

Tips and Tools for Outcomes Assessment

SNMMI-TS EDUCATOR FORUM

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Introductions

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Disclaimers/Disclosures: Joe serves as Chair and Penni serves as Vice-chair of the JRCNMT Board. The information provided represents our personal observations and ideas. For the purpose of this presentation, we do not represent the JRCNMT in any official manner.

Objectives



Describe assessment in the context of accountability in higher education.



Distinguish between student learning outcomes at the institution, program, and course levels.



Use practical tips and tools to make assessment more meaningful and relevant.

Accreditation & Assessment



Accountability



Transparency



Improvement

Emphasis on Assessment

- Remote/Hybrid/Distance Learning
- Assuring quality in a changing environment
- Changes in faculty
- Workforce readiness
- Soaring student debt
- Rebuild public trust

Recognition of Accrediting Agencies

- U.S Department of Education
 - Mission to promote student achievement and preparation for global competitiveness by fostering educational excellence
 - Distributes Title IV funds (Federal Student Financial Aid) based on accrediting agencies assurance of educational quality
- Council for Higher Education Accreditation (CHEA)
 - Non-governmental member organization
 - Recognizes the JRCNMT – serves as the accreditor of the accreditor
 - To be recognized, the JRCNMT must:
 - **Set expectations** for program performance, including student achievement
 - **Implement a process** to determine if students/graduates meet JRCNMT expectations
 - **Determine accreditation status** based on how well programs are meeting expectations.

Accreditation & Assessment in Higher Education

- Institutional Accreditation Agencies – Recognized by DOE and CHEA
 - Higher Learning Commission
 - Middle States
 - New England
 - Northwest
 - Southern
 - Western

All institutional accreditation agencies require assessment as part of the accreditation process.



Standard V: Educational Effectiveness

1. clearly stated **educational goals** at the institution and degree/program levels, which are interrelated with one another, with relevant educational experiences, and with the institution's mission;
2. organized and systematic assessments, conducted by faculty and/or appropriate professionals, evaluating the extent of student achievement of **institutional and degree/program goals**.



Section 8: Student Achievement

Standard 8.2.a: The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of seeking improvement based on analysis of the results for student learning outcomes for each of its educational programs.



Standard D: Assessment

Measurement of a program's effectiveness is based on the extent to which it achieves its mission and student learning outcomes. The program must demonstrate a systematic and sustained assessment process that is used to enhance student learning outcomes and program effectiveness.

Assessment Defined

“Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning.” (Palomba and Banta, 1999)

“Assessment is the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions that affect student learning. (Walvoord, 2010)



Program Assessment

- § While accreditation requires assessment, the focus of assessment should be on improving the program effectiveness and student learning outcomes.
- § What are the benefits of assessment?

Language of Assessment

- Goals, Outcomes, and Objectives – Oh my!
- Terminology may be institution specific
- Direct and Indirect Measures
- Formative and Summative Assessment

Mission Statements & Program Student Learning Outcomes

Program Mission

- May include concepts such as:
 - Types of student served
 - Program responsibility in the community
 - A commitment to diversity
- The mission of an academic program must:
 - Align with department or college
 - Set the stage for program-level student learning outcomes

AdventHealth University

College Mission

AdventHealth University is a Seventh-day Adventist institution specializing in healthcare education in a faith-affirming environment. Service-oriented and guided by the values of nurture, excellence, spirituality, and stewardship, the University seeks to develop leaders who will practice healthcare as a ministry.

NMT Program Mission

Consistent with the mission of the University, the Nuclear Medicine Technology Program at AdventHealth University provides an environment where students pursue technical expertise in the field of nuclear medicine while respecting their own spiritual, intellectual, social, and physical development.

Pennsylvania College of Health Sciences

COLLEGE MISSION

Educate for excellence in health care practice, leadership and the continuous acquisition of knowledge.

NMT PROGRAM MISSION

Provide didactic and clinical education to persons who wish to serve the community as competent, entry-level nuclear medicine technologists.

Program Student Learning Outcomes

- Should be aligned with college student learning outcomes
- Appropriate outcomes advance the program toward fulfilling its mission.
- Outcomes identify the knowledge, skills and attitudes students are expected to acquire in the program.
- Serve as the basis for the assessment of the program.
- Review mission and program outcomes with advisory committee each year.
- Program SLOs should stand the test of time.

