

# The Silver Tide

## How population changes will impact medical laboratory testing

At the Laboratory Services of the Queen Elizabeth Hospital (QEH) in Charlottetown, PEI, lab manager Shane Buchanan is short-staffed. He oversees a staff of 85 to 90, which includes 55 to 60 medical lab technologists and 15 to 20 lab assistants. The majority of staff in some departments is at the younger end of the scale, between the ages of 25 and 35. The QEH is only a 400-bed hospital, but Buchanan's lab, the largest lab in PEI, processes two million lab tests per year. It services the hospital and handles outpatient phlebotomy — there are no private blood collection centres in PEI — and also operates as the provincial reference lab for the whole island. This past September, Buchanan was looking to hire four technologists for both permanent and temporary positions, and relying on creative solutions to bridge the gap, since he knows it can sometimes take up to three months to hire a new recruit once a vacancy is identified. He wonders, given our growing and aging population, if creative solutions will be enough in the future.

Take a snapshot of the QEH medical lab team today and you have a good picture of what the trends indicate labs will look like across the country in the next few years. National figures show that the workforce will be under significant strain to keep pace with anticipated demand for services. In total, there were 18,450 medical lab technologists practicing in regulated regions in 2014, up three per cent from 17,853 in 2013, but still nine per cent lower than the level of 20,087 seen four years earlier in 2010.<sup>1</sup> A key concern is that a majority of the technologists working today fall between the ages of 40 to 60, and there are not enough in younger age categories to backfill those jobs when the older cohort retires. Dr. Arthur Sweetman, an economics professor at McMaster University in Hamilton, Ontario, and Ontario Research Chair in Health Human Resources, shared the workforce trends in a presentation at LABCON 2015. He says, "If you look at the age of lab technologists right now, there are quite a few additional technologists over the age of 60 than there used to be, both in absolute terms and as a percentage of the total."


One of Buchanan's biggest challenges is filling vacancies with the right people and deploying other strategies to cover the gaps that arise. He says, "We run six disciplines with only 10 to 15 technologists in each department. It's difficult to reallocate staff when we are looking to fill a maternity leave as well as a full-time position. The full-time permanent positions are a bit easier to recruit for, but anyone interested in a one-year maternity leave must want to experience the east coast life, or is unable to find work in their province." His staff is currently taking extra shifts to cover the vacancies, happy to wait until Buchanan finds the right people to join the team.

Managing the knowledge gap is Buchanan's other notable challenge. "A big concern is the generation gap. If a manager has a predominantly younger staff, then the high forecasted rate of retirement for the profession is concerning. The years of experience retirees take with them is incredibly valuable. A technologist with 25 years of experience in hematology doing bone marrow differentials, or a chemistry technologist who knew the nuances of radioimmunoassay or enzyme immunoassay tests cannot be replaced easily." As older workers retire, he is grateful to accommodate those who want to stay on as casual employees. "We've been very fortunate. One technologist retired and came back right away to do a full-time maternity leave. We have two other recent retirees in hematology who just wanted the summer off before they started picking up casual shifts. They have a true love for their profession. If they can keep their fingers in a little bit, but on their terms, it's a pretty sweet deal for us, too. We accommodate because we're grateful to keep them on with their experience," Buchanan says.



At Dynacare, one of the largest providers of laboratory testing services in Canada, Vice President of Operations, Vito Ciciretto, says the company is employing creative strategies to keep the knowledge base strong, especially in areas that require specific training. “We employ 300 technologists and we are always hiring. It can take three to six months to bring a new graduate with no previous experience up to speed in areas like pathology and cytology,” says Ciciretto. He crossed paths recently with an almost-retiree who expressed how pleased she was to be working in a job-sharing arrangement with another technologist in a three-days-on, two-days-off rotating workweek. “I can’t tell you how over-the-moon happy this technologist is, like we have done her a favour, when in fact, the opposite is true. We still benefit from someone who has 35 years of experience, who can help meet the demand for tests and train new technologists,” Ciciretto says.

