

NCG-KCDO EMR Requirement (NER)- Radiotherapy Module (Version 1.0)

FOREWORD

The National Cancer Grid (NCG) Electronic Medical Records (EMR) initiative has been well received by the NCG Hospitals and our community of healthcare professionals and stakeholders. The enthusiasm and support we have garnered for this initiative reflect a shared commitment to advancing cancer care through technology and collaboration.

As part of our ongoing efforts to enhance the EMR initiative, we have established distinct subcommittees to focus on specific areas of improvement. These subcommittees bring together subject matter experts in oncology from several NCG hospitals across the country to build the features and functionalities in EMR systems.

The Radiotherapy module has been developed in close collaboration with radiotherapy oncologists from across the NCG, leveraging their insights and expertise to ensure its effectiveness and usability. This module aims to streamline the radiotherapy process, providing oncologists and radiation therapists with the tools they need to deliver optimal care to patients with cancer

This collaborative effort has been informed by thorough industry research, ensuring that the NCG helps EMR vendors build solutions aligned with best practices and meet the diverse needs of our stakeholders.

We share the pre-final version of the Radiotherapy module and welcome feedback, suggestions and guidance from the healthcare professionals involved in treating patients with cancer, healthcare technology companies and providers. Your inputs will help develop EMRs with strong cancer care workflows which in turn will ensure better care, outcomes and value-based care for patients with Cancer across India.

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1. NCG EMR INITIATIVE OVERVIEW

The National Cancer Grid Koita Centre for Digital Oncology (NCG KCDO) launched an initiative to empanel Electronic Medical Records (EMR) vendors and help develop high quality EMR solutions that are appropriate for use in hospitals providing cancer care. This marks a significant milestone in the ongoing efforts to promote digital health and enhance cancer care across the country. Launched with the aim of standardizing and improving clinical practices in oncology, it is a collaborative approach involving leading healthcare institutions, clinicians, and technology partners.

In March 2023, NCG KCDO released the NCG EMR Requirements (NER) – a comprehensive set of EMR requirements needed for effective management of patients with cancer. The NER is a blueprint for the development and implementation of robust EMR systems which will serve general hospitals well, but are also tailored specifically for oncology practices. The NER document is a result of intense deliberations over several months between healthcare professionals involved in cancer care and technology experts, and is available as a digital public good at [NCG-KCDO EMR Initiative](#).

To further support the development of the empanelled EMR systems, the NCG is developing detailed requirements and features in specific areas of oncology including radiotherapy, chemotherapy and surgical oncology. This document details the radiotherapy requirements and features, based on best practices developed at several leading NCG centres.

2. EMR FEATURE BUILDING

A. Radiotherapy Module Overview

Building on the features outlined in the NER (NCG EMR Requirement), the Radiotherapy Module is designed to streamline and optimize the radiotherapy treatment process for patients with cancer. The Radiotherapy Module is designed to enhance the quality, safety, and efficiency of radiotherapy treatment within the NCG network, ultimately improving outcomes for cancer patients and advancing the field of oncology care.

Key features of the Radiotherapy module include:

2.1 Intent of Treatment Management: The Radiotherapy Module provides robust functionality to document and manage the intent of treatment for each patient.

2.2 Role of Treatment Definition: Within the module, the role of treatment for each patient is clearly defined, detailing the specific modalities and techniques planned for delivery.

2.3 Treatment Planning and Scheduling: One of the core functionalities of the Radiotherapy Module is the seamless integration of treatment planning and scheduling.

2.4 Dose Calculation and Optimization: The module incorporates advanced dose calculation and optimization tools to ensure accurate and effective delivery of radiation therapy.

2.5 Toxicity Monitoring and Management: Comprehensive toxicity monitoring and management functionalities are integrated into the Radiotherapy Module, allowing clinicians to systematically assess and document treatment-related toxicities throughout the course of therapy. This includes capturing acute and late toxicities, grading their severity according to established criteria.

2.6 Delivery Tracking and Verification: The module facilitates real-time tracking and verification of treatment delivery, ensuring adherence to prescribed treatment plans and protocols. This includes recording treatment fractions delivered, verifying patient positioning and setup accuracy using image-guided techniques, and documenting any deviations or interruptions in treatment delivery for review and analysis.

2.7 Management of Treatment Interruptions: In cases where treatment interruptions occur due to unforeseen circumstances or patient-related factors, the Radiotherapy Module provides functionality to manage and track these interruptions effectively.

