

Kingdom of Cambodia
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Ministry of Health

**TECHNICAL GUIDELINE FOR THE
ACCEPTANCE OF SECOND-HAND MEDICAL
EQUIPMENT**

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Preface

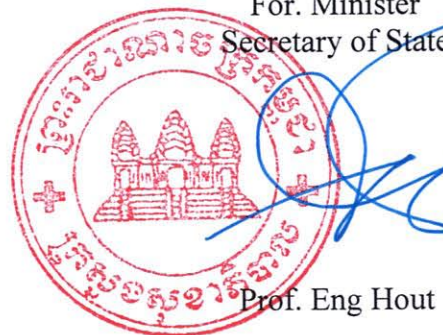
Medical equipment is a very crucial object for diagnosis and treatment. Therefore, taking care of medical equipment management and maintenance means contributing to providing quality, effective, safe and efficient healthcare services in line with the Health Strategic Plan 2008-2015, which outlines a priority objective that is to increase investment in physical infrastructure such as medical equipment and modern technologies and to promote non-medical services, medical equipment management and maintenance and drug and medical devices supply systems.

Since 2006 the Ministry of Health in collaboration with JICA has been implementing the Project for strengthening medical equipment management at some national hospitals and CPA3 referral hospitals and will expand it to cover CPA2 hospitals under the MEDEM-1 Project and MEDEM-2 Project. Through the experience gained from the project, MoH has observed that there are some problems that affect the management of medical equipment such as the overcrowding of old and broken equipment that are difficult to dispose and most of them were donated by organizations and other philanthropists without proper inspections before being accepted or were broken even before donation, some are obsolete and old models without sufficient components and parts, and some are not necessary for hospitals. MoH therefore has developed the Technical Guideline for Acceptance of Second-hand Medical Equipment for use as the basis to determine which used medical equipment is acceptable so as to ensure that they can be used and maintained in an effective and safe manner.

MoH calls on all public hospitals, national institutes, national centers and donors to follow this guideline in a highly attentive manner. *SM*

Phnom Penh, *December 05*,..... 2011

For. Minister
Secretary of State *HE*



Prof. Eng Hout

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ABBREVIATIONS

Abbreviation	Full Word
AC	Alternative Current
CE	Commuauté Européenne (European Community)
CPA2	Complementary Package of Activity Level 2 Hospital
CPA3/NH	Complementary Package of Activity Level 3 / National Hospital
CT	Computed Tomography
DC	Direct Current
ECG	Eledctrocardiograph
HSD	Hospital Service Department
JICA	Japan International Cooperation Agency
JIS	Japan Industry Standard
ME	Medical Equipment
MEDEM-1	Project on Promotion of Medical Equipment Management System
MEDEMIS	MEDEM Inventory Software
MoH	Ministry of Health
NGO	Non Governmental Organization
NWT	National Workshop Team
SPO ₂	Saturated Percutaneous Oxygen
VF	Ventricular Fibrillation

EXECUTIVE SUMMARY OF THIS GUIDELINE

This guideline has been prepared to avoid the waste of resources in bringing second hand Medical Equipment to Cambodia that will never provide any useful service because according to experience of MoH before, it was faced following cases occur:

Donated ME was;

- a) no needs to clinical service for the recipient hospital
- b) not appropriate condition (very old fashioned model, deteriorated or shabby)
- c) not worked before handover
- d) incomplete package (no attached necessary accessories, consumables, etc.)
- e) not provided technical documents
- f) not available local supplier for giving after service

All Medical Equipment must be appropriate to clinical needs and conform to ME standards.

Useful donation of ME is consultation and coordination between the donor agency and the recipient hospital from the initial stage through the mutual consent. Therefore, MoH of Cambodia determined that any Medical Equipment (Second hand used) donated to Cambodia will be accepted only with fulfilled pre-condition written in Page 10.

Particularly, the Ministry of Health stipulated to not accept the second hand ME that has minimum two significant conditions as mentioned follows should be fulfilled:

- (1) MoH could not be accepted the ME (second hand used) has more than 6 years passage since manufactured date (Note: The life periods of most kinds of ME are around 6 years, as determined by the global wide custom and International standards give support to this time frame.). Therefore, Donor side should be provided ME basic information, at least Model and product date should be informed to recipient side before execute to hand over the equipment.
- (2) MoH could not be accepted the ME that equipment condition is not working before donates. Thus, Donor side shall check and confirm the equipment condition of the ME. Also, they should prepare some report of operation test.

TECHNICAL GUIDELINE FOR THE ACCEPTANCE OF SECOND-HAND MEDICAL EQUIPMENT

I. Purpose of this guideline

The purpose of this guideline is to ensure that all public hospitals throughout the country that have received second-hand ME are able to utilize them appropriately, efficiently and safely. This guideline does not apply to medical instruments, furniture and consumables. Generally, medical devices are categorized as follows (See Box1).

Box-1: Typical Categories of Medical Devices

1. Consumable (Use only one time, and then, keep it in a safety box to avoid infectious disease before burning: Needles, Syringes, gauze, etc.)



