Washtenaw Community College Comprehensive Report

RAD 261 Patient Care in Computed Tomography (CT)
Effective Term: Fall 2022

Course Cover

College: Health Sciences
Division: Health Sciences
Department: Allied Health
Discipline: Radiography
Course Number: 261
Org Number: 15600
Full Course Title: Patient Care in Computed Tomography (CT)
Transcript Title: Patient Care in CT
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
Course description
Outcomes/Assessment
Objectives/Evaluation
Rationale: This course could not be assessed because the assessment tools specified do not exist or the outcome was outside the CT technologist's scope of practice. Changes have also occurred in the field of Computed Tomography and what technologists are responsible for.
Proposed Start Semester: Fall 2022
Course Description: In this course, students will learn the theory and practice of the basic techniques of venipuncture and the administration of contrast media for computed tomography (CT) procedures. Other topics include patient education and care, uses of and contraindications for contrasting media, and responding to medical emergencies during computed tomography (CT) procedures. This is a course for certified technologists, ARRT (R), ARRT (N), ARRT (T), and (CNMT), who are admitted to the computed tomography (CT) program.

Course Credit Hours

Variable hours: No
Credits: 1
Lecture Hours: Instructor: 15 **Student:** 15
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 15 **Student:** 15
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

No Level Required

Requisites

Enrollment Restrictions

Admission to the Computed Tomography Post-Associate Certificate (CPCTO) program

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Determine the appropriate patient care for computed tomography (CT) procedures.
   Assessment 1
   Assessment Tool: Outcome-related patient care quiz questions
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome-related questions.
   Who will score and analyze the data: CT program faculty

2. Apply knowledge of contrast media to determine indications and contraindication for computed tomography (CT) procedures.
   Assessment 1
   Assessment Tool: Outcome-related scenario-based quiz questions
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome-related questions.
   Who will score and analyze the data: Departmental faculty

3. Recognize the indicators/symptoms of patient distress during computed tomography (CT) procedures and determine the appropriate course of actions (within the technologist's scope of practice).
   Assessment 1
   Assessment Tool: Embedded multiple-choice questions on the final examination
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome-related questions.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Communicate pre- and post-examination computed tomography (CT) procedures to patients.
2. List instructions that need to be given to patients prior to, during, and after a computed tomography (CT) procedure.

3. Recognize the indicators/symptoms associated with a patient experiencing a mild, moderate, or severe reaction to contrast media.
4. Identify contraindications, warnings, and precautions to be taken with the administration of contrast media.
5. Explain the appropriate history that must be obtained prior to a computed tomography (CT) procedure.
6. List the oral, intravenous (IV), and intraluminal contrast agents used in computed tomography (CT) procedures.
7. Identify the components of the power-injection system.
8. Explain the advantage of the power-injection system.
9. Identify the signs and symptoms of contrast extravasation.
10. Describe the treatment which may be necessary for extravasation at an injection site.
11. Differentiate between negative, neutral, and positive contrast media.
12. Identify the physical properties of various types of contrast media.
13. Describe the structural differences and characteristics of low and high osmolar injectable contrast media.
14. Compare and contrast ionic and nonionic iodinated contrast media.
15. Identify common veins and sites of injection for venipuncture injection of contrast media.
16. List the supplies needed for venipuncture.
17. Describe correct venipuncture technique.
18. Recognize the importance of site selection for venipuncture.
19. Identify indications for intravenous (IV) contrast of the brain.
20. Identify indications for intravenous (IV) contrast of the body.
21. Describe the treatment which may be necessary for a mild, a moderate, and a severe reaction to contrast media.
22. Define intrathecal injection.
23. Define scan delay.
24. Describe the different barium sulfate suspensions used for computed tomography (CT) procedures.
25. Describe the administration of barium for computed tomography (CT) procedures of the gastrointestinal (GI) tract.
26. Explain the difference between the non-equilibrium phase and the equilibrium phase of contrast enhancement.
27. Determine the correct volume and flow rate for various computed tomography (CT) procedures.
28. Explain patient factors that affect contrast flow and enhancement.
29. Explain the advantages of a manual bolus in pediatric computed tomography (CT) procedures.
30. Demonstrate the ability to take a patient's blood, pulse, and count respirations.
31. Define informed consent.
32. Identify the elements necessary for informed consent.
33. List normal blood pressure, pulse and respiration values for adult and pediatric patients.
34. Describe the early symptoms of pulmonary embolus, and explain the actions the technologist must take if these symptoms appear.
35. Interpret and utilize terminology associated with the care of patients who are undergoing a computed tomography (CT) procedure.
36. Identify the protocol for reacting to common medical emergencies that occur during computed tomography (CT) procedures.
37. State the appropriate patient preparation required for head, neck, chest, abdomen, pelvis and musculoskeletal computed tomography (CT) procedures.

