Guidelines For Operationalising First Referral Units

Maternal Health Division
Ministry of Health & Family Welfare
(Department of Family Welfare)
Government of India
Nirman Bhavan, New Delhi - 110 011

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Preface

Reduction in maternal mortality rate is the stated goal for National Population Policy, National Health Policy and Tenth Five Year Plan and is also one of the Millennium Development Goals (MDG) to which the country is a signatory and has to respond.

Maternal mortality in India continues to remain unacceptably high. Historical evidence at the global level has demonstrated that it is possible to bring down maternal mortality effectively if a package of obstetric services is provided within reach of the communities and the families. It is in this context that efforts were initiated in 1992 with the implementation of the Child Survival and Safe Motherhood (CSSM) Programme for upgrading the existing community health centers and sub-district hospitals into First Referral Units (FRUs), to be equipped for providing delivery of emergency obstetric care to pregnant women with complications. Over the years, a number of steps have been taken under the Reproductive and Child Health (RCH) Programme for facilitating the operationalisation of these FRUs. These have included funds for operationalising Operation Theatre (OTs) and Labour Rooms (LRs), supply of equipment kits, supply of drug kits containing emergency obstetric care drugs and funds for hiring of Anaesthetists from private sector. Drugs and Cosmetics Rules have also been amended to enable setting up of Blood Storage Units in the institutions designated as First Referral Units (FRUs). Despite all these efforts, not many FRUs identified by the State Governments have become fully operational for provision of 24-hours Emergency Obstetric and Child Health care services.

The Maternal Mortality Rate (MMR) at the National level continues to be above 400 per 100,000 live births. The MMR in many major states particularly those, which are part of the Empowered Action Group (EAG), is much above the National average. This situation is a major cause of concern and it is imperative that focused efforts have to be made for making the First Referral Units fully operational, in case we have to meet the National objective of bringing down the MMR to less than 100 by the year 2010.

Under the forthcoming Reproductive and Child Health Programme, Phase II, efforts have to be made for operationalising 2000 FRUs in a phased manner. The guidelines on operationalisation of FRUs have been prepared to assist the states to plan for operationalising of the FRUs. Proper planning at this stage will also help the states in determining the type and quantum of assistance required by them for different inputs while planning for the implementation of RCH-II. The guidelines are basically suggestive in nature and the states can take suitable initiatives while planning for various activities towards operationalisation of these FRUs identified by them. Funding for these activities will be under RCH-II and would accordingly be subject to the norms for such funding and details of accountability as would be prescribed under the RCH-II.

I would like to acknowledge the efforts put by the Maternal Health Division of this Department in preparing the guidelines. I am sure this effort will go a long way not only in planning and operationalising of FRUs, but also in ensuring uniform and good quality obstetric services at these First Referral Units (FRUs).

(P. Hota)
Secretary (FW)
Department of Family Welfare
Ministry of Health & Family Welfare
Government of India

24th July, 2004

Acknowledgements

Operationalisation of First Referral Units (FRUs) is an important component of the Reproductive and Child Health (RCH) Programme. It is hoped that the guidelines will help the States in planning for operationalising the FRUs for strengthening Emergency Obstetric and Child Health care at the First Referral units.

I gratefully acknowledge the encouragement and guidance provided by Shri P. Hota, Secretary in Department of Family Welfare. I am also thankful to Shri S.S. Brar, Joint Secretary (RCH) for his inputs and help during the preparation of these guidelines.

I would specifically like to acknowledge the contributions and efforts of Shri J. P. Misra, Programme Advisor, European Commission for technical assistance and Dr. Arvind Mathur, NPO, WHO India, in the preparation of the guidelines. The draft guidelines were discussed also with the State Programme Officers and Technical Experts. Their valuable suggestions have been incorporated while preparing these guidelines and I would like to thank all of them for their contribution.

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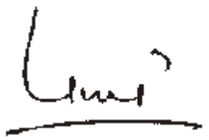
I acknowledge the help provided by Mrs. Reeta Madan and Shri Pradeep Kumar Sohpaul for their secretarial help in putting together the document.



(Dr. V. K. Manchanda)
Deputy Director General
Maternal Health Division
Department of Family Welfare
Ministry of Health & Family Welfare
Government of India

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Introduction

1.1 Historical background

1.1.1 It is estimated that for every 100,000 live births, 407 pregnant women die every year in India due to causes related to pregnancy and childbirth. The major causes of these deaths have been identified as Anaemia, Haemorrhage (both Ante and Post-Partum), Toxemia (Hypertension during pregnancy), Obstructed Labour, Puerperal Sepsis (Infections after delivery) and unsafe Abortions. Over the years, efforts to reduce Maternal Mortality and Morbidity have included providing family planning services, improving essential obstetric care including Ante-natal Care, Safe/Institutional Deliveries, Prophylaxis and treatment of Anaemia and Post-natal Care and **Emergency Obstetric Care.**

1.1.2 Complications associated with pregnancies are not always predictable. Therefore, provision of Emergency Obstetric Care as close to the community as possible was taken up under the Child Survival and Safe Motherhood (CSSM) Programme by setting up First Referral Units (FRUs) at the community health centers/sub-district level hospitals. Central assistance was provided to 1724 FRUs identified by the States (see Annex I), in the form of 12 types of equipment kits which were considered necessary for carrying out Laporotomies, Caesarean Sections and other surgical interventions for Emergency Obstetric Care and New-born Care. However, most of the identified FRUs could not become fully operational due to:

(i) Lack of provision of emergency drugs

(ii) Inadequate infrastructure in terms of Operation Theatre and Labour Rooms

(iii) Non- availability of blood banking facilities, and

(iv) Lack of skilled manpower, particularly Anaesthetists and Gynaecologists

1.1.3 Under the RCH programme, provision has been made for supply of drug kits to the FRUs in the form of Emergency Obstetric Drug kits containing 65 items of drugs @ 3 Kits in 'C' Category Districts and 2 Kits in each of the 'B' Category Districts in the states. The States have also been provided assistance for civil works to upgrade the infrastructure for Operation Theatres and Labour Rooms.

1.1.4 Drugs and Cosmetics Rules have been amended and now it is possible to set up blood storage centers at the sub-district level health facilities identified as FRUs. Guidelines for setting up blood storage facilities at FRUs have been prepared by a group of experts and circulated separately (see Annex-II for key provisions of the guidelines).