Pennsylvania College of Health Sciences

COLLEGE EDUCATIONAL OUTCOMES

At the completion of the College curriculum the graduate will:

Demonstrate inter-professional **collaboration** and communication in the promotion, restoration and maintenance of health.

Utilize **reasoning**, information resources and technology to enhance outcomes.

Pursue opportunities for **lifelong personal** and professional development.

NMT PROGRAM EDUCATIONAL OUTCOMES

At the completion of the program, the graduate will:

Work effectively with members of the **health care team**.

Show ability to **think critically** by applying didactic knowledge to clinical situations.

Assume responsibility for **continuous learning**, professional growth and service to the community.

AdventHealth University

Educational Goals

The AHU graduate will:

- be an effective **communicator** who possesses appropriate verbal, nonverbal and written skills
- be a **critical thinker** who gathers, analyzes, and uses relevant knowledge
- demonstrate **professional expertise** by passing appropriate professional examinations and exhibiting proficiencies

in the practice of healthcare as a ministry.

NMT Program SLOs

The student will:

- demonstrate effective oral and written **communication skills**.
- apply **critical thinking** skills in a variety of situations.
- develop **professional expertise** in Nuclear Medicine Technology through a comprehensive, well balanced curriculum.

Program Goal or Program SLO?

PROGRAM GOAL

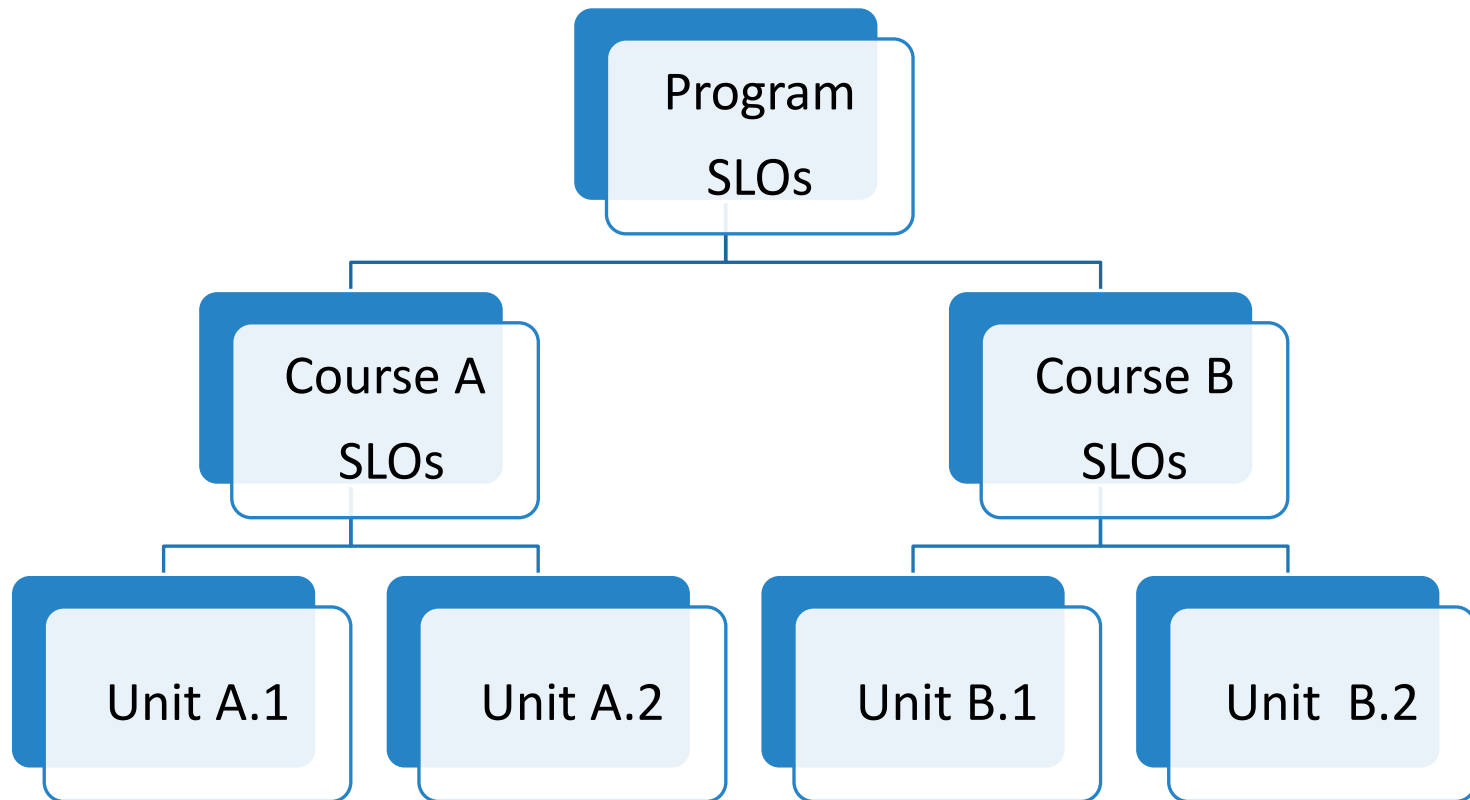
- Focus on what the program will provide or do.
- The **program** will:
 - Provides a clinical setting where students can achieve their competencies.
 - Provide a curriculum that aligns with current practice.

