

UNC Hospitals Radiation Therapy Program Clinical Handbook

Academic Year 2024-2025

Last updated: 08/2024

Introduction

The UNC Hospitals radiation therapy student is responsible for completing clinical requirements and competencies as outlined in this handbook. The program director and clinical preceptor/instructors are available to help the student with these items.

The student is not to take the place of qualified personnel while in the clinical setting.

Specific requirements for each rotation vary according to the rotation. The student will always be assigned to work with an ARRT-registered radiation therapist or other qualified personnel depending on the area of rotation.

The student will participate in all clinical activities as part of the Radiation Oncology team. He/she will prove competence in a variety of simulation and treatment procedures and must demonstrate continued competency throughout the program. The student must never work alone and if he/she is put into a situation in which he/she feels uncomfortable, the student should report this to the clinical preceptor/instructor and/or program director.

The established clinical competencies will assist the student in obtaining competency in general patient care procedures, quality control procedures, simulation procedures, dosimetry, treatment accessory devices, participatory procedures, and radiation treatment procedures.

Any questions concerning the information in this handbook should be directed to the program director and/or clinical preceptor.

Program Director: Jessica Mathis, PhD, RT(R)(T), CMD; Jessica.Church@unchealth.unc.edu

Technical Manager/Clinical Preceptor: Talisha Person, MBA, RT(R)(T);

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Clinical Instructors: All UNC ARRT-registered radiation therapists

Direct Supervision

To ensure the safety of students and patients in the clinical setting, the student must be directly supervised during all patient procedures.

The student cannot work independently or unsupervised. There are NO EXCEPTIONS to this policy!

The clinical preceptor/instructor must at all times:

1. Be present during patient setup and review the accuracy of the students' performance in relation to the setup
2. Be present and directly observe the student operating at the console
 - a. The student is restricted from "beaming on" without the verbal approval of the supervising radiation therapist

The student must be directly supervised 100% of the time regardless of his/her demonstration of competency.

Clinical Attendance

Traditional student clinical hours are 8:00 a.m. – 4:30 p.m.

The student will be required to come to the clinic prior to 8:00 a.m. to observe and perform morning warm-ups in the Spring semester.

The student is required to take a one-hour lunch break.

All clinical hours should be documented on the student's time sheet.

When the student is not in his/her assigned area, he/she should notify his/her clinical preceptor/instructor.

The student is allotted five "vacation" days, one "personal" day, and two interview days for the year. If he/she chooses to take a vacation, personal, or interview day on a clinic day, the student should notify the clinical preceptor/instructor and program director prior to 8:00 a.m.

The student should never ask the clinical preceptor/instructor for permission to leave early.

Clinical Dress Code

The student is to maintain a professional appearance in the clinical setting, as he/she is a representative of the program, department, and institution.

The program expects the student to present a professional image to patients and the public while on campus.

The student must be in uniform (royal blue scrubs) during clinical hours. The student's scrubs and shoes must be clean, properly fitted, and appropriate to the clinical situation. Scrubs should be loose for easy movement.

The student is also expected to be clean and neat and to practice good hygiene. Hair must be clean, combed, and appear professional and natural. Strong-smelling perfume, cologne, and/or deodorants are prohibited.

Jewelry should be kept to a minimum and fingernails should be clean and short. Artificial nails must not be worn.

The student is required to wear his/her identification badge in a visible area. He/she must also wear his/her radiation badge. If he/she attends clinical education without his/her badges, he/she will be sent to retrieve them.

Mobile Electronic Devices

Texting, e-mailing, gaming, listening to music/podcasts, and browsing the Internet are inappropriate and disruptive during clinical activities.

In the clinic, the use of cell phones and cell-phone features of smart watches and other mobile electronic devices is restricted. To ensure the safety of patients, and that the student is focused on learning while in the clinical setting, the use of such devices is prohibited while the student is in proximity of patients, providing patient care, or in public areas of the department where he/she would expect to encounter patients. At other times, devices may be used in non-patient flow areas such as the breakrooms, classroom, and back hallways.

