

**Laboratory Professionals: The “Behind the Scene” Partner in Healthcare****Sheri M. Gon, Lecturer**

Clinical laboratories are typically located in basements or hard-to-find wings of hospitals. Most consumers never see the inside of hospital or reference laboratories. In-patients requiring lab tests usually have their specimens collected by a nurse or phlebotomist. Non-laboratory healthcare professionals providing direct patient care may collect specimens but delivery to the laboratories is dependent on couriers, pneumatic tube systems, or lab staff. So, “out of sight, out of mind” rings true when someone asks what happens in a clinical laboratory.

Because the clinical laboratory is not a visible part of healthcare, services provided by the laboratory healthcare professionals are misunderstood or taken for granted.

A typical clinical laboratory consists of laboratory professionals with levels of responsibilities. The educational requirements of these professionals range from high school diploma to post-graduate degrees.

Phlebotomists and laboratory assistants occupy entry-level positions but are essential to any laboratory. They are responsible for collecting, transporting, and processing specimens in the pre-analytical phase, under the supervision of associate or baccalaureate degreed laboratory personnel. Kapiolani Community College offers a certificate in phlebotomy. It is a 164-hour course that includes class instruction and clinical training at medical facilities in the community. Graduates of the KCC phlebotomy program are eligible to take the national certification exam provided by the National Certifying Agency (NCA) or the American Society of Clinical Pathologists (ASCP).

Medical Laboratory Technicians (MLTs), also known as Clinical Laboratory Technicians (CLTs) are associate degreed (2 years of college) laboratory personnel. They are trained to perform many of the commonly ordered laboratory tests such as basic chemistry and hematology tests. Kapiolani Community College has an accredited training program for MLT/CLTs. After earning their associate degree, MLT/CLTs are eligible to take a national certification examination from either ASCP or NCA. In addition, they must obtain a license to practice in the state of Hawaii.

MLT/CLTs are found all departments of the laboratory expect in some specialty departments, requiring higher-level cognitive and decision-making skills that Medical Technologists and Clinical Laboratory Scientists can provide.

Medical Technologists (MT), or Clinical Laboratory Scientists (CLS) are terms that are used interchangeably. The traditional designation “medical technologist” may be somewhat confusing since popular media often refer to advances in medicine as “medical technology.” The term “clinical laboratory scientist” is a recent designation that was adopted to describe more accurately the profession.

The University of Hawaii, John A. Burns School of Medicine, Division of Medical Technology is the only accredited program in the Pacific that trains MT/CLSs. After applications for admission are reviewed the applicant is interviewed. Students that meet admission requirements enter the Division of Medical Technology program as juniors. After two years of a laboratory science curriculum, Medical Technology students earn their bachelors of science degree. Clinical training of six months’ duration takes place at a variety of community medical centers including the state Department of Health and Blood Bank of Hawaii. Upon completion of the post-baccalaureate clinical training, graduates are eligible for national board certification examination by ASCP or NCA. According to Division records, a majority of UH Medical Technology graduates elect to take both board examinations. The titles of MT (ASCP) (Medical Technologist from the American Society for Clinical Pathology) or CLS (NCA) (Clinical Laboratory Scientist from the National Certification Agency) are bestowed after passing the exams. In addition, Hawaii requires MT/CLSs apply for licenses to practice in the state.

Cytotechnologists prepare and analyze cells. Their work is restricted to cellular analysis of exudates and transudates. In Hawaii there are no programs to train cytotechnologists. A small number of local MT/CLS graduates have entered this discipline and have returned to Hawaii after receiving their training on the Mainland.

The typical laboratory professionals are detail oriented, enjoys science, takes pride in their work, maintains high standards, and loves to problem solve. They realize their strengths in being analytical so are comfortable with providing healthcare in this manner versus being in a different discipline that is more directly involved with patient care.

Over 80% of information in medical charts consists of laboratory data. The majority of medical decisions (both diagnosis and treatment) depend on laboratory data. The most recent therapeutic drug value from the lab affects drug dosages.

Unfortunately, lab professionals are often overlooked as essential in providing and improving healthcare. This lack of recognition may be a contributing factor<sup>1</sup> to laboratory workforce shortages according to the Coordinating Council on the Clinical Laboratory Workforce (CCCLW).

Throughout the country an imminent loss of professionals will occur due to retiring “baby boomers.” Currently, the average age of clinical laboratory scientists is approximately 45 years old.<sup>2</sup> The laboratory is a prime example of this trend. Over time, there has been a decline in enrollment. In 2003, only four students graduated with a degree in Medical Technology.

Decreased enrollment of students into health profession programs and the large numbers of the currently employed “baby boomer”

generation nearing retirement age suggest more will be leaving the health professions than there are qualified to replace them.<sup>3</sup>

Data from the US Bureau of Labor Statistics (BLS, Washington, DC) and the National Accrediting Agency of Clinical Laboratories (NAACLS) indicate that the demand for clinical laboratory technologists and technicians will far exceed the supply of new workers in the coming years. There are approximately 313,000 clinical laboratory technologists and technicians working in the US today, and 5,300 new positions will be created per year through 2008. Annual demand for an additional 4,000 positions will be needed to replace retiring laboratory workers. Thus through 2008 the nation's laboratories are expected to require a total of 9,300 new laboratorians each year.<sup>4</sup>

The University of Hawaii John A. Burns School of Medicine's Biomedical Park in Kakaako is designed to be a magnet for biomedical research. Although the tenants for Kakaako research labs will be high-profile principle investigators, their need for local laboratory professionals of all levels will be necessary to support their research. This potential movement of laboratory professionals from clinical laboratories to research laboratories may further exacerbate the attrition rates in medical centers.

Recruitment and retention of technicians will begin with improving visibility of laboratories. It begins with education. Laboratory personnel will need to be advocates of their profession by sharing what they do with other healthcare professionals and the public. An excellent communication tool for laboratory science is a consumer website, Lab Tests Online ([www.labtestsonline.org](http://www.labtestsonline.org)). Both healthcare professionals and lay public can access this site for information on laboratory testing. Lab Tests Online is an award-winning site sponsored by more than 25 laboratories. The internet reaches out to healthcare consumers to educate the public about laboratory science.

April 18 through 24 is National Medical Laboratory Week. Laboratories throughout the nation will conduct open house tours or arrange activities to highlight the laboratory profession and the services they provide. Please check with your laboratories for any Lab Week activities.

#### References

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**Due to error by author, correction to:**

**Hawaii Medical Journal, February 2004 Vol. 63, No. 2, p. 53, Medical School Hotline, "Addressing Native Hawaiian Health at the John A. Burns School of Medicine," by Shannon M. Hirose-Wong PhD**

**"Table 1.— NCHRP Student Projects" should have listed: Amy Brown PhD (College of Tropical Agriculture and Human Resources) as Research Mentor/Sponsor.**

**Table 1.— NCHRP Student Projects**

Research Category:Authors	Title of Project	Research Mentor/Sponsor
Lapa'au L. C. R. Y.	Evaluating the Effectiveness of Kukui Nut Oil in the Treatment of Psoriasis	Amy Brown, Ph.D. (College of Tropical Agriculture and Human Resources)