

# Annual Report for Assessment of Outcomes

Submitted: September 11, 2012

SAC: MLT – Medical Laboratory Technology

Outcomes Assessed: MLT AAS

1. Describe changes that have been implemented towards improving students' attainment of outcomes that resulted from outcome assessments carried out in the previous academic year.

*(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.iii (for Core Outcomes) or 6.B.iii (for CTE Degree and Certificate outcomes).*

As outlined in the 2011 assessment report, laboratory exercise questions and procedures were revised to encourage higher levels of problem recognition and solving. Students are assessed by campus faculty throughout the year to track development in these areas. Following completion of campus-based activities, students transfer to a student lab facility, followed by a clinical rotation in the same subject area. Faculty's expectation is a measurable improvement in critical thinking and problem solving as demonstrated by student lab and clinical rotation evaluations. Blood bank was arbitrarily chosen for this year's assessment.

Results from 2010-11 evaluations are as follows for 68% of the class:

- The average score in student lab for problem recognition and problem solving in Blood Bank was 3.7 (scale 1-5).
- The average score in the same area for the same students in clinical lab practice, as evaluated by a clinical trainer, was 4.5 (scale 1-5).

For the remaining 32% of the class, student lab data was unavailable. Scores for clinical rotations were used:

- The average score was 4.7 (scale 1-5).

Considering a score of 3.0 represents 'satisfactory progress' and 4.0 represents 'exceeds expectations', we can conclude that students are meeting the Critical Thinking and Problem Solving outcome.

2. Identify the outcomes assessed this year, and describe the methods used.

What were the results of the assessment (i.e., what did you learn about how well students are meeting the outcomes)?

*(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.i& ii (for Core Outcomes) or 6.B.i & ii (for CTE Degree and Certificate outcomes)*

## **a. Assessment Methods**

- ❖ Approximately 800 hours of **Clinical Laboratory Practice** are required from each student, in order to complete the MLT program. The laboratory-affiliated trainers (external to PCC) evaluate each student based on the observation of their performance, using the Clinical Evaluation Rubric. The rubric describes 3 levels of achievement (rubric sections), which correlate with the MLT Outcomes.

In developing an assessment plan, the SAC decided to select scores from a different MLT subject area each year. For purposes of this assessment, the Immunohematology (Blood Banking and Serology) area was arbitrarily chosen and the average scores of each of the rubric sections were calculated per student.

25 students (20 Campus based program and 5 Distance Learning program) were assessed. This comprises 100% of the students enrolled during 2010-11.

- ❖ MLT graduates are eligible to sit for National **MLT Certification Exams**. Although there are several agencies that provide the examination, most students choose ASCP (American Society of Clinical Pathology). ASCP certification is recognized nationwide.

The competencies tested and described in the ASCP Board of Certification examination content guidelines (knowledge application, technical skills, problem solving and decision making, communication and, teaching and training responsibilities) are such that they can be used to assess 4 of the MLT Program outcomes.

Each year, the MLT department receives from ASCP a summary of the Program results and its comparison to the national results. The 2011 results were used for purposes of this assessment.

- ❖ Approximately 6 months after graduation, the MLT program conducts a **Post Graduate Survey**, which targets employers of recent graduates from the MLT program.

25 graduates were contacted and permission to contact their supervisors was obtained and a link to a survey (Survey Monkey) containing 10 questions pertaining to the graduate performance was sent to each of the supervisors. 3 employer questionnaires were received from the 2012 Survey.

The following chart summarizes the MLT program outcomes, and mapping to the PCC Core Outcomes and the assessment methods chosen for each:

<b>MLT AAS Degree Outcomes</b>	<b>PCC Core Outcome</b>	<b>Assessment Method</b>
Act professionally and adhere to ethical and legal responsibilities toward consistent quality patient care.	1,2,3,5,6	Clinical Practice Evaluation Rubric (section: Interpersonal Skills & Professionalism)
Apply knowledge of theory and principles of related content areas (eg. clinical chemistry, hematology, microbiology, immunohematology, etc.) to the clinical laboratory setting in making appropriate professional decisions.	2,3,5	National certification exam (ASCP) Clinical Practice Evaluation Rubric (section: Knowledge and Application of Knowledge)
Select, prepare, perform, correlate and evaluate appropriate laboratory procedures in a high quality, professional, accurate and timely manner.	1,2,5	National certification exam (ASCP) Clinical Practice Evaluation Rubric (sections: Knowledge and Application of Knowledge ; Performance)
Recognize and identify technical, mechanical and physiological problems within the laboratory and effect resolution of problems according to the protocols of the institution.	2,3,5	National certification exam (ASCP) Clinical Practice Evaluation Rubric (sections: Knowledge and Application of Knowledge ; Performance)

Function effectively as a contributing member of the laboratory team and the broader healthcare delivery system.	1,5,6	National certification exam (ASCP) Clinical Practice Evaluation Rubric (section: Interpersonal Skills & Professionalism) Post Graduate Survey
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Core Outcomes: 1 – Communication; 2 – Community and Environment Responsibility; 3 – Critical Thinking and Problem Solving; 4 – Cultural Awareness; 5 – Professional Competence; 6 – Self-Reflection

