Oregon Tech
Medical Imaging Technology Department
Echocardiography Program
2018-2019 Assessment

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in the cognitive (knowledge),

nship at specifically chosen

Additional Student Learning Opportunities and Programmatic Input

Students have been encouraged to attend meetings sponsored by northwest regional chapter of the American Society of Echocardiography (the Willamette Valley Society of Echocardiography - WVSE) held quarterly in Portland and to try to attend other regional society conferences held near their

Three-Year Cycle for Assessment - Echocardiography Student Learning Outcomes

IV. Summary of 2018-2019 Assessment Activities

A. PROGRAMMATIC Student Learning Outcome #4: The student will employ professional judgment, discretion, and ethics.

The Echocardiography faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Echocardiography courses can be found in Appendix B, Student Learning Outcome-Course Matrices Table B1.

Direct Assessment #1

The faculty assessed this outcome in ECHO 388 course during spring term using an ESLO Ethics Assessment assignment, incorporating the American Society of Echocardiography Code of Ethics, and a scenario requiring application of provisions in that code. Sixteen junior Echocardiography students

Table #3. SLO #4 ECHO 388

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Demonstr				

Assignment results, Spring 2019

Students overall performance was at or above the minimum acceptable level of performance.

In reviewing the raw data, while overall individual scores generally met acceptable minimum acceptable performance, there were areas where there was some degree of uncertainty in identifying ethical issues and linking them to possible alternatives. Ethical issues will continue to be emphasized in on-campus courses. In subsequent Externship Preparation classes, more discussion of the ASE Echo Code of Ethics and examples of how it applies to real world examples will be held prior to administration of testing of understanding of ethics in the health care setting. Professional judgement and discretion are topics covered in a significant amount of class time during spring term in Echo 388.

Indirect Assessment #1

The faculty assessed this outcome in ECHO 420 with data from the 2018-2019 Student Program, and Clinical Site Evaluations in the Trajecsys reporting system, asking them to rate how well the OIT Echocardiography program and their extern site prepared them for learning outcome #4. The twenty responding senior Echocardiography students rated their proficiency using the performance criteria described in Table #5 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student rating of how OIT prepared them for outcome #4	2018-2019 Echo Program Evaluation	1 – 4 Scale	80% with a score of 3.0 or better	100%
Student rating of how their extern site prepared them for outcome #4	2018-2019 Clinical Site Evaluation	1 – 4 Scale	80% with a score of 3.0 or better	100%

Table #5. SLO #4 results for ECHO 420 Student Program and Site Evaluations

Students had rated preparation provided by both Oregon Tech, and the individual externship sites as preparing them for meeting the goals of working as a health care professional in a clinical setting. There was only one score of “3”.

In response to the data, expected performance in the clinical setting will continue to be emphasized in the Externship Preparation class, spring quarter. Individual student performance will be addressed based on input provided from Clinical Instructors and data obtained in the quarterly Competencies.

This outcome was similarly assessed in 2015-2016. As a result of the one 2015-2016 score where time constraints were noted as a factor in meeting criteria, interim input from Echocardiography faculty to Clinical Instructors (emphasizing timeliness in reporting student deficiencies and the need for adequate documentation in order to institute any corrective action) was successful in increased scores on outcomes. This process will be applied as needed, and any deficiencies corrected, and monitored.

B. Student Learning Outcome #8: The student will demonstrate knowledge and understanding of clinical echocardiographic diagnostic procedures and testing.

The performance criteria for this outcome are:

1. Correlates abnormal test results to the patient history, including demographics and physical data to answer the clinical question.
2. Not only considers general pathological assumptions as being the cause of abnormal test results, but also considers other possibilities or differential diagnosis.

3. Is able to evaluate diagnostic implications regarding what abnormal Doppler findings mean and/or could mean.
4. Is able to answer the clinical question.
5. Student ability to write the actual preliminary report accurately or write an accurate mock preliminary report.

The mapping of this outcome in the Echocardiography curriculum can be found in Appendix B, Student Learning Outcome-Course Matrices Table B1.