PROGRAM SLO

- Focus on what the student will do or learn.
- The **student or graduate** will:
 - Integrate professional skills with ethical and moral values.
 - Demonstrate competency in the performance of nuclear medicine procedures.

Program & Course Student Learning Outcomes

Hierarchy of Outcomes



Program or Course Student Learning Outcomes?

PROGRAM OUTCOMES

- ❖ 3-6 outcomes that describe at a high level what the students will learn in the program.
- ❖ Modifications may require curriculum committee approval.
- ❖ Published on the website and in the handbook.
- ❖ Example: The graduate will function as a competent, entry-level nuclear medicine technologist.

COURSE OUTCOMES

- ❖ 3-5 specific outcomes that will be learned within the course.
- ❖ Align with program outcomes.
- ❖ Modification may require curriculum committee approval.

Example: Identify function and application of the various instruments used in nuclear medicine.

Program or Course SLOs?

ON THE NEXT SLIDE, NOTE IF THE OUTCOME IS MOST LIKELY AT THE PROGRAM OR COURSE LEVEL.

Program or Course SLO?

Apply critical thinking skills and independent judgement in the technical performance of nuclear medicine procedures.

Program

Critique nuclear medicine case studies to review image quality and selected pathologies.

Course

Describe factors influencing radiation response of cells and tissues.