Clinical Rotation Assignments

Clinical rotation assignments will be arranged by the program director and must be followed. While the assignments will be shared with the supervising radiation therapists, it is the student's responsibility to know and report to the clinical area to which he/she is assigned.

Demonstrating Clinical Competency

To ensure clinical competency, the following guidelines have been established for the assessment of the student performing a competency examination.

The program faculty and UNC Hospitals' radiation therapists **with at least one year of working radiation therapy experience** are authorized to evaluate the student's clinical competencies. Group review may be used when deemed appropriate by the clinical preceptor or program director.

Clinical competencies must be scheduled so that in the event the student fails the competency he/she will have time to repeat the competency on the same patient. The student cannot attempt a competency on the patient's last day of treatment or on the student's last day of rotation.

The student must notify the radiation therapist of his/her readiness to perform the procedure and desire to demonstrate competency. The competency should then be completed unassisted. Once the student begins the competency process, he/she cannot change the performance to practice.

All (relevant) items on the appropriate Competency Evaluation form must be completed. These are intended to represent the primary functions of the radiation therapist during the simulation or treatment procedure. It is expected that the radiation therapist will evaluate the student fairly, and according to the form.

The evaluating radiation therapist should rate the student's performance for each item on the first page of the form. Each item counts for up to 4 points (Student can explain, do, and comprehend task (4); Student can explain, do task, and answer questions (3); Student can do task with no explanations (2); Student can partially do task (1); and Student cannot do task (0)), for a potential total of 100 points.

Likewise, the evaluating radiation therapist should rate the student's performance for the first section (Student's Overall Comprehension Level of Patient Set-Up and Chart Write-Up) on the second page of the form. If the student demonstrates comprehensive knowledge, he/she will receive a score of 5, above average understanding a score of 4, and so on.

Similarly, the evaluating radiation therapist should rate the student's performance for the second section (Student's Behavioral Characteristics) on the second page of the form. For this section, the student can receive a potential total of 5 points. If he/she proceeds confidently and skillfully, he/she will receive 5 points. For each hesitation/uncertainty, instance requiring assistance, and question his/her score will decrease by 0.5 points.

After completing the form, the evaluating radiation therapist should discuss his/her performance with the student. Review of the completed competency form should be done in private.

If the student “fails,” meaning he/she does not receive a total score of 80% (88/110), he/she should repeat the procedure documenting and discussing his/her strengths and areas of improvement until she has reasonably mastered the simulation or treatment procedure. The repeated competency may be for the same procedure, but a different patient.

The evaluating instructor retains the right to fail a student on a competency evaluation during which a primary duty is neglected but the reason for the failure must be linked back to the activities on the form. Any failed competencies must be documented and repeated.

The student should not attempt any treatments he/she does not feel comfortable.

The student’s performance is limited to the patient’s scheduled time plus ten (10) minutes.

Clinical Paperwork

1. Clinical goals form
2. Self-evaluation
3. Weekly evaluation
4. Evaluation of the clinical environment
5. Overall evaluation
6. Competencies

1. The **clinical goals form** is to be completed by the student prior to the second day of the clinical rotation. He/she should detail his/her progress at UNC Hospitals/other facilities and establish goals for the rotation. This includes documentation of his/her needed competencies. The completed form should be signed by a clinical instructor by the end of the third day of the rotation.

2. The **self-evaluation** reflects the student's perception of his/her clinical performance each week. The form should be completed by the first day of the following week.

3. The **weekly evaluation** reflects the clinical instructor's perception of the student's clinical performance each week. **The clinical instructor should consider the student's performance based on the student's level of clinical experience.** The form should be completed by the first day of the following week.

