HealthPartners/GHI

Malaria Smear Preparation Procedure	**Attachments** ☐ Yes ☒ No
Key words Plasmodium, paroxysmal fever	**Number** **GHP-PC-CLINIC LAB-Procedures-Malaria Smear v. 11-2009**
Category Provision of Care	**Effective Date** **September 1985**
Manual Clinic Laboratory Procedure Manual	**Last Review Date** **November 2012**
Issued By Clinic Laboratory – Laboratory Technical Consultants	**Next Review Date** **November 2013**
Applicable Clinic Laboratory Staff	**Origination Date** **September 1985**
	Retired Date
Level of Complexity Not applicable	**Contact** Laboratory Technical Consultants
Review Responsibility **Laboratory Technical Consultants**	**Approved Date** **September 1985**
APPROVAL(S) Laboratory Medical Director	

I. PURPOSE/PRINCIPLE

The definitive diagnosis of malaria is based on the demonstration of the parasite in the blood. A thick film allows the examination of a larger amount of blood and is used as a screening procedure. A thin film is prepared for a quick diagnosis of high parasitemia and for speciation purposes.

Four species of the protozoan Plasmodium cause malaria: P. vivax, P. falciparum, P. malariae, and P. ovale. The two most common forms of malaria are caused by P. vivax and P. falciparum. The most life threatening form of malaria is caused by P. falciparum, which is the most common species in tropical Africa.

In cases where fever follows classical paroxysms of chills, the best time to prepare blood smears is shortly after a paroxysm, or about 10 hours later when enough young asexual parasites have matured to the trophozoite stage for speciation purposes.

II. POLICY

Laboratory Staff will follow the approved techniques outlined in this procedure.

Reagents/Materials:

Glass Slides

Use frosted slides and label using the small computer labels.

Specimen:

5 thin smears and 5 thick smears. If a venipuncture is performed, prepare smears from a freshly drawn EDTA tube. If a fingerstick is used for blood collection make smears from an EDTA capiject or from the capillary (fingerstick) puncture.

III. PROCEDURES

1. **THIN SMEAR PREPARATION**

   Prepare 5 thin smears as done for routine differentials. Dry smears quickly by fanning to preserve cell morphology.

2. **THICK SMEAR PREPARATION**

   Prepare 5 thick smears as follows:

   a. Clean 5 slides using alcohol and dry.
   b. Place 1-2 drops of blood on the slides
   c. With an applicator stick, gently mix the drops and spread the blood to about the size of a dime.
   d. Allow the smears to air dry at room temperature for at least 1 hour in a dust-free area.

Note: Optimal thickness occurs when one is able to read newsprint through the blood. If the blood is too thick, or if any grease is on the slide, the blood will flake off during staining.

3. **REFERRAL OF SPECIMEN**

   Send at least 5 thin and 5 thick smears to Regions Hospital Laboratory. Send the EDTA tube or Capiject tube with the slides.

   - **Evenings or Weekends –** Call a courier to deliver to Regions Hospital. Results must be available to the provider by the next day or within 24 hours.

PROCEDURE NOTES

None

REFERENCES

CDC Laboratory Update: Preparing and Staining Blood Films for the Diagnosis of Parasitic Infections. CDC C78-36.
Campbell, C and Chin, W: Diagnosing and Monitoring Malaria. Diagnostic Medicine, May/June 1981. pp. 46-49.
Finegold, S. and Martin, W: Diagnostic Microbiology.

APPENDIXES

AUTHOR

JWright:
JVos:
LEJohnson,
DABergo,
SLCooper,
NJButala:
JAGayken
AKHoward
BBergsbaken

IV. DEFINITIONS

V. COMPLIANCE

Failure to comply with this policy or the procedures may result in disciplinary action, up to and including termination.

VI. ATTACHMENTS

VII. OTHER RESOURCES

VIII. ENDORSEMENT

Laboratory Administration