1.1.5 The experience indicates that lack of specialist/trained providers (Anaesthetists and Gynaecologists) is perhaps the single most important cause for inadequacy in provision of emergency care in Government hospitals particularly in rural areas. In order to improve availability of Anaesthetists, provision was made in the RCH Programme for hiring the services of private Anaesthetists for conducting emergency operations at a payment of Rs. 1000/- per case. However, the expenditure reports indicate that the State Governments have not been able to use the financial assistance made for this purpose which may be due to many factors, including non-availability of such specialists even in the private sector.

1.2 Tenth Plan: Recommended approach

1.2.1 The working group on health care for women and children for Tenth Five Year Plan have identified establishment of fully functional and operational FRUs as the priority area for the provision of Emergency Obstetric and New-born Care. The group has recommended as under:

"It is imperative that the existing infrastructure and specialist manpower at FRUs/CHCs is looked into critically and re-organized, and mis-matches between infrastructure and manpower corrected. At the first instance it would be desirable to ensure provision of quality Emergency Care Services at least at the district hospital and sub-district hospital followed by FRUs/CHCs. Thus, developing some FRUs in a district by ensuring that they have the required number of specialists in position or have access to the services of specialists on call, would be a preferred option rather than having a number of FRUs which may not be providing full range of services. The information on location of such emergency services/FRUs will be made available to all villages in the area so that the population knows where they should reach for getting appropriate emergency care. The provision of emergency care has also to be supported by appropriate referral services from sub-centers to PHCs and from PHCs to the functioning First Referral Units providing emergency services."

1.2.2 In view of the foregoing, it is considered imperative that the States look at the existing facilities and identify clearly their requirements for putting into place fully functional FRUs. It is envisaged that by the end of the Tenth Five Year Plan, each district should have at least 3-4 fully functional facilities which are equipped to provide the full range of Emergency Obstetric and New-born Care on a round-the-clock basis.

1.2.3 To realize the above objective, an exercise will need to be undertaken for mapping the existing health facilities, available manpower and other resources for each district. This exercise will facilitate proper placement of the available resources and at the same time will bring out additional requirements in terms of training, equipment and infrastructure required for operationalising the identified CHCs/sub-district hospitals as FRUs. To facilitate this exercise, formats have been designed and are given in Annex III {Formats I, II & III}. Based on this exercise, it should be possible to draw the district-wise action plans for operationalising FRUs in a phased manner. Consolidation of the district plans at the state level will thus bring out the overall requirements of the State in various areas, like infrastructure, equipment, manpower and training needs for operationalising FRUs during the Tenth Plan.

1.2.4 The guidelines below are an attempt to facilitate the planning exercise by the States and also take into account the recommendations of the National workshop organized in 1999 for operationalisation of FRUs, in which all the States, donor agencies, experts and programme officers of the Department of Family Welfare participated.

1.2.5 The suggestions/recommendations made below also draw upon two consultative meetings with the States and experts held in connection with the proposed second phase of the RCH programme.

Critical determinants of a First Referral Unit

2.1 Recommended service package

2.1.1 An existing facility (district hospital, sub-divisional hospital, community health centre etc.) can be declared a fully operational First Referral Unit (FRU) only if it is equipped to provide round-the-clock services for Emergency Obstetric and New-born Care, in addition to all emergencies that any hospital is required to provide (Box-1).

Box-1: Minimum services to be provided by a fully functional FRU

- 24-hour delivery services including normal and assisted deliveries
- Emergency Obstetric Care including surgical interventions like Caesarean Sections(*) and other medical interventions
- New-born Care(*)
- Emergency Care of sick children
- Full range of family planning services including Laproscopic Services
- Safe Abortion Services
- Treatment of STI / RTI
- Blood Storage Facility (*)
- Essential Laboratory Services
- Referral (transport) Services

(*): Critical determinants of functionality

2.1.2 It should be noted that there are three critical determinants of a facility being 'declared' as a FRU: availability of Surgical Interventions, New-born Care and Blood Storage Facility on a 24-hour basis.

2.1.3 The planning effort in relation to operationalising the FRUs, therefore, has to focus on carefully selecting such existing CHW/Sub-district hospitals which can be quickly equipped to handle all obstetric emergencies including those requiring surgical interventions like the Caesarean Section.

2.1.4 It may also be noted that the above critical interventions may currently not be available even in some district headquarter hospitals, particularly in the newly created districts in the EAG States. Therefore, the operationalisation effort must be carefully sequenced, and should start by making the district hospital fully operational as a First Referral Unit.

2.1.5 Given the scarcity of resources, particularly the specialists, even the best endowed States have carefully avoided a normative approach (e.g. of declaring all CHCs as FRUs). For example, Maharashtra carried out a detailed assessment exercise covering all CHCs which revealed that it would not be feasible to provide the 24-hour surgical interventions at all CHCs. The State, therefore, selected 3-4 CHCs in every district for provision of FRU services. For the remaining CHCs, the service package has been defined at a lower level of competence.

Points to be considered while selecting the facility

Points to be considered while selecting sites for opertionalising FRU services

3.1 Infrastructure needs

3.1.1 To be able to perform the full range of FRU functions, a health facility must have the following physical infrastructure:

This may call for selecting a smaller facility in preference to some otherwise 'larger' facilities. For example, a brand new CHC may have to be ignored because it may be too close to the district headquarter or it may be difficult to retain its manpower because of its location.

- A minimum bed strength of 20-30. However, in difficult areas as the North-East States and the under-served areas in the EAG States, this could be relaxed to 10-12 beds initially.
- A fully functional operation theatre equipped for undertaking anaesthetic and emergency surgical procedures including Caesarean Sections and Laporotomies.
- A fully operational Labour Room.
- An area earmarked and equipped for New-born Care in the Labour Room and also in the ward.
- A functional laboratory with facilities for all essential investigations.
- Blood storage facility as per the guidelines issued by Govt. of India (GoI).
- 24-hour water supply.
- Arrangements for waste disposal.
- Regular electricity supply with back-up arrangements to ensure uninterrupted supply to the operation theatre and labour room, cold chain and blood storage facility.
- Telephone connection.
- Ambulance (owned or arranged through local hiring).

3.2 Selection of sites

3.2.1 Under the RCH Programme funds were provided for civil works related to operationalisation of operation theatre, labour rooms and provision of regular water supply etc. at the CHCs and district hospitals. Similarly, civil works have been undertaken at many sub-district facilities as part of the Health Systems Projects in the concerned States. It is expected, therefore, that the physical infrastructure is already in place in many sub-district health facilities in every district. This should be taken into account while carrying out the selection process.

