

**Eastern West Virginia Community and Technical College
COURSE ASSESSMENT REPORT**

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| Course Title and Number: NU 142 Drug and Dosage Calculations II | Academic Term and Year of Assessment Activity (Ex: Fall, 2014) |
| Report Submitted By: Eleanor Berg, MS | Number of Students Assessed: 19 |
| Date Report Submitted: 5/30/2017 | Number of Sections Included: 1 |
| Course Delivery Format (list all modalities used in sections assessed. Ex: web based, VDL, traditional section, hybrid course, etc.): Traditional | |

Course Role in the Curriculum

Provide a description of the role the course serves in the curriculum (i.e. general education requirement, program technical core, restricted elective, etc.). Note all as appropriate.

NU 142 is a mandatory course in the nursing curriculum which must be taken in the second semester. The student must be in the nursing program and must have completed NU 132 with a "C" or above. Drug and Dosage Calculations are utilized in the nursing profession and the student must be able to apply the concepts to safely deliver nursing care. The course expands the nursing student's ability to read, interpret, and solve increasingly complex dosage calculation problems. Critical thinking skills are applied to age and acuity specific variations in select populations. The methods of calculations were taught in both NU 132 and NU 142 but this course expanded the knowledge to encompass IV drips in critical care along with utilizing drug inserts to obtain information in mixing and administering IV medications.

Assessment Methods

Provide a description of the assessment process used. Include description of instrument and performance standards in description. Note all methods.

11 take home quizzes for a total of 267 points were given. The HESI exam was administered as a final exam and was worth 100 points. The benefit of the HESI exam was to determine how the class and each student compared to other nursing students nationally.

Assessment Results

Provide a summary of results including tables/charts. Incorporate information from previous assessments as appropriate. Append additional pages if necessary. If appending, include notation in box to "See attached".

The course was previously offered in Spring, 2015. Although the students did very well on the take home quizzes, six scored below 800 on the HESI exam and had to take the second version. The class average on the first version was 833 (39.33 percentile nationally) which is much lower than was in the previous cohort when the class average was 1001. I noted a large gap between the scores of those who passed with an 800 or above and those who did not, the range was 470-1211. I talked to some of the students who were successful and they said the take home quizzes and lectures had enabled them to answer the questions correctly. I met with the six who failed and found they had not calculated concentrations, failed to use the IV (intravenous) drip rate correctly when an IV pump was available, had difficulty eliminating information not needed to perform the calculations, rounding and failed to realize that sometimes several steps were required to get the final answer. They had incorrectly assumed only one of the formulas would get the correct answer instead of doing several steps such as conversion from grams to milligrams, changing time from minutes to hours, ratio/proportion, calculating concentrations, IV drip rates and IV drip factors. A few admitted they had assumed all questions would be simple, one step calculations and failed to review the take home quizzes. I worked with these students in a group and some found practice questions on the internet. I worked individually with those who came for help. The six took another

version and the average score was 1123 with the range being 1037-1178. All 19 successfully completed the course with an “A”. The quizzes were matched to the college core values, the course objectives and the nursing student learning objectives. 100% of the objectives were measured with the quizzes and the HESI exam. This is the second time the current curriculum has been taught and previously, we did not mandate a minimum HESI score. Prior to this cohort, the faculty reviewed all past HESI exams for all cohorts, especially looking at those students who eventually failed out of the program or failed the NCLEX. It was apparent the HESI exams had been predictive of those who were unsuccessful so it was then decided to mandate minimum scores on the HESI exams throughout the program. 750 the first semester, 800 the second semester, 850 the third semester and 900 the final semester. In each course, the student has the option of taking both versions if not pleased with the score or does not meet the benchmark the first version.

| Course Level Assessment Summary of Outcomes, Indicators and Results Course Title and Number: NU 142 Number of students in assessment sample = 19 Number of Sections in Assessment = 1 Add additional rows to table if necessary | | | | |
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| Learning Outcomes (Insert learning outcomes assessed during this cycle) | Indicator (Insert indicators used for each outcome: exam question, scoring rubric, etc. Be specific) | Percent of Correct Responses | Percent of Incorrect Responses | Performance Standard Met (75%)* (yes or no) |
| Outcome 1: Nursing Judgement Professional Identity Human Flourishing Demonstrates the ability to convert units of measurement and calculating dosages/amounts to administer using correct notation and labeling. | Students will score 800 or above on the HESI assessment exam for Drug Calculations which included 55 questions on drug calculations and administrations. These included but not limited to grams, milligrams, kilograms, milliliters, liters and household measurements. | 100% | 0 | yes |
| Outcome 2: Nursing Judgement Identify medication administration errors and assess accuracy of ordered and calculated medication dosages. | The drop rate is the number of drops per minute to maintain a certain rate. They are listed as drops per minute. The drop rate depends on the drop factor (also called the drip factor) of the IV tubing. The drop factor is the number of drops it takes to equal 1 ml and will be listed on the tubing box. A microdrip (or microdropper) is 60 gtts/ml. If you are using a microdrip, it is exactly the same as the ml/hr ordered. | 100% | 0 | met |

