

**Paramedic Education Program
Assessment Report
2010 - 2011**

Introduction

The Paramedic Education Program was established in 1977 at Oregon Health & Science University. A collaborative program with Oregon Institute of Technology was initiated in 2001. The program offers an Associate of Applied Science degree in Emergency Medical Technology-Paramedic and is nationally accredited by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Profession (CoAEMSP), a specialized accrediting body recognized by the Council for Higher Education Accreditation and/or the Secretary of the U.S. Department of Education. The program is located in Portland.

Program Educational Purpose, Objectives, and Student Learning Outcomes

In March 2011, the department reviewed the program purpose, objectives and outcomes. The department will continue to review these items on a yearly basis per their national accrediting body.

OHSU-OIT Paramedic Education Program Purpose

The purpose of the Oregon Health & Science University/ Oregon Institute of Technology Paramedic Education Program is to educate pre-hospital care providers; to prepare EMS leaders of the future; and to enhance the delivery of health care in the out-of-hospital setting.

Educational Objectives

The educational objectives of the program are to prepare students to:

1. Demonstrate personal behaviors consistent with professional and employer expectations of an entry level Paramedic.
2. Demonstrate technical proficiency in all of the skills necessary to fulfill the role of an entry-level Paramedic.
3. Comprehend, apply, and evaluate information relative to the role of an entry-level Paramedic.

Learning Outcomes

Past Year's Cycle for Assessment of Student Learning Outcomes

The faculty of the program had been using the following established the cycle for assessment of student learning outcomes as shown in Table 1 below.

Four-year Cycle for Assessment

Learning Outcomes	07-08	08-09	09-10	10-11
1. An understanding of EMS knowledge necessary to function in a healthcare setting	F			S
2. An understanding of general medical knowledge necessary to function in a healthcare setting		W		
3. An ability to collect data from charts and patients		SU		
4. An ability to interpret patient data			SU	
5. An ability to recommend appropriate diagnostic and therapeutic procedures			S	
6. An ability to use sound judgment while functioning in a healthcare setting	SU			
7. An ability to perform a broad range of clinical skills			F	F
8. An ability to perform patient assessment		F		
9. An ability to perform approved therapeutic procedures and modalities			W	
10. An ability to perform and interpret diagnostic procedures		S		
11. An ability to communicate effectively in a healthcare setting				
12. An ability to conduct oneself in an ethical and professional manner	S			SU
13. An ability to manage time efficiently while functioning in a healthcare setting				
14. An ability to use critical thinking skills to assess and treat patients in emergency settings	W			

Table 1. Cycle for Assessment of EMT Student Learning Outcomes

Current Assessment Plan

The faculty has concluded that the following learning outcomes will be evaluated and analyzed every year to allow for longitudinal data analysis of the program's effectiveness.

Graduates of the program will demonstrate:

1. An ability to understand, interpret and apply EMS and general medical knowledge necessary to function in a healthcare setting.
2. An ability to perform a broad range of paramedic level EMS skills both difficult and routine.
3. An ability to conduct oneself in an ethical and professional manner and show proficiency in interpersonal relations and communication.

2010-2011 Assessment Activities

The program faculty conducted formal assessment of three student learning outcomes during the 2010-2011 academic year. These learning outcomes have been mapped to the curriculum, as shown in Appendix A.

Student Learning Outcome #1: An ability to understand, interpret and apply EMS and general medical knowledge necessary to function in a healthcare setting.

During the fall, winter and spring terms paramedic students complete the paramedic didactic course of study before beginning a summer term field externship practicum. At the end of spring term an evaluation of the students readiness to enter the field practicum is conducted in the form of an oral examination which tests the students knowledge and understanding of pharmacology, medications administration, short answer medical and trauma questions, scenario based medical emergencies and static electrocardiography procedures and interpretation.

In a one on one appointment with a member of the faculty a student is required to answer questions regarding specific drugs, drug interactions and the appropriate use of the drugs; verbally respond to patient scenarios that list the findings from the patient examination, vital signs, EKG rhythms, pulse oximetry; and blood glucose monitoring and require the student to provide the appropriate patient management. Results are shown below in Table 2.

Scoring System for the Didactic Completion Oral Examination Table 2.

