Spring 2014
Institutional Learning Outcomes Assessment Report

Term Assessments Took Place: Fall 2012 and Spring 2013 **Type of Outcome: ILO #1**

Step 1: Learning Outcomes Statement
ILO #1. Critical Thinking: Students demonstrate critical thinking through decision-making, problem-solving, analysis of information, and creative thinking across the disciplines.

Step 2: Means of Assessment (Measurement Method)
Using data collected in eLumen in Fall 2012 and Spring 2013, 800 records were collected for ILO #1 using a five level rubric and 6,465 were collected using a four level rubric. The information from the 4 level rubric was used to indicate student's progress on achieving the Critical Thinking Institutional Learning Outcome.

Step 3: Criteria for Success (Benchmark)
Each year the IEAO Committee will identify the two ILOs with the lowest student performance scores and focus on identifying strategies for improvement in those two areas. ILOs 1, 5, and 6 were identified as having the lowest scores on the assessments, 78% of the scores were 2 or higher on the 4-point rubric ranging from 0 – 3. The IEAOC chose ILO #1, Critical Thinking, and ILO #5, Information Literacy, to develop improvement plans for because these two areas were assessed much more extensively and ILO #6, Ethics and Values, will have more assessments as we improve the mapping and data collection process.

Step 4: Summary of Evidence
78% of the responses were scored at a 2 or higher on the course outcomes.

Rubric Level	Rubric Description	#	%	%
0	No demonstrated achievement	501	7.7	22.1
1	Minimal evidence of achievement – below expectations	928	14.4	
2	Adequate evidence of achievement – met stated outcome or expectations	1,775	27.5	77.9
3	Significant evidence of achievement – surpassed stated outcome, mastery or near mastery of learning expectations	3,261	50.4	
	Total	6,465	100.0	100.0

Step 5: Use of Results (Implications for Program Improvement & Planning)
In Fall 2014 the outcomes committee will facilitate a meeting with the instructors involved in assessing this outcome to provide input on how the results from the assessment help of inform instruction and to develop strategies for improving instruction in the area of critical thinking.

Table 1: Spring 2013 Student ratings on the CCSSE of how their experience at CHC contributed to ability to think critically and analytically.

How much has your experience at this college contributed to your knowledge, skills, and personal development in the following…	Likert Scale									% of Some or Higher	% of Quite a Bit or Higher
	Very Little		Some		Quite a Bit		Very Much		Total		
	#	%	#	%	#	%	#	%	#		
Thinking critically and analytically	27	4.2	150	23.1	268	41.2	205	31.5	650	95.8	72.8

Table 2: Fall 2012 and Spring 2013 eLumen Summary of Results by Outcome Statement.

Outcomes Statements		Rubric Value				Total
		0	1	2	3	
1. Identify the various respiratory and metabolic acid-base problems, and be able to interpret the results of blood gas analysis using the Henderson-Hasselbalch equation.	#	2	0	0	25	27
	%	7.4	0.0	0.0	92.6	100.0
1. Students will identify, discuss, and analyze the elements of literature.	#	0	0	0	14	14
	%	0.0	0.0	0.0	100.0	100.0
1. The student will identify Laplace's law.	#	1	0	0	33	34
	%	2.9	0.0	0.0	97.1	100.0
2. Identify the physiologic effects of electrolyte disturbances caused by both elevated and reduced levels of various electrolytes, and their relationship to acid-base balance interpretation.	#	2	0	0	25	27
	%	7.4	0.0	0.0	92.6	100.0
2. Students will choose artwork and literature for inclusion of the school literary magazine.	#	0	0	0	14	14
	%	0.0	0.0	0.0	100.0	100.0
2. The student will know when immature surfactant first appears.	#	18	0	0	16	34
	%	52.9	0.0	0.0	47.1	100.0
3. Identify the signs and symptoms of cardiopulmonary distress, and be able to discuss their etiology and identify effective therapeutic interventions.	#	1	0	0	26	27
	%	3.7	0.0	0.0	96.3	100.0
3. Students will layout and design the school literary magazine.	#	0	0	0	14	14
	%	0.0	0.0	0.0	100.0	100.0
3. The student will know the three cardinal signs of respiratory distress.	#	4	0	0	30	34
	%	11.8	0.0	0.0	88.2	100.0
4. Students will develop criteria for evaluating the quality of submissions.	#	0	0	0	14	14
	%	0.0	0.0	0.0	100.0	100.0
4. The student will calculate how long an H cylinder running at 3Lpm will last.	#	0	0	0	34	34
	%	0.0	0.0	0.0	100.0	100.0
5. The student will calculate the duration of a liquid oxygen reservoir running at 2 Lpm.	#	3	0	0	31	34
	%	8.8	0.0	0.0	91.2	100.0
8. Students will learn to collect information, create a flow	#	11	13	64	186	274