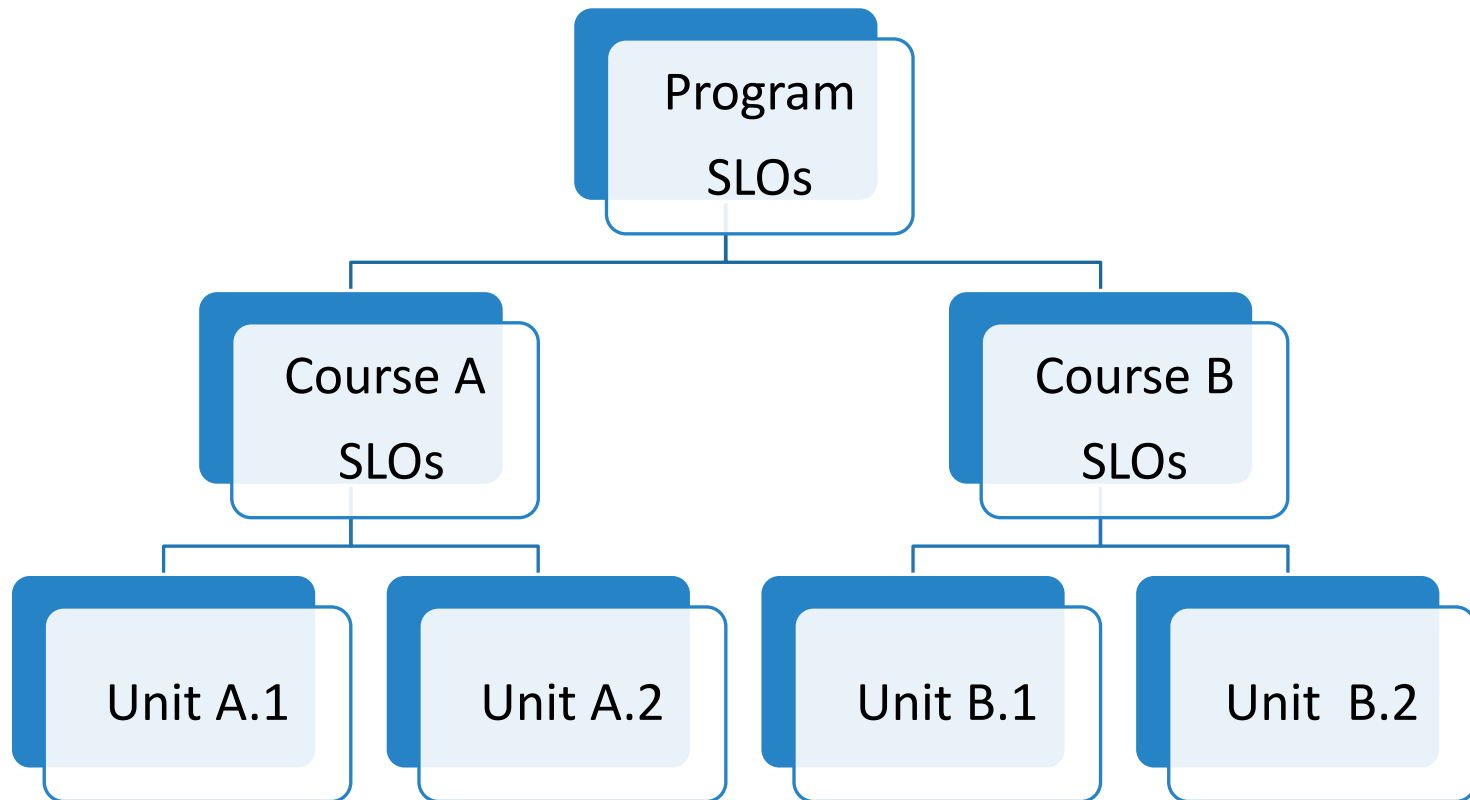
Course

Demonstrate effective oral and written communication skills.

Program

Course & Unit Student Learning Outcomes

Hierarchy of Outcomes



Course or Unit Student Learning Outcomes?

COURSE OUTCOMES

- ❖ 3-5 outcomes that describe at a high level what the students will learn in the course.
- ❖ Modifications may require curriculum committee approval
- ❖ Included on the syllabus
- ❖ Example: Identify function and application of the various instruments used in nuclear medicine.

UNIT OUTCOMES

- ❖ 3-5 specific outcomes that will be learned within the instructional unit.
- ❖ Align with course outcomes
- ❖ Can be modified by faculty
- ❖ Example: Identify the appropriate survey instrument(s) to use in the care of thyroid therapy patient.

Course or Unit SLOs?

ON THE NEXT SLIDE, NOTE IF THE OUTCOME IS MOST LIKELY AT THE COURSE OR THE UNIT LEVEL.

Course or Unit SLO?

The student will calculate the specific radioactivity of a sample after an elapsed time period, given the initial activity, volume and half-life.

Unit

Explain how various components of the imaging system affect the nuclear medicine image.

Course

Students can apply concepts of gamma ray emission and radiation attenuation for optimal patient positioning for a SPECT/CT procedure.

Unit

Upon reviewing patient history and initial images of a bone scan, the student can identify the necessary additional views that should be required to obtain a complete, diagnostic patient study.