3.2.2. However, situations could arise where the previous investments for infrastructure strengthening may not have been made in facilities which are otherwise optimally located and are more likely to attract specialised manpower than the facilities which were not taken up for such strengthening. For example, investments made to upgrade a CHC located within a few kilometers of the district hospital may not lead to much improvement in the availability of emergency services because (a) the people are likely to by pass it and go to the district hospital and (b) the staff posted at such facility would tend to stay in the district headquarter.

3.2.3 The objective of ensuring proper selection should be to develop a network of 3-4 facilities in the district in such a way that these together with the district hospital can ensure that all emergency cases in the district can access the nearest facility within a maximum travel time of 1 hour.

Equipment: Review past receipts

4.1 Twelve types of equipment kits (Kit-E to Kit-P) were designed under the CSSM programme (See Box-2 below) and supplied to the States. Detailed facility surveys carried out in some places have indicated that substantial part of these supplies may still be lying unused in some CHCs which do not have the requisite physical infrastructure and/or the necessary human resources for utilizing the equipment. Some equipment for blood storage have also been supplied under the Aids Control Programme by NACO to a number of sub-district facilities. Similarly, States covered under the Health Systems Projects have also procured and supplied equipment for the district and sub-district level facilities.

Box-2: Equipment kits supplied under CSSM Programme
Kit-E: Standard Surgical Set-I (instruments) FRU
Kit-F: CHC Standard Surgical Set-II
Kit-G: IUD Insertion Kit
Kit-H: CHC Standard Surgical Set-III
Kit-I: Normal Delivery Kit
Kit-J: Standard Surgical Set IV
Kit-K: Standard Surgical Set-V
Kit-L: Standard Surgical Set VI
Kit-M: Equipment for Anaesthesia
Kit-N: Equipment for Neo-natal Resuscitation
Kit-O: Equipment for Laboratory Tests and Blood Transfusion
Kit-P: Materials Kit for Blood Transfusion

4.2 It is clear that an assessment needs to be carried out as part of the process of operationalising FRUs so that the equipment already available in a given district can be taken into account while determining the requirement of equipment. A stock taking at the district level will thus be a necessary exercise and will facilitate shifting of the equipment lying un-utilized at some facilities to those facilities where these may be required. Details of the various equipment kits is in Annexure IV.

Human resources: Re-deployment and multi-skilling

5.1 Policy options for human resource management

5.1.1 The community health center was envisaged to be a fully functional FRU (defined to mean a facility providing full range of FRU services including C-section, along with facilities for handling other medical emergencies) and, accordingly, a minimum strength of 4 medical officers (who are either qualified or especially trained to work as surgeon, obstetrician, physician and pediatrician) was recommended. Facilities selected for operationalising FRU services should, therefore, aim to provide a similar or increased strength of medical personnel. In addition, adequate number of nursing staff to work in Operation Theatre, Labour Room and In-patient wards will also need to be carefully determined.

5.2 Re-deployment & multi-skilling

5.2.1 Re-deployment of the resources existing within the districts is one of the important step. This has been gainfully done in West Bengal. Based on a review, the State Government of West Bengal announced an infrastructure rationalization and manpower re-deployment policy with a view to improve institutional care in the State. The key features of the policy announcement are as follows:

- Strengthening of Block PHCs (BPHCs) and PHCs will be done in a need based manner after actual assessment for each individual institution. This would include rehabilitation of the buildings, provision of new equipment as well as posting of additional manpower.
- All the block PHCs shall have minimum 30 indoor beds with complete facilities for institutional delivery and usual indoor treatment care.
- Efforts will be made to provide same facilities in the BPHCs as are available in rural

hospitals (Community Health Centres as per GoI nomenclature).

- Well-functioning PHCs running with indoor facilities will be identified and their infrastructure strengthened.
- The existing manpower position of the BPHCs and PHCs (which are well functioning) will be strengthened by withdrawing and posting of manpower from PHCs that are providing only OPD services.
- All the staff of PHCs that are providing only outdoor services shall be withdrawn and re-deployed in BPHCs and PHCs running with indoor. Manning of OPD of these PHCs shall be done from the BPHCs by deployment of manpower for required work on rotation basis.

5.2.2 Provision of other support services like blood storage, Laboratory services, pharmacy services should be planned primarily on the basis of multi-skilling and re-deployment of available paramedical staff.

5.2.3 After selection of the facilities to be operationalised as FRUs and assessment of available manpower and other resources has been completed, it would be necessary to re-deploy the specialists and other manpower to the facilities designated as FRUs. The State Government has to steer this process since the process may also require inter-district re-deployment.

5.2.4 Considering the general lack of specialists particularly that of anaesthetists, it is imperative to train the MBBS doctors in life saving anaesthetic skills for emergency obstetric care. A training programme on this has been designed for this purpose and a pilot course already implemented by officers of Chhattisgarh. The course module for the training, to be organized in selected medical colleges, is in the process of being finalized and will be shared with States as soon as they are available.

5.2.5 Similar training programme is being designed by the Federation of Obstetrical and Gynaecological Societies of India (FOGSI) to train the MBBS doctors for management of obstetric emergencies (including C-section) and New-born Care. This training programme is also likely to be available shortly.

5.2.6 Multi-skilling training of paramedical workers will also be necessary in the critical area of Obstetric Care, New-born Care and Blood Storage and Laboratory Services.

Referral transport

6.1 Since most of the referrals originate from the field, the information on availability of emergency services at FRUs will have to be effectively disseminated to all villages in the area so that the population knows where they should reach for getting appropriate emergency care.

6.2 The provision of emergency care has to be supported by (i) appropriate referral transport from the periphery to the functioning First Referral Units providing emergency services and (ii) also from FRUs to district/tertiary level institutions. State Government will have to develop administrative mechanisms to facilitate transportation of patients from the field to the FRU on the one hand and from the FRU to higher facilities (district hospital and/or tertiary care facility), if required, on the other.

6.3 Providing Government procured vehicles should not be seen as the only option for referral transport/linkage. The option of providing funds to the facility in-charges, together with administrative and financial powers to make local arrangements is a recommended option.

Functional/financial autonomy

7.1 FRU operationalisation is not just about more equipment and funds; it is about empowering the facilities to respond to emergencies. Therefore, once an FRU becomes operational, State Government will have to ensure that there is no disruption in the services due to lack/absence of staff and/or minor requirement of funds.

7.2 In other words, State Government will have to formulate appropriate guidelines for providing some functional and financial autonomy (e.g. retention of user charges, if any) for the hospitals to enable them to:

(a) Hire locally available specialists and/or paramedical workers from the private/ NGO sector in case of need

(b) Make local arrangements for referral transport

(c) Generate resources locally and

(d) Out-source non-clinical services.

