Annual Academic Assessment Report Cover Sheet

Assessment reports are due the 1st Wednesday after the Fall Term
Email to: assessment@unlv.edu

Program Information:

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<th>Program Assessed</th>
<th>Nuclear Medicine Technology</th>
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<tr>
<td>Department</td>
<td>Health Physics</td>
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<td>College</td>
<td>Allied Health Sciences</td>
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<td>Date Submitted</td>
<td>Dec 6, 2017</td>
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Please attach a narrative (not to exceed 4 pages, excluding appendices) addressing the following:

- What are the student learning outcomes? Please provide a numbered list.
- Which learning outcomes were assessed?
- How were they assessed? (Programs must use at least one direct assessment of student learning.)
- Undergraduate programs should assess at least one University Undergraduate Learning Outcome (UULO) each year, which may or may not overlap with a program learning outcome.
- Graduate programs should assess at least one outcome related to one of the following graduate level requirements each year:
  - student engagement in research, scholarship, creative expression and/or appropriate high-level professional practice.
  - activities requiring originality, critical analysis and expertise.
  - the development of extensive knowledge in the field under study.
- What was learned from the assessment results?
- How did the program respond to what was learned?

Please limit the narrative portion of your report to no more than four pages. You may attach appendices with data, tables, charts, or other materials as needed. Please explain the relevant conclusions from any appendices in your narrative. Please contact the Office of Academic Assessment if you have questions or need assistance.
What are the student learning outcomes?

1. Develop a greater appreciation and respect for radiation including; its proper use with patients, protection issues for patients, technologists and understanding of gamma ray interactions in body and consequences safety concerns.
2. Apply theoretical concepts learned in the classroom to practical applications in the nuclear medicine clinical environment.
3. Completing competency tasks associated with routine aspects of nuclear medicine technology including; preparation and injection of radiopharmaceuticals, scanning patients, quality control on equipment
4. Develop cognitive thinking through laboratory and course exercises
5. Have a sound academic foundation for graduate studies
6. Conduct themselves in a professional manner respectful of patient needs and other health care providers

What learning outcomes were assessed?
Learning Outcomes 1-4, and 6 were assessed

How were they assessed?

Learning outcome # 1
Nuclear Medicine students recently completed their first year of the program in August of 2017. The emphasis on these first year nuclear medicine students is on understanding and appreciating the importance of radiation and the effects on biological cells in the human body. Through multiple courses, lectures and presentations; students learned aspects of radiation safety, radiation detection, computer applications of imaging of gamma rays and effective methods of equipment quality control. Nuclear Medicine students were assessed their knowledge through examination throughout course work and required annual lectures by University Radiation Safety Officer. Students are also required to demonstrate competency in understanding radiation by efficiently using radiation monitoring equipment, utilizing appropriate and proper shielding and demonstrating knowledge and understand of gamma camera equipment in hospitals and outpatient clinical to minimize patient and technologist exposure levels.

Learning Outcome # 2
Many applied theoretical concepts learned in the classroom were assessed in practical applications in the nuclear medicine clinical environment in the following ways;

A. Individual testing and observation of students by Clinical coordinator or Certified Technologist in the clinical site the students were assigned. These tests and observations required students to either verbally explain or demonstrate how specific concepts of Instrument, radiation protection, radiopharmaceutical use and computer manipulations taught in the class were applied and properly used in clinical environment.
B. Through clinical competency evaluations performed on each student during their clinical rotation demonstrating understanding of basic concepts in classroom setting translating to hospital and outpatient setting.
C. Clinical sites supervisor’s evaluation of students and end of the year survey forms.

Learning Outcome #3
Competency tasks are assessed in the clinical environment in many aspects of nuclear medicine through the use of a competency based performance sheet. Students have to successfully complete (demonstrate understanding and be able to perform specific tasks) assigned in the clinical environment in 29 identified areas. These forms require that the Clinical Coordinator or Chief Technologist sign-off on all competencies in order for a student to complete their clinical rotation in nuclear medicine.

Learning Outcome #4
Developing cognitive thinking was assessed through laboratory and Course work exercises in a number of way including;
A. Numerous laboratory experiments and written reports required by students to assimilate information and deduce solutions.
B. Calculations of mathematical equations and problem solving important to understand basic theorems of nuclear medicine.
C. Homework that evoked thought and a comprehension of various statistical counting perimeters and understanding of anatomy and physics to interpret simulated patient data.
D. Various tests throughout the program evaluating cognitive development of ideas essential in nuclear medicine.

Learning Outcome #6
Students are expected to be professional and conduct themselves in an ethical manner. This is assessed formally twice a semester by written evaluations performed by clinical supervisor of the student. After evaluations are completed, results of student’s perceived behavior are discussed with student. Furthermore, the clinical coordinator meets informally with hospital and /or outpatient staff to discuss behavior and attitude of student in their facility bi-monthly.
What was learned from assessment results?
1. Overall grades for nuclear medicine students were mostly A’s and B’s on laboratory exercises and classroom examinations demonstrated students understanding in theoretical concepts of nuclear medicine.
2. Transferring these concepts into practical experiences was demonstrated by students satisfactory completion of Competencies identified in their clinical experience and Clinical Supervisor’s evaluation forms.
3. Students surveyed after first year of program, reported they were well prepared for the nuclear medicine clinical experience. (8/12 students responded to survey)
4. Clinical supervisors surveyed after nuclear medicine students completed first year of study reported they were overall pleased with the quality of students and their ability to transfer the theory of classroom work into practical understanding and competency in the real clinical environment.
5. One area of concern was identified by students and clinical supervisors were the need for more hands-on clinical experience in PET/CT.

How do the program respond to what was learned?
The Nuclear Medicine Program Director at UNLV met with nuclear medicine advisory board in the community. This board is representative of Chief Technologists, Staff Technologists, Radiology managers, Pharmacists, Sales representatives and previous graduates of program. The information was disseminated to this group and discussed. The committee decided to add more clinical time in PET/CT to current and future nuclear medicine students in the program.