Combined Percentage on Exam	Standardized Score	Defined As:			
100-90% 121 – 134 points	4	Excels at understanding, interpreting and applying EMS and general medical knowledge.			
89-80% 108 – 120 points	3	Meets Standards for understanding, interpreting and applying EMS and general medical knowledge.			
79-70% 94 – 107 points	2	Does not meet standards for understanding, interpreting and applying EMS and general medical knowledge.			
<70% <93 points	1	Needs much improvement in the cognitive competencies of EMS and general medical knowledge			
Results					
Scores		4	3	2	1
Number / % student scores		3/16%	14/74%	2/10%	0

A copy of the Learning outcome #1 evaluation tool is found in Appendix B.

Student Learning Outcome #2: An ability to perform a broad range of paramedic level EMS skills both difficult and routine.

During the fall term students review the EMT-Basic skills and are introduced to the Paramedic skills. Skills are practiced during the weekly skills lab sessions. The final skills examinations for EMS 271 Paramedic Skills Lab, part 1 included a practical exam where students demonstrate their ability to perform a variety of skills. Competency requires 80% accuracy with the exception of critical criteria, which requires 100% accuracy for a passing score. The intent of this assessment is to identify any specific categories within skills that may be weak. Each student was tested individually and their performance was rated using the National Registry skills sheet examination instrument for the management of bleeding and shock. A scenario-based exam was used for the patient assessment examination. See Appendix C for the skills evaluation instrument.

The results indicate that the majority of students perform the skills with competency. Only 3 students of the 24 students enrolled in the course were unable to pass a first attempt skills performance. All three students failed on a critical criteria item. Combined performance on both skills exams only had one of the three students failing both exams. All three students passed a second attempt on the exam. Results are shown in Table 3.

Final Skills Exam, EMS 271 Table 3.

Management of Bleeding, Wounds and Shock		
Category and Points required for competency	Number of Students	
	Competent	Not competent
Performance on the required management procedures	21	3
Critical criteria performance	21	3
Patient Assessment - Medical		
Performance on the required management procedures	21	3
Critical criteria performance	21	3

An example of the Learning Outcome #2 evaluation tools are attached in Appendix C

Student Learning Outcome #3: An ability to conduct oneself in a professional manner and show proficiency in interpersonal relations and communication.

During summer term paramedic students complete an externship working with an EMS agency on advanced life support ambulance. They are required to perform the duties of a paramedic under the direction of a paramedic preceptor. Every two weeks the preceptor is required to fill out an evaluation on the student assessing their ability to use teamwork/communication and the student's professionalism using cognitive, psychomotor and affective domains. The scores were rated using a rubric; results are shown in Table 4.

Preceptor Evaluation of Externs Table 4.

Professionalism		
Score		Defined As:
2	Meets Standards	Articulate, Self motivated, confident, accepts criticism, well groomed displaying a professional image, and displays respect for patients and coworkers.
1	Does Not Meet Standards	Does not adhere to proper dress code, unprofessional in appearance, lack of consideration for others, inappropriate behavior on-scene, argumentative, denies need for correction.
Results		
Scores	2	1
Number / % student scores	19/100%	0

Teamwork/Communication		
Score		Defined As:
2	Meets Standards	Is aware of functions of other agencies, follows chain of command, good rapport, diplomatic and polite to other responders, provides clear direction and delegates tasks consistent with responder's certification level.
1	Does Not Meet Standards	Indicates lack of knowledge of inter/intra agency chain of command, poor rapport with other responders, difficult to understand (mumbles, hesitant, disorganized), unable to delegate tasks appropriately or provide adequate direction.
Results		
Scores	2	1
Number / % student scores	19/100%	0

The Learning Outcome #3 evaluation tool is located in Appendix D.

Summary of Student Learning

Student Learning Outcome #1: An ability to understand, interpret and apply EMS and general medical knowledge necessary to function in a healthcare setting.

Strengths:

- The student performance on this exam was consistent with previous classes and overall demonstrated that students were prepared to begin the externship phase of the program.
- The oral format of this exam gives the students their first experience of completing an oral exam, which prepares them for the Medical Director's Oral exam at the end of the year and the NREMT national certification examination.
- The comprehensive examination forces student to revisit materials learned in all three terms prior to beginning the field externship.
- Due to the comprehensive nature of the exam and its time consuming nature, all faculty must participate requiring all faculty to be up to date on their EMS knowledge.
- Feedback is given to the students at the end of their exam. This provides students with individual and timely responses to their performance on the exam.

