



Date: November 30, 2020
To: All Zones: Physicians, Nursing Managers, Laboratory Directors and Managers
From: Clinical Biochemistry, South Sector, Alberta Precision Laboratories (APL)
Re: Repatriation of Thiopurine Methyltransferase (TPMT) Phenotyping to Calgary

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Key Message:

- Effective **December 14, 2020**, TPMT Phenotyping will be performed at the APL Pharmacokinetics Laboratory located in the Tom Baker Cancer Centre (TBCC) in Calgary. This was previously performed at the Health Sciences Center in Winnipeg (a.k.a. Diagnostic Services of Manitoba).
- Anticipated turnaround time is within 7 days of sample receipt
- APL test directory will be updated

Why this is Important:

- TPMT is the rate-limiting enzyme in metabolism of Thiopurine medications (e.g. Azathioprine).
- Sequence variants in the TPMT gene can decrease the enzyme activity, causing a toxic buildup of thiopurine metabolites in patients.
- TPMT activity assessment prior to administration of the medication will identify patients who require a reduced dose or who should not be placed on this therapy, thus improving the quality of patient care and reducing costs to the medical system.
- Results will be reported as Units per mL of Packed Red Blood Cells (U/mL RBC) and new Reference Intervals will be as follows:

Enzyme Activity	Measurement
Low	< 5.0 U/mL RBC
Intermediate	5.0 – 10.0 U/mL RBC
Normal	> 10.0 U/mL RBC

Action Required:

- Request TPMT Phenotyping on the General Laboratory requisition or enter the test mnemonic TPMT PHENO if ordering electronically.
- TPMT Phenotyping test results will now be available in Millennium, Connect Care, Netcare and physician office systems (POS).

Inquiries and feedback may be directed to:

- Dr. Dennis Orton, Clinical Biochemist, South Sector, Dennis.Orton@aplabs.ca, (403) 770-3219
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This bulletin has been reviewed and approved by:

- Dr. Hossein Sadrzadeh, Section Chief, Clinical Biochemistry, South Sector
- Dr. Leland Baskin, Associate Medical Director, South Sector