2.8 Follow-Up Plan Documentation: Finally, the module supports the documentation of comprehensive follow-up plans for patients completing radiotherapy treatment.

B. Methodology

The methodology used to build the Radiotherapy Module within the NER (NCG EMR Requirements) document encompasses a systematic and collaborative approach, involving key stakeholders and leveraging best practices across NCG hospitals. Recognizing the need, NCG KCDO formed a subcommittee which consisted of radiation oncologists from leading NCG hospitals across the country. The Radiotherapy Core Team developed the Radiotherapy Module based on their expertise, market research, and discussions with clinical and technology professionals.

The Radiotherapy module is characterized into 4 parts:

RT- Part A: Common data elements- This section standardizes the collection and storage of essential data elements related to radiotherapy treatment, including patient diagnosis, treatment history, treatment intent and patient consent.

RT- Part B: EBRT Module- The section is dedicated to the planning and delivery of external beam radiotherapy treatments (EBRT). It includes tools for treatment planning, dose calculation, and treatment delivery tracking, allowing healthcare providers to precisely target and administer radiation therapy to cancerous tissues while minimizing exposure to surrounding healthy tissues.

RT- Part C: Brachytherapy Module- The section focuses on the planning and delivery of brachytherapy treatments. This module provides tools for treatment planning, source placement

optimization, and dose calculation, enabling healthcare providers to deliver highly targeted radiation therapy with precision and accuracy.

RT- Part D: Discharge Summary- This section facilitates the timely and comprehensive documentation of patient discharge information following any radiotherapy treatment. It includes templates for summarizing treatment course, outcomes, follow-up recommendations, and any relevant instructions or medications.

3. RT- Part A: Common Data Elements

Radiotherapy Module (Common)			
SNo	Data Elements	Clinician's Response	Remarks for Vendors
A	Patient registration number		Auto populate from EMR
B	Type of registration	<input type="checkbox"/> New <input type="checkbox"/> Revisit	
C	Patient referred from	<input type="checkbox"/> In-house <input type="checkbox"/> Outside	
D	Visit Number/Episode number		Auto Populate in numeric form as per the visit
1 Diagnostic Investigations/ Imaging			
A	CT scan	<input type="checkbox"/> Yes <input type="checkbox"/> No	
B	PET CT	<input type="checkbox"/> Yes <input type="checkbox"/> No	
C	MRI	<input type="checkbox"/> Yes <input type="checkbox"/> No	
D	Others, please specify		Open Text box
2 Diagnosis			
A	Treatment Site		Auto Populate from EMR
B	Subsite		Auto Populate from EMR
C	Laterality	<input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Central <input type="checkbox"/> Bi-lateral	Choose one

D	Staging	<input type="checkbox"/> TNM <input type="checkbox"/> Others	Rows II-VI to appear if the user chooses TNM dropdown Row I to appear, if the user chooses 'others' dropdown
I	If others		Open text box
II	Tumor Staging (Clinical)	<input type="checkbox"/> T0 <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> Tx	Choose one
III	Nodal Staging (Clinical)	<input type="checkbox"/> N0 <input type="checkbox"/> N1 <input type="checkbox"/> N2 <input type="checkbox"/> N3 <input type="checkbox"/> Nx	Choose one
IV	Metastatic Staging (Clinical)	<input type="checkbox"/> M0 <input type="checkbox"/> M1 <input type="checkbox"/> Mx	Choose one
V	Tumor Staging (Pathological)	<input type="checkbox"/> T0 <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> Tx <input type="checkbox"/> Others	Choose one
VI	Nodal Staging (Pathological)	<input type="checkbox"/> N0 <input type="checkbox"/> N1 <input type="checkbox"/> N2 <input type="checkbox"/> N3 <input type="checkbox"/> Nx	Choose one
VII	Metastatic Staging (Pathological)	<input type="checkbox"/> M0 <input type="checkbox"/> M1 <input type="checkbox"/> M1a <input type="checkbox"/> M1b <input type="checkbox"/> M1c <input type="checkbox"/> Mx	Choose one
E	Histopathology	<input type="checkbox"/> Adenocarcinoma <input type="checkbox"/> Squamous Carcinoma <input type="checkbox"/> Adenosquamous Carcinoma <input type="checkbox"/> Small Cell Carcinoma <input type="checkbox"/> Others <input type="checkbox"/> Undifferentiated	Choose one

