

Annual Report for Assessment of Outcomes

Submitted: June 10, 2011

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).

Results from the 09-10 Assessment of Critical Thinking and Problem Solving focused outcome (PCC Core Outcome 4) were very positive. The average scores were as follows:

- Above 3.5 (scale 1-5) in the 2 clinical practice subject areas (HCU - Hematology Coagulation Urinalysis and Immunohematology) assessed by PCC staff during student laboratory practice.
- Above 4.0 (scale 1-5) in all clinical practice subject areas (HCU - Hematology Coagulation Urinalysis, Microbiology, Immunohematology, Chemistry and Phlebotomy) assessed by laboratory affiliated trainers external to PCC staff.

Despite the fact that the results obtained in the assessment were very satisfactory, SAC decided to continue improving the content of campus based laboratory exercises to create more opportunities for students to practice critical thinking and problem solving skills:

- Laboratory exercises activities were revised to include more activities that require critical thinking (example preparing reagents by making dilutions from limited volumes of concentrated solutions).
- Instructors revised laboratory exercise questions to include more critical thinking and problem solving type of questions.

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 overlap with the MLT Outcomes.

For purposes of this assessment, the HCU area (Hematology Coagulation Urinalysis) was arbitrarily chosen and the average scores of each of the rubric sections were calculated per student [note: if the HCU evaluation record was not found, Immunohematology was used instead].

25 students (09-10) (20 Campus based program and 5 Distance Learning program) were assessed.

- ❖ 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).

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 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 2010 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.

24 graduates were contacted and permission to contact their supervisors was obtained and a link to a survey (Survey Monkey) containing 12 questions pertaining to the graduate performance was sent to each of the supervisors. 6 employer questionnaires were received from the 2011 Survey.

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

MLT AAS Degree Outcomes	PCC Core Outcome	Assessment Method
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

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	09-10	
		n=	score
Act professionally and adhere to ethical and legal responsibilities toward consistent quality patient care.	Interpersonal Skills & Professionalism	25	4.6
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	4.3
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	4.3 4.4
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	4.3 4.4
Function effectively as a contributing member of the laboratory team and the broader healthcare delivery system.	Interpersonal Skills & Professionalism	25	4.6

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

Scores greater than 4.0 are interpreted as evidence that most 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 09-10		DL 09-10	
	n=	score	n=	score
Interpersonal Skills & Professionalism	20	4.6	5	4.6
Knowledge and Application of Knowledge	20	4.2	5	4.3
Performance	20	4.3	5	4.6

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 2010 revealed that 23 of the 25 graduates took the exam between October and December of 2010.

All PCC students passed the exam. A PCC student had the highest score in the country and six of the top seven scores were PCC graduates. Two of these students were in the online program. The lowest score obtained by the PCC students was still higher than the national average score.

The program average score was 709 (highest possible 999) in comparison with the national average of 486. Overall, the PCC program had the first or second highest-class average in the country (the way the data is reported it is impossible to tell which program had the highest score).

Subject area averages were all well above the mean. The only exception was “Other Tests” under hematology. This was discussed at the department level and at the last hematology advisory subcommittee meeting. It was decided to see one more year of data before implementing specific changes to the curriculum.

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

Six (6) Employer Questionnaire were received in 2011 pertaining to the 2010 graduates. All were supervisors in the greater Portland area. Five are in a hospital setting and one is in a reference laboratory. Approximately 50% of the employers claimed the graduates to be especially well trained in Hematology and Chemistry and Urinalysis. 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, Coagulation, Microbiology, Phlebotomy, and Specimen Processing. The remaining employers felt there was no area of deficiency. Two (2) employers 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. The supervisor who hired multiple 2010 graduates said “all three have been outstanding”.

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 the intended outcomes.

When the assessment plan was first designed it was thought that the last MLT 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 isn’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. In the future, the survey will be revised to include questions that specifically reflect assessment of the outcome intended.