chart and to successfully navigate through that flow chart.	%	4.0	4.7	23.4	67.9	100.0
By the end of the class the student will be able to demonstrate proficiency in the management of the patient with ARDS.	#	8	0	0	19	27
	%	29.6	0.0	0.0	70.4	100.0
By the end of this class the students will be able to IDENTIFY Acute and chronic obstructive respiratory diseases.	#	3	1	10	16	30
	%	10.0	3.3	33.3	53.3	100.0
By the end of this class the students will be able to IDENTIFY Acute and chronic restrictive respiratory disease.	#	3	2	2	23	30
	%	10.0	6.7	6.7	76.7	100.0
By the end of this class the students will be able to IDENTIFY The fundamentals of chest radiograph interpretation.	#	3	2	4	21	30
	%	10.0	6.7	13.3	70.0	100.0
By the end of this course the student will be able to demonstrate proficiency in assessing hemodynamic differences between restrictive and obstructive disorders.	#	14	0	0	13	27
	%	51.9	0.0	0.0	48.1	100.0
By the end of this course, the student will show proficiency in being able to assess, identify and treat restrictive disease processes.	#	10	0	0	17	27
	%	37.0	0.0	0.0	63.0	100.0
Demonstrate the ability to correctly use an automatic pipettor and a micropipettor	#	0	0	0	4	4
	%	0.0	0.0	0.0	100.0	100.0
Demonstrate the ability to correctly wash laboratory glassware	#	1	0	1	13	15
	%	6.7	0.0	6.7	86.7	100.0
Demonstrate the ability to determine and adjust the pH of solutions	#	0	0	0	4	4
	%	0.0	0.0	0.0	100.0	100.0
Demonstrate the ability to operate an autoclave	#	1	0	1	13	15
	%	6.7	0.0	6.7	86.7	100.0
Demonstrate the ability to prepare microbiological media	#	1	0	1	13	15
	%	6.7	0.0	6.7	86.7	100.0
Find, evaluate and incorporate sources from library and internet into a research paper that argues a position effectively using MLA guidelines (8-10 Pages, Times Roman 12 point font).	#	132	353	678	524	1687
	%	7.8	20.9	40.2	31.1	100.0
Identify and use medical terminology in proper context when communicating orally or in writing Version 2	#	12	16	18	32	78
	%	15.4	20.5	23.1	41.0	100.0
Interpret the information contained in SDS (safety data sheets – formally called MSDS)	#	1	0	1	13	15
	%	6.7	0.0	6.7	86.7	100.0
SMART Goal: Quality of overall Goal/Plan	#	1	3	6	16	26
	%	3.8	11.5	23.1	61.5	100.0
SMART Goal: The presentation was clear and well presented.	#	1	3	8	13	25
	%	4.0	12.0	32.0	52.0	100.0
Students will be able to articulate their support for or against an issue by crafting essays which are well-supported and demonstrate logical reasoning and argumentative skills.	#	23	41	101	63	228
	%	10.1	18.0	44.3	27.6	100.0
Students will be able to identify the best parameter to evaluate the adequacy of a patient?s ventilation.	#	3	0	0	28	31
	%	9.7	0.0	0.0	90.3	100.0
Students will be able to identify the general purpose for	#	10	0	0	21	31

