



Update on Laboratory Testing and Minimum Retesting Intervals for Outpatients

Choosing Wisely Canada/CADTH Recommendations

1. Hemoglobin A1c (HbA1c) – 3-month minimum interval for unstable glycemic control, 6 months for stable glycemic control in patients with diabetes.
2. Lipase/Amylase – don't reorder for monitoring of acute or chronic pancreatitis.
3. Other recommendations are available: <https://www.cda-amc.ca/minimum-retesting-intervals-lab-tests>

Local Lab-Recommended Minimum Retesting Intervals

1. Ferritin – 28-day minimum interval.
2. Vitamin B12 – 180-day minimum interval.
3. Vitamin D – 120-day minimum interval.

Objective

To analyze patterns of outpatient testing for the following tests: HbA1c, Ferritin, Vitamin B12, Vitamin D and Lipase/Amylase.

Practice Points

1. Certain commonly repeated laboratory tests are used for ongoing queries into patient health in pre-specified clinical scenarios.
2. Minimum retesting intervals are recommendations that any repeat testing should not be done sooner than the indicated intervals. They are a way to support good laboratory stewardship.
3. The need for repeat tests will vary with each individual and recommendations are not intended to replace clinical judgment.
4. Given the difficulties faced by many clinicians in keeping up with changing guidelines, it is important that health care administrators utilize technology-based reminders and notifications to support appropriate test use.

Methods

Test data were provided by Newfoundland and Labrador Health Services (NLHS) Digital Health by extracting relevant records from the Provincial Client Registry and the Meditech Laboratory Data Module. The results covered the period from 1 Apr 2018–31 Mar 2025 across the province. Potentially unnecessary laboratory tests were defined as repeat tests that were performed sooner than the recommended guidelines for retesting.

Results

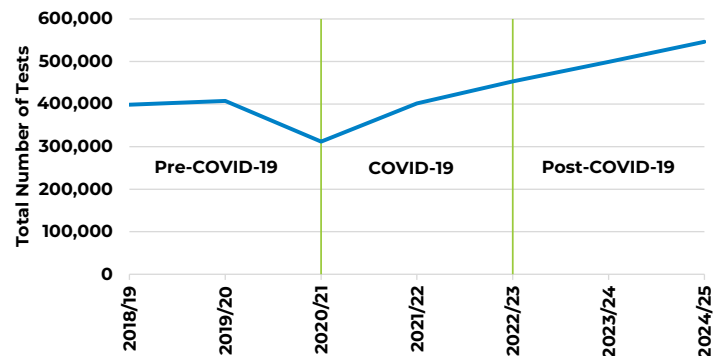


Figure 1. Total Number of Tests Analyzed by Year, 1 Apr 2018–31 Mar 2025

- The number of tests increased over the years. While there was a drop in 2020/21, there was a continuous upward trend afterwards.

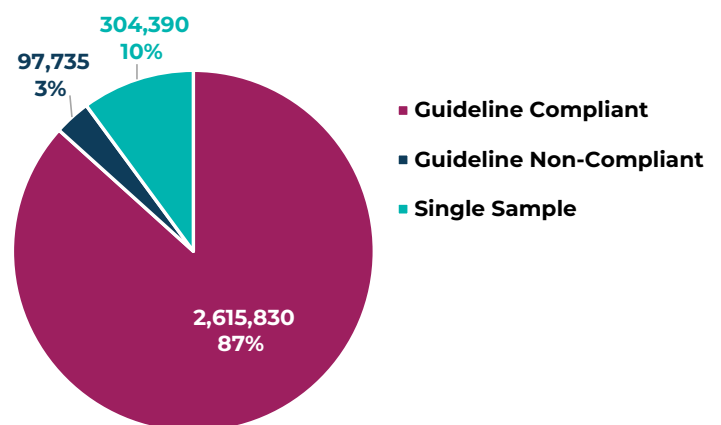


Figure 2. Number of Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- While 87% of tests were in accordance with retesting guidelines, around 3% of tests occurred sooner than recommended. Roughly 10% of tests were without repeats (i.e., single samples).

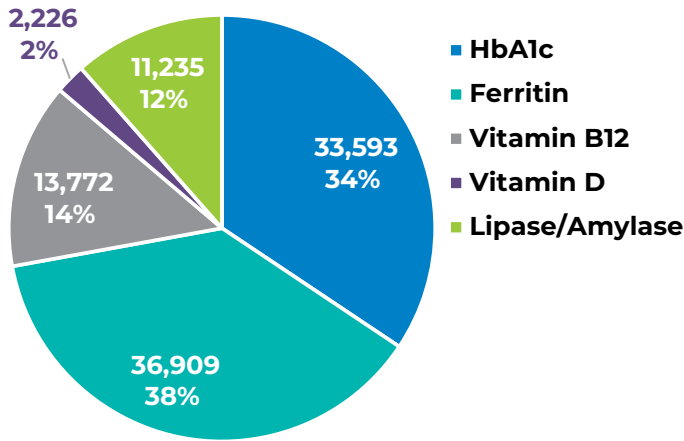


Figure 3. Repeat Tests Non-Compliant With the Minimum Retesting Interval Guidelines Grouped by Test Names, 1 Apr 2018–31 Mar 2025

- HbA1c and ferritin accounted for the majority of retests that occurred sooner than the recommended guidelines.