2. **Medical Instrument** (No require maintenance: Scissors, Knife, Bowel and others)



3. **Medical Furniture** (Easy maintenance: Patient bed, Wheelchair, Shelf and others)



4. **Medical Equipment** (Require proper maintenance: X-ray machine, Centrifuge, Incubator, ECG and others)



The guideline is applicable to Medical Equipment only.

This guideline explains the characteristics and capabilities of ME with the aim of ensuring proper management in the recipient hospitals. It was drawn up and officially approved as the first technical pre-condition for receiving second hand ME and to avoid any possible trouble to the acceptance of ME.

Finally, MoH expects that second hand ME will contribute to improving the health of the Cambodian people by improving the quality of medical services at each hospital and that a good friendship bond with all donor organizations will be maintained.

II. Background

The following information should be considered when Cambodia plans to accept and utilize second hand ME.

(1) Donor side:

In general, when donors consider and assist developing countries many of them observe that medical services are not sufficiently provided to the local population due to ME shortages. ME is necessary to provide sufficient medical services for these people. It is obvious that most medical service delivery agencies cannot afford to purchase new equipment to fulfill these requirements. Thus, donors have the intention to provide such necessary equipment according to their ability. Even though, they wish to provide brand new equipment but their budget is limited.

Some donor countries need to spend a lot of money on formal disposal of ME. In addition, disposal of equipment is still in good condition costs additional money. To avoid such a problem, some donors have so far given away such equipment to those who need them. This measure is also an effective policy to preserve the environment.

(2) Recipient side:

Almost all public hospitals in Cambodia face a shortage of ME and facilities to provide essential medical services for the Cambodian people. It is therefore a good opportunity to address this issue for hospitals, many of which hospitals need facilities and medical equipment in order to be able to provide appropriate medical services to the people of Cambodia.

Meanwhile, MoH wishes to express its grateful thanks to the donor agencies who intend to provide their support for this purpose and for their willingness to promote cooperation in this area in the future.

III. Characteristics of ME

It is necessary to appreciate that ME is an extremely different appliance compared with a vehicle or a motorbike when usage and maintenance is considered.

In the modern medical field, ME models develop as the number of diagnoses, examinations and treatments increases.

In recent years, it should be noted that the number of ME models has been estimated to be approximately 30,000. On the other hand, the numbers of motorbike and vehicle models have been estimated at 300 and 600 respectively. This comparison demonstrates a huge difference between ME and vehicle models.

Whether ME is in a usable state, we can tell its functions and ability based on the following four criteria.

(1) Reliability

The main purpose of the ME is to perform diagnosis, examination and treatment. Therefore, when we need to carry out any of these actions, ME should always be ready for use. An example below illustrates an occurrence when the defibrillator is used.

The defibrillator is used for a person who has a ventricular fibrillation (hereinafter called “VF”), a heart attack. This equipment is designed to give an electric shock, even for a moment, to make patient’s heart begin to beat with a normal pulse of the ECG wave.



Fig 1: Example of an accident happened when utilizing the defibrillator

A man had a heart attack and laid flat on his back where he fell (actually he would receive “VF”). 5 minutes later a rescue team arrived by ambulance. This rescue team intended to use the defibrillator. However, the apparatus could not provide adequate output power from the paddle electrode as it was not adequately recharged. As a result, the man died.

The above case clearly illustrates with proper maintenance the man could have been alive until today. Clearly, one of the first priorities of ME is reliability.

(2) Accuracy

Some ME is used for diagnostic and examination purposes (e.g. ECG, ultrasound scanner, laboratory equipment, and so on) to provide results of data measurement. If such data have an error, doctors or nurses could give wrong treatment, which can cause a severe accident to the patient and is against his/her wishes.

Given the aforementioned situation, we should never allow a wrong measurement to happen. Therefore, it is essential that ME provide an accurate measurement.

For example, a patient who was suspected of having “hypernatremia” (a high sodium level in the serum) went to the hospital to have blood electrolyte testing. In case of hypernatremia, the value of sodium (Na) in the serum may be higher than 150mEq/L. However, the actual value in this case was 141.3mEq/L. The doctor believed this value and concluded that the patient had a normal sodium rate. Therefore, the diagnostic result of this patient did not seem to present any problem. Nonetheless, several days later, the patient's condition became dramatically worse and severely dehydrated. He eventually had to be sent to the emergency ward.

The problem was caused by the inaccuracy of the equipment. In this regard, laboratory technicians should always check the equipment condition and perform proper quality control.