Course

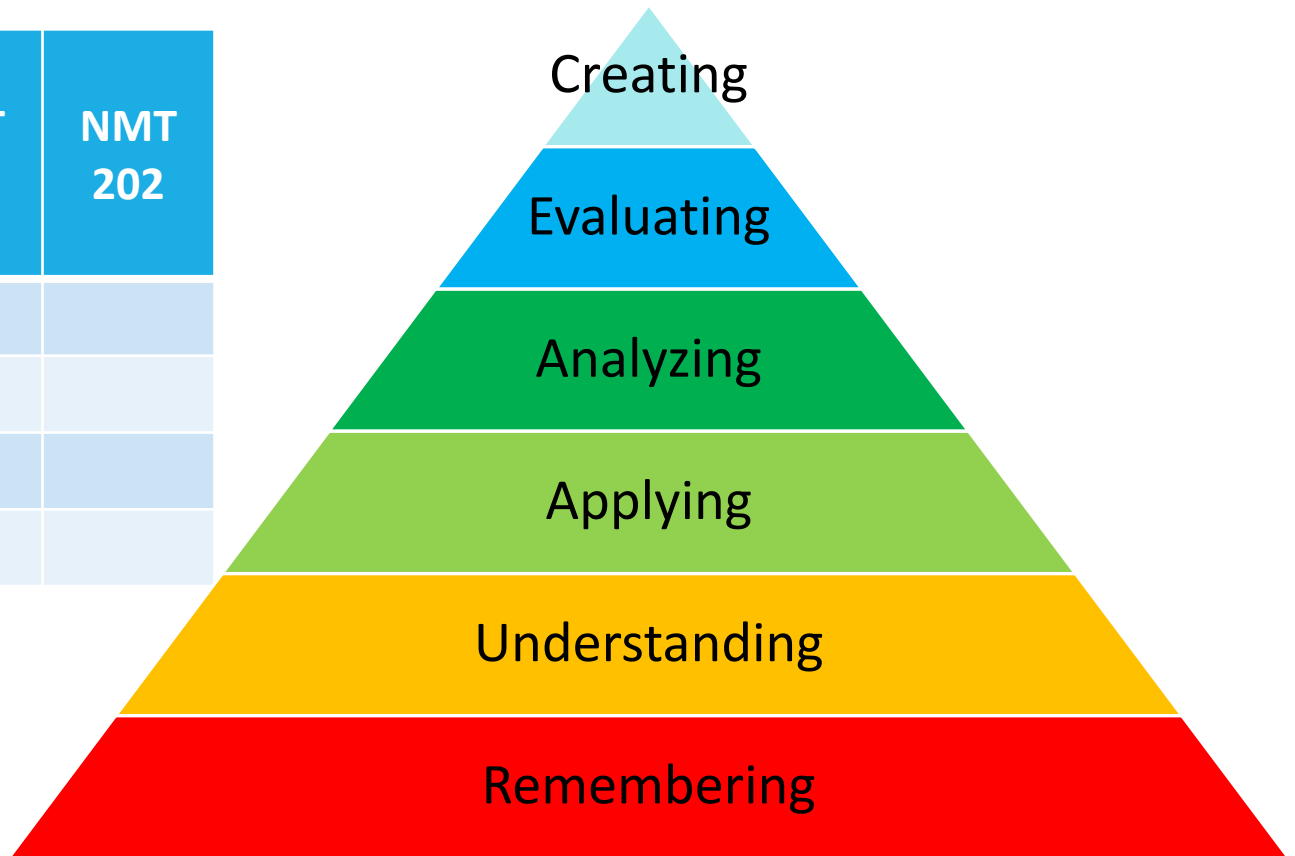
Unit

Linking Courses to Program SLOs

	Program SLO #1	Program SLO #2	Program SLO #3	Program SLO #4
NMT101	X	X		X
NMT 201	X	X	X	
Ethics 200	X			X
Pt Care 100	X			X