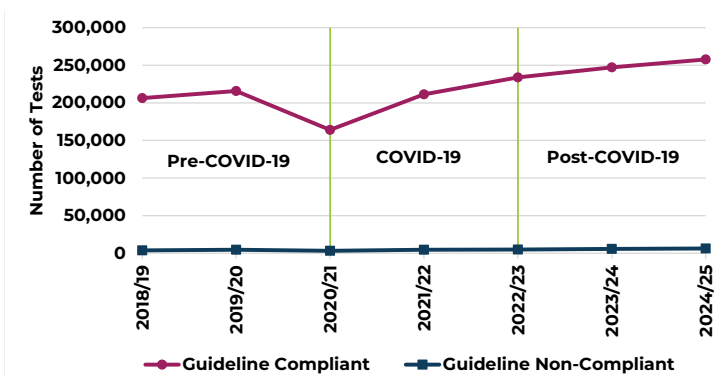


Figure 4. HbA1c Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- The proportion of guideline non-compliant HbA1c tests remained constant over the years.

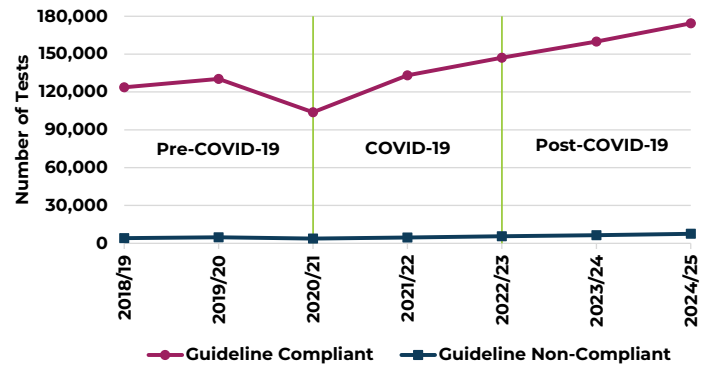


Figure 5. Ferritin Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- The proportion of guideline non-compliant ferritin tests remained constant over the years.

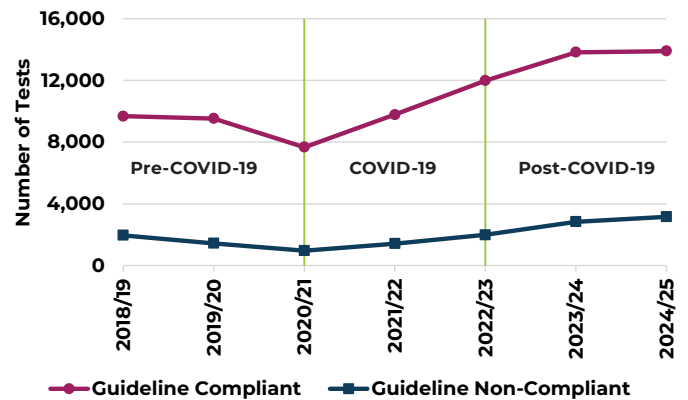


Figure 6. Vitamin B12 Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- The proportion of guideline non-compliant vitamin B12 tests remained constant over the years.

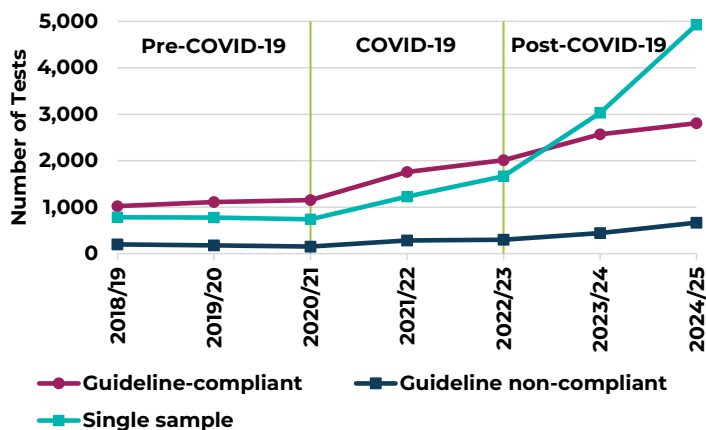


Figure 7. Vitamin D Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- The proportion of guideline non-compliant vitamin D tests remained constant over the years, and the proportion of single samples increased.