New Resources for Course

Course Textbooks/Resources

Textbooks

Dutton, A., G. and Ryan, A., T.. *Torres' Patient Care in Imaging Technology*, 9th ed. Wolters Kluwer, 2018, ISBN: 9781451115659.

Manuals
Periodicals
Software

Equipment/Facilities

Reviewer	Action	Date
Faculty Preparer:		
Jim Skufis	*Faculty Preparer*	*Mar 01, 2022*
Department Chair/Area Director:		
Kristina Sprague	*Recommend Approval*	*Mar 02, 2022*
Dean:		
Shari Lambert	*Recommend Approval*	*Mar 07, 2022*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Apr 01, 2022*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Apr 04, 2022*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Apr 05, 2022*

Washtenaw Community College Comprehensive Report

RAD 261 Patient Care in Computed Tomography (CT)
Effective Term: Fall 2013

Course Cover

Division: Math, Science and Health
Department: Allied Health
Discipline: Radiography
Course Number: 261
Org Number: 15600
Full Course Title: Patient Care in Computed Tomography (CT)
Transcript Title: Patient Care in CT
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: New Course
Change Information:
Rationale: This is a required course for the Computed Tomography Post-Associate Certificate (CPCTO).
Proposed Start Semester: Fall 2013
Course Description: This is a course for certified technologists, ARRT (R), ARRT (N), ARRT (T), and (CNMT), who are admitted to the computed tomography (CT) program. The theory and practice of the basic techniques of venipuncture and the administration of contrast media for computed tomography (CT) procedures will be presented. Other topics include patient care, education, and management protocols for CT procedures.

Course Credit Hours

Variable hours: No
Credits: 1
Lecture Hours: Instructor: 15 **Student:** 15
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 15 **Student:** 15
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Enrollment Restrictions
Admission to the Computed Tomography Post-Associate Certificate (CPCTO) program

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Determine the appropriate patient care, education, and management protocols for computed tomography (CT) procedures.
   Assessment 1
   Assessment Tool: Embedded multiple-choice questions on the final examination.
   Assessment Date: Winter 2016
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Blind-scored with an answer key
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome related questions.
   Who will score and analyze the data: Faculty

2. Apply knowledge of contrast media to determine indications and contraindication for computed tomography (CT) procedures.
   Assessment 1
   Assessment Tool: Embedded multiple-choice questions on the final examination
   Assessment Date: Winter 2016
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Blind-scored with an answer key.
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome related questions.
   Who will score and analyze the data: Faculty

3. Determine the appropriate protocol for administration of contrast media during computed tomography (CT) procedures.
   Assessment 1
   Assessment Tool: Embedded multiple-choice questions on the final examination
   Assessment Date: Winter 2016
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Blind-scored with an answer key.
   Standard of success to be used for this assessment: 80% of the students will score 75% or higher on the outcome related questions.
   Who will score and analyze the data: Faculty

Course Objectives

1. Communicate pre- and post-examination computed tomography (CT) procedures to patients.
   Matched Outcomes
2. List instructions that need to be given to patients prior to, during, and after a computed tomography (CT) procedure.
   Matched Outcomes
3. Recognize the indicators/symptoms associated with a patient experiencing a mild, moderate, or severe reaction to contrast media.
   Matched Outcomes
4. Identify contraindications, warnings, and precautions to be taken with the administration of contrast media.
   Matched Outcomes
5. Explain the appropriate history that must be obtained prior to a computed tomography (CT) procedure.
   Matched Outcomes
6. List the oral, intravenous (IV), and interlumenal contrast agents used in computed tomography (CT) procedures.

