**EXECUTIVE SUMMARY of STUDENT LEARNING OUTCOMES**

Radiation therapy is a radiologic imaging sciences specialty that is one of the disciplines in a radiation oncology center. Radiation therapists practice in a cooperative effort between medical and radiation oncology physicians, medical physicists, dosimetrists, oncology nurses and dietitians. Radiation therapists are responsible for accurately recording, interpreting, and administering the treatment prescribed by radiation oncologists. Radiation therapists help physicians use multiple imaging modalities including; fluoroscopy, x-ray, and/or computed tomography to localize and outline anatomical areas for treatment and patient alignment. These responsibilities require highly specialized clinical skills as well as complex critical thinking in order to effectively contribute to the team approach of patient centered treatment.

**Program Effectiveness**

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| **Program Effectiveness Measure and Performing Standard** | **Data Collected** | **Analysis** |
| Annual program completion rate class of 2022. There is no performance standard for this measure. | 19/19 = 100% | Admitted 19 students, and 19 completed. |
| ARRT Certification Board examination pass rate (class of 2022). Performance standard, 75% pass rate on 1st attempt within six months of graduation. | 17/19 = 89.4% | 17/19=89.4% of students passed on the first attempt, 1 student has since taken the exam a second time and passed. One student has taken the test for a second time and unfortunately still did not pass. That student did reach out for additional advice/mentoring |
| Job placement rate (class of 2021). Performance standard, 75% of active job seekers will be placed within 12 months of graduation. This standard includes students that have gone back to school, and excludes those not willing to move for employment. | 18/18 = 100% | All of the 2021 graduates “actively seeking employment” per accreditation definition are either employed or in school one year post graduation.  |
| Graduate satisfaction (class of 2021). Performance standard set by program; 95% of returned graduate surveys will rate satisfaction as 3 or higher, on a 1-5 Likert scale. | 3/4=75% (graduate survey)15/16=93.75% (exit survey) | Class of 2021 (graduate survey) 3/4=75% ranked their satisfaction with the program as Very Good (n=3) and Fair (n=1)Class of 2022 (exit survey) 14/16=87.5% ranked their preparedness as an entry level RTT by the program as Strongly Agree (n=8), Agree (n=7), and Neutral (n=1) |
| Employer satisfaction (class of 2021). Performance standard set by program; employers will rank graduates “above average” in OVERALL QUALITY measure.  | 3/3=66.7% | Class of 2021, 3/3 returned employer surveys ranked graduates as “Excellent”. One ranked the graduate as “Good”. |

**Provide a response to last year’s Advisory Board review of the program’s Effectiveness report:**

* The Class of 2022’s ARRT exam scores are comparable to the Class of 2021. There were increases in 3 of the 8 content areas of the exam (Pt Interactions & Mgmt (8.7 vs 8.3) Pt & Med Record Mgmt (8.0 vs 8.0), Rad Physics & Radbio (7.8 vs 7.9) Rad Physics/Equip/QA, Rad Protection (7.9 vs 7.7), Treatment Sites & Tumors (8.6 vs 7.9) Tx Vol localization (8.4 vs 8.4), Rx & Dose Calculation (7.8 vs 8.1), Treatments (8.2 vs 8.6). There was a slight decrease in Rx & Dose Calcs, Rad Phy & Radbio, and Treatments. Pt & Med Rec Mgmt and Tx Vol localization scores were the same for the Class of 2021 & 2022.

#### Describe how the program’s outcomes support GVSU mission, strategic plan, and relevant school plan:

The program’s mission is to provide competent, entry level Radiation Therapists who shape their profession, society, and lives of the communities which they serve. The program provides students opportunities to develop technical knowledge and personal skills necessary for a career in the radiation sciences. The College of Health Professions is in the process of re-evaluating/realigning the mission, vision, and values of the college. Also, as the newly formed School of Interdisciplinary Health has been created, these items are also being evaluated for alignment with all of the programs that are now housed within the school. The program should have further information regarding this with the next assessment cycle (2022-23).

