Respiratory Care Annual Assessment Report
2007-08

I. Introduction

The Respiratory Care program joined Oregon Institute of Technology July 1, 2008. The 2004 fall enrollment was 26, 2005 fall enrollment was 47 and 2006 fall enrollment was 44. Two year attrition of program students was 16% for students starting in 2004 and graduating in 2006. Total number of graduates in 2006 was 19 and the total number of graduates in 2007 was 23. Employment rate for 2007 graduates is 100% The program is currently housed in Medford on the Campus of Rogue Community College,

II. Program Purpose, Objectives and Student Learning Outcomes

Respiratory Care Program Purpose

The purpose of the Respiratory Care Program, an Associate of Applied Science degree, is to provide for the regional needs for respiratory care practitioners prepared at the advanced level, (Registered Respiratory Therapist level).

Program Educational Objectives

Graduates will demonstrate professional behaviors consistent with employer expectations as advanced-level respiratory therapists (affective domain).
Graduates will demonstrate the ability to comprehend, apply, and evaluate clinical information relevant to their roles as advanced-level respiratory therapists (cognitive domain).
Graduates will demonstrate technical proficiency in all the skills necessary to fulfill their roles as advanced-level respiratory therapists (psychomotor domain).

Expected Program Learning Outcomes

Students in the program will demonstrate:

1. The ability to communicate effectively in oral, written and visual forms.
2. Knowledge of the respiratory care code of ethics and ethical and professional conduct.
3. The ability to function effectively in the health care setting as a member of the healthcare team.
4. Knowledge and application of mechanical ventilation and therapeutics.
5. Knowledge and application of cardiopulmonary diagnosis and monitoring.
6. Knowledge and application of cardiopulmonary pharmacology and pathophysiology.
7. Management of respiratory care plans for adult, neonatal and pediatric patients.

III. Three-Year Cycle for Assessment of Student Learning Outcomes

The following table shows the three year plan for assessing individual student learning outcomes.

Student Learning Outcome	2008-08	2008-09	2009-10
1. the ability to communicate effectively in oral, written and visual forms.			●
2. knowledge of the respiratory care code of ethics and ethical and professional conduct.			●
3. the ability to function effectively in the health care setting as a member of the healthcare team.			●
4. knowledge and application of mechanical ventilation and therapeutics.	●		
5. knowledge and application of cardiopulmonary diagnosis and monitoring.		●	
6. knowledge and application of cardiopulmonary pharmacology and pathophysiology.		●	
7. management of respiratory care plans for adult, neonatal and pediatric patients.	●		

Table 1. Respiratory Therapy Education Assessment Cycle

IV. Summary of 2007-08 Assessment Activities

Respiratory Therapy faculty conducted a formal assessment of two student learning outcomes during 2007-08.

Student Learning Outcome #4: Knowledge and application of mechanical ventilation and therapeutics.

The Respiratory Care program conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome to respiratory care courses can be found in Appendix A, Student Learning Outcome-Course Matrix, table A1.

Fall term 2007 the faculty assessed student written and practical examination performances in the RCP 385 Advanced Mechanical Ventilation class and laboratories, to determine student competence established during the term. Eleven students were tested in a laboratory setting in Medford and 9 in Klamath Falls. Eleven out of Eleven junior students were rated as highly in sensitivity, Ten out of 11 were able or higher in determination of AutoPEEP, 11 out of 11 here high in making weaning recommendations.

Analysis revealed the strongest areas of student performance in detection and amelioration of Auto PEEP, determination and treatment of sensitivity problems, making weaning recommendations and responding to the patient who is fighting the ventilator. When students were asked to self reflect on their progress using a Likert scale they reported adequate to Very Much for each of the following areas, responding to a ventilator emergency where the patient is fighting the ventilator, recognizing Auto PEEP,

correcting Auto PEEP, detecting and correcting sensitivity problems. Only one student rated their preparation regarding ventilator lung stretch emergencies as less than adequate. No additional actions required at this time.

Detailed records of this assessment can be found in the department assessment coordinator's notebook.

Student Learning Outcome #7: Management of respiratory care plans for adult, neonatal and pediatric patients.

Neonatal:

The respiratory care program conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome to respiratory care courses can be found in Appendix A, Student Learning Outcome-Course Matrices, table A2.

Student neonatal ability was evaluated as recorded on the Neonatal Resuscitation Megacode assessment form used in the RCP 388 course. This form uses a 3 point Likert scale. Students were consistently rated as #2 done correctly and in order. In six instances six students were rated #1 Done incorrectly, incompletely, or out of order level. Two were rated #1 in rating the area of drying the newborn and removing wet towels and repositions Five students were rated at this level for not identifying the need to start chest compressions.

In analyzing the data, the program concluded that the weakest part of this SLO for a small group of students was the ability to determine when to start neonatal chest compressions. The next time the course is taught, the faculty will provide more practice in determining when to start chest compressions. Most of the students in the program were able to meet this performance criteria, so no further action is required at this time.

When students were asked to self reflect on what they had learned about emergent neonatal resuscitation 100% rated their learning as either 9 or 10 on a 10 point Likert scale. Below these numbers were the words "A lot". Clearly the students believe that they learned a lot about neonatal resuscitation in the delivery or operating room.

Detailed records of this assessment can be found in the department assessment coordinator's notebook.