7.3 Community participation in the management of facilities should be explicitly built into the operational guidelines and inputs for this can be drawn from a number of States which have introduced these (e.g. Rogi Kalyan Samiti in MP, Medical Relief Society in Rajasthan, Hospital Kalyan Samiti in Assam, Himachal Pradesh and Hayrana and Chikitsa Sudhar Samitis in Uttaranchal).

7.4 The State Government will also have to:

- Formulate appropriate guidelines to enable the District Health Officers / Chief Medical Officers to identify and re-deploy specialists and paramedical staff within the district,
- Identify the para-medical cadres which can be merged and decentralized to lower levels; and
- Design an appropriate training programme for the multi-skilling of doctors/ paramedical staff.

Selection: The first step

8.1 Past experience indicates that sustained availability of specialists, general duty medical officers and paramedical staff (and their functional competence) holds the key to the functionality of First Referral Units. It is important, therefore, that every health facility identified as FRU is carefully assessed and a district wise priority list is drawn. Annex-III provides a set of formats to facilitate the assessment exercise. These may be suitably modified if considered necessary. Based on this exercise it would be possible to draw the district-wise action plans for operationalising FRUs in a phased manner. Consolidation of the district plans at the state level will thus bring out the consolidated requirements of the State in various areas for operationalising FRUs during the tenth plan.

8.2 Given the general lack of capacity at the district level, one or more teams of experts may be engaged to assist with the process of collection and analysis of data using the suggested formats (Annex-III) for selection, assessment and operationalisation of FRUs. The teams can be constituted by drawing suitable experts from the Directorate, State Institute of Health and Family Welfare and Medical Colleges. The exercise must be taken on priority basis for each district and the consolidated action plan for the State must be prepared.

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Annexure - I

Number of FRUs reported by the States (1992-97)

S. No.	Name of the State	FRU (under CSSM)
1	Andhra Pradesh	92
2	Arunanchal Pradesh	21
3	Assam	76
4	Bihar & Jharkhand	143
5	Chhatisgarh*	
6	Goa	4
7	Gujarat	77
8	Haryana	62
9	Himachal Pradesh	28
10	Jammu & Kashmir	26
11	Jharkhand**	
12	Karnataka	83
13	Kerala	70
14	Madhya Pradesh	163
15	Maharashtra	123
16	Manipur	15
17	Meghalaya	9
18	Mizoram	8
19	Nagaland	13
20	Orissa	65
21	Punjab	56
22	Rajasthan	130
23	Sikkim	6
24	Tamil Nadu	105
25	Tripura	5
26	Uttar Pradesh	242
27	Uttaranchal***	
28	West Bengal	77
29	A&N Islands	4
30	Chandigarh	2
31	D&N Haveli	2
32	Daman & Diu	2
33	NCT Delhi	5
34	Lakshdweep	2
35	Pondicherry	8
	TOTAL	1724

*included with Madhya Pradesh ** included with Bihar ***included with Uttar Pradesh

Annexure - II

Extracts from National Guidelines on Blood Storage Facilities at FRUs

1. Requirements

Space : The area required for setting up the facility is only 10 square meters, well-lighted, clean and preferably air-conditioned.

Manpower : One of the existing doctor and technician should be designated for this purpose. They should be trained in the operation of blood storage centers and other basic procedures like storage, grouping, cross- matching and release of blood.

The medical officer designated for this purpose will be responsible for overall working of the storage center.

Electricity : 24 hours supply is essential. Provision of back-up generator is required.

Equipment : Each FRU should have the following :

1. Blood bag refrigerators having a storage capacity of 50 units of blood.
2. Deep freezers for freezing ice packs required for transportation. The deep freezers available in the FRUs under the Immunization Programme can be utilized for this purpose.
3. Insulated carrier boxes with ice packs for maintaining the cold chain during transportation of blood bags.
4. Microscope and centrifuge: since these are an integral part of any existing laboratory, these would already be available at the FRUs. These should be supplied only if they are not already available.

Consumables: There should be adequate provision for consumables and blood grouping reagents. The following quantities would suffice the annual requirement of an FRU with up to 50 beds.

Consumables	Quantity
Pasteur pipette	12 dozens / year
Glass tubes	7.5 to 10 mm - 100 dozens / year
Glass slides	1" x 2" boxes of 20 or 25 each / year
Test tube racks	6 racks, each for 24 tables
Rubber teats	6 dozens / year
Gloves	Disposable rubber gloves 500 pairs per year
Blotting tissue paper	As required
Marker pencil (alcohol based)	As required
Tooth picks	As required

Reagents: All the reagents should come from the Mother Blood Bank.

Anti-A	2-vials each per month
Anti-B	2-vials each per month
Anti-AB	2-vials each per month

Anti-D (Blend of IgM & IgG)	2 vials each per month
Antihuman Globulin (Polyclonal IgG & Compliment)	1 vial per month

Since quality of the reagents is an important issue, the supplies of these should be made from the same blood bank/center from where blood is obtained. For this purpose, State Governments/Union Territories should provide the additional budgetary requirements to the mother blood bank/center.

Disinfectants: Bleach & Hypochlorite Solution - As required

2. Suggested quantities of Whole Blood Units to be available at a Blood Storage Units

5 units each of	A, B, O (Positive)
2 units of	AB (Positive)
1 units each of	A, B & O (Negative)

This can be modified according to the actual requirement

3. Storage & transportation

Cold chain : It is necessary to maintain the cold chain at all levels i.e. from the mother center to the blood storage center to the issue of blood. This can be achieved by using insulated carrier boxes.

During transportation, the blood should be properly packed into cold boxes surrounded by the ice packs. Ice, if used should be clean and should not come in direct contact with the blood bags.

The blood should be kept in blood bank refrigerator at 4°-6°c ± 2°c. The temperature of the blood should be monitored continuously.

Storage : The storage center should check the condition of blood on receipt from the mother center and also during the period of storage. The responsibility of any problem arising from storage, cross matching, issue and transfusion will be of the storage center. Any unit of blood showing hemolysis, turbidity or change in colour should not be taken on stock for transfusion.

Due care should be taken to maintain sterility of blood by keeping all storage areas clean.

The expiry of the blood is normally 35/42 days depending on the type of blood bags used. The Medical Officer in-charge should ensure that unused blood bags should be returned to the mother center at least 10 days before the expiry of the blood and fresh blood obtained in its place.

The blood storage centers are designed to ensure rapid and safe delivery of whole blood in an emergency. The detail of storage of packed cells, fresh frozen plasma and platelets concentrate are therefore not given in these guidelines. In case, however, these are required to be stored, the storage procedures of the mother blood bank should be followed.