**List all of the program’s goals**:

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| **Learning Outcome** | **Year of Last Assessment** | **Assessed This Year** | **Year of Next Planned Assessment** |
| Students will demonstrate clinical competence | FY 20-21 | AY 21-22 | 2023 |
| Students will develop critical thinking and problem solving skills | FY 20-21 | AY 21-22 | 2023 |
| Students will communicate effectively to patients and healthcare professionals | FY 20-21 | AY 21-22 | 2023 |
| Students will demonstrate professional behavior in clinical areas and the profession | FY 20-21 | AY 21-22 | 2023 |

**Outcomes and Past Assessment**

**Programmatic Goal 1:** Students will demonstrate clinical competence

**Is this outcome being reexamined? X** Yes No

**Assessment Activity**

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| **Outcome Measures***Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard** *Define and explain acceptable level of student performance.* | **Data Collection***Discuss the data collected and student population* | **Analysis**1. *Describe the analysis process.*
2. *Present the findings of the analysis including the numbers participating and deemed acceptable.*
3. *Historical data for comparison*
 |
| Students will appropriately simulate treatment delivery. | 90% of lab evaluations will score 3 or higher on a Likert 1-5 scale, for the objective of “**Evaluate accuracy of machine parameters”**. | Collection will be during the 1st semester throughout RIT 331 (class of 2023) | Average scores were calculated from lab evaluations 1) Class of 2023,115/120 (95.8%), 2 completed by students no longer in the program met the benchmark2)Class of 2022, 133/133 (100%) 3)Class of 2021: 133/133 (100%) met the benchmark; all students score a 4 or 5 on evaluation.4) Class 2020: 133/133 (100%) met the benchmark5) Class 2019: 117/117 (100%) met the benchmark |
| 4th  semester throughout RIT 431 (class of 2022) | Class of 2022: 132/133 (99.2%) met the benchmarkClass of 2021: 137/137 (100%) met the benchmarkClass 2020: 115/115 (100%) met the benchmark1. – program suggests changing second measure to 4 out of 5.
 |
| Students will demonstrate correct positioning of patients for treatment. | 95% of clinical evaluations will score “fair” or better on student’s first clinical evaluation for “**ORGANIZATION OF DUTIES:**Logical & efficient performance”. Fair is considered our minimum acceptable score. | Collection will be in the 2nd semester after 1st clinical evaluation (class of 2023).  | Trajecsys was used to collect and tally the data from previous semester evaluations 1) Class of 2023: 100% met the benchmark (Total avg=92.9; range 85.7-100)2) Class of 2022 100% met goal, this was 1st eval but in 3rd semester,3) Class of 2021: 67/68 (98.5%) met the benchmark {64/68 Good or excellent}, this first eval was in the 3rd semester due to COVID4) Class of 2020:52/52 (100%) met the benchmark, {31/52, 60% “good” or “excellent”} |
| 3rd semester after 2nd clinical evaluation (class of 2023).  | 1) Class of 2023: 100% met the goal of “Fair” or better. 14/15 met “Good” or better. Avg score=93.6 (range 87.9-100)2) Class of 2021: data came from 4th semester eval (#2)67/67=100% of evals were fair or higher; 66/67 (98.5%) of evals were “good” or “excellent”. Class of 2022 are currently in their 2nd semester of clinical/4th semester in the program. Should be back on track with normal collection of this measure with the Class of 2023.3) Class of 2020: 65/68 (96%) met the benchmark, {58/68, 85.2 “good” or “excellent”} |
| Students will illustrate correct simulation of a variety of patients | 95% of clinical evaluations will score “fair” or better on student’s 2nd clinical evaluation for “**ADAPTABILITY:**Achievement of routine procedures on non-routine patients”. | Collection will occur during the 2nd clinical evaluation, completion of the 3rd semester (class of 2023). | Trajecsys was used to collect and tally the data from clinical evals. 1) Class of 2023: 100% met the benchmark. Avg=93% (range 82.1-99.2)2) Class of 2022; 100% met benchmark, collected from 3rd semester 1st eval3) Class of 2021: 68/68 (100%) met the benchmark – data from first eval 3rd semester.4) Class of 2020: 65/68 (96%) met the benchmark, \* same 3 evals as above |
| 95% of clinical evaluations will score “good” or better on student’s last clinical evaluation for “**ADAPTABILITY:**Achievement of routine procedures on non-routine patients”. | Collection will occur during the last clinical evaluation, completion of the 5th semester (class of 2022). | Trajecsys was used to collect and tally the data from clinical evals.1) Class of 2022: 70/71=98.6% (benchmark met)2) Class of 2021: 61/61=100% benchmark met 3)Class of 2020: 70/75=93.3% benchmark not met.4) Class of 2019: 132/133 (99%) met the benchmark  |