4. The **evaluation of the clinical environment** reflects the student's perception of the clinical environment. The form should be completed after each formal machine assignment. A summary report of the students' perceptions will be provided to the chief radiation therapist.

4. The **overall evaluation** reflects the clinical instructor's perception of the student's clinical performance throughout the rotation. This is based on feedback from the clinical instructors. The form should be completed by the end of the student's rotation. Again, the **clinical instructor should consider the student's performance based on the student's level of clinical experience.**

5. The program follows the ARRT's list of required **competencies** (on next page). Any competency forms should be completed by the end of the student's rotation.

All clinical paperwork is due to the program director. Paperwork will be collected weekly.

General Patient Care Procedures

- O₂ administration
- Patient transfer

Quality Control Procedures

- Linear Accelerator
 - Laser alignment
 - Imaging systems
 - Beam output and symmetry
- Simulator
 - Laser alignment
 - QC water phantom (e.g., CT number)

Simulation Procedures

- Brain
- Head and neck
- Thorax
- Breast
- Pelvis
- Skeletal

Treatment Accessory Devices

- Custom bolus
- Custom immobilization devices (e.g., foaming agents, vacuum bags)
- Thermoplastic mold

Participatory Procedures

- Total body irradiation (TBI) treatment
- Craniospinal treatment
- Brachytherapy treatment
- SBRT/SRS treatment
- Special treatment simulation procedure (e.g., 4D CT, SBRT, gating, or brachytherapy)
- Custom block process (photon or electron)*
 - May or may not include actual block fabrication (e.g., third party outsourcing)

Radiation Treatment Procedures

- Brain
 - Primary
 - Metastatic
- Head and neck
 - Multi-field
- Thorax
 - Multi-field (non-IMRT)

- IMRT and/or volumetric arc therapy
- Breast
 - Tangents only
 - Tangents with supraclavicular
 - Tangents with supraclavicular and posterior axilla boost
 - Special set-up (e.g., photon or electron boost, prone, IMRT, gating)
- Abdomen
 - Multi-field
- Pelvis
 - Multi-field supine
 - Multi-field prone
- Skeletal
 - Multi-field spine
 - Extremity
- Electron fields
 - Single
- Photon or electron
 - Abutting fields

Multi-field includes two or more fields, and may include 3D conformal, IMRT and/or volumetric arc therapy (unless specified otherwise).

UNC Hospitals Radiation Therapy Program

Name: _____

Rotation Dates: _____

Clinical Goal Sheet

A major task(s) I have completed to date is/are:

A task(s) I wish to complete this rotation is/are:

I have the following competencies to complete:

Radiation Therapist Acknowledgement: _____

Date: _____

**UNC Hospitals Radiation Therapy Program
Self-Evaluation**

Name: _____
Rotation Dates: _____

Considering your level of experience, evaluate yourself according to the following criteria. Comments and suggestions are very important components of evaluation feedback, so please include when possible.

	Weak				Strong
	1	2	3	4	5
PATIENT CARE SKILLS Patient safety, patient comfort, awareness of patient condition, patient emotional support, patient radiation protection					

COMMENTS:

	1	2	3	4	5
SIMULATOR/LINAC SKILLS Psychomotor skills, use of console controls, use of room controls					

COMMENTS:

	1	2	3	4	5
CHART SKILLS Chart interpretation, documentation					

COMMENTS:

	1	2	3	4	5
ORGANIZATIONAL SKILLS Cleaning and stocking rooms, preparation for patients, prioritizing procedures/patients, following through with all aspects of procedures					

COMMENTS:

	1	2	3	4	5
TEAMWORK SKILLS Communication skills, motivation, dependability, assists staff and other students					

COMMENTS:

Student's signature: _____ Date: _____

**UNC Hospitals Radiation Therapy Program
Weekly Clinical Evaluation**

Student name: _____ Date: _____

Consider each item separately and rate each item independently of all others. Circle the rating that indicates the extent to which you agree with each statement, based on the student's level of experience. Please do not skip any rating. If you do not know about a particular area, please circle N/A.