F	Grading	<input type="checkbox"/> Well-Differentiated <input type="checkbox"/> Moderately Differentiated <input type="checkbox"/> Poorly Differentiated <input type="checkbox"/> Indifferentiated	Choose one
3 Tumor Board			
A	Past Tumor board decision		To be enabled only if there was a tumor board held earlier. To auto populate from VTB/MDT Module.
B	Was the past Tumor board decision followed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	To be enabled only if past tumor board discussion was recorded.
I	If no, reason why past tumor board decision was not followed		This row to be enabled only if the user chooses 'No' as an answer to 5B
C	Assign patient to Tumor board	<input type="checkbox"/> Yes <input type="checkbox"/> No	Default option should be 'No'
D	If Yes, Schedule the patient for Tumor board discussion	DD/MM/YYYY	Calendar view, link to VTB / MDT Scheduler
E	Question for Tumor Board discussion		Free text Box. Mention reason and question for discussion
4 Chemotherapy Details			
		To auto populate from medical oncology module. Provide link to Discharge Summary- Chemotherapy module	
A	Type of chemotherapy	<input type="checkbox"/> Neoadjuvant <input type="checkbox"/> Adjuvant <input type="checkbox"/> CT Alone	Choose one
B	No of Cycles received with dates (Start date and end date)		
C	Chemotherapy Regimen details		
D	Chemotherapy Drugs		
E	Chemotherapy Schedule		
F	Toxicity Monitoring Remarks		

5 Treatment			
A	Intent	<input type="checkbox"/> Curative <input type="checkbox"/> Non-Curative	Choose one
B	Role of Radiotherapy	<input type="checkbox"/> Neoadjuvant <input type="checkbox"/> Concurrent <input type="checkbox"/> Adjuvant <input type="checkbox"/> RT Alone <input type="checkbox"/> Prophylactic <input type="checkbox"/> Palliative	Choose one- Options to reflect as per the response selected in 5A. <ul style="list-style-type: none"> For Curative, following options to reflect Neoadjuvant/Concurrent/RT Alone/Prophylactic Non-Curative, Only Palliative option to be made visible.
C	Type of Radiotherapy	<input type="checkbox"/> EBRT <input type="checkbox"/> Brachytherapy <input type="checkbox"/> Both	If EBRT is chosen, go to Part B. If Brachytherapy is chosen, go to Part C. If both is chosen, then first visit Part B (EBRT) and then Part C (Brachytherapy).
D	Patient Consent taken	<input type="checkbox"/> Yes <input type="checkbox"/> No	Click photo and upload image of the consent form with date/ Configure as per NCG Center
E	Patient consent taken date	DD/MM/YYYY	Calendar view
Go to Part B (EBRT) or Part C (Brachytherapy) or both sections based on response to 5C			

4. RT- Part B: EBRT Module

EBRT Module			
SNo	Data Elements	Clinician's Response	Remarks for Vendors
5	Treatment	If multiple options are chosen in row A, then repeat the entire set (Item A through Item M)	
A	Simulation Intent with auto date and time	<input type="checkbox"/> Primary <input type="checkbox"/> Adaptive <input type="checkbox"/> Re-Planning <input type="checkbox"/> Secondary	Choose Multiple option
B	Simulation Imaging	<input type="checkbox"/> CT <input type="checkbox"/> CT/MRI <input type="checkbox"/> CT/ PET <input type="checkbox"/> X-RAY <input type="checkbox"/> Clinical	Choose one
C	Patient Position	<input type="checkbox"/> Supine <input type="checkbox"/> Prone <input type="checkbox"/> Lateral <input type="checkbox"/> Others	Choose one
D	Special Techniques	<input type="checkbox"/> SRS <input type="checkbox"/> SRT <input type="checkbox"/> DIBH <input type="checkbox"/> DEBH <input type="checkbox"/> Gating <input type="checkbox"/> Tracking <input type="checkbox"/> Fiducials	Choose one
E	Total Radiotherapy Dose cGy		Choose highest, 4 digit validation (Numeric)
F	Total Number of Fractions		
G	Fractionation Schedule	<input type="checkbox"/> Alternate Day <input type="checkbox"/> Daily <input type="checkbox"/> Once Weekly <input type="checkbox"/> Others	
H	SIB/Sequential Boost		
I	Dose Per Fraction		Auto Calculate, Formula= Total Radiotherapy dose(5E) /Total Number of Fractions(5F)
J	Name of Machine		Configure by Center