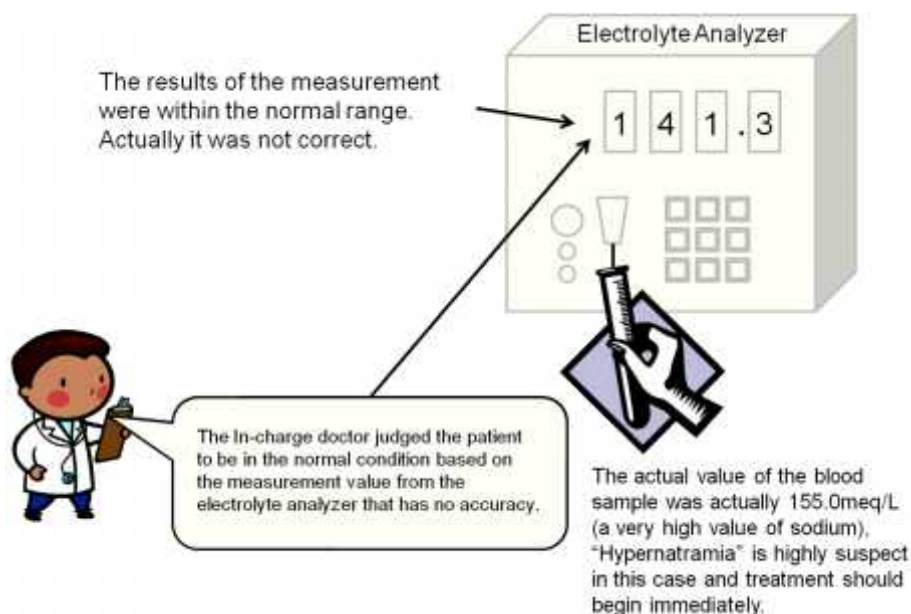


Fig. 2: Example of equipment showing inaccurate results

(3) Safety

Below is an example of a person who was killed in an accident due to unsafe ME.

A nurse was preparing to check the function of an ECG machine, a model which is already over 10 years old. She connected the power plug to the AC outlet and turned “ON” the power switch, as shown in the figure below. Even for a moment, the leakage current from the enclosure flowed through her hand (as the nurse held the machine with both hands) and got into her heart. Later she was pronounced dead from a heart attack.

This incident happened because the machine was too old and was due to the poor insulation condition inside of the electronic circuit.

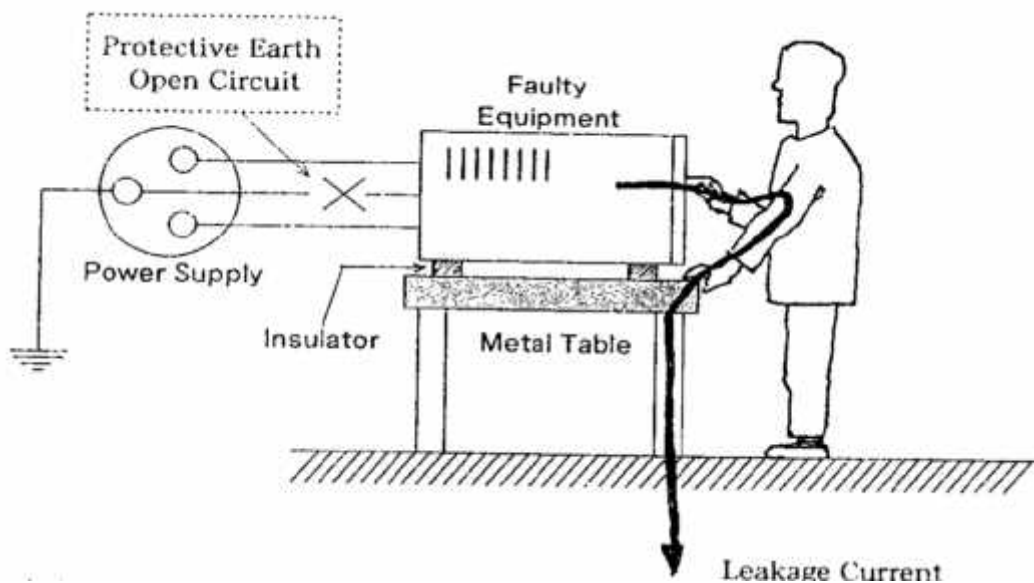


Fig. 3 An example of an accident with leakage current from the ME

Based on this case, we can understand that ME can present a significant risk of electrical shock and many other negative effects because it comes into contact with human skin or organs through some interfaces such as electrode, probe, transducer, and so on. Therefore, it is absolutely important to ensure that all ME is safe before they are used.

(4) Maintenance

As described above, appropriate maintenance (preventive maintenance and service) is crucial in order to make sure that ME is reliable, accurate and safe for use. However, carrying out ME maintenance is not easy. ME maintenance cannot be performed smoothly, properly and efficiently if these following 3 points are not considered.

a. Difficulty in repair

As mentioned above (Point 3. Characteristics of ME), ME has a wide variety of models and types compared to vehicles or motorbikes and this makes repair difficult. One of the main issues facing Cambodia is a lack of human resources (technicians or engineers who can carry out diagnosis and repairing work) and the difficulty in procuring spare parts.

b. Minimal maintenance cost

While ME maintenance should be carried out regularly, it also involves regular cost.

1) Replacement of spare parts

It is necessary to replace worn-out and broken parts periodically to maintain the best condition of the ME. Those parts include infant incubator micro filters, autoclave water filters, surgery lamps, and so forth.

