

Optimizing Laboratory Testing in Facility Hemodialysis

July 2026

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Fraser Health conducted a review of routine blood work practices for in-centre and community hemodialysis patients, with a focus on identifying opportunities to safely reduce the frequency of select tests in support of more sustainable healthcare practices and planetary health goals, as well as improved patient experience. The team reviewed practices in Fraser Health as well as across other health authorities (Providence Health Care, Vancouver Coastal Health, Island Health and Northern Health). The review aligned with BC Renal Kidney Care Advisory Panel (KCAP) blood work guidelines and incorporated updates from the BC Renal Hemodialysis Anemia Management Protocol. The resulting recommendations were endorsed by BC Renal's Medical Advisory Group and Hemodialysis Advisory Panel for provincial implementation. Importantly, these recommendations are not intended to override clinical judgment or eliminate necessary laboratory testing. Instead, they are informed by current literature and aim to support clinicians in making evidence-based decisions.

Working Group and Literature Review Process

A Fraser Health interdisciplinary working group conducted literature reviews on specific laboratory tests and a formal literature search request was submitted to Fraser Health Library Services, spanning June to October 2025. The purpose of this review was to gather evidence on the clinical value and recommended testing frequency for each lab parameter in the context of hemodialysis patient care.

To support informed decision-making, a summary document compiling routine chronic lab orders from various health authorities was developed (See [Appendix 1](#)). This overview served as a reference to facilitate discussions and guide final recommendations.

Hemodialysis Routine Blood Work Recommendations

Lab Work	q 6 weekly	q 3 monthly	Annually	Comment
CBC	✓	✓	✓	Without diff.
Hgb	✓	✓		If Hgb can be decoupled, take only CBC without diff – initially and annually.
Sodium	✓	✓	✓	
Potassium	✓	✓	✓	
Chloride	✓	✓	✓	If chloride can be decoupled will consider future reduction in frequency.
Magnesium		✓		Based on KDIGO guidelines.
Bicarbonate/CO2	✓	✓	✓	
Urea Pre and Post	✓	✓	✓	
Creatinine	✓	✓	✓	
Albumin	✓	✓	✓	Based on KDIGO guidelines.
Ionized Calcium	✓	✓	✓	Ionized calcium is preferred over total serum calcium for routine monitoring in hemodialysis patients, as it more accurately reflects the biologically active fraction of calcium. However, adoption of ionized calcium testing should be based on site-specific laboratory capabilities, including available equipment, testing methodologies, and resource considerations. Additional lab testing costs may be incurred when comparing calcium levels across different methods or time points. For accurate analysis, comparisons should be made between similar test types—such as ionized calcium to ionized calcium, or serum calcium to serum calcium—to ensure consistency and reliability.

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NOTES:

- Laboratory testing may be initiated on a discretionary basis by the healthcare provider, guided by the patient's clinical status and care requirements.
- Although laboratory testing recommendations are established at the provincial level, individual health authorities maintain the authority to determine which specific tests are implemented within their jurisdiction.

Lab Work	q 6 weekly	q 3 monthly	Annually	Comment
Phosphate	☒	☒	☒	
iPTH		☒	☒	
TSats	☒	☒	☒	Based on KDIGO guidelines and current BC Renal Hemodialysis Anemia Management Protocol. Recommendation will be based on the outcomes of the Anemia guideline future update. Q six weeks may capture iron loads.
Ferritin	☒	☒	☒	
Iron/TIBC	☒	☒	☒	
ALT				Initial blood work only.
ALK Phos			☒	Annually, if iPTH is high.
HbA1c		☒		To provide a baseline (especially for patients without a GP). Recommendation of Diabetes Canada to ensure that glycemic goals are met or maintained.
Hep B Surface Ag			☒	Consulted with Dr Kevin Afra, Infectious Disease Specialist. Agreed with yearly frequency.
Hep B Surface Ab			☒	
Hep B Core Ab			☒	
Hep C Ab			☒	
Vitamin B12				Initial blood work.

Appendix 1

Routine Chronic Lab Orders per Health Authority (as of January 2026)

