Mammography
- ▶ PCPNDT/TLD
- ▶ Inventory – Films / contrast / medicines / linen
- ▶ Report dispatch – Modality wise
- ▶ Separate register and maintenance of medico-legal cases





Quality Indicators

Key Performance Indicators

- % of test result delayed from standard turn-around time
- % compliance to radiation safety practices (done through sample monitoring)
- % of critical results reported to concerned consultant within the given timeframe
- % of variation in peer review findings
- % of variation of test results from clinical findings
- % of re-testing required
- Average waiting time for each modalities





References



► The Future of Medical Imaging: Trends and Perspectives

ISSSR Rotterdam, November 10, 2018

- <https://www.isrtr.org/wp-content/uploads/2023/07/ISRRT-WHO-QA-Guidance-for-General-radiography.pdf>
- Radiology Department Quality (SPO- Structure, Process, Outcome)
<https://www.slideshare.net/SrishtiBhardwaj2>