2) Procurement of consumables

This is especially required for laboratory equipment where consumables need to be procured routinely. These consumables include supplies, reagents and cleaning solution.

3) Maintenance contract with ME suppliers (local agents)

If hospitals use sophisticated ME such as CT Scan, digital X-ray system and Auto chemical analyzer, they should arrange a maintenance contract with ME suppliers as such equipment requires specialist maintenance (bio-medical Engineers).

c. Necessary knowledge and technique

To ensure proper ME maintenance, it is necessary to have human resources with bio-medical engineering knowledge and technique. The reason being it is not easy to learn about the structures, mechanisms and operational principle of all models, and types of ME. Only specialists with this knowledge and technique know how to maintain ME in a safe and reliable manner. Based on what is mentioned above, ME has a lot of special characteristics. Therefore, it is crucial to have appropriate knowledge and technology skill to handle ME appropriately.

IV. Advantages and Disadvantages of Acceptance Second-hand ME

Several reports show that acceptance of second-hand ME has the following advantages and disadvantages:

1. Advantages

a) Initial cost is lower than a new purchase

Purchasing brand new equipment normally is expensive and after procurement it is necessary to spend more money buying materials required for their installation and on maintenance contracts. However, with second hand ME initial costs will be reduced.

b) Establishing a good relationship with donor institution

Through second hand ME donation, Cambodia will have the opportunity to establish a good partnership with donor institution. Such a relationship is not only about the provision of second hand ME but also about cooperation of other support such as technical cooperation in the clinical field as well as skill of hospital management. This relationship can bring about benefits for the recipient side (MoH Cambodia).

2. Disadvantages

a) No guarantee

With second hand ME there is no guarantee for supplying accessories, consumables and spare parts from the manufacturer.

For example, some hospitals have experience in receiving ME from donor institution but not with accessories and spare parts. Even though these hospitals tried to obtain accessories and/or spare parts from local suppliers they are not available. Consequently, these hospitals cannot use these ME at the present time as well as in the future.

b) Fragility, or breakages and shorter lifespan than new ME

ME that has been used for many years before are more likely to fail or break down than brand new equipment. Obviously, its movable parts have become deteriorated and gradually worn down from the length of use.

In the engineering field, there is a scientific theory that all equipment will certainly fail during their lifetime, even though they operate normally. When the lifetime of ME is close to finish, its operation condition changes significantly fashion and sometimes it can cause serious harm to patient safety and cause disruption to service delivery, too.

According to one engineering theory, the “equipment failure rate curve” can be represented by “Bath Tub Curve”.

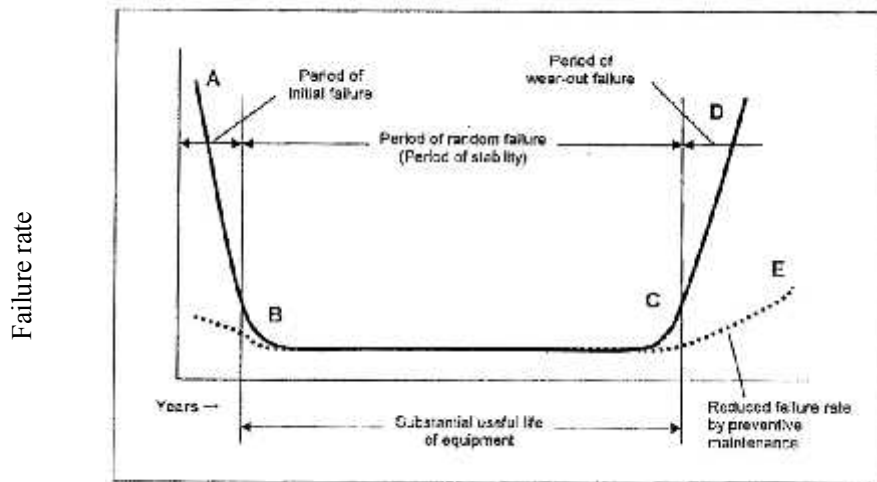


Fig 4: Bath Tub Curve of equipment failure rate

Equipment failure can be categorized into three stages on the basis of their rate of occurrences. Each of these stages is briefly described below.

(1) Period of initial failure

As shown in Fig 4 above, the failure rate is high during the initial stage of operation. This may occur immediately after the equipment is manufactured (Curve AB) due to a poor circuit design, improper choice of components, faulty production process, and so on. However, most such defects are not likely to be detected by the user because such shortcomings are observed and rectified during examinations and inspections during and after manufacturing in the factory or during the initial installation stage. Recently, equipment failures have not been as high as the curve AB, since manufacturers thoroughly carry out the production management process to ensure the reliability of the various components used in those equipment as well as of assembly during the manufacturing process.

(2) Period of accidental failure

During the early to mid-term usage period, the state of the equipment is likely to be stable. Equipment failure is rare during this period (Curve BC). If a failure occurs during this time it is rather accidental.

