

**ASSESSMENT REPORT 2004-2005**  
**JOHN A. BURNS SCHOOL OF MEDICINE**  
**Medical Technology**  
**BS**

Undergraduate Assessment

*Synopsis:* The Division of Medical Technology is part of the Department of Allied Health Sciences in the John A. Burns School of Medicine. The mission of the Division is to prepare students to become competent medical technologist, also known as Clinical Laboratory Scientist (CLS). A CLS is a health professional who performs laboratory tests used to help diagnose and treat diseases and to monitor health status. We are the only State program which offers a B.S. degree in Medical Technology. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The program is 2+2 program in which the first 2 years of the program, students complete core requirements, followed by admission into the program for another 2 years, and 6 months of post-baccalaureate clinical training. With the assistance of the many clinical affiliates (approximately ten with most on Oahu), we have been able to train our students to not only experience a high quality education, but also provide students with employment opportunities.

**1. List Student Learning Outcomes (SLOs):**

At the completion of the clinical training, the student will be at the level of a CAREER-ENTRY MEDICAL TECHNOLOGIST by:

1. Demonstrating professionalism in attitude and appearance and knowledge of medical ethics when working with patient, hospital staff, and laboratory staff
2. Demonstrating concerns for the patient and cooperating with others in the health care field
3. Employing professional discretion with patient information
4. Demonstrating absolute integrity in the accurate performance and reporting of results
5. Demonstrating responsibility by performing laboratory tests honestly, without bias, and with an acute awareness of the consequences of errors in the testing procedures
6. Carrying out acceptable collection of laboratory specimens through direct patient contact and/or advising other health care medical personnel of proper specimen collection procedures, maintaining specimen identification for efficient, accurate processing of laboratory test results, and evaluating acceptability of patient samples

7. Demonstrating basic knowledge of laboratory test procedures
8. Preparing reagents or media from prescribed procedure or from the literature, including making any necessary computations, using an analytical balance, and adjusting the pH if necessary
9. Following prescribed procedures of the facility and performing any of the tests in chemistry, hematology, immunology, microbiology, and immunohematology within defined time periods
10. Calculating the results of the tests performed if necessary
11. Acting and working independently
12. Organizing the work and meeting deadlines
13. Demonstrating rigid accuracy in the identification and reporting of numbers, names, and results
14. Employing reasoning ability and good independent judgment
15. Integrating and relating test results in recognizing possible discrepancies, confirming of abnormal results, and solving technical problems as defined by each section
16. Demonstrating the ability to adapt to various clinical laboratory situations and handle conditions of increased workload and time constraints in an organized manner
17. Operating, calibrating, conducting performance check, and maintaining clinical laboratory instruments or equipment
18. Recognizing and correcting basic instrument malfunctions and referring serious instrument problems to appropriate personnel
19. Conducting established quality control procedures on analytical tests, equipment, reagents, media, and products
20. Evaluating results of the quality control, plotting values, identifying out-of-control values, and implementing corrective action when indicated
21. Establishing basic quality control procedures and confidence limits for procedures
22. Reporting unsafe work conditions, injuries/illnesses, and incidents in a timely and proper manner to the section supervisor

23. Communicating effectively with peers, supervisors, and other hospital personnel, and patients
24. Applying principles of management when interacting with medical laboratory technicians, laboratory assistants, and clerks
25. Instructing supportive personnel, students, and peers in the performance and theory of analytical tests
26. Recognizing and acting upon individual needs for continuing education as a function of growth and maintenance of professional competence.

A CAREER-ENTRY MEDICAL TECHNOLOGIST is defined as:

Able to perform the functions with minimal direction and occasional supervision. Requires the necessary orientation for new employees. Capable of organizing and planning routines. Capable of evaluating, troubleshooting, and problem-solving where indicated.

## **2. Where are the SLOs published?**

The expected competency levels (or SLO) are published in the Division of Medical Technology Student Handbook given to incoming Junior students during orientation on the first day of class.

## **3. Explain how SLOs map onto your curriculum**

The expected competency levels are evaluated through the career entry-level objectives and checklist for each discipline of medical technology. Campus and clinical faculty evaluate each student to indicate if they have met the minimum career entry level objectives for each discipline. Faculty and students sign off once completed.

