

The Paramedic learning outcomes are broad and have been updated as of 1999. The master syllabi have been updated to reflect curriculum requirements of the EMS accreditation agency.

The Department of Public Safety, Division of Emergency Medical Services is the accrediting agency. The federal Department of Transportation (DOT) provides a minimum standard curriculum for EMS programs. Ohio adopted the 1999 DOT National Standard Curriculum without changes/additions. This model, including 1272 separate objectives, is extensive and beyond the scope of this report. Detailed individual objectives can be obtained through the department chair.

The EMS Advisory Committee and local employers provide feedback and input into the development of the program.

The last accreditation visit by the Department of Public Safety was in 2007. The EMS program received the maximum three-year accreditation. The next accreditation visit is scheduled for 2010.

- * Note: Every department is required to review Master Syllabi and Program Learning Outcomes a minimum of every two years.

II. Program Learning Outcomes: A description of what you intend for students to know (cognitive), think/feel (affective), or do (psychomotor), when they have completed your degree program. A suggested manageable number of outcomes should be in the range of five to ten. Describe Program Learning Outcomes review activities*.

An entry-level EMT-Paramedic who has successfully completed the Paramedic Certification Program at Sinclair Community College will be able to:

Learning Outcomes	Related Courses
1. Demonstrate the ability to comprehend, apply, and evaluate information relevant to the job description of an entry-level Emergency Medical Technician-Paramedic.	EMS 135, 136, 137, 138, 139

Learning Outcomes	Related Courses
2. Demonstrate the ability to proficiently perform all procedures relevant to the job description of an entry-level Emergency Medical Technician-Paramedic.	EMS 135, 136, 137, 138, 139
3. Demonstrate personal behaviors and attitudes consistent with and appropriate to the delivery of prehospital emergency medical care.	EMS 135, 136, 137, 138, 139

III. Assessment Method(s): A measurable indicator of success in attaining the stated learning outcome(s). The methodology should be both reliable and valid. Please describe in detail.

- a. **Formative Assessment Methods(s) and Description:** a measurable indicator of student in-progress success in attaining the stated learning outcome(s).

There are three main areas where formative assessment is accomplished during paramedic level education: Lecture, Laboratory and Clinical Setting. All five quarters of the paramedic program have these three attributes present.

The lecture environment within every paramedic course assesses primarily student knowledge. Students must achieve a 78% or higher average each quarter on written examinations. Topic oriented tests constitute 45%, quarterly final exams constitutes 40% and reading/written projects constitute the remainder. Demonstrated professional behavior is required during classroom and laboratory sessions. Attendance, attitude, and completion of assignments demonstrate professional behavior in this setting.

The laboratory setting assesses students' knowledge and skills as they pertain to simulated environments. Demonstrated proficiency of mandated practical skills is required in the laboratory prior to performance in the clinical setting each quarter. Proficiency in a skill is defined as the correct performance of all critical steps in the proper sequence within a prescribed time frame. Demonstrated professional behavior is required during classroom and laboratory sessions. Attendance, attitude, and completion of assignments demonstrate professional behavior in this setting. Minimum skill performances are required prior the beginning of clinical activity.

The clinical setting assesses the appropriate application and synthesis of knowledge and skills into real patient care situations. Ongoing student progress is monitored by the faculty by reviewing the clinical record book

which identifies satisfactory and unsatisfactory behaviors and skills. If problems are observed by the faculty a counseling session is scheduled with the student. A total of 348 hours of clinical are required throughout the paramedic program. A portion of these clinical hours is scheduled within every course throughout the curriculum. Thus, students are involved in a clinical experience every quarter. Demonstrated professional behavior is required during hospital/field clinical practicums. Professional behavior in the clinical setting is demonstrated by attitude, appearance, interaction with other health care workers and patients, and completion of assignments.

- b. **Summative Assessment Method(s) and Description:** a measurable indicator of end-of-program success in attaining the stated program learning outcome(s).

