STANDARD OPERATING PROCEDURE

(Name of the Blood Centre)

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SP 003		2		
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LOCATION	SUBJECT
Donor Room	Qualifying Test for Blood Donation
FUNCTION	**DISTRIBUTION**
Method of estimation of donor's haemoglobin by copper sulphate method	- Medical Officer-in-Charge of Donor Area for use by all technicians in the area - Master File

1. SCOPE AND APPLICATION

To find a fit and healthy donor, assuring his or her safety. This also helps in assuring the quality of the product.

2. RESPONSIBILITY

It is the responsibility of the technician working in the donor area.

3. REFERENCE

Technical Manual of American Association of Blood Banks, 13th edition, 1999 Pg. 711-712

4. MATERIALS REQUIRED

1. Copper sulphate working solution with a specific gravity 1.053.
2. Sterile gauze/cotton, spirit and sterile disposable lancets.
3. Heparinized capillaries (dimensions: 75mmx1mm)
4. Containers with 1% sodium hypochlorite solution for disposing sharp lancets, capillaries and bio hazardous materials.
5. Coplin jar with lid.

For preparation of copper sulphate working solution refer SOP: SP 004.

5. PROCEDURE

Principle:

This is a qualitative test based on specific gravity. The drop of donor's blood dropped

into copper sulphate solution becomes encased in a sac of copper proteinate, which prevents any change in the specific gravity for about 15 seconds. If the haemoglobin is equal to or more than 12.5 gm/dL the drop will sink within 15 seconds and the donor is accepted.

N.B:

- Do not depend on colour of tongue or conjunctiva.
- Accept a donor only if haemoglobin is >12.5g/dL.

Method:

1. 30 ml copper sulphate working solution (Sp.gr.1.053) in a clean, dry coplin jar is used for determining hemoglobin. The jar is kept covered with a lid when not in use. The working solution is changed after every 25 tests.
2. The fingertip is cleaned thoroughly with a spirit swab and allowed to dry.
3. The finger is punctured firmly near the tip with a sterile disposable lancet. A good free flow of blood is ensured. The finger is not to be squeezed repeatedly since it may dilute the drop of blood with excess tissue fluid and give false low results.
4. The first drop of blood is wiped and ¾ of the micro capillary is allowed to fill with blood sample by capillary force, without any air bubbles.
5. Allow one drop of blood to fall gently from the capillary from a height of about 1 cm above the surface of the copper sulphate solution, into the coplin jar.
6. The drop of blood is observed for 15 seconds.
7. The lancet and capillaries are disposed off in a container with 1% sodium hypochlorite solution.

Interpretation:

1. If the drop of blood sinks within 15 seconds (i.e. donor's haemoglobin is more than 12.5gm/dL), the donor is accepted for blood donation.
2. However, if the blood drop sinks midway (i.e. haemoglobin level is less than 12.5gms/dL), and then comes up, the donation or donor is deferred.
3. If the drop sinks slowly, hesitates and then goes to the bottom of the jar, confirm the haemoglobin of this donor.
4. If the donor fails the CuSO4 test, repeat haemoglobin by Sahli's /Drabkin's / Automated Cell Counter.
5. In case if the haemoglobin is lower than 12.5g/dL, prescribe haematinics and ask the donor to come for a recheck after one month.

6. DOCUMENTATION

Enter the result on donor card

N.B.: WHO has developed a simple device for estimating haemoglobin (Haemoglobin Colour Scale)