The career entry-level objectives for each discipline are:

1. Administration and Education
2. Chemistry
3. Hematology and Hemostasis
4. Immunohematology
5. Immunology
6. Microbiology
7. Professional Traits
8. Urinalysis and Body Fluids

## **4. What specific methodologies were used to collect data?**

- a) Career entry level objectives and checklists. Evaluations are done upon completion of the BS degree and at the end of the post-baccalaureate MEDT 591 (Clinical Training) course by both campus and clinical faculty.
- b) Graduate survey forms. All graduates are mailed a survey a year after completing MEDT 591 (Clinical Training). Data is compiled upon receipt.
- c) National certification exam scores. Data is compiled upon receipt (at least twice annually).
- d) Review of the NAACLS accreditation report. Data is compiled shortly after the exit interview by the NAACLS site visitors.

**5. How are the assessment data/results used to inform decisions concerning the curriculum and administration of the program?**

a) Graduate survey forms. The survey includes questions regarding employment and solicits comments on strengths, weaknesses, and recommendations for improving the program. The survey are mailed back to the chair/program director, tabulated, and the results shared at a Division faculty meeting. If applicable, issues are disseminated to appropriate committee, subcommittee, or task force for further discussion. Any action proposed by the committee/task force are brought forth to a Division faculty meeting for approval.

b) National certification exam scores. Examination scores are reviewed by the chair/program director, Curriculum Committee chair, curriculum subcommittee conveners, and education coordinators of the MEDT 591 clinical affiliates. Each curriculum subcommittee convener examines student performance on questions related to its discipline as the results are received. Topic areas with which students consistently have difficulty are shared with members of the subcommittee(s). Any actions proposed by the subcommittees are brought forth to the Curriculum Committee and/or Division faculty meetings for approval.

c) Review of the NAACLS accreditation report. The NAACLS site visitors' verbal and written summary reports are presented to faculty. The reports include general impressions, areas of strength, and areas of concern. When applicable, areas of concern are forwarded to the appropriate committee(s)--Curriculum, Admission, Personnel and Safety--or task force for further discussion/review. Proposals regarding changes are presented to the faculty for adoption. The frequency of review depends on the length of accreditation.

– Was pedagogy changed? No

– Did you make an administrative change? Yes, during the annual review of the program by the MEDT 591 medical advisors, MEDT 591 education coordinators, and the chair/program director, a concern was raised regarding the number of students that clinical affiliates could accommodate in the post-baccalaureate phase

of the program, MEDT 591 (Clinical Training). Due to downsizing and financial restrictions, some clinical affiliates were faced with the need to take substantially fewer students. At the same time, observations from the curriculum subcommittees (i.e., Immunohematology and Microbiology) noted that students were entering MEDT 591 better prepared for some disciplines than others. A review of the curriculum noted that students entered MEDT 591 as having five courses each in hematology and clinical chemistry, but only one course in immunohematology and two courses in microbiology. The emphasis in the latter course was academic, and not clinical microbiology.

From that annual meeting, it was recommended to reorganize MEDT 591 which had been a 26-week clinical rotation. The new MEDT 591 course would change to four weeks each of immunohematology and microbiology on campus, 13 weeks of clinical rotation, and four weeks of workshops and seminars sessions. The four-week immunohematology and microbiology sessions would involve 40 hours per week of lectures and laboratories. The respective curriculum subcommittees were asked to design the content of the campus sessions and identify competencies that would be validated on campus and at the clinical affiliates. This eased the burden at the clinical affiliates in terms of accommodating the number of students. Since the introduction of this change, informal feedback from clinical instructors has indicated that students are now better prepared for their rotation in microbiology and immunohematology. In summary, through the Medical Advisors' Annual Meeting Committee, the program was able to adapt to a curriculum change in a timely manner.

- Were there changes in interactions with students? Advising, counseling, etc? No
- Were degree requirements changed? No
- Were courses changed? No

## **6. General Education Assessment within the Major:**

*How have you met the requirements in your degree program?*

An example on how we've met the above requirement is through our MEDT 366 (Clerkship) and MEDT 591 (Clinical Training) courses. Both courses are conducted on campus and at a clinical site. The on-campus phase of MEDT 366 includes problem-based learning units where students are assigned learning issues. Students are to research the learning issues and to report back to the group on what they've learned. The on-campus phase of MEDT 591 includes student labs and lectures where lab reports and assignments are given. At the clinical sites, students gain hands-on experience with clinical laboratory procedures under the supervision of the clinical faculty.

Regarding communication skills, students are required to take an O (Oral Communication) focus course where students learn how to give effective oral

presentations. In addition, students are required to attend two seminars for the on-campus phase of MEDT 591 (Clinical Training) on developing both interpersonal and interdisciplinary communication skills.