K	Radiotherapy Start Date	DD/MM/YYYY	Date format and Calendar View
L	Peer review	<input type="checkbox"/> Yes <input type="checkbox"/> No	
M	If Yes, Comments		Open Text Box, to appear if user chooses 'Yes' in Row L- Peer review
6 Procedure Details			
A	Treatment Machine	<input type="checkbox"/> Cobalt <input type="checkbox"/> LA <input type="checkbox"/> CyberKnife <input type="checkbox"/> Mr Linac <input type="checkbox"/> Proton	Choose one
B	Systemic Therapy	<input type="checkbox"/> Chemotherapy <input type="checkbox"/> Targeted Therapy <input type="checkbox"/> Immunotherapy <input type="checkbox"/> Combination	Choose one
I	If Combination, Please Specify which two therapies		Free text box, Enabled only when the response to 6B is 'Combination'
C	Radiotherapy Technique	<input type="checkbox"/> Single Portal <input type="checkbox"/> 2 Dimensional <input type="checkbox"/> 3DCRT <input type="checkbox"/> IMRT/VMAT	Choose one
D	Dose Constraints Achieved	<input type="checkbox"/> Yes <input type="checkbox"/> No	
E	If No, Comments		Open text box, enabled only when the response to 6D is 'No'.
7 Treatment Planning			
A	Treatment Verification	<input type="checkbox"/> Yes <input type="checkbox"/> No	
B	Verification Type	<input type="checkbox"/> CBCT <input type="checkbox"/> EPID	
C	Verification Frequency	<input type="checkbox"/> Daily <input type="checkbox"/> Once Weekly <input type="checkbox"/> Thrice Weekly	Choose one
D	Adaptive radiation	<input type="checkbox"/> Yes <input type="checkbox"/> No	

E	If Yes, Reason	<input type="checkbox"/> Tumor Related <input type="checkbox"/> Patient Related <input type="checkbox"/> Treatment Related	Enabled only when the response to 7D is 'Yes'. Choose one
8 Approvals			
E-Signature			
A	Name and Signature-RO (Radiation Oncologist)		
B	Name and Signature-MP (Medical Physician)		
C	Name and Signature-RTT (Radiotherapy Technician)		
9 Toxicity Monitoring			
A	Early Reaction	<input type="checkbox"/> Yes <input type="checkbox"/> No	Row B-D to appear when the response to 9A is 'Yes'. Please provide option to record multiple toxicities. One toxicity to be captured from row B-D. In case of multiple toxicities, repeat rows B-D.
B	Toxicity Grading System	<input type="checkbox"/> RTOG <input type="checkbox"/> CTCAE 5.0	
C	Toxicity Adverse Event-Area		Include all areas of toxicities listed in CTCAE. Example- Skin, Heart, Ear, Lung
D	Grade	<input type="checkbox"/> Grade 0 <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade II <input type="checkbox"/> Grade III <input type="checkbox"/> Grade IV <input type="checkbox"/> Grade V	Please write the entire explanation as per the grade. Example- Grade 0- No change in baseline Grade 1- Follicular, faint or dull erythema
E	Do you want to continue with the treatment	<input type="checkbox"/> Stop the treatment <input type="checkbox"/> Suspend the treatment <input type="checkbox"/> Continue with the same treatment	Choose one to continue
F	Reason to suspend/Stop the treatment		Open text box, EMR to convey the red flag to medical oncologist if there is any suspension/stop/resume and vice versa
G	Resume date	DD/MM/YYYY	Calendar view

H	Radiotherapy Completion Date	DD/MM/YYYY	Date format and Calendar view
10 Current Chemotherapy Details			
A	Concurrent Chemotherapy	<input type="checkbox"/> Yes <input type="checkbox"/> No	Auto populate from the Medical Oncology Module, If chosen yes, go up to Serial no 6-procedure details and confirm the treatment.
B	No of Concurrent Chemotherapy Cycles Given		In numeric, to auto populate from Medical Oncology Module
C	Chemotherapy Drugs		From the Medical Oncology Module
D	Chemotherapy Schedule	<input type="checkbox"/> Weekly <input type="checkbox"/> 3 Weekly <input type="checkbox"/> Others	From the Medical Oncology Module
E	Toxicity Monitoring Remarks		From the Medical Oncology Module
11 Treatment Completion			
A	Radiotherapy Completion	<input type="checkbox"/> Planned <input type="checkbox"/> Unplanned	
B	Reason for Unplanned Radiotherapy Completion		Open text box, to appear if the response to 11A is 'Unplanned'. Also, convey the red flag to medical oncologist
C	Clinical Response at Completion	<input type="checkbox"/> CR <input type="checkbox"/> PR <input type="checkbox"/> SD <input type="checkbox"/> PD	Criteria – WHO/RECIST- Either one of it. Choose one.
D	Weight at Completion (In Kg)		
E	Overall Treatment time (In days)		Radiotherapy Completion date minus Radiotherapy start date= ____ number of days
F	Treatment Gap	<input type="checkbox"/> Yes <input type="checkbox"/> No	
G	Treatment Gap time/duration		Calendar date from and to date
H	Reason for Gap	<input type="checkbox"/> Poor Compliance <input type="checkbox"/> Treatment related Toxicity <input type="checkbox"/> Machine Breakdown	Choose one

