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	Document Type:	Standard Operating Procedure
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	Department/Section:	Hematology
	Document Title:	MALARIAL SMEAR

PURPOSE:

To describe in detail how to process the Malarial Smear test correctly and always in the same manner. It is the easiest and reliable test in screening blood donors if there is a case of transfusion induced malaria or if there is a suspected case of malaria in a patient who has febrile illness and if the repeated blood smears are negative.

SCOPE:

Applies to all Hematology Section Staff of Laboratory Department of Dr. Pablo O. Torre Memorial Hospital (DPOTMH)

PERSON RESPONSIBLE:

Medical Technologists (Medical Laboratory Scientists), Pathologists, Medical Doctors, Nurses, Medical Trainees, Laboratory Clerks

PROCEDURE:

1. Hand washing shall be performed before and after the procedure.
2. The wearing of Personal Protective Equipment such as gloves, masks, goggles/face shield and gowns shall be observed in doing the procedure.
3. The Medical Technologist collects blood in an EDTA lavender top tube (2mL/0.5mL tube) properly labeled with complete patient's name and date of collection or obtains a thick and thin smear from a finger puncture.
4. The Medical Technologist collects blood sample, filled to specified volume, no underfilling or overfilling and is inverted tip to tip 8-10 times gently for adequate mixing and to avoid hemolysis and destruction of chemical elements.
5. Specimens collected shall be considered as biohazardous material and the disposal of syringes and needles will be according to Infection Control guidelines.
6. The Medical Technologist forwards properly the blood sample and patient's request to the Hematology Section. Medical Technologist then checks blood sample label, volume and clots prior to analysis. Not properly labeled sample is given back to the extractor for correct labeling. Insufficient volume and clotted sample is subject for repeat blood collection and the Medical Technologist, Nurse in-charge or the patient will be informed immediately.



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7. The Medical Technologist makes smear labeled slides, air dries and stains the thick smear using giemsa stain and thin smear using the hemacolor stains. Thick and thin smears shall be done to newly collected blood sample (delay can result in changes in parasite morphology and staining characteristics). Do not fix thick smears with methanol or heat. If there will be delay in staining smears, dip the thick smear briefly in water to hemolyse the RBCs.
8. The Medical Technologist examines microscopically using the oil power objective for the presence of ring forms, trophozoites, schizonts and gametocytes .

Characteristics of *Plasmodium vivax*:


- All stages may be found in the blood
- Variety of stages in a single fiber
- Enlarged parasitized red blood cells
- Schuffner's stippling
- Ameboid trophozoite
- Golden brown pigment
- 12-24 merozoites (average 16)
- Length of asexual cycle – 48 hours.

Characteristics of *P. falciparum*:

- Asexual cycle appear 48 hours
- Stages in blood – rings and gametocytes
- Red blood cells are normal in size
- Maurer's dots
- Black pigment
- 6-32 merozoites

Malarial Parasite Counting Technique (Quantitative)

Quantitative malarial parasite count is performed by counting the number of malarial parasites against 200 white blood cells multiplied by 8,000 which is the normal white blood cell count. This is done in the thin blood smear that there is no overlapping of cells microscopically.

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To compute:


$$\frac{\text{Malaria parasite count} \times 8000}{200 \text{ WBC}} = \text{malaria count/cumm.}$$

This technique is used to monitor the efficacy of malaria chemotherapy.

9. The Medical Technologist notes microscopic findings and encodes results in the system.
10. The Medical Technologist/Laboratory Clerk prints out results for outpatients at the reception area and results for admitted patients can be viewed and printed out by nurses to its respective stations.
11. Names and results of patient shall be recorded in the Hematology/Miscellaneous logbook.
12. Turn-around time for releasing Malarial Smear result is within 3 hours.

REFERENCE:

Hematology Handbook for Medical Technologists/Shirley I. Fabian-Cruzada, MSPH, RMT/Philippines

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KEY TASKS	PERSON RESPONSIBLE
1. Encodes the request of the patient to BIZBOX system.	Laboratory Clerks and Nurses
2. Extracts blood sample from the patients.	Medical Technologist/Nurse
3. Ensures sample is acceptable for testing.	
4. Disposes properly and safely biohazardous and infectious wastes and materials.	
5. Ensures laboratory equipment is clean, functional and calibrated.	
6. Processes and analyzes samples. Reports result with significant findings.	
7. Releases and validates result thru BIZBOX System.	
8. Records result to Hematology logbooks.	Laboratory Clerks and Nurses
9. Endorse the patient's results to the patient or doctor.	