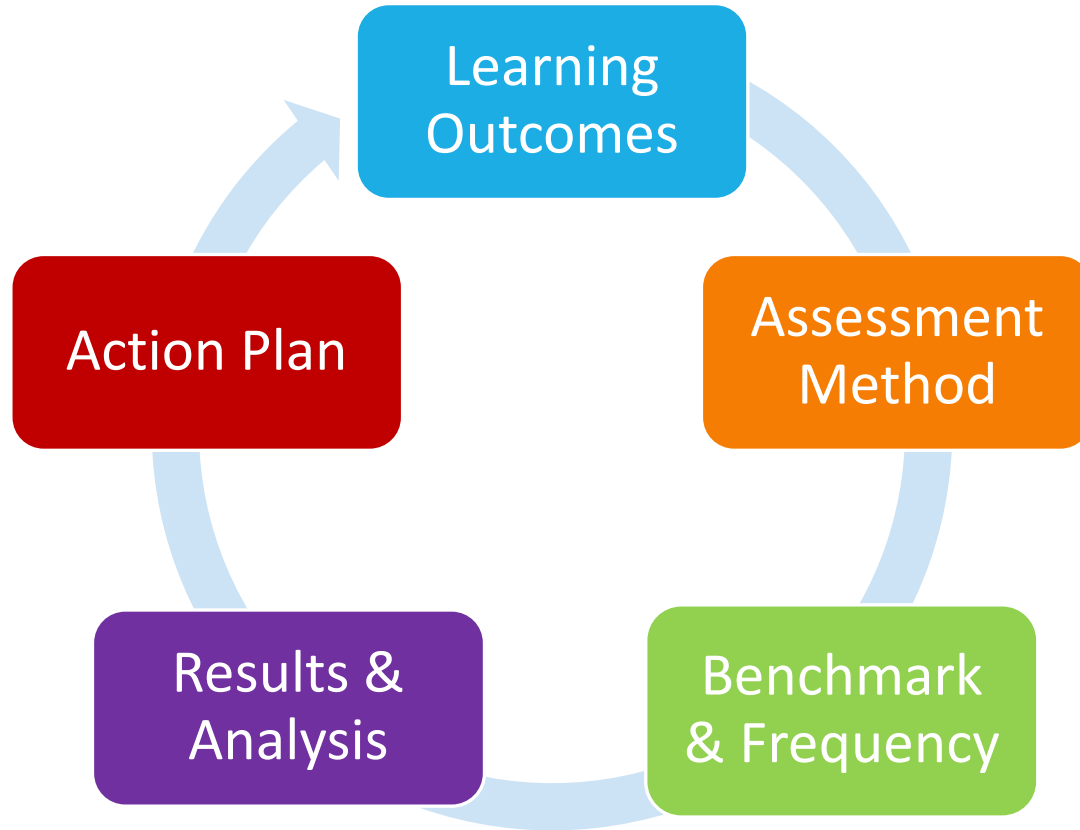
Review of Course SLOs

NMT 101	NMT 102	NMT 201	NMT 202



Assessment of Program Student Learning Outcomes

Assessment Cycle



Direct Assessment Methods

- Performance Based
- Examples:
 - Assessment of students skills observed by experience clinical instructors
 - Presentations and written work assessed with a rubric
 - Scores and pass rates on certification exams
 - Scores on a multiple choice or essay test that has a test blueprint.

Indirect Assessment Methods

- Opinion or Perception Based
- Examples:
 - Course grades and grade distributions
 - Assignment grades made without the use of a rubric or scoring criteria
 - Retention and graduation rates
 - Student ratings of their knowledge or skills

Direct or Indirect Assessment?

- Direct is preferable
 - Documentation to support
 - Difficult to dispute
- Indirect provides helpful feedback
- Assessment of student learning can use both but should not rely solely on indirect assessment method.