**Interpretation of Results**

**Extent this learning outcome has been achieved by students:**

* Class of 2022 and 2023 have met the established program benchmarks for Goal #1 and associated SLO’s.
* **Program strengths and opportunities for improvement relative to assessment of outcome:**

Program suggests to change verbiage in performance standards to be in percentages versus “Good”, “Fair” etc. Will seek advisory input regarding this potential change.

**Discuss planned curricular or program improvements for this year based on assessment of outcome:**

None additional planned by the program at this time. The program will solicit advisory board feedback for suggestions.

**Programmatic Goal 2:** Students will develop critical thinking and problem solving skills

**Is this outcome being reexamined? X** Yes No

**Assessment Activity**

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| **Outcome Measures***Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard** *Define and explain acceptable level of student performance.* | **Data Collection***Discuss the data collected and student population* | **Analysis**1. *Describe the analysis process.*
2. *Present the findings of the analysis including the numbers participating and deemed acceptable.*
3. *Historical data for comparison*
 |
| Student will compare current treatment images to treatment plan and determine accuracy of positioning. | Students will successfully pass IGRT competencies during their clinical rotations throughout the program (At least one completed by the 3rd semester and 2 or more by the 5th semester). | Data will be collected following the 3rd semester. | Trajecsys was used to collect and tally the data from completed comps during time frame using “study” filters 1) Class of 2023: 15/15 (100%) met this benchmark2) Class of 22; 18/19 (95%), all 18 passed first try; there was only one semester of data collection for this outcome due to the delay in beginning clinical education for this cohort.3) Class of 2021: 16/19 (84%) – attempted and 16/16 (100%) passed.4) Class of 2020: 15/18 (83.3%) had 1 completed, new measure for 18-19 assessment  |
| Data will be collected following the last clinical rotation (5th semester). | 1) Class of 2022: 19/19 (100%) met the benchmark1) Class of 2021: 18/18 (100%) met the benchmark2) Class 2020: 19/19 (100%) met the benchmark3) Class of 2019: 17/17 (100%) met the benchmark  |
| Students will propose treatment plans for the treatment of breast cancer | Scores >90% on the breast problem based learning assignment (PBL) will indicate students use systematic reasoning to examine and evaluate information and ideas and then synthesize their conclusions to propose newperspectives and solutions | Data will be collected following the Fall semester, RIT 430 course (class of 2022). | Using 90% as “good” to equate it to other measures, evaluation and tally of these scores from Bb grade book completed1) Class of 2022: 18/19=94.7% benchmark met (Avg=93%; range 88-98%)2)Class of 2021; 12/19 (63%): benchmark not met3) Class of 2020: 10/19 (53%), discuss benchmark at ABM4) Class of 2019: 16/17 (94%) met the benchmark |

**Interpretation of Results**

**Extent this learning outcome has been achieved by students:**

* The Class of 2022 and 2023 met the benchmark established for outcomes measured.
* **Program strengths and opportunities for improvement relative to assessment of outcome:**

Program suggests that the lab manual should be evaluated for a procedure that may satisfy the programmatic goal for IGRT competencies. Due to the manner in which things are done in clinic, this goal would easily be obtained as it stands. Will seek advisory board input regarding this potential change.

**Discuss planned curricular or program improvements for this year based on assessment of outcome**:

* Program will seek advisory board and CI’s input related to this outcome.
* The Program suggests evaluation of the performance standard to be more specific to the goal of critical thinking and problem solving rather than the whole product of the PBL. The PBL rubric consists of 28 pts related to problem solving and critical thinking. Program suggests that students should earn a minimum of 25pts out of 28pts in this area which is 90%.