Weaknesses:

- Providing a one on one instructor to student examination is very time consuming for faculty and requires the entire program faculty to participate in testing students. This exam takes approximately 1.5 hours per student to conduct.
- The evaluation/grading is somewhat subjective with multiple members of the faculty testing students.
- Because of the scheduling and time needed to test all students, although prohibited, there is opportunity to discuss exam materials with one another.

Actions:

Overall the faculty views this exam as a valuable assessment tool. The exam will be reviewed the annually to assure current and accurate medical information is tested.

Student Learning Outcome #2: An ability to perform a broad range of paramedic level EMS skills both difficult and routine.

Strengths:

- As with SLO #1, the student performance on this exam was consistent with previous classes.
- The exam results indicate that students are prepared to enter the clinical setting.
- The exam gives the students their first attempt at an advanced level practical skills exam similar to the exam experience with the national certification examination.

Weaknesses:

- Scenario based examinations require the use of a simulated patient. It is often difficult to create realism in scenario-based patients settings.
- Evaluation of student performance is somewhat subjective, due to the number of evaluators needed to conduct the exam.

Actions:

No changes are needed at this time. Our student outcomes on the national practical certification examination are very high. Faculty feels that tests such as this prepares the students for the national examination and gives them a valuable experience in practical testing while assuring that learning outcomes are met.

The NREMT has notified us of a research project underway to evaluate the effectiveness of the practical examination. We are watching for project results and depending on the outcome, we will update our examination format to stay current with the national standards. We expect to receive the results and plans for changes within the next twelve to eighteen months.

Student Learning Outcome #3: An ability to conduct oneself in a professional manner and show proficiency in interpersonal relations and communication.

Strengths:

- Evaluation of the students' professional and teamwork skills reinforces their importance in the work environment.
- The biweekly evaluation paired with the daily evaluations of students builds a record of student progress.
- Timely evaluations and feedback from preceptors allows the faculty the information needed to discuss progress with students and provide instructions for any improvements needed. Frequently faculty uses the evaluations as a starting point to contact preceptors and discuss options for helping student's progress.

Weaknesses:

- This is an area of evaluation where there are very few students who do not perform well. Getting detailed information for analysis is difficult in this type of format.
- It is often difficult to get detailed written comments from preceptors. However most comments provide faculty with enough information to know when it is necessary contact a preceptor and/or student regarding performance issues.

Actions:

No action is needed at this time. Evaluation forms are reviewed annually to see if any changes to the evaluation tool is needed and to assure that the forms are meeting the current standards and capturing the desired information.

Appendix A

Student Learning Outcomes-Course Matrices

Courses that are shaded indicate that the SLO is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance.

I = Introduced

R = Reinforced

E = Emphasized

Student Learning Outcome #1: An ability to understand, interpret and apply EMS and general medical knowledge necessary to function in a healthcare setting

Table A1 demonstrates the mapping of this outcome to EMT courses.

Course	Fall	Winter	Spring	Summer
EMS 115				
EMS 200				
CHE 210				
EMS 218				
EMS 231				
EMS 235				
EMS 271				
EMS 211				
EMS 232				
EMS 236				
EMS 272				
EMS 281				
EMS 233				
EMS 282				
EMS 273				
EMS 290				

Table A1. Student Learning Outcome #4-Course Matrix.

Student Learning Outcome #2: An ability to perform a broad range of paramedic level EMS skills both difficult and routine.

Table A2 demonstrates the mapping of this outcome to EMT courses.

Course	Fall	Winter	Spring	Summer
EMS 115				
EMS 200				
CHE 210				
EMS 218				
EMS 231				
EMS 235				
EMS 271				
EMS 211				
EMS 232				
EMS 236				
EMS 272				
EMS 281				
EMS 233				
EMS 282				
EMS 273				
EMS 290				

Table A2. Student Learning Outcome #5-Course Matrix.

Student Learning Outcome #3: An ability to conduct oneself in a professional manner and show proficiency in interpersonal relations and communication

Table A3 demonstrates the mapping of this outcome to EMT courses.

Course	Fall	Winter	Spring	Summer
EMS 115				
EMS 200				
CHE 210				
EMS 218				
EMS 231				
EMS 235				
EMS 271				
EMS 211				
EMS 232				
EMS 236				
EMS 272				
EMS 281				
EMS 233				
EMS 282				
EMS 273				
EMS 290				

Table A3. Student Learning Outcome #7-Course Matrix.