4. Issue of blood

Patients blood grouping and cross matching should invariably be carried out before issue of blood. A proper record of this should be kept.

First In and First Out (FIFO) policy, whereby blood closer to expiry date is used first, should be followed.

5. Disposal

Since all the blood bags will already be tested by the mother center, disposal of empty blood

bags should be done by landfill. Gloves should be cut and put in bleach for at least one hour and then disposed as normal waste.

6. Documentation & records

The center should maintain proper records for procurement, cross matching and issue of blood and blood components. These records should be kept for at least 5 years.

7. Training

Training of doctors and technicians, who will be responsible for the Blood Storage Center, should be carried out for 3 days in an identified center as per the guidelines. Training will include :

- Pre-transfusion checking, i.e. patient identity and grouping
- Cross matching
- Compatibility
- Problems in grouping and cross matching
- Troubleshooting
- Issue of blood
- Transfusion reactions and its management
- Disposal of blood bags

The states will have to identify the institutions where training of the staff responsible for running the blood bank is to be held. These could be the blood banks at Medical Colleges, Regional Blood Banks, Indian Red Cross Blood Banks, or any other well setup, licensed Blood Bank, provided they have the necessary infrastructure for undertaking training.

The training will be for three-days duration during which the Medical Officer and the technician from the identified FRUs will be posted at the training institution.

A "Standard Operating Procedures Manual" (SOPM) has been developed and is part of these guidelines. This SOPM will be used as the training material. A copy of this SOPM will be made available to the Medical Officer for use in his Blood Storage Center for undertaking storage, grouping, cross matching and transfusion.

In addition to the training of the above Medical Staff, it is considered necessary that the clinicians who will be responsible for prescribing the use of blood are also sensitized on the various parameters of blood transfusion. For this the "Clinician's Guide to Appropriate Use of Blood" has been developed. It is suggested that one-day sensitization programme for the clinicians may be organized at the District Hospital/Medical College.

Government of India will make the expenditure for the above-mentioned trainings, available as per the norms of training under the RCH Programme. This training will, however, be coordinated by the Training Division of Department of Family Welfare. The states are required to include training as part of the overall State Action Plan for establishing Blood Storage Centers.

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Format - I : Suggested Scoring System for Selection of facilities as FRUs

Note:
Include public hospitals at the district headquarters and other public health facilities in the district providing in-patient services and having an operational bed-strength of 30 or more: Sub-Divisional Hospitals, Taluk / Area / Rural / Referral Hospitals and Community Health Centres.

State_____ District_____

S.No.	Name and address of the facility	Scores (refer scoring system given at the bottom)						
		Location	Geographical suitability	Access to disadvantaged	Feasibility to hold workforce people	Bed occupancy rate in recent past	Availability of private sector providers	Total score
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Scoring system: Assign marks as given below. **Assign zero if no criteria is met.**	
Location	2- if located at Sub-divisional / Taluk / Block headquarters 1- not located at Sub-divisional / Taluk / Block headquarters but located on a highway and/or near a railway station
General accessibility	2- if location connected with rail and all weather road link 1- if location connected with all weather road link
Access to disadvantaged people	2- if located at more than 4 hour travel distance from district headquarter 1- if located at less than 4 hour travel distance from district headquarter
Feasibility to hold workforce	1- if location has a municipality or a degree college or a railway station
Bed occupancy rate in the recent past (minimum one year)	2- if average bed-occupancy rate in last 12 months was more than 60% of operational bed-strength 1- if average bed-occupancy rate in last 12 months was 40-60% of operational bed-strength
Availability of private sector providers	2- if no private / charitable /trust hospital functioning at the location

Format - II : Profile of the district hospital and other public health facilities in the district having 20- 30 or more (operational) beds. In case of remote areas and North East States 10-12 beds

State _____ District _____

S. No.	Name and address	No. of sanctioned beds	No. of operational beds	Doctors (Total)		OBG specialist		Surgeon		Anaesthetist		Paediatrician		Staff nurse		Lab. technician	
	1	2	3	4		5		6		7		8		9		10	
				S	IP	S	IP	S	IP	S	IP	S	IP	S	IP	S	IP
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

S:Sanctioned
I.P:In Position

Format - II : (Continued)

State _____ District _____

S. No.	Name and address	Blood Storage *		Utilisation Level				
		Available (Yes/ No)	Size of existing laboratory	Functional delivery room (Yes/No)	No. of deliveries conducted during previous year (Jan-Dec)	Functional OT room (Yes/No)	No. of C-sections during previous year (Jan-Dec)	Total surgeries done during previous year (Jan-Dec)
	1	11	12	13	14	15	16	17
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

* The Notification and the DOFW guidelines allow a blood storage facility being set up in an existing room. Provided it has a minimum carpet area of 10 square meters.

Format - II : (Continued)

State _____ District _____

S. No.	Name and address	Availability of equipment #			Availability of infrastructure (Yes/No)		Availability of investigational facility (Yes / No)		Availability of functional ambulance (Y/N)	Staff quarters (Number)			
		Anaesthetic	C-Section	New-born care	Generator	24hr Water Supply	Functional Laboratory	Functional Radiology (X-Ray)		Total	No. meant for doctors	No. meant for nurses	No. meant for others
	1	18	19	20	21	22	23	24	25	26	27	28	29
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													

In case of shortage of functional equipments use separate sheet to indicate what is required.

Format - III : Human resource summary

State_____ District _____

Level and category		Number		
		Sanctioned	In-position (including those assigned to duties on 'attachment' basis)	Recruited on contract basis
A: District Hospital and other public health facilities at district headquarters (e.g. Maternity homes, Health posts and Urban Family Welfare Centres etc.)				
Doctors- (MBBS)	Male			
(MBBS)	Female			
	Surgeons			
	OBG specialists			
	Anaesthetists			
	Paediatricians			
	Lab technicians			
	Staff Nurse			
B: CHC/Sub-district Hospitals				
Doctors- (MBBS)	Male			
(MBBS)	Female			
	Surgeons			
	OBG specialists			
	Anaesthetists			
	Paediatricians			
	Lab technicians			
	Staff Nurses			
C: Block PHCs, PHCs and Dispensaries etc.				
Doctors- (MBBS)	Male			
(MBBS)	Female			
	Surgeons			
	OBG specialists			
	Anaesthetists			
	Paediatricians			
	Staff Nurses			
	Lab technicians			
	LHVs			
	ANMs			