**Programmatic Goal 3:** Students will communicate effectively to patients and healthcare professionals

**Is this outcome being reexamined? X** Yes No

**Assessment Activity**

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| --- | --- | --- | --- |
| **Outcome Measures***Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard** *Define and explain acceptable level of student performance.* | **Data Collection***Discuss the data collected and student population* | **Analysis**1. *Describe the analysis process.*
2. *Present the findings of the analysis including the numbers participating and deemed acceptable.*
3. *Historical data for comparison.*
 |
| Students will describe procedures to patients | 95% of clinical evaluations will score “fair” or better on student’s first clinical evaluation for “**COMMUNICATION SKILLS:** Interpersonal skill with **patients**”. Fair is considered our minimum acceptable score. | Collection will be in the 2nd semester after 1st clinical evaluation (class of 2023).  | Trajecsys was used to collect and tally the data from previous semester evaluations. “Fair” is considered minimum competence 1) Class of 2023: 100% met the benchmark (Avg=93.2; range 85.3-100)2) Class of 2022: 100% met benchmark3) Class of 2021: 68/68 (100%) {62/68 > Good} met the benchmark4) class of 2020: 66/66 (100%) met the benchmark |
| 95% of clinical evaluations will score “good” or better on student’s last clinical evaluation for “**COMMUNICATION SKILLS:** Interpersonal skill with **patients**”. | Collection will occur during the last clinical evaluation, completion of the 5th semester (class of 2022). | Trajecsys was used to collect and tally the data from previous semester evaluations. “good” is considered appropriate competence in this skill for this stage of the program.1) Class of 2022: 70/70 (100%) met the benchmark2) Class of 2021: 61/61 (100%) met the benchmark3) Class of 2020: 71/75 (94.7%) met the benchmark4) Class 2019: 129/133 (97%) met the benchmark |
| Students will communicate effectively with healthcare staff | 95% of clinical evaluations will score “fair” or better on student’s first clinical evaluation for “**COMMUNICATION SKILLS:** Interpersonal skill with **staff**”. Fair is considered our minimum acceptable score. | Collection will be in the 2nd semester after 1st clinical evaluation (class of 2023).  | Trajecsys was used to collect and tally the data from previous semester evaluations. “Fair” is considered minimum competence 1) Class of 2023: 100% met benchmark. Avg=94.8 (range 90.5-100)2) Class of 2022; 100% met benchmark, 1 student averaged fair3) Class of 2021: 65/68 (95.6%) met the benchmark {61/68 > Good}4) Class of 2020: 66/66 (100%) met the benchmark |
| 95% of clinical evaluations will score “good” or better on student’s last clinical evaluation for “**COMMUNICATION SKILLS:** Interpersonal skill with **staff**”. | Collection will occur during the last clinical evaluation, completion of the 5th semester (class of 2022). | Trajecsys was used to collect and tally the data from previous semester evaluations. “good” is considered appropriate competence in this skill for this stage of the program1) Class of 2022: 70/70 (100%) met the benchmark2) Class of 2021: 60/61 (98.4%) met the benchmark2) Class of 2020: 71/75 (94.7%) met the benchmark3) Class of 2019: 129/133 (97%) met the benchmark |
| Students will Demonstrate effective formal presentation skills.  | 100% of students will make effective use of eye contact, voice projection, pacing and language choices that are appropriate for the assignment placing them in the “proficient” category  | Collection will occur following in class presentations in RIT 330, 1st semester (Class of 2023)Collection will occur following in class presentations in RIT 432, 5th (final) semester (class of 2022) | Rubric for this SLO which was provided by the GVSU General Education Committee which ranks the student as proficient, progressing, or baseline.1) Class of 2022:19/19 (100%) met the benchmark; Class of 2023: 17/17 (100%) met the benchmark2) Class of 2021: Classes were virtual/remote still for Winter 2021; data not collected. 3) Class of 2020: Due to COVID-19, classes went remote for the last half of Winter 2020, presentations were not done in RIT 432. The program will re-evaluate with the Class of 2021.4) Class of 2019: 17/17 (100%) met the benchmark |

**Interpretation of Results**

**Extent this learning outcome has been achieved by students:** Class of 2022 & 2023 met the benchmark for this Goal & SLO. GVSU resumed F2F learning in Fall 2021.