5 = strongly agree; 4 = generally agree; 3 = neutral (acceptable); 2 = generally disagree; 1 = strongly disagree; N/A = not applicable

I. Knowledge Base (cognitive domain)

The student...

1. Has the oncology care knowledge necessary to function in a healthcare setting	5	4	3	2	1	N/A
2. Has the general medical knowledge base necessary to function in a healthcare setting	5	4	3	2	1	N/A
3. Collects data from charts and patients	5	4	3	2	1	N/A
4. Implements patient data	5	4	3	2	1	N/A
5. Evaluates treatment techniques in order to perform appropriate procedures	5	4	3	2	1	N/A
6. Uses sound judgement while functioning in a healthcare setting	5	4	3	2	1	N/A

Comments:

II. Clinical Proficiency (psychomotor domain)

The student...

1. Performs a broad range of radiation therapy examinations	5	4	3	2	1	N/A
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2. Has skills to critique treatment plans	5	4	3	2	1	N/A
3. Integrates anatomy, treatment planning, and radiation therapy	5	4	3	2	1	N/A
4. Uses software to analyze, evaluate, and implement data	5	4	3	2	1	N/A

Comments:

III. Behavioral Skills (affective domain)

The student...

1. Communicates effectively within a healthcare setting	5	4	3	2	1	N/A
2. Conducts him/herself in an ethical and professional manner	5	4	3	2	1	N/A
3. Manages time efficiently while functioning in a healthcare setting	5	4	3	2	1	N/A

Comments:

Clinical instructor (print): _____

Clinical Instructor's signature: _____ Date: _____

**UNC Hospitals Radiation Therapy Program
Evaluation of Clinical Environment**

Rotation: _____

Dates: _____

Clinical Instructor(s): _____

Please evaluate your clinical environment considering the following criteria:

Clinical Staff

	Never	Rarely	Sometimes	Often	Always
Maintains a friendly, professional attitude towards students	1	2	3	4	5
Maintains a professional attitude towards his/her career; speaks positively about students entering the profession	1	2	3	4	5
Demonstrates and explains software/equipment	1	2	3	4	5
Demonstrates and explains exams/treatments	1	2	3	4	5
Encourages students to ask questions	1	2	3	4	5
Encourages students to attempt exams/treatments with supervision	1	2	3	4	5
Points out items of importance; assists in correcting errors	1	2	3	4	5
Encourages an environment conducive to learning; is patient, considerate, and helpful	1	2	3	4	5

Clinical Environment

Was this your first rotation in this clinical area?	YES	or	NO		
The clinical area had a steady patient flow	1	2	3	4	5
I was exposed to a variety of procedures	1	2	3	4	5
My assigned area was consistently staffed with clinical personnel	1	2	3	4	5
My clinical environment was conducive to learning (organized, efficient, resourceful)	1	2	3	4	5

Student's signature: _____

Date: _____

**UNC Hospitals Radiation Therapy Program
Overall Clinical Evaluation**

Student Name: _____

Criteria:

	High			Low	
Clinical Adaptability	5	4	3	2	1
Professional Appearance	5	4	3	2	1
Efficient Use of Educational Opportunities	5	4	3	2	1
Clinical Performance	5	4	3	2	1

Clinical Instructor (print):) _____

Clinical Instructor's Signature:

Date:

Comments:

**UNC Hospitals Radiation Therapy Program
CT Simulation Competency Evaluation**

Student:	Grading Explanation: 5 Student can explain, do, and comprehend task (4) 4 Student can explain, do task, and answer (3) questions 3 Student can do task with no explanations (2) 2 Student can partially do task (1) 1 Student cannot do task (0)
Date:	
Procedure:	
Circle One: Simulated OR Clinical	