EMS 139, Paramedic Theory and Practice V, a seven-credit-hour course, is required of every EMS student. A comprehensive final is required and students must achieve a 70% or higher level of mastery.

Comprehensive Final

This exam was constructed to mimic the students' national certification examination. It is 240 questions in length and covers 6 separate sections. The final is designed to evaluate students at the higher ends of the cognitive domain. Construction of this exam is now in its 120th plus hour. To ensure a predictable product, questions are screened, difficulty determined and then the final product is apportioned to reflect the certification examination. The comprehensive final has 10% difficult, 55% moderate, and 35% easy questions. All questions are multiple choice format.

Questions are geared to determine appropriate evaluation and synthesis of patient care knowledge that has been obtained throughout the past 15 months. The examination has been determined to be predictive related to student's future behaviors on their certification exam.

Practical Final

In addition to the comprehensive written final, students must demonstrate proficiency and integration of mandated skills during the comprehensive practical examination at the completion of EMS 139. During this practical evaluation, students must control and direct a team of care providers to deliver appropriate medical care, perform a randomly selected set of isolated skills, and manage complex patient scenarios.

Clinical Evaluation

Clinical documents required involve patient management and ambulance run report forms. Students work with preceptors within the clinical setting to integrate knowledge and skill during the creation of treatment plans and differential diagnosis. In addition, faculty enter the clinical setting during the

final quarter of paramedic education to complete a summative evaluation of the student's readiness to graduate.

Medical Director Evaluation

As part of the summative evaluation system, every student is required to meet with the medical director of the program. This meeting is designed to determine entry level competency for near graduation paramedic students. The medical director, through a series of simulation activities and question / answer sessions, must indicate his comfort with each student prior to course completion.

Feedback

The EMS program receives feedback about the results from the National Registry Examination. This includes results on a written and practical examination.

The current first time pass rate for the EMT-Paramedic program is 73% (12/01 to 12/03 courses). Benchmarks are as follows:

State minimal requirements = 65%

National Average first time pass rate = 64%

Overall state of Ohio first time pass rate = 63%

The current first time pass rate for the EMT-Basic program is 84% (2001 – 2003 courses).

The faculty solicits informal dialogue with current students and feedback from Advisory Committee Members.

“Graduates” of the Paramedic Certification Program must achieve an overall passing grade on the written certification examination with acceptable subset scores. Graduates of the Paramedic Certification Program must successfully complete the skills portion of the certification examination.

IV. Results: A description of the actual results of overall student performance gathered from the summative assessment(s). (see III.b.)

Attrition in EMS is approximately 40-50%. The courses in which students have the highest attrition are EMS 135 (entry course for paramedic) and EMS 136 (cardiology). Within EMS 135, the main reason for attrition is lack of understanding of the rigors to be successful within the paramedic program. In EMS 136, students are unsuccessful typically due to the depth and complexity of the material presented.

Students who are marginally successful within EMS 135 tend to have difficulties in 136. These students are advised about the need to allocate more

time and resource to be successful. They are also advised of the faculty and facility resources that are available within the EMS department.

	# Students Entering EMS 101 / 135	# Students Completing EMS 104 / 139	All Attempts # Students passing certification examination (%)
Class of '07	140	85	In Progress
Class of '06	140	67	64 (95.5%)
Class of '05	110	75	74(98.7%)
Class of '04	87	76	74 (97.4%)
Class of '03	135	96	94 (97.9%)
Class of '02	86	49	49 (100%)
Class of '01	133	71	66 (93.0%)

- Students who have chosen to not sit for certification are removed from the group, yielding the above results.
- # of students entering indicates those students enrolled in a cohort after the 14 day.
- # of students completing reflects the number of students enrolled in that original cohort's final course. This number includes students from the original cohort and students who have been transplanted into that cohort due to needing to retake a course(s) during the sequence.
 - The lowest rating by graduates in technical/cognitive knowledge are cardiology and medical emergencies.

