

Bronx Community College Career Development Office

Career Explorations

Careers As Clinical Laboratory Technologists and Technicians

Medical or clinical laboratory technologists generally perform complex biological, hematological, immunologic, microscopic, and bacteriological tests. Technologists examine body substances such as blood and tissue under a microscope. They make cultures to determine presence of microorganisms such as bacteria and parasites in body fluid and tissues. They also determine the level of blood glucose and cholesterol by seeing the chemical reaction or content in blood. They analyze the results and convey their findings to doctors. They also prepare specimens for examinations and count or look for abnormal cells that would suggest the beginning stages of a particular disease. In addition to evaluating test results, they "develop and modify procedures, and establish and monitor programs to ensure the accuracy of tests." They also supervise clinical laboratory technicians. How complex tests are, the level of judgment needed for them, and the amount of responsibilities people are given in this position depends on the level of education and experience people bring in. Overall, they play a vital role in not only detecting diseases, but diagnosing and treating it.



Technologists who work in small laboratories generally "perform many types of tests, whereas those in large laboratories generally specialize." *Clinical chemistry technologists* are those who prepare the specimens and analyze the contents of body fluids for its chemicals and hormones. *Microbiology technologists* examine and identify microorganisms such as bacteria. Blood bank technologists collect, type, and prepare blood for transfusions. *Immunology technologists* examine the elements of the human immune system and how it responds to foreign bodies. *Cytotechnologists* prepare slides of body cells and examine these cells under a microscope to detect any abnormalities. *Molecular biology technologists* test protein and nucleic acid on samples of cells.

Medical or clinical laboratory technicians usually perform less complex responsibilities, but they may prepare specimens and perform manual tests under specific detailed instructions. They may work in several areas of a clinical laboratory or specialize in a specific area. For instance, *histotechnicians* cut and stain tissue specimens to be examined under a microscope by pathologists and *phlebotomists* collect samples of blood. Clinical laboratory technicians usually are supervised by clinical laboratory technologists.

Educational Requirements

Most entry-level positions for a medical or clinical laboratory technologist require a bachelor's degree and a major in medical technology or a major within the life sciences. People can also go into this profession with a combination of education and on-the-job training. Entry-level positions as medical or clinical laboratory technicians generally require an associate's degree from a community or junior college or a certificate from a hospital or a vocational/technical school. In order to work in this profession, some states require that people be either licensed or registered.

People looking to enter this field should have good analytical ability and be able to work well under pressure. Also, they should be detail-oriented, have manual dexterity, normal color vision, computer skills, and be good at problem solving.

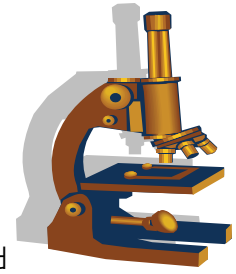
Advancement opportunities exist for people who want to supervise, but a doctorate is needed to become a laboratory director for example, but this may vary. Some federal regulation allows "directors of moderately complex laboratories to have either a master's degree or a bachelor's degree, combined with the appropriate amount of training and experience." Clinical laboratory technicians can become technolo-

Office, Loew Hall room
319/328

Special points of interest:

- ◆ Clinical laboratory technologists usually hold a bachelor's degree and major in medical technology or a major within the life sciences
- ◆ Clinical laboratory technicians usually need either an associate's degree or a certificate
- ◆ Job opportunities are projected to be excellent through 2012.
- ◆ The Career Resource Library has a collection of audio and visual tapes as well as a variety of other career development resources to help students research a variety of career related topics
- ◆ A variety of personality and career assessments are available for students to help with career choice and the impact personality has on career choice
- ◆ The Cooperative Work Experience Program allows students to gain valuable experience, in a field of study, prior to graduation

The BCC Career Fair is an excellent opportunity to explore various careers and speak to recruiters in those industries. Open to all BCC students and recent alumni, but several requirements must be completed to be eligible to attend. For more information, please go to the Career Development Office, Loew Hall room 319/328. The fair will be held on March 9th, 2006



ologists with additional education and experience.

Future Job Growth

Jobs for clinical laboratory workers in general is expected to grow as fast as the average for all occupations through 2012. The abundance of opportunities is supposed to be excellent due to the growing number of job openings that will exceed the number of people looking for positions. On the other hand, since technology is expected to continue to grow it will have a two fold effect on employment through 2012: new and powerful diagnostic tests will encourage people to take tests and thus, increase employment, but due to the "research and development efforts targeted at simplifying routine testing procedures, it may enhance the ability of non-laboratory personnel 'physicians and patients in particular' to perform tests now conducted in laboratories." Hospitals will continue to employ a large number of people in these professions, but many opportunities will also exist in medical and diagnostic laboratories, doctor's offices and other ambulatory health care services.

Salary



In 2002, the median annual earnings of clinical laboratory technologists was \$42,910. The middle fifty percent earned between \$36,400-\$50,820, the lowest ten percent earned less than \$30,530 and the highest ten percent earned more than \$50,820. The median annual earnings for the most industries employing clinical laboratory technologists in 2002 were general medical and surgical hospitals with \$43,340, medical and diagnostic laboratories with \$42,020, and physicians offices with \$38,690.

In 2002, the median annual earnings for clinical laboratory technicians was \$29,040. The middle fifty percent earned between \$23,310 and \$35,840, the lowest ten percent earned less than \$19,070, and the highest ten percent earned more than \$43,960. The median earnings for the most industries employing clinical laboratory technicians in 2002 were general medical and surgical hospitals with \$30,500, colleges, universities and professionals schools with \$30,350, physicians offices with \$27,820, medical and diagnostic laboratories with \$27, 550, and other ambulatory healthcare services with \$26,710.

For clinical laboratory technologists and technicians specializing in certain areas, the pay scale varied in 2002 depending on specialization. For instance, the lowest percent of cytotechnologists earned \$41,454, the average earned \$49,920, and the highest earned \$54,600. The lowest percent of histotechnologists earned \$33,280, the average earned \$41,122, and the highest earned \$45,760. Last but not least, the lowest percent of phlebotomists earned \$18,720, the average earned \$21,944, and the highest earned \$25,168.

Working Environment



The working conditions of people in these professions depends on the size and type of setting they are employed in. In large hospitals or independent laboratories, people may usually work the day, evening, or night shift as well as holidays and weekends. In smaller facilities, they may work on rotating shifts rather than a regular shift. People can be on call seven days a week or on weekends if an emergency arises that they need to be there.

People are usually trained to work with infectious specimens as well. People often wear or are required to wear protective gloves, masks, and goggles to ensure their safety and to prevent infection. In addition, laboratories are normally well-lighted and clean and people work a good part on their feet.

Sources for Further Research

Keep in mind that this article is written to offer you a detailed glimpse into these professions, but further research needs to be done in order to determine if either one of these professions is the best choice for you. *In addition to utilizing our Career Resource Library located in Loew Hall room 338*, the following are excellent sources to gain more information on these fields:

- *American Association of Blood Banks* (also try them on-line), 8101 Glenbrook Road, Bethesda, Maryland 20814-2749
- *American Society for Clinical Laboratory Science* (also try them on-line), 6701 Democracy Blvd., Suite 300, Bethesda, Maryland 20817

Information on certification is available from the following source:

- *American Medical Technologists* (also try them on-line), 710 Higgins Road, Park Ridge, Illinois 60068

Information for this article is taken from the Occupational Outlook Handbook, 2004-2005 Edition