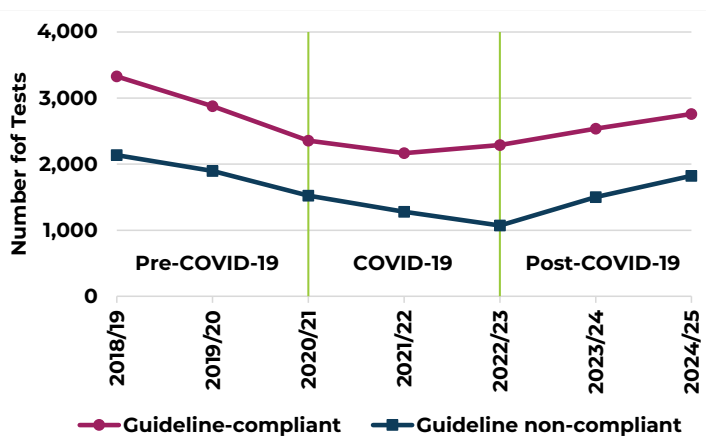


Figure 8. Lipase/Amylase Tests Classified by Minimum Retesting Interval, 1 Apr 2018–31 Mar 2025

- The proportion of guideline non-compliant lipase/ amylase tests remained constant over the years.

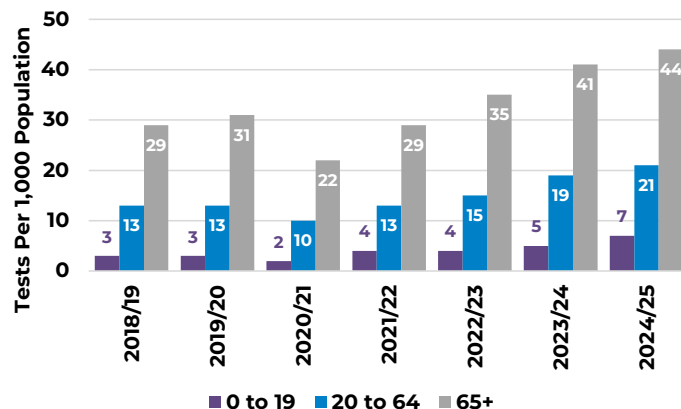


Figure 9. Age Standardized Rates Per 1,000 Population Retested Outside the Minimum Retesting Interval Guidelines, 1 Apr 2018–31 Mar 2025

- The number of guideline non-compliant tests per 1,000 people in the population increased over the years.

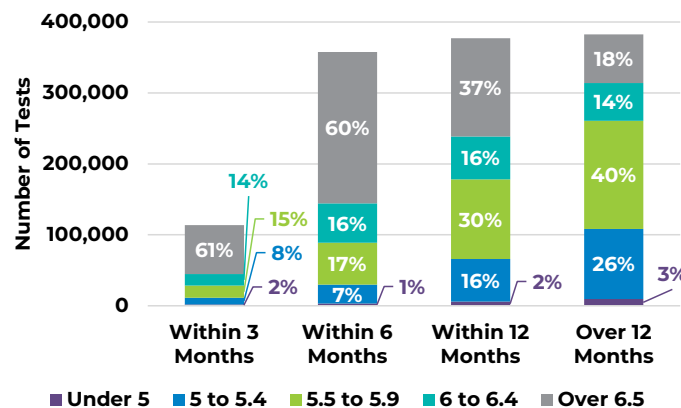


Figure 10. HbA1c Retests in Females Aged 45 Years and Older and Males Analyzed by Retesting Interval and Test Result, 1 Apr 2018–31 Mar 2025

- Outpatients who met the definition of diabetes (HbA1c over 6.5%) made up the majority of those retested within 3 or 6 months.
- About 25% of patients retested within 6 months were low or moderate risk for diabetes (HbA1c <6%).

Conclusions

1. Overall use of lab tests in the outpatient setting has increased steadily over time.
2. In accordance with minimum retesting intervals, the proportion of tests occurring sooner than recommended was low (<5%) and did not increase over time; however, the intervals were very conservative and missed a substantial number of inappropriate tests.
3. It would be helpful to modify the definition of non-compliant tests based on specific clinical indications where they are available (e.g., ferritin monitoring for iron deficiency vs. iron overload; HbA1c for screening vs. management).
4. While the number of guideline non-compliant HbA1c tests was low according to conservative estimates, there was a high proportion of potentially inappropriate retests in individuals with normal and acceptable glycemic control.
5. While there was an increasing prevalence of vitamin D and B12 tests, the numbers of said tests were low and there have been restrictions in place for them since 2018. Increasing orders for vitamin D may be partially attributed to changes in the testing method and easing of traditional restrictions making it easier to order.