V. **Analysis/Actions:** From analysis of your summative assessment results, do you plan to or have you made any adjustments to your program learning outcomes, methodologies, curriculum, etc.? If yes, describe. If no, explain.

It appears that students have appropriate levels of knowledge and understanding, but application, synthesis and evaluation are lacking. To bolster these areas, the review sessions held during EMS 139 have been changed to reflect less restating of information already presented and more scenario based / application of information.

The comprehensive final has been retooled to more accurately reflect the certification exam. Complexity of questions has been increased to more appropriately stress the students.

In an attempt to manage the high attrition within the EMS program, two measures were instituted. First, all students who are unsuccessful within a paramedic level course are required to meet with EMS faculty prior to reentry into the program. This reinstatement meeting is designed to have a frank

conversation with the student to discover and mitigate factors that contributed to past failure. A plan is then created with a follow meeting at week 5 of the quarter. Current data (2008) for this approach is inconclusive as to its effectiveness in preventing future failure.

A second way the department is attempting to manage this high attrition rate is through a mandatory attendance policy. Past paramedic programs have allowed student to attend or not attend class as they saw fit. Starting in Fall 2007, students were advised that they could only miss 7 hours of class (10%). If they missed more, they would fail the class.

Attrition rates for students moving from EMS 135 to EMS 136 were typically 17-23 percent. The cohort starting in Fall 2007 has a 10% attrition as they moved into EMS 136 in Winter 2008. Though too early to make broad assumptions about the meaning of this data, it does appear that the mandatory attendance policy has not increased attrition. Continued assessment is required.

VI. General Education: A description of where and how within the major the three primary general education outcomes* (communication, thinking, values/citizenship/community) are assessed.

- a. Where within the major do you assess written communication? Describe the assessment method(s) used. Describe assessment results if available.

Written skills are reinforced through team projects and simulations that emphasize interactions with patients and field workers. Written communication is reinforced within every EMS class through the critique of patient assessment forms and ambulance run reports.

Programmed learning packets have been introduced to EMS 135, 136, 137, 138, and 139. The goal is to encourage mastery of writing skills and teamwork skills. These packets require the student to research various subjects and then deliver their findings. Findings may be delivered through take home quizzes, oral presentations, or written reports.

- b. Where within the major do you assess oral communication? Describe the assessment method(s) used. Describe assessment results if available.

Diagnosis games. These are activities within the classroom where a scenario is generated for the class. The group is then allowed to ask any question they deem appropriate. Answers are then created to assist and confound the student (in an attempt to recreate real patient interactions) As the dialog continues, students are able to see how one question leads to another and how a series of questions can lead to incorrect conclusions. At the end of the activity, students

are asked to list three possible causes of the patient's problems and what information within the assessment led them to that conclusion.

Oral communication skills are reinforced through team projects and simulations that emphasize interactions with patients, field workers, and verbal communication skills through use of the "two-way radio".

- c. Where within the major do you assess thinking? Thinking might include inventing new problems, seeing relationships and/or implications, respecting other approaches, demonstrating clarity and/or integrity, or recognizing assumptions. Describe the assessment method(s) used. Describe assessment results if available.

Thinking skills are reinforced through fact-finding, history, diagnosis, and developing a treatment plan, and assessment and management of patient needs. The EMS department focuses heavily on thinking skills. Students are constantly presented with new and more complicated patient scenarios to solve. These skills are required within the lecture, laboratory and clinical settings.

- d. Where within the major do you assess values/citizenship/community? These activities might include behaviors, perspective, awareness, responsibility, teamwork, ethical/professional standards, service learning or community participation. Describe the assessment method(s) used. Describe assessment results if available.

Values are reinforced through discussion of the diversity of various ethnic backgrounds. Ethic considerations and value judgments are discussed and students have to learn how to put aside their own biases, etc. Every EMS course touches on ethical considerations and values. Students explore their own values and must learn how to be relatively objective. A section of ethics within EMS is discussed within EMS 139.