

University of North Carolina (UNC) Hospitals
Medical Dosimetry Program

Assessment Plan: Analysis and Actions

Fall (1st semester) 2018 – Summer (3rd semester) 2019

Approved May 2018 Advisory Board

Mission Statement: The UNC Hospitals Medical Dosimetry Educational Program will competent, educated, and professional entry-level medical dosimetrists who will participate in scholarly activity and enhance overall patient care (JRCERT Standards 10.1, 3.1). .

Goal 1: Students will be clinically competent.

Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results	Metrics	Action Plan
Students will demonstrate acquisition of correct dosimetry treatment planning skills.	1) Overall Evaluation Form (1,4) 2) Overall Evaluation Form (3)	1,2) At least a 4 on a 5 point scale in the 1 st and 2 nd semesters, and a 5 on a 5 point scale in the 3 rd semester	Formative: 1 st and 2 nd semesters Summative: 3 rd semester	Program Director (reported annually to the advisory committee)	(1,4) 2017: 4.9 2016: 4.9 2015: 4.8 2014: 4.8 2013: 4.7 2012: 4.5 2011: 4.3 (3) 2017: 4.9 2016: 4.9 2015: 4.8 2014: 4.6 2013: 4.4 2012: 4.4 2011: 4.3	100% of students have met the benchmark goal. Average scores continue to increase.	Our clinical adaptability scores continue to improve. Our clinical courses are going well, and the additional computer based learning modules have been beneficial to our students clinical education.

	3) Graduate survey (IIF)	3) At least a 4 on a 5 point scale	Annually	Program Director annually reports directly to the advisory committee	2017: 4.8 2016: 4.8 2015: 4.7 2014: 4.7 2013: 4.6 2012: 4.6 2011: 4.5 2010: 4.2	100% of students (2010-2017) met the benchmark goal. Average scores continue to increase over the last 5 years.	From 2010 until 2017 we have received 14 (2 students per class) graduate surveys. We continuously are working on program improvement, which include additional computer based learning, additional interprofessional education, and having access to a Ray Station Treatment Planning System.
	4) Employer survey (IIG,H)	4) At least a 4 on a 5 point scale	Annually		2017: 4.8 2016: 4.7 2015: 4.6 2014: 4.5 2013: 4.5 2012: 4.4 2011: 4.35 2010: 4.1	100% of students (2010-2017) met benchmark goal. Average scores have increased over the past 7 years.	Our treatment planning skillsets continue to improve. Otherwise, no explicit comments were given by employers for improvement.

Students will evidence competency in treatment.	1) Overall Evaluation Form (4) 2) Competency Evaluation	1) At least a 4 on a 5 point scale in the 1 st and 2 nd semesters, and a 5 on a 5 point scale in the 3 rd semester 2) 5 completed competencies in the 1 st semester, 10 (15 total) in the 2 nd semester, (31 total) in the 3 rd semester	1) Formative: 1 st and 2 nd semesters Summative: 3 rd semester 2) 1 st , 2 nd , and 3 rd semesters	Program Director (reported annually to the advisory committee)	2017: 4.8 2016: 4.8 2015: 4.7 2014: 4.7 2013: 4.6 2012: 4.6 2011: 4.5 2010: 4.4 2) 2017: 100% 2016: 100% 2015: 100% 2014: 100% 2013: 100% 2012: 100% 2011: 100%	100% of students met benchmark (2011-2017). Average evaluation form scores have increased; competency percentages have met minimal requirement (100%)	Our treatment planning skills continue to improve. We have worked with clinical preceptors developing new objectives for clinical rotations.
	3) Graduate survey (IC,D)	3) At least a 4 on a 5 point scale	Annually	Program Director reported annually to the advisory committee.	(IC) 2017: 4.8 2016: 4.8 2015: 4.7 2014: 4.7 2013: 4.6 2012: 4.6 (D) 2017: 4.8 2016: 4.8 2015: 4.8 2014: 4.8 2013: 4.7 2012: 4.6	100% of students met benchmark (2011-2017).	From 2011-2017, we received 10 graduate surveys. We have implemented a Ray Station Planning System to improve treatment planning skills.

	4) Employer survey (IC,D)	4) At least a 4 on a 5 point scale	Annually	Program Director reported annually to the advisory committee.	(IC) 2017: 4.8 2016: 4.8 2015: 4.8 2014: 4.8 2013: 4.7 2012: 4.6 2011: 4.5 (ID) 2017: 4.8 2016: 4.8 2015:4.8 2014 4.8 2013: 4.6 2012: 4.5 2011: 4.4	100% of students met benchmark (2011-2017)	From 2011-2017 we received 10 employer surveys. Employers were satisfied with our graduates and their level of treatment planning expertise.
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Goal 2: Students will demonstrate effective communication skills.

Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results	Metric	Action Plans
Students will effectively communicate with patients, medical dosimetrists, faculty, and staff.	1) Competency Evaluation (12)	1) 100% pass rate	Formative: 1 st and 2 nd semesters Summative: 3 rd semester	Program Director (reported annually to the advisory committee)	2017: 100% 2016: 100% 2015: 100% 2014:100% 2013: 100% 2012: 100% 2011: 100%	100% of students 2011-2017, met this benchmark. Average scores have met minimal standard.	We continue to increase clinical oral skills through Socratic questions and preceptor dialogue. This is incorporated into clinical evaluations.
	2) Graduate survey (IIK)	2) At least a 4 on a 5 point scale	Annually	Program Director (reported annually)	2017: 4.8 2016: 4.8 2015: 4.7 2014: 4.7 2013: 4.7 2012: 4.6 2011: 4.6	100% of our alumni met this benchmark from 2011-2017. Our graduates feel comfortable in their communication skills; these skills continue to improve with our graduates.	Our medical dosimetry program is unique, where our dosimetry students have daily interaction with resident and attending physicians and teaching conferences. The UNC medical dosimetry educational program interprofessional education data was peer-reviewed published in the spring 2014 <i>Medical Dosimetry Journal</i> .

	3) Employer survey (IIIK)	3) At least a 4 on a 5 point scale	Annually	Program Director (reported annually)	2017: 4.8 2016: 4.8 2015: 4.7 2014: 4.7 2013: 4.6 2012: 4.6 2011: 4.5	100% of our alumni met this benchmark from 2010-2017 with scores increasing over the past 5 years.	This again demonstrates success to our unique medical dosimetry training program.
Students will write at a proficient level by graduation.	1) Independent Research Project Rubric	1) At least a 3 on a 5 point scale in the 1 st and 2 nd semesters, and a 4 on a 5 point scale in the 3 rd semester	Formative: 1 st and 2 nd semesters Summative: 3 rd semester	Program Director (reported annually to the advisory committee)	2 nd semester 2017: 4.5 2016: 4.5 2015: 4.3 2014: 4.2 2013: 3.9 2012: 3.8 2011: 3.4 2010: 3.2	100% of students (2011-2017) met benchmark goal. Average scores increased over the past 5 years.	Some students are stronger writers than others. Moreover, some students have been out of school longer than others. For students not as strong we do tutorials, paper examples, mentoring, and utilize UNC teaching/writing/learning resources. In 2016, our two students had three published research papers.
	2) Graduate survey (IIIK)	2) At least a 4 on a 5 point scale	Annually	Program Director (reported annually to the advisory committee)	2017: 4.7 2016: 4.7 2015: 4.6 2014: 4.6 2013: 4.6 2012: 4.5	100% of graduates attained this benchmark from 2011-2017. Average scores have	Our medical dosimetry program is unique in that almost every class has had a paper published in the academic literature. For example, in 2015 and 2016 of 4 students we had 5 profession

						increased over the past 5 years.	publications. Since the program's inception, there have been 18 published papers by our students.
	3) Employer survey (IIIK)	3) At least a 4 on a 5 point scale	Annually	Program Director (Reported annually to the advisory committee)	2017: 4.6 2016: 4.6 2015: 4.5 2014: 4.5 2013: 4.4 2012: 4.4 2011: 4.3	100% of graduates from 2011-2017 attained this benchmark. Average scores increased during the past 5 years.	This again demonstrates success to our unique training program.

Goal 3: Students will develop critical thinking skills.

Outcome	Measures	Benchmarks	Assessment Schedule	Responsible Person(s)	Results	Metrics	Action Plans
Students apply didactic concepts and information into the clinical setting.	1) Weekly Clinical Evaluation , application of knowledge section	1) Students will average at least a 3 on a 5 point scale in the 1st and 2nd semesters, and a 4 on a 5 point scale in the 3rd semester	Formative: 1st and 2nd semesters Summative: 3rd semester	Program Director (reported annually to the advisory committee)	2017: 4.7 2016: 4.7 2015: 4.7 2014: 4.7 2013: 4.6 2012: 4.5 2011: 4.1 2010: 3.8	100% of our students met this goal from 2011 until 2014. The program continues to improve in this area.	With continuous changing technologies and treatments, the program will continue to design curriculum to change with complex clinical changes. This assessment will come from our communities of interest.
	Average of actual scores of all clinical evaluations	2) At least a 4 on a 5 point scale in the 1st and 2nd semesters, and a 4.5 on a 5 scale in the 3rd semester	Formative: 1st and 2nd semesters, Summative: 3rd semesters	Program Director (reported annually to the advisory committee)	2017: 4.8 2016: 4.8 2015: 4.8 2014: 4.8 2013: 4.7 2012: 4.4 2011: 4.4 2010: 4.3	100% of our students met this goal from 2010 until 2017.	Our program will continue to monitor knowledge theory with application theory coupled with knowledge transformation.

Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results	Metric	Action Plans
Students will conceptualize current patient safety radiation oncology based Lean engineering principles.	1) Completion of a Lean CQI class on “good catches,” A3s, and kaizens.	1) Completion of training during orientation with a passing grade and completion of a student found clinical problem utilizing an A3 tool. Evaluation is done by a Ph.D. Human Factors Engineer.	Annually	Program Director (reported annually to the advisory committee)	2017: 100% 2016: 100% 2015: 100% 2014: 100% 2013: 100% 2012: 100% 2011: 100%	Our program continues to make improvements in the quantity and quality of Lean Continuous Quality Improvement Initiatives our UNC Medical Dosimetry Students have access to in our educational program.	Our education program is unique in that patient safety is a primary emphasis of the department and chair. With this emphasis the student are trained in the most cutting edge patient safety programs in the field. This will continue to be a focus in our medical dosimetry training program.
	2) Graduate survey (IIH)	2) At least a 4 on a 5 point scale	Annually		2017: 4.9 2016: 4.9 2015: 4.9 2014: 4.9 2013: 4.7	100% of graduates attained this benchmark from 2011-	Our program is unique in that patient safety is taught at the cutting edge

					2012: 4.6 2011: 4.5	2017. Our program continues to improve in this area from 2011-2017.	level. Our graduates go into the workplace with unique continuous quality improvement skillsets.
	3) Employer survey (IIH)	3) At least a 4 on a 5 point scale	Annually		2017: 4.7 2016: 4.7 2015: 4.7 2013: 4.6 2012: 4.4 2011: 4.3	100% of alumni attained this benchmark from 2011-2017. Our program continues to improve in this area from 2011-2017.	Again, this demonstrates a unique feature that our program offers to the radiation oncology communities of interest.

Goal 4: Students will grow and develop professionally.

Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results	Metrics	Action Plans
Students will demonstrate professional behaviors.	1) Overall Evaluation Form	1) At least a total 4 on a 5 point scale in the 1 st and 2 nd semesters, and a 5 on a 5 point scale in the 3 rd semester	Formative: 1 st and 2 nd semesters Summative: 3 rd semester	Program Director (reported annually to the advisory committee)	2017: 4.8 2016: 4.8 2015: 4.8 2014: 4.8 2013: 4.4 2012: 4.3 2011: 4.2	100% of our students attained this benchmark. We continue to demonstrate improvement in this area.	Some of our students come into the program with various perceptions of professional behavior. During both orientation and continuing throughout the academic year, professional behavior and dress are a large component of our students professional education.
	2) Graduate	2) At least a 4 on	Annually	Program	2017: 4.8	100% of our	Our alumni

	survey (IIIL)	a 5 point scale		Director (reported annually to the advisory committee)	2016: 4.7 2015: 4.7 2014: 4.6 2013: 4.5 2012: 4.3 2011: 4.1	graduates attained this benchmark. Our program continues to demonstrate improvement in this area.	understand that professional behavior and dress correlate with earning respect from patients and co-workers.
	3) Employer survey (IIIL)	3) At least a 4 on a 5 point scale	Annually	Program Director (reported annually to the advisory committee)	2017: 4.8 2016: 4.8 2015: 4.8 2014: 4.8 2013: 4.8 2012: 4.7 2011: 4.6	100% of our graduates attained this benchmark. Our program continues to demonstrate improvement in this area.	This again demonstrates success to our unique medical dosimetry educational training program.
Students will participate in continuing education.	4) Graduate survey (IVA,B,C,D)	4) At least a 4 on a 5 point scale	Annually	Program Director (reported annually to the advisory committee)	2017: 4.9 2016: 4.9 2015: 4.8 2014: 4.8 2013: 4.8 2012: 4.7 2011: 4.7	100% of our graduates attained this benchmark. Our program continues to demonstrate improvement in this area.	Program alumni were taught why continuing education is important to becoming a professional health care worker.
	5) Employer survey (IIIP)	5) At least a 4 on a 5 point scale	Annually	Program Director	2017: 4.9 2016: 4.8	100% of our graduates	This again demonstrates

				(reported annually to the advisory committee)	2015: 4.8 2014: 4.7 2013: 4.7 2012: 4.6 2011: 4.6	attained this benchmark. Our program continues to demonstrate improvement in this area.	success to our unique training program.
The student will communicate professionalism both orally and through the written word.	6) Written and oral presentations based on professional questions	6) At least a grade of 80 in the presentations	1 st semester MD500, 2 nd semester MD 514, 3 rd semester MD 512	Dr. Adams 1 st , 2 nd , 3 rd semesters (teaches each class)	2017: 96 2016: 96 2015: 95 2014: 94 2013: 93 2012: 93 2011: 92	100% of our graduates attained this benchmark. Our program continues to demonstrate improvement in this area.	Our program is unique in that our students interact with attending and resident physicians. Our research course is two semesters and demonstrates to the student the importance of creating knowledge from an academic perspective.