**Program strengths and opportunities for improvement relative to assessment of outcome: -**

The program suggests to change the performance standard verbiage from “Good”, “Fair”, “Proficient”, etc to percentages. Will seek advisory board input related to this.

#### Discuss planned curricular or program improvements for this year based on assessment of outcome:

This assessment cycle is the first time the program has had a second timeframe of collection for Goal 3, SLO 3. In both timeframes evaluated, the students met the benchmark. The program suggests to leave the benchmark as it is for at least one more assessment cycle before any changes should be made. Will seek advisory board input regarding this.

**Programmatic Goal 4:** Students will demonstrate professional behavior in clinical areas and the profession

**Is this outcome being reexamined? X** Yes No

**Assessment Activity**

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| **Outcome Measures***Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard** *Define and explain acceptable level of student performance.* | **Data Collection***Discuss the data collected and student population* | **Analysis**1. *Describe the analysis process.*
2. *Present the findings of the analysis including the numbers participating and deemed acceptable.*
3. *Historical data for comparison*
 |
| Students will demonstrate professional behavior | 95% of clinical evaluations will score “good” or better on student’s clinical evaluation for “**PROFESSIONAL CONDUCT:** Mannerisms, cleanliness, neatness”. | Collection will be in the 2nd semester after 1st clinical evaluation (class of 2023).  | Using the Trajecsys student reporting system, a report of the class of 18 students was run from March –May (time of evaluation) with evaluation of the responses for “Professional conduct”.1) Class of 2023: 100% met benchmark (Avg=97.8; range 94.4-100)2) Class of 2022; 100% met benchmark, 13 student averaged excellent3) Class of 2021: 67/68 (99%) benchmark met {54/68 79% > Excellent}, data from 3rd semester 1st final evaluation4) Class of 2020: 57/66 (86%) benchmark not met |
| 95% of clinical evaluations will score “excellent” on student’s clinical evaluation for “**PROFESSIONAL CONDUCT:** Mannerisms, cleanliness, neatness”. | Collection will be in the 5th semester after 4th clinical evaluation (class of 2022).  | 1) Class of 2022: 63/72=87.5% benchmark not met1) Class of 2021: 60/61 (98.4%) met the benchmark2) Class of 2020: 50/65=77% benchmark not met3) Class of 2019: 78/98 (80%) benchmark not met{95/98 (97%) reported “Good” or better}4) Class of 2018: 82/103 (80%) benchmark not met |
| Students will integrate networking into program and profession. | All students (class of 2023) will participate in student essay and poster competition at the state or national level. | Data will be collected at the end of Fall semester each year. | 1) Class of 2023: All 4th year students attended the MSRT conference and submitted essays for the student competition. 2) Class of 2022: Due to the students’ delay in beginning clinic, the poster/essay was not completed for this cohort. The students did attend either the MSRT or ASRT conference3) Class of 2021: Due to COVID-19, the MSRT conference was canceled. The program will re-evaluate this outcome with the Class of 2022.4) Class of 2020: 0/19 (0%) benchmark not met |

**Interpretation of Results**

**Extent this learning outcome has been achieved by students** *(Use both direct and indirect measure results)***:** The Class of 2023 meet the benchmarks established for these outcomes. The Class of 2022 did not as it relates to Goal 4, SLO 1, Performance standard 2. This has been consistent in the last several years with the exception of the Class of 2021 who did met the benchmark.

As conferences were back F2F for 2022 All students (Class of 2023 and 2024) did attend the MSRT meeting in October 2022.

**Program strengths and opportunities for improvement relative to assessment of outcome**:

The program will ensure that the professionalism checklist is being used in clinic with students each semester as supposed to just the first semester of clinic.

#### Discuss planned curricular or program improvements for this year based on assessment of outcome:

#### The program will discuss this further in the CI meeting after the advisory board meeting. The program will also review the professionalism checklist with the current 3rd year students at their handbook review which will occur on December 7, 2022. The program has already incorporated this topic into RIT 310 (Pt. Care).