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| | 1. D10W at 40 mL/hr a) 10 gtt/mL ___ b) 15 gtt/mL ___ c) 20 gtt/mL ___ d) 60 gtt/mL ___ | | | |
| Outcome 3: Identify medication administration errors and assess accuracy of ordered and calculated medication dosages. Also measures Nursing Judgment* | Dopamine 400mg in 250mL D5W at 3 mcg/kg/min, pt's weight is 60kg a) Concentration b) mcg/hr c) mcg/min d) ml/hr | 100% | 0 | yes |
| Outcome 4: Calculate pediatric dosages based on body weight Also measures Nursing Judgment and Human Flourishing* | For fluid maintenance, a child needs 100 mL of IV fluid per kg administered in 24 hours. The child weighs 22 lbs. How much fluid does the child need in 24 hours? How many mL per hour will you give? | 100% | 0 | yes |
| Outcome 5 Calculate adult dosages based on body weight. Also measures Nursing Judgment* | Lidocaine 1 mg/kg IVP now with a maximum dose of 100mg. Give over two minutes IVP. Available is 100mg/ml. The patient weighs 240 pounds. How many mLs will be give and how many mLs will be given in one minute? | 100% | 0 | yes |
| Outcome 6 Interpret drug labels, package directions, tables, charts and graphs in order to administer medications correctly. Also measures Spirit of Inquiry* | Each student was given a drug insert label issued by the pharmaceutical company. The students had to provide the following information. Brand name, generic name, drug classification, length of time of use, recommended dose and schedule, recommended use, when does the drug peak, what is the plasma half-life, any adjustments for kidney or liver failure, how does it work, any special tests prior to administration, contraindications, serious side-effect or reactions, safety in pregnancy or | 100% | 0 | yes |

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| | breastfeeding, safety in pediatrics and geriatrics, how to treat an overdose, reconstitution, stability and storage, range of adult dose, recommended administration time and what did you learn about use of medication package inserts? The quiz was worth 25 points. | | | |
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* Please note if using a different minimum performance standard.

| Conclusions | |
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| Provide a brief summary of conclusions derived based on analysis of data. Append additional pages if necessary. If appending, include notation in box to "See attached". | |
| Overall, the class performed very well but six students failed to meet the 800 benchmark on the HESI the first time. All were successful with the second version. The main issue seemed to be interpreting word problems which resolved when the need to determine concentrations, use multiple steps and eliminate unnecessary information was reviewed with the students. | |
| Class of 2018 | Class of 2016 |
| Class average-833 (National Average-936) *2nd version-1123 (National Average-936) | Class average-1001 (National Average-921) *2nd version not offered |
| Range-470-1211 *2nd version-1033-1183 | Range-644-1226 *2nd version not offered |
| Percentile Nationally-63.7 *2nd version-78.76 | Percentile Nationally-39.22 *2nd version not offered |
| Percent of students scoring over 800-68.4% *2nd version-100% | Percent of students scoring over 800-87.5% *2nd version not offered |

| Previous Assessment Reports and Results |
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| Date of Previous Assessment: 5/12/2015 |
| List of Outcomes Not Met: None |
| Summary of Actions Taken to Address Unmet Learning Outcomes: Append additional pages if necessary. If appending, include notation in box to "See attached". |
| All of the outcomes had been met the last time but two of the students had not made the recommended 850 and neither passed the NCLEX the first time. In fact, one has never passed. After looking at NCLEX pass rates along with those who failed to complete the program, the faculty chose to set a benchmark for the HESI exam for each semester. That benchmark was set at 800 for each course in the second semester. |

| Action Plan and Date for Reassessment |
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| Identify action plan for improvement or maintaining current performance levels including outcomes identified for re-assessment, curriculum revision, LOT proposal, new or revised course activities to reinforce learning outcomes, etc. Append additional pages if necessary. If appending, include notation in box to "See attached". |
| Will continue to mandate a minimum score of 800 on the HESI exam with the possibility of taking the second version. Will provide internet links for word problems so the students can practice taking multiple steps word problems on their own and get individual instruction if having difficulty. I have already added more multiple step problems to the exams which will be used for the next cohort. Will reassess in spring, 2019. |

**Assessment Committee Recommendation/Approval
(To be posted by Assessment Committee Chair)**

Approved as presented

Approved with recommendations for future reports (Explanation Required)

Resubmission Required. Reason for Resubmission:

Date: 09-08-17