Health Authority	FHA				PHC-Cerner					Northern Health				Island Health (South Island)			
Lab Frequency	q 6 weeks	q 3 months	Annually	Comment	q 6 weeks	q 3 months	q 6 months	Annually	Comment	q 6 weeks	q 3 months	Annually (February)	Comment	q 6 weeks	q 3 months	Annually	Comment
Lab Work Name																	
CBC	☒	☒	☒	Without Diff	☒	☒	☒	☒	Without Diff	☒	☒	☐	With Diff	☒	☒	☐	Without Diff
Rectic Count	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐		☒	☒	☐	
Sodium	☒	☒	☒	Panel CP7	☒	☒	☒	☒	Panel with potassium	☒	☒	☐	E7 panel	☒	☒	☐	Six/60
Potassium	☒	☒	☒	Panel CP7	☒	☒	☒	☒	Panel with sodium	☒	☒	☐	E7 panel	☒	☒	☐	Six/60
Chloride	☒	☒	☒	Panel CP7	☒	☒	☒	☒		☒	☒	☐	E7 panel	☒	☒	☐	Six/60
Magnesium	☐	☐	☐		☒	☒	☐	☒		☐	☒	☐		☒	☒	☐	
Bicarbonate/CO2	☒	☒	☒	Panel CP7	☒	☒	☒	☒	SPH & VGH orders Bicarbonate reported as CO2	☒	☒	☐		☒	☒	☐	Six/60
Urea Reduction Ratio/Urea/Post Urea	☒	☒	☒	Labeled on lab work - pre and post ureas	☒	☒	☒	☒	Labeled on lab work - pre and post urea Urea and creatinine panel	☒	☒	☐	Labeled on lab work - pre and post urea Urea with E7 panel	☒	☒	☐	
ALK Phos	☐	☒	☒	Same tube as CP7	☐	☐	☒	☒		☐	☒	☐		☒	☒	☐	
HbA1c (if diabetic)	☐	☒	☒		☐	☒	☐	☐	SPH/VGH PRN	☐	☒	☐		☐	☐	☐	
Random Glucose	☒	☐	☒	Panel CP7	☐	☐	☐	☐		☒	☒	☐	E7 panel	☐	☐	☐	
Hep B Surface Ag	☐	☐	☒		☐	☐	☐	☒		☐	☐	☒		☐	☐	☒	
Hep B Surface Ab	☐	☐	☒		☐	☐	☐	☒		☐	☐	☒		☐	☐	☒	
Hep B Core Ab	☐	☐	☒		☐	☐	☐	☒		☐	☐	☒		☐	☐	☒	
Hep C Ab	☐	☐	☒		☐	☐	☐	☒		☐	☐	☒		☐	☐	☒	

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Health Authority	FHA				PHC-Cerner					Northern Health				Island Health (South Island)			
Lab Frequency	q 6 weeks	q 3 months	Annually	Comment	q 6 weeks	q 3 months	q 6 months	Annually	Comment	q 6 weeks	q 3 months	Annually (February)	Comment	q 6 weeks	q 3 months	Annually	Comment
Vitamin B12	☐	☐	☐	Taken initially and adhoc	☐	☐	☐	☐		☐	☐	☐		☐	☐	☒	
Total Cholesterol	☐	☐	☐		☐	☐	☐	☐		☐	☐	☒		☐	☐	☐	
HDL	☐	☐	☐		☐	☐	☐	☐		☐	☐	☒		☐	☐	☐	
LDL	☐	☐	☐		☐	☐	☐	☐		☐	☐	☒		☐	☐	☐	
Triglycerides	☐	☐	☐		☐	☐	☐	☐		☐	☐	☒		☐	☐	☐	
HIV Serology	☐	☐	☒		☐	☐	☐	☐		☐	☐	☐	Every 5 years	☐	☐	☒	If ordered
TSH	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐		☐	☐	☒	
Lactate Dehydrogenase	☐	☐	☐		☐	☐	☒	☒		☐	☐	☐		☐	☐	☐	
Gamma Glutamyl Transferase	☐	☐	☐		☐	☐	☒	☒		☐	☐	☐		☐	☐	☐	
ECG	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐		☐	☐	☒	If not completed, within the previous year
Pre and Post Sugars	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐		☐	☐	☐	
Troponin	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐		☐	☐	☐	

The following individuals and groups reviewed and provided their approval of the recommendations:

Name	Health Authority	Position
Yao, Shaoyee	Fraser Health	Nephrologist, Chair of the BCR Hemodialysis Advisory Panel
Harris, Claire	Vancouver Coastal Health	Nephrologist
Horgan, Kevin	Island Health	Nephrologist
Chiu, Ada	Fraser Health	Clinical Pharmacy Specialist
Lau, Wynnne	Providence Health	Clinical Pharmacy Specialist, Vice Chair of the BCR Pharmacy Services Advisory Panel
Goodacre, Deidra	Northern Health	Program Lead
Sairanbaeva, Elvira	Fraser Health	Team Lead
Khokhar, Navdeep	Fraser Health	Team Lead
Kelly, Gillian	Fraser Health	Team Lead
Kensal, Sherri	Fraser Health	Clinical Nurse Specialist, Chair of the BCR Vascular Access Educators Group
Najman, Melany	Fraser Health	Clinical Nurse Educator
Magbag, Zoila	Fraser Health	Clinical Nurse Educator
Caryk, Julia	Island Health	Clinical Nurse Educator, Chair of the BCR Renal Educators Group

Endorsed by: BCR Hemodialysis Advisory Panel, BCR Medical Advisory Group.