		5	4	3	2	1
1	Checks for consent					
2	Checks that Assessment is in and approved					
3	Prepares room					
4	Registers patient in CT					
5	Greets and assists correct patient to room and verifies name and DOB					
6	Explains procedure and confirms understanding					
7	Takes and downloads photos					
8	Answers all patient questions					
9	States patient diagnosis & stage					
10	Attends to patient modesty and comfort					
11	Positions patient in reproducible/safe manner					
12	Texts/pages radiation oncologist to CT/Sim					
13	Uses correct contrast media or catheters to localize/identify structures					
14	Instructs patient to hold still					
15	Sets program ranges for topogram					
16	Assists radiation oncologist(s) with all activities					
17	Transfers images and sets table height					
18	Navigates through tumor loc including marking iso					
19	Sends iso(s) to lasers and tattoos patient/marks on mask					
20	Fills out patient set-up sheet and enters information into MOSAIQ					
21	Schedules patient					
22	Explains appointments and performs clinic tour					
23	Completes QCL					
24	Charges patient appropriately					
25	Completes exam in timely manner					

Clinical Instructor (Print): _____

Clinical Instructor's Signature: _____ Date: _____

Student's Signature: _____ Date: _____

Student's Overall Comprehension Level of Patient Set-Up and Chart Write-Up

- The student demonstrates **comprehensive knowledge** of basic and advanced concepts beyond requirements of the procedure (5)
- The student demonstrates **above average understanding** of basic concepts applicable to the procedure (4)
- The student demonstrates **adequate knowledge** of the essential elements of the procedure (3)
- The student shows **limited understanding** of the essential concepts related to the procedure (2)
- The student has **inadequate** knowledge of even the basic concepts related to the procedure (1)

Student's Behavioral Characteristics

- In performing the patient set-up, the student proceeded **confidently and skillfully without** any hesitation, assistance from the clinical instructor, or asking any questions (5)
- In performing the patient set-up, the student proceeded **confidently and skillfully with** (check all that apply): 1(4.5), 2(4), 3(3.5)
- one or two minor hesitations or seeming uncertainty(ies)
 - one or two instances requiring minor assistance from the clinical instructor
 - one or two minor questions being asked
 - other _____
- In performing the patient set-up, the student was **confident and skillful with** (check all that apply): 1(3), 2(2.5), 3(2)
- more than one or two minor OR one major hesitation(s) or uncertainty(ies)
 - more than one or two minor OR one major instance(s) requiring assistance from the clinical instructor
 - more than one or two minor OR one major question(s) being asked
 - other _____
- In performing the patient set-up, the student was **lacking in confidence and/or skill** with (check all that apply): 1(1.5), 2(1), 3(0.5)
- more than one or two minor OR one major hesitation(s) or uncertainty(ies)
 - more than one or two minor OR one major instance(s) requiring assistance from the clinical instructor
 - more than one or two minor OR one major question(s) being asked
 - other _____
- In performing the patient set-up, the student exhibited carelessness, lack of attention to detail, little self-confidence, and **should repeat the procedure** (0)

**UNC Hospitals Radiation Therapy Program
Treatment Clinical Competency Evaluation**

Student:	Grading Explanation: 5 Student can explain, do, and comprehend task (4) 4 Student can explain, do task, and answer (3) questions 3 Student can do task with no explanations (2) 2 Student can partially do task (1) 1 Student cannot do task (0)
Date:	
Procedure:	
Circle One: Simulated OR Clinical	

