



Date: July 13, 2020
To: Lethbridge and Area & Medicine Hat and Area Physicians and Nursing staff
Lethbridge and Area & Medicine Hat and Area Laboratory Staff
From: Hematology Laboratory Pathologists, Lethbridge and Medicine Hat
Re: Malaria Test Preliminary and Final Reporting

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Message:

- Effective July 20, 2020 all specimens submitted for malaria testing at Chinook Regional Hospital Laboratory, Medicine Hat Regional Hospital Laboratory and Brooks Hospital Laboratory will be preliminarily screened using a Rapid Diagnostic test kit and microscopy. The specimen will then be forwarded to APL Calgary Microbiology for confirmatory testing by nucleic acid test (NAT) methodology.
- Negative NAT result will be reported as negative for malaria (final report).
- Positive NAT result will be further confirmed, by APL Calgary Microbiology, using standard thick and thin film microscopy.
- If blood parasites other than Malaria are clinically suspected, testing for these must be ordered separately.

Why this is important:

- As of November 2018, Calgary Microbiology modified the malaria testing algorithm to include NAT in addition to thick and thin microscopy.
- Malaria testing will now rely on NAT for final malaria reporting.
- No repeat testing is required when NAT is negative due to its excellent sensitivity (97-100%) and negative predictive value (99-100%)
- Positive NAT result will still require microscopy for speciation and quantification and follow up testing to monitor parasitemia levels while on treatment as clinically indicated.

Background:

- Historically, malaria testing required 3 consecutive thick and thin film examinations spaced 6-8 hours apart to rule out malaria.
- This repeat testing was due to the lack of sensitivity of microscopy in detecting very low level infections.
- New NAT testing detects malaria parasite levels at or below 1 parasite per uL, over 100 to 1000-fold more sensitive than microscopy and other rapid antigen tests.

Action Required:

- **Do not send repeat specimens when malaria NAT result is negative**
- Specimens received for repeat testing will be deferred if negative NAT results are available.
- If repeat testing is clinically indicated in spite of negative NAT result, notify the Hematology lab.

Inquiries and feedback may be directed to:

- Dr. Krishna Narra, Hematology Pathologist, Chinook Regional Hospital, 403-388-6063
- Dr. Michael O'Connor, Hematology Pathologist, Medicine Hat Regional Hospital, 403-529-8867

This bulletin has been reviewed and approved by:

- Michael Greeff, MD, Regional Laboratory Medicine Site Chief, Chinook Regional Hospital
- Julio Silva, MD, Regional Laboratory Medicine Site Chief, Medicine Hat Regional Hospital