(3) Period of wear out failure

The curve CD shows the equipment's old age condition. Here, the failure rate starts rising as a result of deterioration, wear and tear, or breakdown of components inside the equipment. However, this failure rate can likely be reduced by the replacement of old or faulty components and their proper adjustment during

maintenance (the failure rate may decrease as shown by curve CE.)

When any part or system fails repeatedly, the budget for repair increases and the equipment's reliability and safety cannot be maintained anymore. This condition indicates the end of equipment's life.

Equipment can also be damaged by other causes besides those mentioned above. It is also reasonable to recognize that second hand ME has expired and more importantly it will go along the way of the Bath Tub Curve. For instance, in the case of second hand ME, we know in advance that it will go along the way of the CD index curve and it will fail or break down more easily than the equipment on the BC index curve.

c) Risk for the safety of patients or operators

1)Electrical safety:

After an extended use of ME, most of the electronic and electric circuit parts will be deteriorated and damaged. Especially, some parts will oxidize and become rusty. ME's life ends, the insulation to the enclosure of the equipment may be damaged and this can cause various accidents of electric shock to the operators and others. Obviously old equipment carries with it a greater risk than new equipment (See Part 3. **Characteristics of Medical Equipment, Point (3). Safety**”).

2)Bio-safety hazard:

ME often carries germs, bacteria and virus specially ME that has been used at some medical diagnostic and treatment centers (biological laboratory, operation theater, and so on) can pose a serious risk of infection to the medical personnel or patients.

d) Problem in transporting second-hand ME

After an agreement is reached between the donor and the recipient of ME, the ME needs to be transported to the recipient's location. As they need to be transported and reinstalled these pieces of ME can encounter failure or breakage and some parts may also be missing during any of the following three stages:

1)Dismantling

2)Transportation

3)Reinstallation

e) Problem during reinstallation and/or reassembling

For specialized or large ME such as CT, X-ray, auto-chemical analyzer, it is necessary to have special methods or procedures for installing or assembling them. In this case only specialists can install these kinds of ME properly. Therefore, specialists who have the knowledge and training in installing ME will be required. Sometimes, we also need some spare parts and other related materials during installation.

V. Pre-condition for receiving Second-hand ME

Since some hospitals have faced some difficulties after receiving second-hand ME, for example outdated models, no accessories, spare parts and some necessary documents (for the actual problem, please see Annex 1), MoH has established prerequisites for which are the roles and responsibilities of the donor and the recipient as follows:

(1) Responsibilities of the Recipient Side

When the recipient decides to receive second-hand ME from a donor agency, they will have to follow the following points to ensure appropriate and efficient utilization.

a. Analyze the “needs” of the Equipment

After obtaining information regarding second-hand ME donation, first the hospital has to indicate the type of ME that the donor would like to donate, then the hospital director, hospital management and clinical staff should determine if that ME is necessary for their hospital.

b. Contact Local Agent (in Cambodia)

After obtaining the basic information about the ME to be received (type , manufacturer, model, serial no., manufacture date) from the donor, the hospital shall confirm with the local agents whether or not it will be able to supply the accessories, consumables and spare parts at the present time and in the future.

(2) Responsibilities of Donor side

When the donor decides to provide second-hand ME to the recipient, they shall follow the following points to ensure appropriate and efficient utilization.

a. Provide Basic Information about the ME

This basic information includes:

- 1) Type of equipment
- 2) Manufacturer
- 3) Model
- 4) Serial No.
- 5) Product date

b. Inform about Equipment Condition before Handover (working or not working)

The donor shall check and confirm the operable condition of the ME, whether or not it is in good operating condition before handing them over to the recipient. In addition, they should also prepare some documents for the recipient such as the operation test report.

c. ME should be delivered with essential accessories, parts and consumables

The donor should check and confirm clearly whether or not the ME includes essential accessories, parts and consumables necessary for utilization which should be in good condition at least during the initial stage.

The donor shall provide these materials in the correct quantity stated in the operation manual.

d. Technical documents

The donor shall check and confirm whether or not the required technical documents are included in the ME. These technical documents include operation manual, maintenance manual, spare parts list, and other relevant documents. At least there should be an operation manual as it is important to ensure appropriate use of the ME.

e. ME utilization period

The donor shall provide information about how long the ME has been used to date. Ministry of Health stipulated to not accept the second hand ME has more than 6 years passage since manufactured date (Note: The life periods of most kinds of ME are around 6 years, as determined by the global wide custom and International standards give support to this time frame.).

Also, MoH has set ME lifespan for less than 12 years in the Disposal process. Any kind of ME if already exceeded 12 years since manufacture, the target ME will be disposed by MoH guideline (Refer to the “Technical Guideline on Medical Equipment Disposal”).

f. Environmental condition during ME utilization period

The donor shall provide information on ME whether they can be installed and used in Cambodia. To this end, the donor shall provide a description of the location where the ME had been used.

g. User training

If the recipient hospital receives sophisticated or complicated equipment, user training on how to operate and handle ME shall be provided. The recipient hospital shall inform the donor if they require user training for the target ME.