Details of Equipment Kit Supplied under CSSM

KIT - E Standard Surgical Set - I (Instruments) FRU

S. No.	Item Description	Qty.
1	Tray, instrument/dressing with cover, 310 x 200 x 600 mm-ss	1
2	Gloves surgeon, latex sterilizable, size 6	12
3	Gloves surgeon, latex sterilizable, 6-1/2	12
4	Gloves surgeon, latex sterilizable, size 7	12
5	Gloves surgeon, latex sterilizable, 7-1/2	12
6	Gloves surgeon, latex sterilizable, 8	12
7	Forceps, backhaus towel, 130 mm	4
8	Forceps, sponge holding, 228 mm	6
9	Forceps, artery, pean straight, 160 mm, stainless steel	4
10	Forceps hysterectomy, curved, 22.5 mm	4
11	Forceps, hemostatic, halsteads mosquito, straight, 125 mm-ss	6
12	Forceps, tissue, all/is 6x7 teeth, straight, 200 mm-ss	6
13	Forceps, uterine, tenaculum, 280 mm, stainless steel	1
14	Needle holder, mayo, straight, narrow jaw, 175 mm, ss	1
15	Knife-handle surgical for minor surgery # 3	1
16	Knife-handle surgical for major surgery # 4	1
17	Knife-blade surgical, size 11, for minor surgery, pkt of 5	3
18	Knife-blade surgical, size 15 for minor surgery, pkt of 5	4
19	Knife blade surgical, size 22, for major surgery, pkt of 5	3
20	Needles, suture triangular point, 7.3 cm, pkt of 6	2
21	Needles, suture, round bodied, 3/8 circle No. 12 pkt of 6	2
22	Retractor, abdominal, Deavers, size 3, 2.5 cm x 22.5 cm	1
23	Retactor, double-ended abdominal, Beltouis, set of 2	2
24	Scissors, operating curved mayo-blunt pointed 170mm	1
25	Retractor abdominal, Balfour 3 blade self-retaining	1
26	Scissors, operating, straight, blunt point, 170 mm	1
27	Scissors, gauze, straight, 230 mm, stainless steel	1
28	Suction tube, 225 mm, size 23 F	1
29	Clamp intestinal, Doyen, curved, 225 mm, stainless steel	2
30	Clamp intestinal, Doyen straight, 225 mm, stainless steel	2
31	Forceps, tissue spring type, 160 mm, stainless steel	2
32	Forceps , tissue spring type, 250 mm, stainless steel.	1

Details of Equipment Kit Supplied under CSSM

KIT - F Standard Surgical Set - II

S. No.	Item Description	Qty.	Unit
1.	Forceps, tissue, 6 x 7 teeth, Thomas-Allis, 200 mm- ss	1	EA
2.	Forceps, backhaus towel, 130 mm, stainless steel	4	EA
3.	Syringe, anaesthetic (control), 10 ml, luer-glass	1	EA
4.	Syringe, hypodermic, 10 ml glass, spare for item 3	4	EA
5.	Needles, hypodermic 20G x 1-1/2" box of 12	1	Box
6.	Forceps, tissue, spring type, 145 mm, stainless steel	1	EA
7.	Forceps, tissue spring type 1 x 2 teeth, Semkins, 250 mm	1	EA
8.	Forceps, tissue spring type, 250 mm, stainless steel	1	EA
9.	Forceps, hemostat curved mosquito halsteads, 130 mm	6	EA
10.	Forceps, artery, straight pean, 160 mm, stainless steel	3	EA
11.	Forceps artery, curved pean, 200 mm, stainless steel	1	EA
12.	Forceps, tissue, Babcock, 195 mm, stainless steel	2	EA
13.	Knife handle for minor surgery No. 3	1	EA
14.	Knife blade for minor surgery No. 10, pkt of 5	8	EA
15.	Needle holder, straight narrow-jaw Mayo–Heger, 175 mm	1	EA
16.	Needle suture straight, 5.5 mm, triangular point, pkt of 6	2	Pkt
17.	Needle, Mayo, ½ circle, taper point, size 6, pkt of 6	2	Pkt
18.	Catheter urethral Nelaton solid-tip one-eye 14 Fr	1	EA
19.	Catheter urethral Nelaton solid-tip one-eye 16 Fr	1	EA
20.	Catheter urethral Nelaton solid-tip one-eye 18 Fr	1	EA
21.	Forceps uterine tenaculum duplay dbl-cvd, 280 mm	1	EA
22.	Uterine elevator (Ranathlbod), stainless steel	1	EA
23.	Hook, obstetric, Smellie, stainless steel	1	EA
24.	Proctoscope Mcevedy complete with case	1	EA
25.	Bowl, sponge, 600 ml, stainless steel	1	EA
26.	Retractor abdominal Richardson-Eastman, dbl-ended, set 2	1	Set
27.	Retractor abdominal Deaver, 25 mm x 3 cm, stainless steel	1	EA
28.	Speculum vaginal bi-valve graves, medium, stainless steel	1	EA
29.	Scisssors ligature, spencer straight, 130 mm, stainless steel	1	EA
30.	Scissors operating straight, 140 mm, blunt/blunt ss	1	EA
31.	Scissors operating curved, 170 mm, blunt/blunt ss	2	EA
32.	Tray instrument curved, 225 x 125 x 50 mm, stainless steel	1	EA
33.	Battery cells for item 24	2	EA

Details of Equipment Kit Supplied under CSSM

KIT - G IUD Insertion Kit

S. No.	Item Description	Qty.	Unit
1	Setal sterilization tray with cover size 300 x 220 x 70 mm, S/S, Ref IS: 3993	1	EA
2	Gloves Surgeon, latex, size 6-1/2 Ref. 4148	6	Pairs
3	Gloves surgeon latex, size 7-1/2 Ref. 4148	6	Pairs
4	Bowl, metal sponge, 600 ml, Ref. IS: 5782	1	EA
5	Speculum vaginal bi-valve cusco's graves small ss	1	EA
6	Forceps sponge holding, straight 228 MMH Semken 200 mm	1	EA
7	Sound uterine simpson, 300 mm graduated UB 20 mm	1	EA
8	Forceps uterine tenaculum duplay DBL-CVD, 280 mm	1	EA
9	Forceps tissue - 160 mm	1	EA
10	Anterior vaginal wall retractor stainless	1	EA
11	Torch without batteries	1	EA
12	Gloves surgeon, latex, size 7, Ref: 4148	6	Pairs
13	Gloves surgeon, latex size 6 Ref. IS: 4148	6	Pairs
14	Battery dry cell 1.5 V 'D' Type for Item 7G	1	EA
15	Speculum vaginal bi-valve cusco's/Grea Ves Medium ss	1	EA
16	Forceps artery, straight, Pean, 160 mm	1	EA
17	Scissors operating, straight, 145 mm, Blunt/Blunt	1	Set
18	Forceps uterine vulsellum curved, Museux, 240 mm	1	EA
19	Speculum vaginal double-ended sime size #3	1	EA