		<input type="checkbox"/> Others	
12 Follow up			
A	Follow up date	DD/MM/YYYY	Calendar view
B	Follow up time		Link to appointment calendar
C	Follow up Imaging advised	<input type="checkbox"/> CT scan <input type="checkbox"/> PET CT <input type="checkbox"/> MRI <input type="checkbox"/> Others	Choose one
D	Post Completion treatment Plan		Free text box
E	Advice on completion		To configure as per list provided by NCG Center
13 Go to Part D (Discharge Summary)			

5. RT- Part C: Brachytherapy Module

Brachytherapy Module			
SNo	Data elements	Clinician's Response	Remarks for Vendors
5	Treatment		
A	Clinical Assessment Details		Open text box
B	Plan of treatment		Open text box
6	Previous EBRT Details		
A	Intent	<input type="checkbox"/> Curative <input type="checkbox"/> Non-Curative	To auto populate in case the pt is in-house
B	Total Radiotherapy Dose cGy		Choose highest, 4digit numeric validation
C	Total Number of Fractions		
D	Fractionation Schedule	<input type="checkbox"/> Alternate Day <input type="checkbox"/> Daily <input type="checkbox"/> Once Weekly <input type="checkbox"/> Others	Choose one
E	Dose Per Fraction		Auto Calculate, Formula= Total Radiotherapy dose(6B) /Total Number of Fractions(6C)
F	Dose to OAR 1		Auto Populate from Treatment planning system
G	Dose to OAR 2		Auto Populate from Treatment planning system
H	Dose to OAR 3		Auto Populate from Treatment planning system
I	Dose to OAR 4		Auto Populate from Treatment planning system
7	Procedure Details		
A	Date of Procedure	DD/MM/YYYY	Calendar view
B	Anaesthesia Type		Free text box
C	Implant/ Template Used		Free text box
D	EUA Findings, If any		Free text box

E	No Of tubes/ Needles Used		Free text box- In Numeric
F	No of Planes Used		Free text box- In Numeric
G	Remarks, If any		Free text box
8 Treatment Planning			
A	Imaging for Planning	<input type="checkbox"/> CT <input type="checkbox"/> X-RAY <input type="checkbox"/> MRI	Choose one
B	Total Radiotherapy Dose cGy		Choose highest, 4digit Validation- Numeric
C	Total Number of Fractions		
D	Fractionation Schedule	<input type="checkbox"/> Alternate Day <input type="checkbox"/> Daily <input type="checkbox"/> Once Weekly <input type="checkbox"/> Others	Min 6 hours gap between fractions
E	Dose Per Fraction		Auto Calculate, Formula= Total Radiotherapy dose(8B) /Total Number of Fractions(8C)
F	Dose to OAR 1		
G	Dose to OAR 2		
H	Dose to OAR 3		
I	Dose to OAR 4		
J	GTV Volume/ Coverage		
K	CTV Volume/ Coverage		
9 Approvals			
A	Name and Signature-RO (Radiation Oncologist)		
B	Name and Signature-MP (Medical Physician)		
C	Name and Signature-RTT 1 (Radiotherapy Technician)		
D	Name and Signature-RTT 2 (Radiotherapy Technician)		
10 Treatment Completion			
A	Imaging for Planning	<input type="checkbox"/> CT	Choose one

		<input type="checkbox"/> X-RAY <input type="checkbox"/> MRI	
B	Total Radiotherapy Dose cGy		
C	Total Number of Fractions		
D	Fractionation Delivered		Date and Time
E	Dose per Fraction		Auto Calculate, Formula= Total Radiotherapy dose(10B) /Total Number of Fractions(10C)
F	Add any remarks related to procedure/treatment		Free text box
11 Follow up			
A	Follow up Imaging advised	<input type="checkbox"/> CT-Scan <input type="checkbox"/> PET CT <input type="checkbox"/> MRI <input type="checkbox"/> Others, _____	Multiple Choice possible
B	Post Completion treatment Plan		Free text box
C	Advice on completion		To configure as per list provided by NCG Center
12 Go to Part D (Discharge Summary)			