Direct Assessment #1

The faculty addressed this outcome at externship sites using the Cardiac – Adult TTE Aortic Stenosis Competency, as assessed by industry. This was the most commonly reported pathology competency (14/20) employing Doppler evaluation. Within the Trajecsys reporting system, the Clinical Instructors rated the proficiency of 14 senior Echocardiography students using the performance criteria described in Table #6 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results/ Competency Score
Correlates test results with clinical information & question	Aortic Stenosis Competency	1-100	Class Item Average score of 90 or better	98.5
Identifies alternate causes of pathology	Aortic Stenosis Competency	1-100	Class Item Average score of 90 or better	98.5
Recognizes abnormal Doppler findings & implications	Aortic Stenosis Competency	1-100	Class Item Average score of 90 or better	98.5
Writes accurate preliminary report	Aortic Stenosis Competency	1-100	Class Item Average score of 90 or better	98.1

Table #6. Student Competency Evaluation Results for SLO #8, 2018-2019 Externship.

Students performed at or above the minimum level of performance, as judged by industry.

The one significant below minimum score in the 2015-2016 Assessment evaluated during the 2020-2021 year, and modifications will be made based on industry recommendations. All Competency Evaluations (three per quarter minimum) are reviewed by faculty, and scores refl

C. Student Learning Outcome #9: The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.

Indirect Assessment #1

This outcome was assessed in Evaluations completed by both senior students and clinical sites as students approached completion of their clinical externship in ECHO 420, spring term 2019. Twenty externship sites participated in the program evaluation, 20 students completed Clinical Site Evaluations and 20 completed Program Evaluations. The criteria and results are provided in Table #9 below.

Evaluation scale: (1) Poor (2) Satisfactory (3) Good (4) Excellent (n/a) Not applicable

Performance Criteria	**Assessment Methods**	**Measure Scale**	**Minimum Acceptable**

Strengths: Externship provides many students with cultural diversity on a scale not experienced if the student originates from many of the smaller communities in the Northwest.

Weaknesses: While cultural diversity can be taught, the Oregon Tech student body does not reflect the wide diversity that students will encounter when going on clinical externship. The selection method for incoming class cohorts has been changed to provide a broader range of faculty input in scoring students for Program acceptance. This will hopefully level the playing field for applicants, and cancel out any unconscious bias that would reflect in the cultural diversity of an individual incoming cohort.

Additionally, as a result of the data, additional presentations of both pathophysiology and imaging resources as viewed globally will be again be provided. In the Externship Preparation classes spring term, students will be presented information on cultural differences that will be encountered on externship.

III. Overall Strengths and Weaknesses:

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Weaknesses: Procedures and testing varied somewhat between externship sites. Students have a period of significant growth and knowledge acquisition during their initial quarters of externship. Pre-externship, the sizes of the medical facilities available locally preclude clinical experience that would provide direct patient care within their echocardiography labs prior to externship. Students are additionally limited in the diversity of scanning subjects within the campus lab setting.

Plans for improvement:

- The faculty in the Echo program will increase the number of actual echocardiograms available for review on the CoreSound Echo PACS system, and utilize them for image review, pathology review, testing methods, and reporting practice in the core echocardiography classes.
- Students will also be encouraged to select scanning subjects that may be more difficult to scan, as they progress in scanning ability throughout the on-campus curriculum.
- Externship students will be expected to submit examples of pathologies encountered (submitted to OIT following HIPAA Guidelines and as allowed by individual clinical facilities).

Student Learning Outcome #9: The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.

Strengths: Clinical externship provides an introduction to many levels of society, and many cultures as students encounter a wide-diversity of patients in the clinical setting.

Weaknesses: The isolation of the Oregon Tech campus – geographical, cultural, and geopolitical – presents a challenge in terms of patient management and application of imaging with respect to cultural variation that will be encountered in the workforce.

