

DATE:	2022 February 17
TO:	Devon General Hospital (DVH) – Physicians, Nurses, Pharmacists, and Managers
FROM:	Alberta Precision Laboratories
RE:	New Coagulation Analyzer Implementation at DVH

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Key Message

- New ACL ELITE PRO coagulation analyzers went live February 10, 2022 at DVH.
- These new analyzers are being implemented in a staggered fashion across the entire Edmonton Zone over the span of a few weeks. As this platform is already in use everywhere else in Alberta, implementation also allows for provincial standardization of coagulation testing.

Background

- The coagulation lab at **DVH** already performs the following tests: PTT, INR, and D-Dimer. (D-Dimer is not performed on a different instrument, however).
- The new coagulation analyzers will continue to perform all the same tests. However, the new coagulation analyzers, from Instrumentation Laboratories (aka Werfen), utilize a different clot detection method (optical) than the retiring Stago brand of analyzers (mechanical). Consequently, significant changes to how results are reported will occur.
- Additional changes will also be occurring as a result of provincial standardization.

How this will impact you

1) Interfering Substances:

- Thresholds for interfering substances will change (see Appendix Table 1). Comments will continue to be appended if results may be affected by interfering substances.
- Thrombin Time is particularly sensitive to interfering substances and the test will be cancelled if there is visible lipemia or hemolysis.

2) Reference Ranges:

- Regional Thrombin Time (performed externally) reference range changing: 10.3-16.6 seconds (previously 14.3-19.7s)
- No impact to other reference ranges.

3) Heparin Monitoring:

- PTT Nomogram ranges will be updated in Epic.

4) Turnaround Times:

- On-instrument analysis time may be prolonged in the setting of significantly abnormal INR, PTT and Fibrinogens. This may lead to extended turnaround time for critical results.
- The *maximum* differences from our previous analyzers have been estimated as follows:
 - INR (when >5): +3 minutes.
 - PTT (when >120 s): +7 minutes



5) Critical Results - Preliminary Reporting and Reflex Testing:

- Provincial standardization initiatives coincide with the new analyzer implementation and necessitate changes to the process for laboratory handling of critical results.
- Previously, critical PTTs, INRs, and fibrinogens were *Preliminarily* reported while the laboratory confirmed their validity, and then were *Final Verified*.
- Going forward, only critical Fibrinogen assay results will be *Preliminarily* reported. The lab will then investigate for possible interferences and if none are found, the Fibrinogen result will be *Final Verified*. INR and PTT results will only be available at the *Final Verified* result stage.
- Under some circumstances, a critical INR or PTT result may cause reflex Fibrinogen testing to be suggested. Because fibrinogens are not performed on-site, a comment will be appended to the INR/PTT result indicating that testing may be of value, and to contact the lab if required.

6) Critical Results – Contacting Collectors:

- The new critical handling process also acknowledges the risk of specimen collection issues causing expectedly grossly abnormal (critical) results.
- Laboratory technical staff may attempt to contact the specimen collector (nursing, allied health, lab phlebotomist, etc.) to inquire regarding the collection if the results were not previously critical.
- Comments may be appended to the results if the lab suspects or cannot determine if there was specimen interference/compromise.

Action Required

- Be aware of limitations and changes associated with incoming coagulation analyzers relevant to your practice.

Effective

- Immediately

Questions/Concerns

- Dr. S. Nahirniak, DVH Hematopathology Site Lead, susan.nahirniak@albertaprecisionlabs.ca
- Dr. E. Turley, Coagulation Lead - Edmonton, elona.Turley@albertaprecisionlabs.ca

Approved by

- Dr. A. Szkotak, Hematopathology Chief, North Sector, artur.Szkotak@albertaprecisionlabs.ca



APPENDIX

Table 1: Tests on the ACL ELITE PRO instruments are accurate up to (and including) the tabulated levels of the interfering substance

Test	Interfering Substance			
	Triglycerides (mmol/L)	Bilirubin (umol/L)	Free Hemoglobin (mg/L hemolysis)	Heparin (U/mL)
INR	8	250	5000	1.0
PTT	10	510	4000	N/A – sensitive to heparin