Details of Equipment Kit Supplied under CSSM

KIT - H CHC Standard Surgical Set - III

S. No.	Item Description	Qty.	Unit
1	Tray, instrument/dressing with cover, 310 x 195 x 63 mm	1	EA
2	Forceps, backhaus towel, 130 mm, stainless steel	4	EA
3	Forceps, hemostat, straight, Kelly, 140 mm, stainless steel	4	EA
4	Forceps, hemostat, curved, Kelly, 125mm, stainless steel	2	EA
5	Forceps, tissue Allis, 150 mm, stainless steel, 4 x 5 teeth	2	EA
6	Knife handle for minor surgery No. 3	1	EA
7	Knife blade for minor surgery, size 11, pkt of 5	10	Pkt
8	Needle hypodermic, Luer 22G x 11/4", box of 12	1	Box
9	Needle hypodermic, Luer 250G x 3/4", box of 12	1	Box
10	Needle, suture straight 5.5 cm, triangular point, pkt of 6	2	Pkt
11	Needle, suture, Mayo ½ circle, taper point No. 6, pkt of 6	2	Pkt
12	Scissors, ligature, angled on flat, 140 mm, stainless steel	1	EA
13	Syringe anaesthetic control, Luer - 5 ml, glass	4	EA
14	Syringe 5 ml, spare for item 13	4	EA
15	Sterilizer, instrument 200 x 100 x 60 mm with burner ss	1	EA
16	Syringe, hypodermic, Luer 5 ml, glass	4	EA
17	Forceps, sterilizer, Cheatle, 265 mm, stainless steel	1	EA

Details of Equipment Kit Supplied under CSSM

KIT - I Normal Delivery Kit

S. No.	Item Description	Qty.	Unit
1	Trolley, dressing carriage size 76C, long x 46 cm wide and 84 cm high. Ref. IS 4769/1968	1	EA
2	Towel, trolley 84 cm x 54 cm	2	EA
3	Gown, operation, cotton	1	EA
4	Cap. operation, surgeon's 36 x 46 cm	2	EA
5	Gauze absorbent non-sterile 200 mm x 6 m as per IS: 171/1985	2	EA
6	Tray instrument with cover 450 mm (L) x 300 mm (W) x 80 mm (H)	1	EA
7	Macintosh, operation, plastic	2	EA
8	Mask, face, surgeon's cap of rear ties: B) Beret type with elastic hem	2	EA
9	Towel, glove	3	EA
10	Cotton wool absorbent non-sterilize 500G	2	EA
11	Drum, sterilizing cylindrical - 275 mm Dia x 132 mm, ss as per IS: 3831/1979	2	EA
12	Table instrument adjustable type with tray ss	1	Set

Details of Equipment Kit Supplied under CSSM

KIT - J Standard Surgical Set - IV

S. No.	Item Description	Qty.	Unit
1	Vaccum extractor, Malastrom	1	Set
2	Forceps obstetric, Wrigley's, 280 mm, stainless steel	1	EA
3	Forceps, obstetric, Barnes-Neville, with traction, 390mm	1	EA
4	Forceps, sponge holding, straight 228 mm, stainless steel	4	EA
5	Forceps, artery, Spencer-Wells, straight, 180mm-ss	2	EA
6	Forceps, artery, Spencer-Wells, straight, 140mm-ss	2	EA
7	Holder, needle straight, Mayo-Hegar, 175 mm-ss	1	EA
8	Scissors, ligature, Spencer, 130 mm, stainless steel	1	EA
9	Scissors, episiotomy, angular, Braun, 145 mm, stainless steel	1	EA
10	Forceps, tissue, spring-type, 1 x 2 teeth, 160 mm-ss	1	EA
11	Forceps, tissue, spring-type, serrated ups, 160mm-ss	1	EA
12	Catheter, urethral, rubber, Foley's 14 ER	1	EA
13	Catheter, urethral, Nelaton, set of five (Fr 12-20) rubber	1	Set
14	Forceps, backhaus towel -130 mm-ss	4	Set
15	Speculum, vaginal, Sim's, double-ended # 3-ss	1	EA
16	Speculum, vaginal, Hamilton-Bailey	1	EA

Annexure - IV

Details of Equipment Kit Supplied under CSSM

KIT - K Standard Surgical Set - V

S.No.	Item Description	Qty.	Unit
1	Forceps, obstetric, Neville-Barnes, W/traction 390 mm	1	EA
2	Hook, decapitation, Braun, 300 mm, stainless steel	1	EA
3	Hook, crochet, obstetric 300 mm, Smellie, stainless steel	1	EA
4	Bone, forceps, Mesnard 280 mm, stainless steel	4	EA
5	Perforator, Smellie, 250 mm, stainless steel	1	EA
6	Forceps, cranial, Gouss, straight, 295 mm-ss	1	EA
7	Cranioclast, Braun, stainless steel, 365 mm long	1	EA
8	Scissors ligature Spencer 130 mm, stainless steel	1	EA
9	Forceps sponge holding, 22.5 cm straight – ss	1	EA
10	Forceps, tissue, spring-type, 1 x 2 teeth, 160 mm, stainless steel	1	EA
11	Forceps, tissue, spring-type, serrated tips, 160 mm-ss	1	EA
12	Forceps, artery, Spencer–Wells, straight, 180 mm-ss	2	EA
13	Forceps, artery, Spencer-Wells, straight, 140 mm-ss	2	EA
14	Forceps, scalp flap, Willet's 190 mm –ss	4	EA
15	Forceps, Vulsellum, duplay double curved, 280 mm-ss	4	EA
16	Forceps, Vulsellum, duplay double curved, 240 mm-ss	1	EA
17	Catheter, urethral, 14 Fr. solid tip, one eye, soft rubber	3	EA
18	Holder, needle, Mayo-Hegar, narrow jaw, straight, 175 mm-ss	1	EA
19	Speculum vaginal bi-valve, Cusco-medium, stainless steel	1	EA
20	Speculum, vaginal sim's double-ended, size # 3-ss	1	EA
21	Forceps, backhaus towel, 130 mm, stainless steel	4	EA