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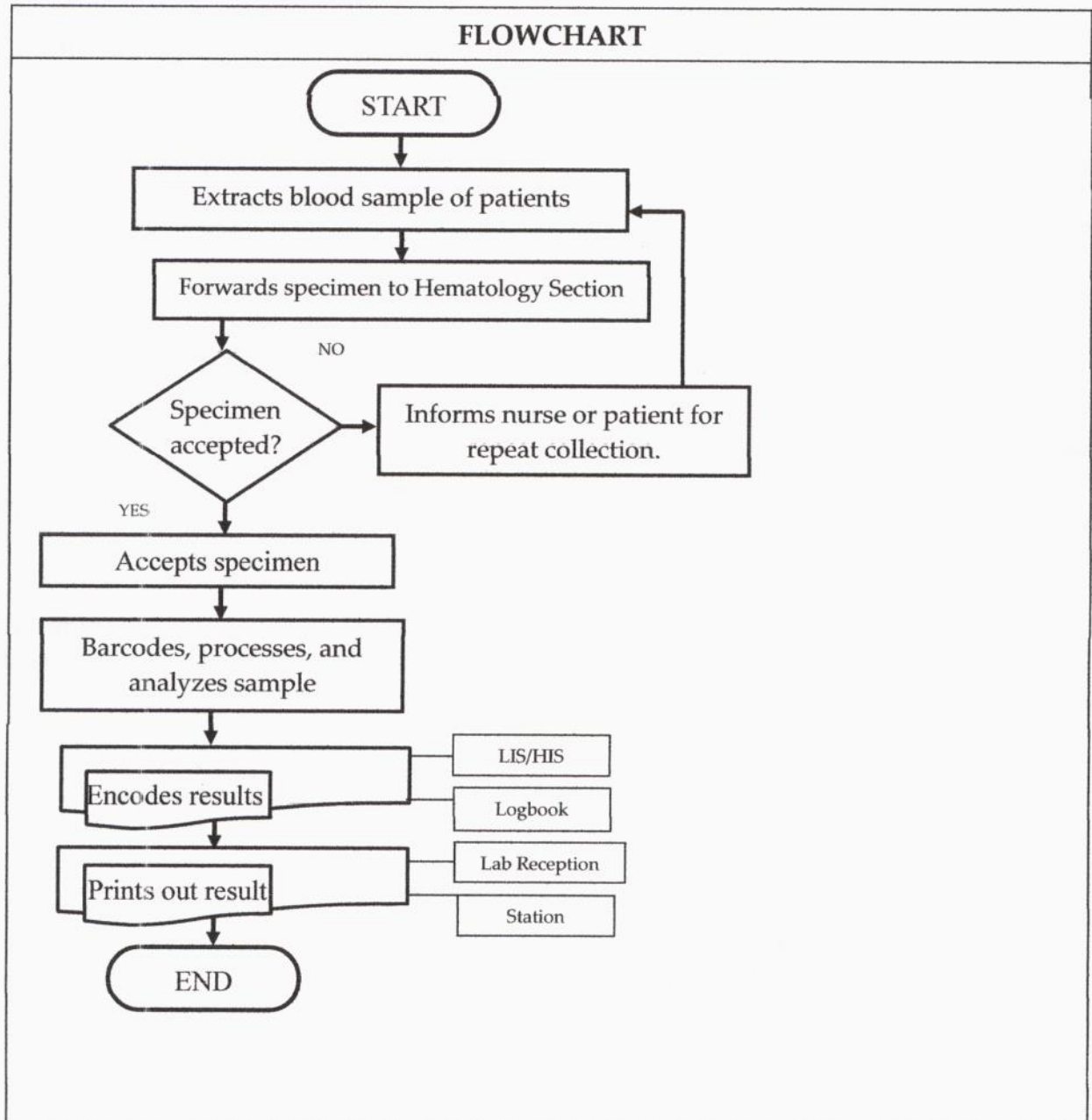
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