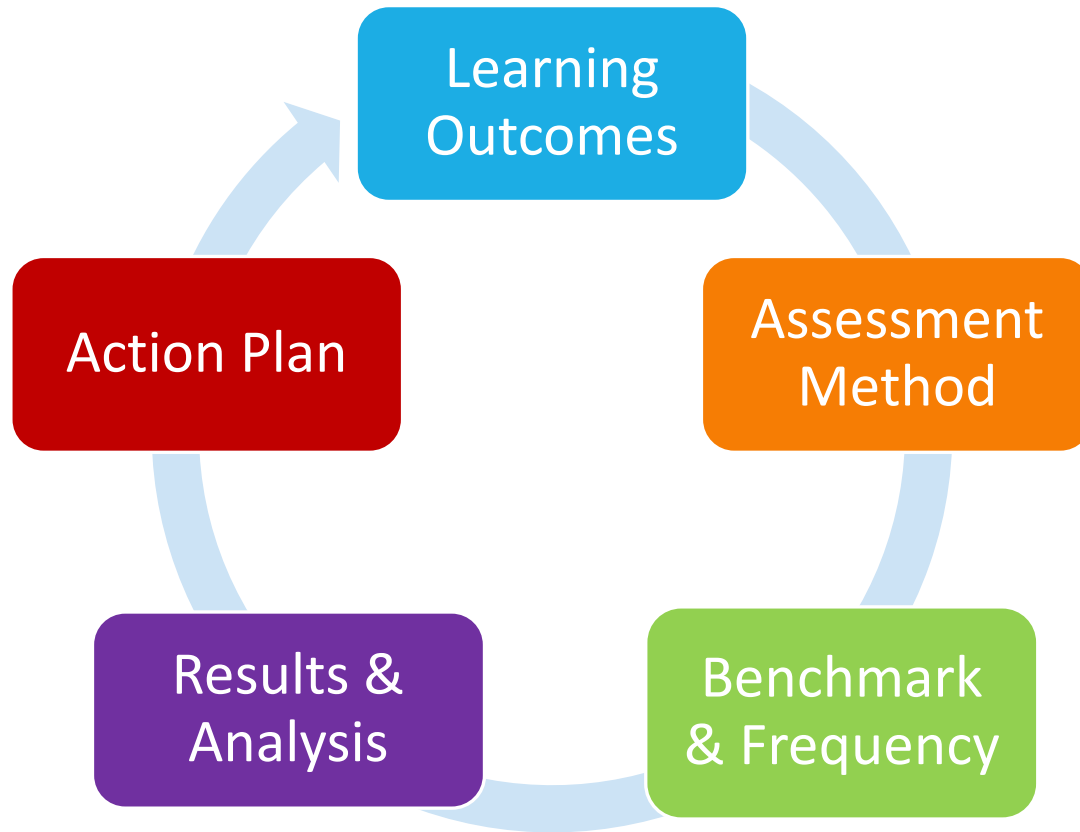
Direct or Indirect Assessment?

IN THE NEXT SLIDE, NOTE IF THE ASSESSMENT IS DIRECT OR INDIRECT?

Direct or Indirect Assessment

Alumni Survey	Indirect
Capstone Project Using a Rubric	Direct
Graduation Rate	Indirect
Portfolio	Direct
AES Clinical Evaluation of Student	Direct

Assessment Cycle



JRCNMT Forms

JRCNMT Forms

- **Form J:** Assessment of Program Student Learning Outcomes (APSLO)
- **Form L:** Program Effectiveness Data (PED)

Form J

Form J: Assessment of Program Student Learning Outcomes (APSLO)

Standard D1 and D2

Institution Name: _____

Academic Year in this Report: _____

Date of Report Completion: _____

Program Mission: **TYPE MISSION HERE**

PROGRAM STUDENT LEARNING OUTCOMES

SLO #1:					
	Assessment Method(s)	Frequency of Assmnt	Benchmark(s)	Results	Action Plan
1.					
2.					

SLO #2:					
	Assessment Method(s)	Frequency of Assmnt	Benchmark(s)	Results	Action Plan
1.					
2.					

Sources of Data

- Course Assignments (papers, case studies)
- Clinical Competencies
- Clinical Evaluations
- Graduate and Employer Surveys
- National Surveys
- Annual program reports
- Institution-wide Assessments

Form J Tips

- Review the program mission and the SLOs to ensure they correlate.
- Recognize the difference between SLOs (what students will learn in program) and program goals (what the program will accomplish).
- Ensure the program-level SLOs are unique.
- Program SLOs should be broad and will break down into smaller subsets at the course level.
- Assessment Method:
 - Identify key questions that relate to the specific SLO and only use them for computations to demonstrate student attainment of the outcome.
- Results: Be specific. Such as 8/10 or 80% demonstrated the behavior.

Benchmarks/Targets

- Review results from previous years
- Reasonable, achievable, aspirational
- Its ok to not meet all benchmarks.
- Even if all are met, we still want to look for areas of improvement.

Form J

SLO #5: Integrate professional skills with ethical and moral values.