Appendix B—Outcome #1

DIRECTOR'S ORAL EXAMINATION
EMS 233: Class 37-11

Student: _____

Date: May 23, 2011

Proctor: _____

Section	Evaluation	# Points Awarded	Points Possible
I.	Pharmacology	_____ \geq 12	20
II.	Medication Administration	A. _____ = 9	9
		B. _____ \geq 4	6
III.	Short Answer	_____ \geq 19	24
IV.	Scenarios	_____ \geq 24	30
V.	Static ECG	_____ \geq 36	45
Total		_____ \geq 108	134

Final Recommendation

PASS

NO-PASS

Notes: _____

Director's Oral Exam Format

I. PHARMACOLOGY (5 points each, 20 total)

Questions 1 – 4: Students will recite the following information for each drug given.

- Indications
- Onset.
- Contraindications
- Side Effects
- Dosage

II. MEDICATION ADMINISTRATION (3 points each, 15 total)

Note: Questions 1 – 3, Students must calculate and give the correct dosage within four minutes for each question (critical fail).

Question 4 – 5, students must describe correct procedure for each of the medications to be administered.

III. SHORT ANSWER Medical Questions, (3 points each, 24 total)

Students will orally provide the answers to 8 medical questions.

IV. SCENARIOS (10 points each scenario, 30 total)

Given a scenario, students will orally describe assessment, management priorities, differential diagnosis, potential complications and management of each.

V. STATIC ECG (5 points each, 45 points total)

Questions 1 – 8: Given a scenario and a static ECG strip, the student will identify the ECG rhythm and verbally provide the first line of treatment.

Question 9: students will discuss 12-lead ECG findings and clinical indications of each.

Appendix C--Outcome # 2



**National Registry of Emergency Medical Technicians
Advanced Level Practical Examination**

BLEEDING CONTROL/SHOCK MANAGEMENT

Candidate: _____ Examiner: _____

Date: _____ Signature: _____

Time Start: _____	Possible Points	Points Awarded
Takes or verbalizes body substance isolation precautions	1	
Applies direct pressure to the wound	1	
<i>NOTE: The examiner must now inform the candidate that the wound continues to bleed.</i>		
Applies tourniquet	1	
<i>NOTE: The examiner must now inform the candidate that the patient is exhibiting signs and symptoms of hypoperfusion.</i>		
Properly positions the patient	1	
Administers high concentration oxygen	1	
Initiates steps to prevent heat loss from the patient	1	
Indicates the need for immediate transportation	1	
Time End: _____	TOTAL	7

CRITICAL CRITERIA

- _____ Did not take or verbalize body substance isolation precautions
- _____ Did not apply high concentration of oxygen
- _____ Did not control hemorrhage using correct procedures in a timely manner
- _____ Did not indicate the need for immediate transportation

You must factually document your rationale for checking any of the above critical items on the reverse side of this form.



**National Registry of Emergency Medical Technicians
Advanced Level Psychomotor Examination**

PATIENT ASSESSMENT - MEDICAL

Candidate: _____ **Examiner:** _____

Date: _____ **Signature:** _____

Scenario: _____

	Possible Points	Points Awarded
Actual Time Started: _____		
Takes or verbalizes body substance isolation precautions	1	
SCENE SIZE-UP		
Determines the scene/situation is safe	1	
Determines the mechanism of injury/nature of illness	1	
Determines the number of patients	1	
Requests additional help if necessary	1	
Considers stabilization of spine	1	
PRIMARY SURVEY		
Verbalizes general impression of the patient	1	
Determines responsiveness/level of consciousness	1	
Determines chief complaint/apparent life-threats	1	
Assesses airway and breathing -Assessment (1 point) -Assures adequate ventilation (1 point) -Initiates appropriate oxygen therapy (1 point)	3	
Assesses circulation -Assesses/controls major bleeding (1 point) -Assesses skin [either skin color, temperature, or condition] (1 point) -Assesses pulse (1 point)	3	
Identifies priority patients/makes transport decision	1	
HISTORY TAKING AND SECONDARY ASSESSMENT		
History of present illness -Onset (1 point) -Severity (1 point) -Provocation (1 point) -Time (1 point) -Quality (1 point) -Clarifying questions of associated signs and symptoms as related to OPQRST (2 points) -Radiation (1 point)	8	
Past medical history -Allergies (1 point) -Past pertinent history (1 point) -Events leading to present illness (1 point) -Medications (1 point) -Last oral intake (1 point)	5	
Performs secondary assessment [assess affected body part/system or, if indicated, completes rapid assessment] -Cardiovascular -Neurological -Integumentary -Reproductive -Pulmonary -Musculoskeletal -GI/GU -Psychological/Social	5	
Vital signs -Pulse (1 point) -Respiratory rate and quality (1 point each) -Blood pressure (1 point) -AVPU (1 point)	5	
Diagnostics [must include application of ECG monitor for dyspnea and chest pain]	2	
States field impression of patient	1	
Verbalizes treatment plan for patient and calls for appropriate intervention(s)	1	
Transport decision re-evaluated	1	
REASSESSMENT		
Repeats primary survey	1	
Repeats vital signs	1	
Evaluates response to treatments	1	
Repeats secondary assessment regarding patient complaint or injuries	1	
Actual Time Ended: _____		
CRITICAL CRITERIA	TOTAL	48