Matched Outcomes

7. Identify the components of the power-injection system.
   Matched Outcomes
8. Explain the advantage of the power-injection system.
   Matched Outcomes
9. Identify the signs and symptoms of contrast extravasation.
   Matched Outcomes
10. Describe the treatment which may be necessary for extravasation at an injection site.
    Matched Outcomes
11. Differentiate between negative, neutral, and positive contrast media.
    Matched Outcomes
12. Identify the physical properties of various types of contrast media.
    Matched Outcomes
13. Describe the structural differences and characteristics of low and high osmolar injectable contrast media.
    Matched Outcomes
14. Compare and contrast ionic and nonionic iodinated contrast media.
    Matched Outcomes
15. Identify common veins and sites of injection for venipuncture injection of contrast media.
    Matched Outcomes
16. List the supplies needed for venipuncture.
    Matched Outcomes
17. Prepare the set up and perform the appropriate steps of venipuncture.
    Matched Outcomes
18. Describe and demonstrate correct venipuncture technique.
    Matched Outcomes
19. Recognize the importance of site selection for venipuncture.
    Matched Outcomes
20. Identify indications for intravenous (IV) contrast of the brain.
    Matched Outcomes
21. Identify indications for intravenous (IV) contrast of the body.
    Matched Outcomes
22. Describe the treatment which may be necessary for a mild, a moderate, and a severe reaction to contrast media.
    Matched Outcomes
23. Define intrathecal injection.
    Matched Outcomes
24. Define scan delay.
    Matched Outcomes
25. Describe the barium sulfate suspension used for computed tomography (CT) procedures.
    Matched Outcomes
26. Describe the administration of barium for computed tomography (CT) procedures of the gastrointestinal (GI) tract.
    Matched Outcomes
27. Explain the difference between the non-equilibrium phase and the equilibrium phase of contrast enhancement.
    Matched Outcomes
28. Determine the correct volume and flow rate for various computed tomography (CT) procedures.
    Matched Outcomes
29. Explain patient factors that affect contrast flow and enhancement.
    Matched Outcomes
30. Explain the advantages of a manual bolus in pediatric computed tomography (CT) procedures.
    Matched Outcomes
31. Demonstrate the ability to take a patient's blood, pulse, and count respirations.
    Matched Outcomes

32. Define informed consent.
    Matched Outcomes
33. Identify the elements necessary for informed consent.
    Matched Outcomes
34. List normal blood pressure, pulse and respiration values for adult and pediatric patients.
    Matched Outcomes
35. Describe the early symptoms of pulmonary embolus, and explain the actions the technologist must take if these symptoms appear.
    Matched Outcomes
36. Interpret and utilize terminology associated with the care of patients who are undergoing a computed tomography (CT) procedure.
    Matched Outcomes
37. Identify the protocol for reacting to common medical emergencies that occur during computed tomography (CT) procedures.
    Matched Outcomes
38. State the appropriate patient preparation required for head, neck, chest, abdomen, pelvis and musculoskeletal computed tomography (CT) procedures.
    Matched Outcomes

New Resources for Course

Course Textbooks/Resources

Textbooks

Jensen, Steven C., & Peppers, Michael P.. *Pharmacology and Drug Administration for Imaging Technologists (2nd edition)*, 2nd ed. Elsevier, 2006, ISBN: 978-0-323-030.

Manuals

Periodicals

Software

Equipment/Facilities

Other: OE 121 Radiography Classroom/Laboratory

Reviewer	Action	Date
Faculty Preparer:		
Connie Foster	*Faculty Preparer*	*Feb 28, 2013*
Department Chair/Area Director:		
Connie Foster	*Recommend Approval*	*Mar 01, 2013*
Dean:		
Martha Showalter	*Recommend Approval*	*Mar 05, 2013*
Vice President for Instruction:		
Bill Abernethy	*Approve*	*Apr 10, 2013*