Details of Equipment Kit Supplied under CSSM

KIT - L Standard Surgical Set - VI

S.No.	Item Description	Qty.	Unit
1	Forceps, sponge holding, straight, 225 mm, stainless steel	4	EA
2	Speculum, vaginal, Sim's double-ended size # 3 – ss	1	EA
3	Speculum, vaginal, weighted Auvard, 38 x 75 mm blade – ss	1	EA
4	Forceps, tenaculum, Teale's, 230 mm-ss x 3 x 4	2	EA
5	Sound, uterine, Simmpson, 300 mm with 200 mm graduations	1	EA
6	Dilator, uterine, double - ended hegar, set of 5 – ss	1	Set
7	Curette, uterine, sim's blunt, 26 cm x 11 mm size # 4-ss	2	EA
8	Curette, uterine, sim's sharp, 26 cm x 9 mm size # 3-ss	2	EA
9	Forceps, artery, Spencer-Well's straight, 140 mm-ss	1	EA
10	Forceps, tissue, spring-type, serrated tips, 160 mm-ss	1	EA
11	Forceps, ovum, Krantz, 290 mm, stainless steel	1	EA

Details of Equipment Kit Supplied under CSSM

KIT - M Equipment for Anaesthesia

S.No.	Item Description	Qty.	Unit
1	Facemask, plastic w/rubber cushion & headstrap, set of 4	4	Set
2	Airway Guedel or Berman, autoclavable rubber, set of 6	2	Set
3	Laryngoscope, set with infant, child, adolescent blades	3	Set
4	Catheter, endotracheal w/cuff, rubber set of 4	3	Set
5	Catheter, urethral, stainless steel, set of 8 in case	2	Set
6	Forceps, catheter, Magill, adult and child sizes, set of 2	1	Set
7	Connectors, catheter, straight/curved, 3, 4, 5 mm (set of 6)	3	Set
8	Cuffs for endotracheal catheters, spare for item 4	4	EA
9	Breathing tubes, hoses, connectors for item 1, anti-static	4	Set
10	Valve, inhaler, chrome-plated brass, Y-shape	3	EA
11	Bag, breathing, self inflating, anti-static rubber, set of 4	2	Set
12	Vaporiser, halothane, dial setting	2	Set
13	Vaporiser, ether or methoxyflurane, wick type	2	EA
14	Intravenous set in box	6	EA
15	Needle, spinal, stainless set of 4	2	Set
16	Syringe, anesthetic, control 5ml Luer mount glass	2	EA
17	Cells for item 3	2	EA

Details of Equipment Kit Supplied under CSSM

KIT - N Equipment for Neo-natal Resuscitation

S. No.	Item Description	Qty.	Unit
1	Catheter, mucus, rubber, open ended tip, size 14FR	2	EA
2	Catheter, nasal, rubber, open tip, funnel end, size 8Fr	2	EA
3	Catheter, endotracheal, open tip, funnel end rubber, 12Fr	3	EA
4	Stilette, curved, for stiffening tracheal catheter SS	1	EA
5	Catheter, suction, rubber, size 8Fr	3	EA
6	Laryngoscope, infant, w/three blades and spare bulbs.	1	EA
7	Lateral mask, with ventillatory bag, infant size	2	EA
8	Resuscitator, automatic, basinet type	1	EA
9	Lamp, ultra-violet (heat source) with floor stand	1	EA
10	Cells for item 6 (Laryngoscope)	2	EA

Details of Equipment Kit Supplied under CSSM

KIT - O Equipments for Laboratory Tests & Blood Transfusion

S. No.	Item Description	Qty.	Unit
1	Rod, flint-glass, 1000 x 10 mm dia, set of two	2	Set
2	Cylinder, measuring, graduated W/pouring lip, glass, 50 ml	2	EA
3	Bottle, wash, polyethylene W/angled delivery tube, 250 ml	1	EA
4	Timer, clock, interval, spring wound, 60 minutes x 1 minute	1	EA
5	Rack, slide drying nickel/silver, 30 slide capacity	1	EA
6	Tray, staining, stainless steel 450 x 350 x 25 mm	1	EA
7	Chamber, counting, glass, double neubauer ruling	2	EA
8	Pipette, serological glass, 0.05 ml x 0.0125 ml	6	EA
9	Pipette, serological glass, 1.0 ml x 0.10 ml	6	EA
10	Counter, differential, blood cells, 6 unit	1	EA
11	Centrifuge, micro-hematocrit, 6 tubes, 240v	1	EA
12	Cover glass for counting chamber (item 7), Box of 12	1	Box
13	Tube, capillary, heparinized, 75 mm x 1.5 mm, vial of 100	10	Vial
14	Lamp, spirit W/screw cap. metal 60 ml	1	EA
15	Lancet, blood (Hadgedorn needle) 75 mm pack of 10 ss	10	Pkt
16	Benedict's reagent qualitative dry components for soln	1	Kit
17	Pipette measuring glass, set of two sizes 10 ml, 20 ml	2	Set
18	Test tube, w/o rim, heat resistant glass, 100 x 13 mm	24	EA
19	Clamp, test-tube, nickel plated spring wire, standard type	3	EA
20	Beaker, HRG glass, low form, set of two sizes, 50 ml, 150 ml	2	Set
21	Rack, test-tube wooden with 12 x 22 mm dia holes	1	EA

Details of Equipment Kit Supplied under CSSM

KIT - P Materials Kit for Blood Transfusion

S. No.	Item Description	Qty.	Unit
1	Bovine albumin 20% testing agent, box of 10 x 5 ml vials	5	Box
2	Centrifuge, angle head for 6 x 15 ml tubes, 240 volt	1	EA
3	Bath, water, serological, with racks, cover, thermostate, 240 v	1	EA
4	Pipette, volumetric, set of six 1 ml/2 ml/3 ml/5 ml/10 ml/20 ml	1	EA
5	Test-tube without rim 75 x 12 mm HRG	12	EA
6	Test-tube without rim 150 x 16 mm, HRG	12	EA
7	Cuff, sphygmomanometer, set of two sizes – Child/Adult	1	Set
8	Needle, blood collection disposable, 17G x 1-1/3 box of 100	1	Box
9	Ball, donor squeeze, rubber, dia, 60 mm	1	EA
10	Forceps, artery, Spencer-Wells, straight 140 mm, stainless steel	1	EA
11	Scissors, operating, straight 140 mm, blunt/jpoints, ss	1	EA
12	CPDA anti-coagulent, pilot bottle 350 ml for collection	20	EA
13	Microscope, binocular, inclined, 10 x 40 x 100 x magnificant	1	EA
14	Illuminator for item 14 (microscope)	1	EA
15	Slides, microscope, plain 25 x 75 mm, clinical, box of 100	1	Box