Population trends affect not only the workforce but also the work. Over the last five years, the Canadian population has been growing. The population estimate for Q2 2016 stands at 36.1 million<sup>2</sup>, up 5.2 per cent compared to 2011.<sup>3</sup> The leading edge of the “silver tide,” also known as the baby boomers, started turning 65 in 2011.<sup>4</sup> According to Sweetman, the number of lab tests people need starts to increase around the age of 65 and then jumps significantly higher after the



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age of 70. The incidence of chronic diseases like cancer, heart disease and diabetes climbs dramatically among older adults, and the silver tide is expected to drive up the demand for lab tests. However, analyzing the trends, he says that the number of lab tests is rising even more than he would expect from population factors alone.

Buchanan says that the number of lab tests performed by QEH has increased greatly in the last five or six years. Dynacare conducts more than 60 million tests annually and expects that number to continue to rise. Ciciretto says, "Some tests are showing larger increases than others. During my tenure with the organization over the last seven years, there have been double-digit increases year over year for the Hemoglobin A1C test (HbA1C) and histology tests associated with biopsies and endoscopies." Buchanan also reports an increase in certain tests more than others: "We are noticing a real spike in immunology tests, like for hemochromatosis, molecular tests and more requests for flow cytometry."

Demand for the most common tests is also affected directly by changes in clinical practice guidelines. For example, more than three years ago, the HbA1C test was used only for people already diagnosed with diabetes. In 2013, the guidelines changed to recommend testing to screen the general population, producing a significant upswing in the number of tests. "With that one change in the standards, instead of performing HbA1C testing two-three times per week, we now have one technologist who does primarily HbA1C testing Monday through Friday," says Buchanan.

Changes to clinical practice guidelines and shifts in funding decisions by health authorities can also work like wild cards in the other direction. For example, in 2014, the Canadian Task Force on Preventive Health Care recommended against using

the prostate-specific antigen (PSA) test as a general screen for prostate cancer. Another example is the Pap test, which was commonly ordered every 18 to 24 months for women over the age of 18. "A few years ago, the guidelines changed so that the provincial government only pays for the Pap test every three years for women over the age of 21. That change had a significant, almost overnight impact, reducing the number of tests we conducted by approximately 40 per cent. As a result, we had to resize our staff accordingly," says Ciciretto.

Our growing and aging population will most certainly put increasing pressure on health human resources in medical labs soon. Automation can increase worker productivity, but if the demand for specialty tests like genetic testing and biomarkers grows, highly skilled labour will be in high demand. Scientific advances may be able to address some of the increased demand, too. Consider at-home pregnancy tests that are available at every drug store. In the late 1920s to the early 1960s, a blood test and "rabbit test" were required for a pregnancy test. In the future, we may see more direct to consumer (DTC) diagnostics, relieving some of the population and demographic pressures on medical labs.

By definition, nothing is for sure until it happens. But examining the forecasted squeeze on human resources in medical labs by the silver tide will allow lab managers to assess how to best prepare. "If it is this dire and this busy now before the population explosion has happened, I just hope it's a slow explosion, and we can prepare for it and adjust as it happens," says Buchanan.

Sweetman says, "The silver tide is not a tidal wave. It is something that is eminently plannable. We can already see it rising slowly and increasing demand in medical labs. In 20 to 25 years, the tide will turn around." ■

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MEDICAL LAB TECHNOLOGISTS PRACTICING IN REGULATED REGIONS IN 2014

UP **3%** FROM 17,853 IN 2013

BUT STILL **9%** LOWER THAN THE LEVEL OF 20,087 SEEN FOUR YEARS EARLIER IN 2010.

REFERENCES:

- ▶ <sup>1</sup>Canadian Institute for Health Information: Health Workforce Database. Medical Laboratory Technologists, 2014. Table 2. Accessed September 26, 2016 at <https://www.cihi.ca/en/gsearch/medical%2BLaboratory%2Btechnologists%2B2014>
- ▶ <sup>2</sup>Statistics Canada: Canada's population estimates, first quarter 2016. Released June 16, 2016. Accessed September 26, 2016 at [www.statcan.gc.ca/daily-quotidien/160616/dq160616b-eng.htm](http://www.statcan.gc.ca/daily-quotidien/160616/dq160616b-eng.htm)
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- ▶ <sup>4</sup>Pew Research Center: Baby Boomers Retire. December 29, 2010. Accessed September 26, 2016 at [www.pewresearch.org/daily-number/baby-boomers-retire](http://www.pewresearch.org/daily-number/baby-boomers-retire)



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