Adult

The junior students' ability to perform the cognitive steps needed to manage adult ventilator problems was measured on the final RCP 385 final examination using five paragraph type questions. The didactic final examination tested the ability of the student to synthesize a respiratory care plan to address mechanical ventilation issues. Many students demonstrated difficulty in being able to synthesize a theoretical accounting for various ventilator, ABGs and patient scenarios. Especially the ability to conjecture

regarding the state of ventilatory drive was troublesome. This was a new level of testing found on the final didactic examination. This level of testing was reserved for the final because before students can participate in the highest levels of learning and testing (Analysis and Synthesis) they must first learn and comprehend the basic facts. There are a lot of facts and relationships to learn before we can get to this highest level. Essentially only 5/12 students could do the kind of thinking and analysis desirable.

What the faculty will do to remediate the student's ability to think systematically about complex ventilator problems and come up with a defensible management plan? First a significance number of students were given IC grades fall term and were required to retest and pass an alternative final mechanical ventilation examination fall term 2007-2008. Second, students will be tested at this level of thinking during the winter and spring terms of 2008, as described below. Third, program faculty will consider if this level of thinking could be introduced and tested earlier in the fall mechanical ventilation course. This course is already packed with important learning activities so it may be appropriate to continue as we are doing this year and to work on this high level skill in the remaining two (winter and spring) quarters of the program prior to AS degree graduation.

Final note: Students took the National Board for Respiratory Care Registered Respiratory Therapist Written Secure examination as the final exam of Winter Term and all students exceeded the CoARC set standard for passing. (The previous two classes did not do this well).

V. Evidence of Student Learning

During the 2007-08 academic year, the Respiratory Care faculty formally assessed the student learning outcomes summarized below:

Student Learning Outcome #4: Knowledge and application of mechanical ventilation and therapeutics.

Strengths: All Junior students exceeded national standards for mechanical ventilation and therapeutics as measured Winter Term 2007-08 on the National Board for Respiratory Care Registered Respiratory Therapist Secure Examination. All Juniors have met competency standards in mechanical ventilation in the clinical setting. During fall term 2007 laboratory examinations juniors were strong in the detection and amelioration of autoPEEP, troubleshooting sensitivity problems, making weaning recommendations and responding to a patient who is fighting the ventilator.

Areas needing improvement: None at this time.

Student Learning Outcome #7: Management of respiratory care plans for adult, neonatal and pediatric patients.

Strengths: All juniors met the national standards of the American Academy of Pediatrics as measured during the Neonatal Resuscitation training program. The tests and activities

measure the ability for students to assess the neonate and adjust to resuscitation to patient needs. Juniors are able to evaluate arterial blood gas data and make recommendations for ventilator adjustment. Given patient data juniors are able to make recommendations in harmony with the ARDSnet, ventilator bundles for the prevention of ventilator associated pneumonia, National Asthma Guidelines and the Global Initiative for Chronic Obstructive Lung Disease. All Junior students exceeded national standards for management of respiratory care plans for adult, neonatal and pediatric patients as measured Winter Term 2007-08 on the National Board for Respiratory Care Registered Respiratory Therapist Secure Examination.

Areas needing improvement: None at this time.

Appendix A
Student Learning Outcome-Course Matrices
Learning outcomes/course matrix
2007-2008
and
2010 - 2011

4. Knowledge and application of mechanical ventilation and therapeutics..
Table A1: This matrix identifies possible points for assessment, but not all points will be assessed.

Quarter	Course
Fall Sophomore	RCP 221 Introduction to patient assessment.
	RCP 231 Pulmonary Physiology
	RCP 241 Respiratory Gas Therapeutics
	RCP 251 Pulmonary Pathology and Pharmacology
Fall Junior	RCP 361 Clinical III
	RCP 371 Case Conf/Simulation I
	RCP 385 Adv. Mech Ventilation
	RCP 388 Neonatal and Pediatric Respiratory Care
Winter Sophomores	RCP 222 Pulmonary Rehabilitation and Gerontology
	RCP 242 Hyperinflation Therapy
	RCP 252 Cardiopulmonary Pathology and Pharmacology
Winter Junior	RCP 362 Clinical IV
	RCP 386 Critical Care
Spring Sophomore	RCP 275 Cardiopulmonary Diagnosis
	RCP 284 Intro to Mech Ventilation
	RCP 281 Professional Review
Spring Junior	RCP 363 ICU Clinical
	RCP 373 Case Conf/Simulation III
Summer Sophomores	RCP 261 Clinical I
	RCP 262 Clinical II
	RCP 263 Clinical III
	RCP 304 Field Studies

Learning outcomes/course matrix
2007-2008
and
2010 - 2011

Student Learning Outcome #7: Management of respiratory care plans for adult, neonatal and pediatric patients.
Table A2 This matrix identifies possible points for assessment, but not all points will be assessed.

Quarter	Course
Fall Sophomore	RCP 221 Introduction to patient assessment.
	RCP 231 Pulmonary Physiology
	RCP 241 Respiratory Gas Therapeutics
	RCP 251 Pulmonary Pathology and Pharmacology
Fall Junior	RCP 361 Clinical III
	RCP 371 Case Conf/Simulation I
	RCP 385 Adv. Mech Ventilation
	RCP 388 Neonatal and Pediatric Respiratory Care
Winter Sophomores	RCP 222 Pulmonary Rehabilitation and Gerontology
	RCP 242 Hyperinflation Therapy
	RCP 252 Cardiopulmonary Pathology and Pharmacology
Winter Junior	RCP 362 Clinical IV
	RCP 386 Critical Care
Spring Sophomore	RCP 275 Cardiopulmonary Diagnosis
	RCP 284 Intro to Mech Ventilation
	RCP 281 Professional Review
Spring Junior	RCP 363 ICU Clinical
	RCP 373 Case Conf/Simulation III
Summer Sophomores	RCP 261 Clinical I
	RCP 262 Clinical II
	RCP 263 Clinical III
	RCP 304 Field Studies