performing pulmonary function studies.	%	32.3	0.0	0.0	67.7	100.0
Students will be able to identify what a RCP should keep in mind when reviewing a patient?s history.	#	4	0	0	27	31
	%	12.9	0.0	0.0	87.1	100.0
Students will be able to identify what clinical findings would be most consistent with categorizing a patient with compensated shock.	#	7	0	0	20	27
	%	25.9	0.0	0.0	74.1	100.0
Students will be able to identify what is an important principle in managing sinus tachycardia.	#	4	0	0	23	27
	%	14.8	0.0	0.0	85.2	100.0
Students will be able to identify what the role of fibrinolytics is in ACLS.	#	2	0	0	25	27
	%	7.4	0.0	0.0	92.6	100.0
Students will be able to read and critically evaluate texts for factual, rhetorical and argumentative merit.	#	25	61	144	95	325
	%	7.7	18.8	44.3	29.2	100.0
Students will demonstrate an ability to locate, read, organize and critically evaluate information for incorporation into both informative and persuasive presentations.	#	1	20	83	136	240
	%	0.4	8.3	34.6	56.7	100.0
Students will demonstrate their ability to construct and organize coherent and audience-centered speeches.	#	9	62	258	388	717
	%	1.3	8.6	36.0	54.1	100.0
The student will aply appropriate techniques for solving trigonometric equations and proving trigonometric identities with regard to the course outline.	#	0	13	4	4	21
	%	0.0	61.9	19.0	19.0	100.0
The student will apply appropriate techniques for solving exponential, logarithmic, and algebraic equations with regard to the course outline.	#	0	10	41	44	95
	%	0.0	10.5	43.2	46.3	100.0
The student will apply appropriate techniques to determine and/or construct the six trigonometric functions of commonly used angles as appropriate to the course outline.	#	0	2	3	16	21
	%	0.0	9.5	14.3	76.2	100.0
The student will be able identify what the indication for short acting beta agonists in asthma.	#	0	0	0	29	29
	%	0.0	0.0	0.0	100.0	100.0
The student will be able to apply the appropriate strategy to solve, manipulate, or graph the various types of algebraic expressions/equations.	#	1	60	78	46	185
	%	0.5	32.4	42.2	24.9	100.0
The student will be able to describe the most common side effects for inhaled corticosteroids.	#	6	0	0	23	29
	%	20.7	0.0	0.0	79.3	100.0
The student will be able to explain how to interpret the acid-base balance in an arterial blood gas.	#	6	0	0	25	31
	%	19.4	0.0	0.0	80.6	100.0
The student will be able to explain in writing how to perform a minimal leak technique.	#	0	5	0	25	30
	%	0.0	16.7	0.0	83.3	100.0
The student will be able to explain in writing how to perform a minimum occluding volume.	#	0	11	0	19	30
	%	0.0	36.7	0.0	63.3	100.0
The Student will be able to explain in writing the difference between kinetic energy and potential energy.	#	3	0	0	28	31
	%	9.7	0.0	0.0	90.3	100.0
The student will be able to explain the difference between obstructive and restrictive conditions on a flow volume loop.	#	8	0	0	23	31
	%	25.8	0.0	0.0	74.2	100.0
The student will be able to explain which class of drugs can	#	1	0	0	28	29

be aerosolized.	%	3.4	0.0	0.0	96.6	100.0
The student will be able to identify various types of algebraic expressions/equations as appropriate to the course.	#	1	31	93	60	185
	%	0.5	16.8	50.3	32.4	100.0
The student will be able to use the above outcomes to model real-world type applications.	#	0	23	17	11	51
	%	0.0	45.1	33.3	21.6	100.0
The student will calculate the duration of flow from a gas cylinder.	#	0	11	0	19	30
	%	0.0	36.7	0.0	63.3	100.0
The student will correctly and adequately demonstrate how to ventilate with a self-inflating resuscitation bag on a patient.	#	13	0	0	15	28
	%	46.4	0.0	0.0	53.6	100.0
The student will demonstrate his/her understanding of medical gas cylinders and delivery methods, completing the following steps under the supervision of a clinical instructor.	#	0	0	0	31	31
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to administrate aerosolized medication via small volume nebulizer to a patient in an acute care or alternate site.	#	0	0	0	31	31
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to assess a patient in an acute care or alternate care site.	#	9	0	0	22	31
	%	29.0	0.0	0.0	71.0	100.0
The student will demonstrate how to assess a patient's ventilatory status using safe, aseptic technique and minimizing patient discomfort.	#	0	0	0	27	27
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to extubate a patient using proper procedure and universal precaution.	#	0	0	0	27	27
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to instruct and administer incentive spirometry on a patient in an acute care or alternate site.	#	15	0	0	16	31
	%	48.4	0.0	0.0	51.6	100.0
The student will demonstrate how to mechanically aspirate secretions, when indicated by auscultation, from the patient?s airway.	#	1	0	0	27	28
	%	3.6	0.0	0.0	96.4	100.0
The student will demonstrate how to monitor ventilator parameters according to RT department policy.	#	0	0	0	27	27
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to perform an ECG on a patient in an acute care or alternate care site.	#	0	0	0	27	27
	%	0.0	0.0	0.0	100.0	100.0
The student will demonstrate how to perform percussion, postural drainage and vibration on a patient in an acute care or alternate site.	#	8	0	0	20	28
	%	28.6	0.0	0.0	71.4	100.0
The student will demonstrate how to properly perform IPPB or IPV on a patient in an acute or alternate site.	#	5	0	0	23	28
	%	17.9	0.0	0.0	82.1	100.0
The student will demonstrate how to set up a nasal cannula to a patient and will determine the approximate FIO2 delivered per liter of flow.	#	12	0	0	19	31
	%	38.7	0.0	0.0	61.3	100.0
The student will demonstrate how to set up an aerosol	#	8	0	0	20	28