		5	4	3	2	1
1	Prepares treatment room					
2	Reviews chart prior to prepping patient for treatment					
3	Greets and assists correct patient to treatment room and meets patient's needs (hearing, wheelchair, etc.)					
4	Explains procedure and confirms understanding					
5	Answers all patient questions					
6	Attends to patient modesty and comfort					
7	States patient's diagnosis & stage					
8	Reproduces set-up from chart					
9	Further immobilizes patient if necessary					
10	Positions treatment machine to reproduce set-up in chart					
11	Assures light fields align with marks/tattoos					
12	Inserts correct beam modifier(s)/wedge(s)/compensator(s)					
13	Positions bolus material					
14	Maintains patient markings					
15	Re-checks with set-up in chart					
16	Obtains images when needed					
17	Analyzes images when needed					
18	Instructs patient to remain still during treatment					
19	Downloads/treats correct field(s)					
20	Operates console computer					
21	Monitors patient visually					
22	Monitors linac recordings					
23	Records treatment/charges patient appropriately					
24	Refers patient to appropriate medical personnel					
25	Completes procedure in a reasonable time period					

Clinical Instructor (Print): _____

Clinical Instructor's Signature: _____ Date: _____

Student's Signature: _____ Date: _____

Student's Overall Comprehension Level of Patient Set-Up and Chart Write-Up

- The student demonstrates **comprehensive knowledge** of basic and advanced concepts beyond requirements of the procedure (5)
- The student demonstrates **above average understanding** of basic concepts applicable to the procedure (4)
- The student demonstrates **adequate knowledge** of the essential elements of the procedure (3)
- The student shows **limited understanding** of the essential concepts related to the procedure (2)
- The student has **inadequate** knowledge of even the basic concepts related to the procedure (1)

Student's Behavioral Characteristics

- In performing the patient set-up, the student proceeded **confidently and skillfully without** any hesitation, assistance from the clinical instructor, or asking any questions (5)
- In performing the patient set-up, the student proceeded **confidently and skillfully with** (check all that apply): 1(4.5), 2(4), 3(3.5)
 - one or two minor hesitations or seeming uncertainty(ies)
 - one or two instances requiring minor assistance from the clinical instructor
 - one or two minor questions being asked
 - other _____
- In performing the patient set-up, the student was **confident and skillful with** (check all that apply): 1(3), 2(2.5), 3(2)
 - more than one or two minor OR one major hesitation(s) or uncertainty(ies)
 - more than one or two minor OR one major instance(s) requiring assistance from the clinical instructor
 - more than one or two minor OR one major question(s) being asked
 - other _____
- In performing the patient set-up, the student was **lacking in confidence and/or skill** with (check all that apply): 1(1.5), 2(1), 3(0.5)
 - more than one or two minor OR one major hesitation(s) or uncertainty(ies)
 - more than one or two minor OR one major instance(s) requiring assistance from the clinical instructor
 - more than one or two minor OR one major question(s) being asked
 - other _____
- In performing the patient set-up, the student exhibited carelessness, lack of attention to detail, little self-confidence, and **should repeat the procedure** (0)

Continued Clinical Competency

To ensure the student maintains competency in the clinic, he/she must continue to prove competent in a variety of clinical procedures.

To demonstrate continued competency, the student will be asked to repeat any competency completed in the Fall semester again in the Spring semester; likewise, he/she will be asked to repeat any competency completed in the Fall or Spring semesters again in the Summer semester. The student may not perform a competency and reassessment on the same procedure in the same rotation. Continued competency assessments may be initiated by the student, clinical preceptor/instructor, or the program director.

The program director will provide the clinical instructors with a list of completed competencies prior to each formal rotation assignment. A clinical instructor may request a reassessment of the student's performance on any competency in which he/she has previously demonstrated competency.

A competency may be assessed for continued competency more than one time.

The clinical instructor will inform the student that he/she is being reassessed before the examination begins.

The student must perform the continued competency assessment unassisted and he/she will be evaluated by the radiation therapist who is observing his/her performance.

The same performance criteria used for competency evaluations will be applied.

- If the student fails the continued competency assessment with a score of less than 80%, he/she will be required to undergo remediation with the program director and clinical instructor, discussing his/her mistakes and plan for a second attempt. The student will then be required to perform the continued competency as a second attempt.

The student will be responsible for achieving the specified number of continued competency assessments as indicated in the syllabi for clinical education courses.