(3) Mutual agreement (Donor and Recipient)

When the donor offers to donate ME to the recipient, both parties should mutually agree to the following points in order to avoid any possible trouble or obstacle between themselves. MoH should prepare some agreement documents such as memorandum of understanding with emphasis on the following main points:

1) Responsibility for initial costs during handover of ME

When the donors hand over second-hand ME to the recipient hospitals, they should also bear the initial cost necessary for receiving the equipment such as:

- (a) Transportation
- (b) Installation
- (c) Maintenance
- (d) Other expenses, if necessary

The two parties should agree on who will be responsible for meeting these costs.

2) Preparation the Draft of Memorandum of Understanding

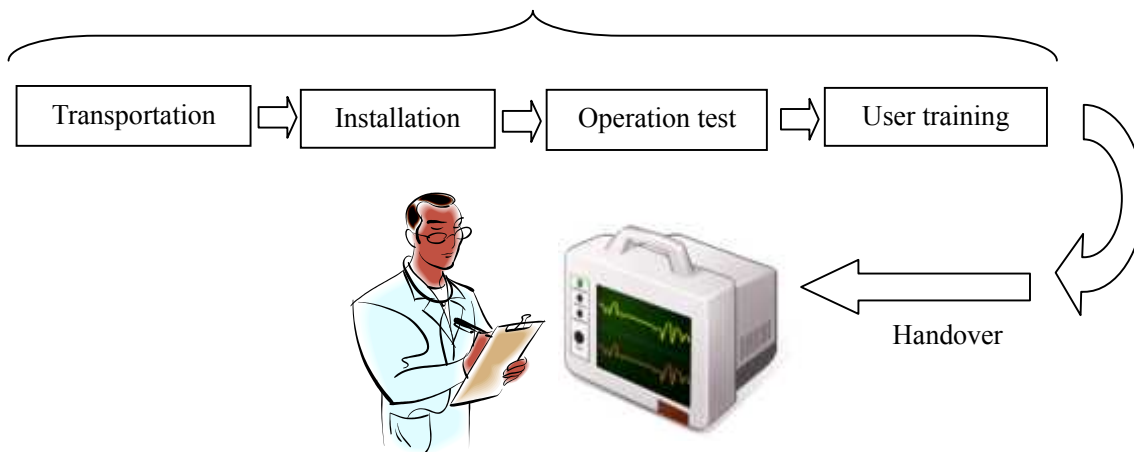
Recipient hospital should prepare a Memorandum of Understanding between the donor and the recipient (the hospital) to clarify the ability and responsibility of each party and to avoid any possible trouble after the handover of ME.

(a) Scope of handover of ME: Definition

In order to avoid possible trouble or obstacles to the handover of ME as mentioned in Point Number 6 “**Pre-condition for receiving second-hand ME**”, MoH has also defined the scope of ME handover.

The donor shall be responsible for ensuring that ME is handed over to and is ready for use by the recipient. The scope of handover is shown below.

Donor shall hold responsibility until handover is completed



Recipient hospital shall check and confirm all important points described through the check sheet (see ANNEX 2) and registers this ME in the inventory list.

(b) Transferring the proprietary right

After the handover of second-hand ME from the donor to the recipient, the two parties should determine who will hold the proprietary right of this ME (ownership). Both parties shall discuss and agree on this right and include it in the MoU.

(c) Responsibility for maintenance management

After the handover of the second-hand ME from the donor to the recipient, the two parties should decide who will hold the responsibility of maintenance management including related costs.

(d) Right of disposal transaction

After the donor has handed over ME to the recipient the two parties should agree on who will be responsible for disposing of this ME. Both parties shall discuss and explain clearly about this right and document it in the MoU.

(e) Acceptance report to be attached

The acceptance report shall be submitted to MoH along with the MoU.

(f) Contact information

Contact information for both parties shall be attached and include the following:

1. Name of institution
2. Name of person in-charge
3. Telephone Number
4. FAX Number
5. E-mail address
6. Other information

3) Authorization of product origin standard

In developed countries generally ME carries the industrial standard authorization product label issued by the country.

Product industrial standard authorization means that each country has their own industrial standards.

ME products always undergo inspections in terms of their operation and function and safety condition test needs to be carried out according to the official standard regulation developed by each respective government. If the product does not pass such inspections, the product cannot be produced or sold in the market. On the contrary, it can be said that when ME passes these inspections, they are reliable and usable safely.

The industrial standard authorization on the product at the national level, for instance, in Japan, is JIS (Japan Industrial Standard), while in the European Union CE (Communauté Européenne, in French) for designating the standard of each product.

In addition, in relation to this issue should it be included in the pre-condition? This should be discussed between both parties to see whether it is important.

VI. After receiving Second-hand ME

(1) Registration of ME in inventory list

After receiving second hand ME, the hospital (administration department or ME section) shall immediately register the equipment in the inventory list and MEDEMIS inventory database, which has been introduced by the MEDEM project (Form 2-4).