## b. Results

### ❖ Results from the Clinical Laboratory Practice:

#### Averaged Scores all students AAS in MLT (scale 1-5)

MLT AAS Degree Outcomes	Clinical Evaluation Rubric Section	2010-11	
		n=	score
Act professionally and adhere to ethical and legal responsibilities toward consistent quality patient care.	Interpersonal Skills & Professionalism	25	4.8
Apply knowledge of theory and principles of related content areas (eg. clinical chemistry, hematology, microbiology, immunohematology, etc.) to the clinical laboratory setting in making appropriate professional decisions.	Knowledge and Application of Knowledge	25	4.6
Select, prepare, perform, correlate and evaluate appropriate laboratory procedures in a high quality, professional, accurate and timely manner.	Knowledge and Application of Knowledge Performance	25	4.6 4.7
Recognize and identify technical, mechanical and physiological problems within the laboratory and effect resolution of problems according to the protocols of the institution.	Knowledge and Application of Knowledge Performance	25	4.6 4.7
Function effectively as a contributing member of the laboratory team and the broader healthcare delivery system.	Interpersonal Skills & Professionalism	25	4.8

Core Outcomes: 1 – Communication; 2 – Community and Environment Responsibility; 3 – Critical Thinking and Problem Solving; 4 – Cultural Awareness; 5 – Professional Competence; 6 – Self-Reflection

Considering a score of 4.0 represents ‘exceeds expectations’, we can conclude that scores greater than 4.0 are evidence that students are meeting outcomes.

Individual Student scores of 2.0 or lower in any category require further investigation and may require remediation until satisfactory progress is shown, otherwise, the student may not be allowed to pass their clinical practice course.

We took this opportunity to compare the scores for the campus and DL program. The scores were as follows:

Rubric Section	Campus 10-11		DL 10-11	
	n=	score	n=	score
Interpersonal Skills & Professionalism	20	4.7	5	4.9
Knowledge and Application of Knowledge	20	4.5	5	4.7
Performance	20	4.6	5	4.8

Based on the scores obtained, there seems to be no significant difference between the performance of the campus based and the distance learning program students.

#### ❖ Results from the MLT Certification exam:

The ASCP BOR examination results for the class of 2011 revealed that 22 of the 25 graduates took the exam between October and December of 2011.

All PCC students passed the exam. The top scoring PCC student ranked within the top 5% nationwide. The lowest score obtained by PCC students was still higher than the national average score.

The program average score was 695 (highest possible 999) in comparison with the national average of 485. Overall, the PCC program had the third or fourth highest-class average in the country (the way the data is reported it is impossible to tell which program had the highest score). The highest score for a PCC student in this cycle was 829.

As noted in last year's assessment, the only subject area that scored below the mean was "Other Tests" under hematology. It was decided by SAC at that time to gather one more year of data before implementing any changes to the curriculum. 2011 scores for all areas, including "Hematology: Other Tests" were above the national average. No further action is necessary.

#### ❖ Results from the Post Graduate Survey:

Three (3) Employer Questionnaire were received in 2012 pertaining to the 2011 graduates. Of these, two were supervisors in the greater Portland area and one was in a location in Oregon outside of the greater Portland metroplex. All are in a hospital laboratory setting. Approximately 66% of the employers claimed the graduates to be especially well trained in Hematology and Coagulation and Chemistry. For the remaining clinical areas, at least one (1) employer said their graduate was well prepared. One (1) employer reported the hired MLT was not adequately trained in Blood Bank and Hematology (cell identification), Phlebotomy, and Specimen Processing. The remaining employer felt there was no area of deficiency. One (1) employer reported the graduate was able to perform at a level consistent to that expected at career entry. Two (2) employers claimed their graduate to be trained at a level greater than expected.

3. Identify any changes that should, as a result of this assessment, be implemented towards improving students' attainment of outcomes.

*(Information provided here may be referenced, inserted into or summarized in Program Review 2.C.iii (for Core Outcomes) or 6.B.iii (for CTE Degree and Certificate outcomes)*

Based on the assessment tools utilized we can say that the MLT students are achieving all degree outcomes.

When the assessment plan was first designed it was thought that the last MLT degree outcome (Function effectively as a contributing member of the laboratory team and the broader healthcare delivery system) was best evaluated by the Post graduate survey, however, it was later noted that there wasn't a question that specifically asks about how the graduate is perceived in terms of being a laboratory team player or of being a contributing member of the health delivery system. There are other questions that can be used towards this same outcome, such as "Do you feel the graduate is especially well prepared?" or "The graduate is able to perform at a level consistent to that expected at career entry; at a level greater than expected at career entry; at a level below that expected at career entry", but none is really explicit. It was later decided by SAC to revise the survey to include questions that specifically address assessment of this outcome. After further consideration, SAC has determined the Clinical Laboratory Practice Evaluation Rubric may actually be a better tool for measuring this outcome since there is a higher rate of participation among trainers than seen with the survey. Changes will be made to the rubric, under "interpersonal skills and professionalism" that specifically measure this outcome, to be implemented in the 2012-2013 assessment.