- _____ Failure to initiate or call for transport of the patient within 15 minute time limit
- _____ Failure to take or verbalize body substance isolation precautions
- _____ Failure to determine scene safety before approaching patient
- _____ Failure to voice and ultimately provide appropriate oxygen therapy
- _____ Failure to assess/provide adequate ventilation
- _____ Failure to find or appropriately manage problems associated with airway, breathing, hemorrhage or shock [hypoperfusion]
- _____ Failure to differentiate patient's need for immediate transportation versus continued assessment and treatment at the scene
- _____ Does other detailed history or physical examination before assessing and treating threats to airway, breathing, and circulation
- _____ Failure to determine the patient's primary problem
- _____ Orders a dangerous or inappropriate intervention
- _____ Failure to provide for spinal protection when indicated

You must factually document your rationale for checking any of the above critical items on the reverse side of this form.

Lab Final Practical Exam

Dispatch information: Unknown Medical

Upon arrival at the scene, you see an elderly male in front of his house fighting to breathe. The patient is in the tripod position, and has his lips pursed. A cigarette is sitting in the ashtray, still smoking.

Patient is an 82 y/o male with a history of COPD. Pt does not have a cardiac history. Pt was not exposed to any allergens.

Med Hx: COPD, lung cancer, asthma, HTN, chronic smoker. No heart history.

Meds: Albuterol, metoprolol, Prednisone.

Allergies: None.

Mentation: Lethargic, confused.

Airway: Clear.

Breathing: Pursed lip breathing. 26 per minute. Inspiratory and expiratory wheezes.

Circulation: Rapid radial pulse at 120bpm.

Head: Pursed lip breathing. Cyanotic. No obvious facial droop. No signs of trauma.

Neck: Some accessory muscle usage. No subcutaneous emphysema. No tracheal deviation. No signs of trauma.

Chest: Equal rise and fall. Inspiratory and expiratory wheezes. Janky at the bases. No pain upon palpation, no pain upon respirations.

Abdomen: Soft and non-tender.

Back: Nothing found if they look.

Pelvis: Nothing found if they look.

Extremities: Full range of motion x 4. Able to stand with assistance, but immediately becomes tired and dizzy.

Vitals:

BP: 130/86

HR: 66

SPO2: 84% at the beginning, decreases gradually with or without interventions.

ETCO2: Starts at 52, goes to 58 through call (decreases after intubation)

EKG: Sinus Rhythm

CBG: 126

Lung Sounds: Inspiratory and expiratory wheezes. Janky at the bases.

Projected course of the scenario:

Student should start with a quick assessment, and should move to apply high flow oxygen quickly. The pt should be recognized as critical, and the student will need to be fast and aggressive with their interventions. Student should start a nebulizer (with either Albuterol or a Duo-neb), have the pt on ETCO2, check vitals and pulse oximetry, and

**OREGON HEALTH & SCIENCE UNIVERSITY
OREGON INSTITUTE OF TECHNOLOGY
Paramedic Education Program**

BI-WEEKLY & FINAL EVALUATION FORM

Biweekly FINAL

Rating: N/A = Not Applicable, 1 = Does Not Meet Standard, 2 = Meets Standard

General

	N/A	1	2
1. Scene Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Safety Considerations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Teamwork & Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Patient Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Patient Management & Treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Skills / Knowledge

7. IV Technique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Medication Administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. EKG Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Airways, Ventilation, Intubation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Spinal Immob., Wound Care, Splinting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments:

Intern Signature: _____
Reviewed By: _____

Preceptor Signature: _____