mask, T-piece, Tracheostomy collar, or face tent with supplemental O2 on a patient, ensuring proper fractional inspired oxygen (FIO2), if ordered, and adequate total flow to meet patient inspiratory flow demand.	%	28.6	0.0	0.0	71.4	100.0
The student will determine the best way to measure spontaneous minute ventilation.	#	16	11	0	0	27
	%	59.3	40.7	0.0	0.0	100.0
The student will determine what medication is for a 2-year-old child with an upper airway infection with audible stridor.	#	0	27	0	0	27
	%	0.0	100.0	0.0	0.0	100.0
The student will evaluate and analyze integrals as appropriate to first year calculus.	#	0	2	11	14	27
	%	0.0	7.4	40.7	51.9	100.0
The student will evaluate and analyze sequences and series and their relation to fucntions as appropriate to first year calculus.	#	0	1	10	16	27
	%	0.0	3.7	37.0	59.3	100.0
The student will explain how to calculate the % improvement from a pre-post bronchodilator pulmonary function test.	#	0	0	0	31	31
	%	0.0	0.0	0.0	100.0	100.0
The student will explain how to calculate the dissolved oxygen in the plasma and the oxygen carrying capacity of hemoglobin in the blood.	#	6	0	0	25	31
	%	19.4	0.0	0.0	80.6	100.0
The student will explain how to compute the alveolar-arterial PO2 difference and a/A ratio.	#	7	0	0	24	31
	%	22.6	0.0	0.0	77.4	100.0
The student will explain how to identify general anatomical landmarks, tube placement, or any other artificial apparatus when viewing patient's chest film.	#	0	0	0	27	27
	%	0.0	0.0	0.0	100.0	100.0
The student will explain how to set the high and low pressure alarm on a ventilator.	#	1	1	4	25	31
	%	3.2	3.2	12.9	80.6	100.0
The student will explain in writing between minute ventilation and alveolar ventilation	#	2	0	0	29	31
	%	6.5	0.0	0.0	93.5	100.0
The student will explain in writing how to calibrate a polarographic oxygen analyzer.	#	0	2	0	27	29
	%	0.0	6.9	0.0	93.1	100.0
The student will explain in writing how to calibrate electrical helium ?type analyzer.	#	0	9	0	21	30
	%	0.0	30.0	0.0	70.0	100.0
The student will explain in writing how to set up a ventilator for operation, choosing the proper mode, rate, tidal volume and flow rate.	#	1	2	9	19	31
	%	3.2	6.5	29.0	61.3	100.0
The student will explain in writing the comparison between compliance and elastance.	#	6	0	0	25	31
	%	19.4	0.0	0.0	80.6	100.0
The student will form a pressure/time graph; identify a ventilator delivered pressure controlled breath.	#	2	4	2	23	31
	%	6.5	12.9	6.5	74.2	100.0
The student will identify and sketch the graphs of polynomial, rational, exponential, and logarithmic functions as well as graphs of the conic sections.	#	3	33	35	24	95
	%	3.2	34.7	36.8	25.3	100.0
The student will identify and sketch the graphs of the trigonometric functions.	#	0	4	4	13	21
	%	0.0	19.0	19.0	61.9	100.0
The student will identify the correct cause of EPAP below the prescribed levels.	#	12	15	0	0	27
	%	44.4	55.6	0.0	0.0	100.0

The student will know how to apply the alveolar air equation in determining alveolar partial pressure of oxygen (PAO2).	#	6	0	0	25	31
	%	19.4	0.0	0.0	80.6	100.0
The student will recognize which device is most effective at increasing the absolute humidity delivered to a patient.	#	3	24	0	0	27
	%	11.1	88.9	0.0	0.0	100.0
The student will recognize, define and use formal mathematic notation as appropriate to the course outline.	#	0	0	6	14	20
	%	0.0	0.0	30.0	70.0	100.0
The student will recognize, define, and use formal mathematic notation as appropriate to the course outline.	#	0	26	67	49	142
	%	0.0	18.3	47.2	34.5	100.0
The student will recommend the correct medication for severe bronchospasm	#	6	21	0	0	27
	%	22.2	77.8	0.0	0.0	100.0
The student will, from a pressure/time graph, identify the SIMV Mode.	#	8	3	1	19	31
	%	25.8	9.7	3.2	61.3	100.0
The suttudent will be able to explain and calculate problems using the different types of gas laws.	#	4	0	0	27	31
	%	12.9	0.0	0.0	87.1	100.0
Using techniques of multivariable calculus, the student will apply derivatives and integration to functions of several variables.	#	0	0	10	10	20
	%	0.0	0.0	50.0	50.0	100.0
Total	#	501	928	1775	3261	6465
	%	7.7	14.4	27.5	50.4	100.0