Assessment Method	Frequency of Assessment	Benchmark	Results	Action Plan
Summative Clinical Evaluation – Professional Ethics (4 point scale)	Spring Trimester	All students earn a 3 or 4 (on a 1-4 scale)	Met: 10/10 earned a 3 or 4.	Will continue to measure and investigate additional assessments that can be used for this outcome.

Form J

SLO #3: Demonstrate effective oral and written communication skills.

Assessment Method	Frequency of Assessment	Benchmark	Results	Action Plan
Senior Case Study – oral presentation and written paper	Every Year – Fall Semester	Class average of 90 on both the presentation and paper	Benchmark met - 94 average for presentation, 91 for paper	Written grades were lower than oral presentation grades for the past two years. This fall, students will be advised to seek assistance from writing center earlier

Form L

Form L: Program Effectiveness Data (PED)

Standard D3.1

Institution Name: _____

Academic Year in this Report: _____

Date of Report Completion: _____

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Data Source	Program's Benchmark	Date(s) of Assessment	Results and Analyses	Action Plans with Time Lines
Graduation rate		1. 2.	1. 2.	1. 2.
Graduate performance on national certification examinations	≥ 80% pass rate for rolling 3-year period for both exams combined	1. 2.	1. 2.	1. 2.
Graduate job placement		1. 2.	1. 2.	1. 2.
Faculty retention		1. 2.	1. 2.	1. 2.

Form L Continued

Student evaluation of individual didactic courses, clinical experiences and faculty		1. 2.	1. 2.	1. 2.
Graduate assessment of program effectiveness		1. 2.	1. 2.	1. 2.
AES assessment of student performance		1. 2.	1. 2.	1. 2.
Employer assessment of graduate preparedness to enter the workforce		1. 2.	1. 2.	1. 2.
Advisory Committee feedback		1. 2.	1. 2.	1. 2.
Affiliate visit notes of PD/CC		1. 2.	1. 2.	1. 2.

Form L Tips

- Results should be quantitative for all items except Advisory Committee Feedback and Affiliate Visits.
- Advisory Committee Input - provide information on key issues raised by the AC during the year under review and the status of the program's efforts to address the issues.
- Affiliate Visits - summarize trends and major issues noted at visits during the year under review.
- Be specific with the benchmarks
- The return rate on graduate or employer surveys does not indicate program effectiveness. It's the responses on the surveys that matter.
- Setting benchmarks at 100% is not practical. Consider reviewing data from the most recent five years and setting a practical benchmark that includes room for improvement.

Form L

Employer assessment of graduate preparedness to enter the workforce

Data Source	Benchmark	Date(s) of Assessment	Results and Analysis	Action Plan with Timeline
Employer Survey	4.0/5.0 in all 7 areas	May 2020 – 1 year after graduation	7 of 9 surveys returned - General NM 4.4 Nuc Card 4.4 PET 4.3 Rad Protect 4.4 Instrument 4.3 QC 4.3	Employers are satisfied with grad performance. Will continue to urge employers to complete the survey.

Form L

Student evaluation of individual didactic courses, clinical experiences and faculty

Data Source	Benchmark	Date(s) of Assessment	Results and Analysis	Action Plan with Timeline
Course/ Instructor Evaluation	3.4 average (on a 4-point scale) for all classes	End of semester	Met: NMT 101: 3.7 NMT 102: 3.8 NMT 105: 3.8 NMT 106: 3.7 NMT 201: 3.7 NMT 202: 3.8 NMT 205: 3.9	New instructor for NMT 101 this year and the average score went up as compared to the last two years. The college may be changing the course/instructor forms. New benchmarks will be set if need be.

Collegial Advice

- ❑ Assessment is about continuous improvement.
 - Assessment is not Pass/Fail
 - Being perfect is not expected.
- ❑ Don't suffer in silence – reach out for assistance.
 - Seek guidance from the assessment office at your institution.
 - Peers
 - JRCNMT office
- ❑ Check to see what data you already have before creating new assessments.
- ❑ Review the directions

Resources

☐ Institution

- Seek guidance from the assessment office
- Education office at hospitals
- Other accredited programs

☐ Books

- Assessing Student Learning: A common sense guide (2018) by Linda Suskie
- Assessment Essentials (2014) by Banta and Palomba
- Assessment Clear and Simple (2010) by Barbara Walvoord