At the time of registration, manufacture and installation date as well as ID number of the ME shall be recorded.

(2) Report to the Ministry of Health

When a hospital receives second-hand ME, the ME acceptance report shall be submitted to MoH.

VII. Reference materials

(1) Case Study of receiving Second-Hand ME (ANNEX 1)

In this annex, we present some actual case studies, good and unexpectedness that have occurred at some hospitals who received second-hand ME in the past.

(2) Checklist for acceptance of Second-hand ME (ANNEX 2)

After obtaining information that the donation of second-hand ME, the hospital shall use a checklist (ANNEX 2) to classify ME and to confirm its condition.

(3) Reference of ME supply (Accessory, Consumable and Spare parts for essential ME) (ANNEX 3)

NWT has prepared a list of essential accessories and consumables for some ME. These ME were selected by the ME Management System of MoH and are also described in the ME Maintenance Guidebook.

In case of receiving second-hand ME, the recipient should confirm with the donor whether they will provide accessories and consumables that are required for using ME effectively.

(4) Local ME Agent List (ANNEX 4)

When ME encounters trouble or failure, it is necessary to contact to the ME supplier. As such, the list of local agent is attached with these guidelines for the hospitals to contact.

This list includes telephone numbers, e-mail addresses and the ME suppliers dealing with manufacturers. Therefore, each hospital should confirm basic information such as models, manufacturers and contact the local ME agent where appropriate.

(5) Sample of Memorandum of Understanding on Second-hand ME Handover (ANNEX 5)

For standardization, each hospital should enter into a MoU between the recipient and the donor. A sample MoU is included in ANNEX 5.

(6) ME Information Sheet (Acceptance of Second-hand ME) (ANNEX 6)

For standardization, the attached ME Information Sheet (ANNEX 6) should be used by each hospital immediately when receiving second-hand ME from a donor institution, and then submit one copy to MoH.

Annex-1: Case study of receiving Second-hand ME

In this annex, we present some actual case examples that have occurred at several hospitals that have received the second hand ME. Below are both good and unexpected cases with regard to the utilization and operation condition of second-hand ME.

(1) Good case

(a) ME is used well with the technical support of the expert

Referral Hospital A:

In 2003, some NGOs provided laboratory equipment (incubator, centrifuge and spectrophotometer) to this hospital. Nevertheless, these pieces of equipment were not used and were left idle in the laboratory room. However, since 2007, some volunteers who were laboratory technicians began to provide instructions on how to use the equipment. Subsequently, these equipment were operable very well.

(b) Donor institution covers maintenance cost

Referral Hospital B:

A health and medical NGO brought some second-hand ME to the operation theater in order to transfer technical know-how in the field of ophthalmology to the hospital.

During the term of the project, this NGO supported the maintenance cost for this equipment by using internal funds.

(c) New diagnosis methodology is introduced into the hospital through second-hand ME

Referral Hospital C:

A private company installed a second-hand Computed Topography (CT) unit at the hospital. The hospital and the company concluded a 5-year contract to operate the equipment. During the utilization period, the company supported maintenance of the ME. To cover these costs, a percentage of the user fee charge was paid to the company. Upon completion of the contract, ownership of the ME will be turned over to the hospital.

This is the first time CT equipment has been introduced into the hospital. As the result, diagnosis examination has expanded and diagnosis quality has improved.

(2) Unexpected case

(a) Medical staff generally do not like to use the second-hand ME because its model is rather out-of-date and therefore cannot be used as desired

Referral Hospital D:

Two cargo containers containing second-hand ME and medical consumables (catheters, suction tubes, syringes, etc.) were sent by a medical NGO to Cambodia. . However, all these ME were produced in 20 years ago and as such their models are **rather out-of-date**, so operators do not want to use them. As a result, these equipment

have been placed in storage.

This case is a bad case because this equipment should have been disposed in a suitable place of initial use. As Cambodia is a developing country this problem should never be allowed to happen.

Lesson learned:

If the donor would provide the recipient hospital with some basic information such as what types of equipment, models, product date, use-period and its status when planning donation, the recipient hospital could consider and decide whether or not they need those ME.

(b) ME is received in a damaged state and cannot be used since date of arrival

Referral Hospital E:

A religion affiliated organization delivered an autoclave to the hospital. The ME has not been turned ON since arrival.

Referral hospital F:

A NGO sent a respirator to the hospital. Regrettably, the equipment continually produces an alarm sound, a distorted screen image and from the outset of arrival some parts were broken on the operation panel.

Lesson learned:

Donors should take the responsibility to hand over ME and to include installation as well as an initial operation test to ensure they work well at the recipient hospital.

(c) The delivered ME did not include necessary accessories and spare parts.

National Hospital G:

Auto chemical analyzer was sent by an NGO to the hospital.

This ME cannot be used because the software program that was needed to set up the initial mode of operation was not included with the main equipment. Subsequent to that finding, the chief of the laboratory at the hospital contacted to the NGO, but surprisingly they did not have the software. As a result, the machine cannot be used.