6. RT- Part D: Discharge Summary

Discharge Summary- Automated			
SNo	Data elements	Clinician's Response	Remarks for Vendors
1	Primary details		
A	Name		Auto Populate from EMR
B	Age		Auto Populate from EMR
C	Gender		Auto Populate from EMR
D	Co morbidities		Auto Populate from EMR
E	Contact No		Auto Populate from EMR
F	Any Remarks		Auto Populate from EMR
G	TNM Staging		Auto Populate from EMR
H	Laterality		Auto Populate from EMR
I	Histopathology		Auto Populate from EMR
J	Date of latest pretreatment Imaging with report		Auto Populate from EMR
H	Intent		Auto Populate from Common RT Module
K	Role of Radiotherapy		Auto Populate from Common RT Module
L	Date of surgery		Auto Populate from EMR, if the pt underwent surgery prior to RT
M	Surgical Histopathology report		Auto Populate from EMR, if the pt underwent surgery prior to RT
N	Weight at completion		NA if brachy is chosen
2	Previous Chemotherapy Details		(Rows A-E to be repeated if both NACT and CTRT are used)
A	Concurrent Chemotherapy		From the Medical Oncology Module
B	No of Concurrent Chemotherapy cycles Given		In numeric, to auto populate from Medical Oncology Module
C	Chemotherapy Drugs		From the Medical Oncology Module

D	Chemotherapy Schedule		From the Medical Oncology Module
E	Toxicity Monitoring Remarks		From the Medical Oncology Module

3 Radiotherapy Summary/ Brachytherapy- On treatment

Visit #/ Episode No	RT Date	Total RT dose cGy	Total no of Fractions	Fractionation Schedule	Early Reaction	Follow up date	Follow up time	Remarks related to Procedure/treatment
1								
2								

4. Toxicity Summary

Auto populate from toxicity monitoring in EBRT (Include Past toxicities too)

Visit No/ Episode No	Toxicity Grading System	Toxicity adverse event	Grade
1			
2			
3			

5 Treatment Interruption

A	Treatment Gap		NA in case of Brachytherapy
B	Treatment Gap time/Duration		NA in case of Brachytherapy
C	Reason for Gap		NA in case of Brachytherapy

6 Follow Up

Auto populate

A	Follow up Imaging advised		
B	Post completion treatment plan		
C	Advice on completion		

7. Appendices

Appendix 1- Glossary of terms

Abbreviations	
NCG	National Cancer Grid
EMR	Electronic Medical Record
NER	NCG EMR Requirements
LEAP	Leading EMR Adoption Program
EBRT	External Beam Radiation Therapy
VTB	Virtual Tumor Board
MDTB	Multi-Disciplinary Tumor Board
CT	Chemotherapy
RT	Radiotherapy
TNM	Tumor Node Metastases (Cancer Staging)
SRS	Stereotactic Radiosurgery
SRT	Stereotactic Radiotherapy
DIBH	Deep Inspiration Breath-hold
DEBH	Deep Expiration Breath-hold
SIB	Simultaneous Integrated Boost
cGy	CentiGray- A unit of absorbed radiation dose equal to one- hundredth of a Gray, or 1 rad
LA	Linear Accelerator
MR LINAC	Magnetic Resonance Linear Accelerator
3DCRT	3D Conformal Radiation Therapy
IMRT	Intensity Modulated Radiation Therapy
VMAT	Volumetric Modulated Arc Therapy
CBCT	Cone Beam Computed Tomography
EPID	Electronic Portal Imaging Device
RTOG	Radiation Therapy Oncology Group
CTCAE	Common Terminology Criteria for Adverse Events
CR	Complete Response
PR	Partial Response
SD	Stable Disease
PD	Progressive Disease
TSH	Thyroid Stimulating Hormone
OAR	Organs at Risk
EUA	Examination Under Anaesthesia
GTV	Gross Tumor Volume
CTV	Clinical Target Volume
MRI	Magnetic Resonance Imaging

CT-Scan	Computed Tomography Scan
NACT	Neo-adjuvant Chemotherapy
CTRT	Chemoradiation

Appendix 2- NER Document

1. [ncg-emr-requirements-ner.pdf \(kcdo.in\)](https://www.kcdo.in/ncg-emr-requirements-ner.pdf)