Plans for improvement:

- Encourage recruitment of imaging volunteers from the entire spectrum of ethnicities and cultures that are present in the Oregon Tech community.
- Present information about MIT Program opportunities available4 Tw 0 -1.17 TDin the i. Oregon area through representation on the 2EAHEC i (Cascades East Area Health Education Center Advisory Board, and provi (he)4 direct hands ion opportunities -2 (n t)-2 334 (l)-1 (he)4 (-2 (s)-1 (

Appendix A – 2018-2019 Program Assessment Report – ESLO #3

discussion between the two sonographers. As they started reviewing and comparing echocardiography findings with cath lab and surgical results, they began to notice a pattern that was alarming. Many of the patients had undergone coronary angiography without any additional stress testing – either through regular stress treadmill, or stress echocardiography procedures.
A significant number of the patients undergoing angiography, based on echo findings alone, were found to have no, or insignificant, coronary artery disease. Additionally, of the patients who did proceed on to coronary bypass surgery, many were also coming back in a few months for additional valve repair or valve replacement surgery. Both sonographers thought that this was odd, but decided there was nothing they could do about it, and let it go.

1. Using your professional code of ethics, describe the ethical issue(s).

2. Describe the parties who are or should be involved in the issue(s) and discuss their point(s) of view.

3. Describe and analyze possible/alternative approaches to the issue(s).

4. Choose one of the approaches that you think is best and explain the benefits and risks.

Appendix B –

Sophomore Year

	BIO 220	BIO 346	BIO 347
OIT-BECH 2016-17.1 Demonstrate the ability to communicate effectively in oral, written and visual forms.			
OIT-BECH 2016-17.2 Demonstrate the ability to work effectively in teams.			
OIT-BECH 2016-17.3 Demonstrate an ability to provide basic patient care and comfort.			

	ECHO 320	ECHO 332	MIT 231
OIT			

Junior Year

	CHE 360	ECHO 321	ECHO 325

	ECHO 385	ECHO 388	SPE 321
OIT-BECH 2016-17.1 Demonstrate the ability to communicate effectively in oral, written and visual forms.	P	P	F
OIT-BECH 2016-17.2 Demonstrate the ability to work effectively in teams.	P		F
OIT-BECH 2016-17.3 Demonstrate an ability to provide basic patient care and comfort.			
OIT-BECH 2016-17.4 Demonstrate professional judgment, discretion, and ethics.			
OIT-BECH 2016-17.5 Demonstrate knowledge and understanding of human gross anatomy, sectional anatomy, and normal and abnormal cardiovascular anatomy.			
OIT-BECH 2016-17.6 Demonstrate knowledge and understanding of cardiovascular physiology, pathology, and pathophysiology.			
OIT-BECH 2016-17.7 Demonstrate knowledge and understanding of cardiovascular physical principles and instrumentation.			
OIT-BECH 2016-17.8 Demonstrate knowledge and understanding of clinical echocardiographic diagnostic procedures and testing.			
OIT-BECH 2016-17.9 Demonstrate an understanding of diverse cultural and humanistic traditions in the global society.	F	P	
OIT-ESLO 2016-17.1.A Communicate effectively orally.			

Senior Year

	ECHO 420	Student Exit Survey
OIT-BECH 2016-17.1 Demonstrate the ability to communicate effectively in oral, written and visual forms.	C	C
OIT-BECH 2016-17.2 Demonstrate the ability to work effectively in teams.	C	C
OIT-BECH 2016-17.3 Demonstrate an ability to provide basic patient care and comfort.	C	C
OIT-BECH 2016-17.4 Demonstrate professional judgment, discretion, and ethics.	C	C
OIT-BECH 2016-17.5 Demonstrate knowledge and understanding of human gross anatomy, sectional anatomy, and normal and abnormal cardiovascular anatomy.	C	C
OIT-BECH 2016-17.6 Demonstrate knowledge and understanding of cardiovascular physiology, pathology, and pathophysiology.	C	C
OIT-BECH 2016-17.7 Demonstrate knowledge and understanding of cardiovascular physical principles and instrumentation.	C	C
OIT-BECH 2016-17.8 Demonstrate knowledge and understanding of clinical echocardiographic diagnostic procedures and testing.	C	C
OIT-BECH 2016-17.9 Demonstrate an understanding of diverse cultural and humanistic traditions in the global society.	C	C
OIT-ESLO 2016-17.1.A Communicate effectively orally.	C	C
OIT-ESLO 2016-17.1.B Communicate effectively in writing.	C	C