Lesson learned:

The donor should take the responsibility to include all necessary parts, including software programs, before delivery. In addition, the recipient should request and specify the contents of the invoice clearly before the ME is delivered.

(d) The operation manual was not included with the ME

Referral Hospital H:

An NGO sent 3 ventilators of the same models to the hospital. However, operation manuals and necessary accessories were not included. Therefore, medical staff at the hospital did not know how to operate the device.

Lesson learned:

The donor should include technical documents (operation manual, service manual or spare parts list, and other necessary items) to ensure appropriate use of ME.

In addition, the recipient should confirm to the donor whether these manuals were received or not.

(e) No repair service or spare parts and consumables as there is no local supplier in the country**Referral hospital I:**

A faith based organization supplied an incubator and a centrifuge to the hospital. The laboratory of this hospital used them for over 1 year, after which they were no longer serviceable. Accordingly, the hospital contacted several local agents of similar equipment, but as this equipment were not appropriately marked with the manufacturer's name or country of origin, the local agents could not contact the manufacturer for possible spare part replacement.

Lesson learned:

The recipient hospital should confirm with the local agents before accepting the ME about the supply of necessary accessories and spare parts as well as the provision of technical service for the target ME.

(f) The hospital attempted to contact the donor institution directly regarding a failed ME but was not successful**Referral Hospital J:**

A medical university supplied one electrolyte analyzer to the hospital. After 1 year, this machine was out of service. Therefore, the chief of the laboratory tried to contact the donating university but failed. As a result, the machine now remains idle.

Lesson learned:

It is advisable to exchange the memorandum of understanding between the donor side and the recipient side. Especially, the point of concern is to state clearly who will hold the responsibility to maintain the equipment after hand over.

Annex-2: Checklist for Acceptance of Second-hand ME

No.	Checklist Item	Procedure for Confirmation	Check Result
I.	Responsibilities of Recipient Side	When the recipient decides to receive second-hand ME from a donor, they shall address the following issues to ensure proper use and efficiency	Remarks
	<p><u>a. Analyze “Needs” of the equipment</u></p> <p>1. First step, confirm with the donor the type of ME that will be donated to the recipient hospital.</p> <p>2. The recipient hospital considers and determines whether or not to accept the ME.</p>	<p>1) Confirm with the donor the type of ME that will be donated.</p> <p>2) The hospital director and his/her key ward chiefs under his/her control will consider and determine whether or not to accept the offer.</p>	<p>Decision to receive or not receive ME</p> <p style="text-align: center;">_____ Yes / No _____</p>
	<p><u>b. Contact local agent in Cambodia</u></p> <p>Contact with local agents about the possibility to provide accessories, consumables and spare parts.</p>	<p>Confirm with the local agent if they will be able to supply accessories, consumables and spare parts and to provide technical service for ME at the present time and in the future.</p>	<p>Local agent will be able to supply:</p> <p style="text-align: center;">_____ Yes / No _____</p>
II.	Responsibilities of Donor Side	When the donor decides to donate any second-hand ME to the recipient, they shall address the following issues to ensure proper utilization and efficiency.	Remarks
	<p><u>1. Provide Basic information about ME</u></p> <p>The donor provides basic information on the target ME to the recipient hospital.</p>	<p>Donor provides the following information for the recipient hospital:</p> <p>a) Type of equipment</p> <p>b) Manufacturer</p> <p>c) Model</p> <p>d) Serial No.</p> <p>e) Product date</p>	<p>Fill in the following information:</p> <p>a) Type: _____</p> <p>b) Manufacturer: _____</p> <p>c) Model: _____</p> <p>d) Serial: _____</p> <p>e) Product date: _____</p>

<p><u>2. Inform about Equipment Condition before Handover (working or not working)</u> The donor checks and confirms the operational status of the target ME to determine whether or not it is in good condition before handing it over to the recipient.</p>	<p>The donor shall carry out an operation test on the ME to confirm if it works properly or not?</p>	<p>Operation condition: _____</p>
<p><u>3. Delivered with essential accessories, spare parts and consumables</u> The donor shall check and confirm that the target ME includes essential accessories, spare parts and consumables.</p>	<p>The donor ensures the provision of essential accessories, spare parts and consumables according to the operation manual attached with the target ME.</p>	<p>Inspection Results: _____</p>
<p><u>4. Technical documents</u> The donor shall check and confirm that the required technical documents are included with the ME.</p>	<p>Required technical documents include: a) Operation manual b) Service manual c) Spare parts list d) Electrical wiring diagram The donor provides the above-mentioned manuals, and at least the operation manual as it is very important for the proper operation and utilization of the ME.</p>	<p>Technical documents received: _____</p>
<p><u>5. ME Utilization period</u> The donor shall provide information on the length of time the ME has been used by their institution.</p>	<p>At first, the donor shall check years of the target ME has been used. Then, they inform the recipient about this.</p>	<p>Donors Response: _____ Years used</p>

	<p><u>6. Environmental condition during ME utilization period</u> The donor shall provide information on the environment in which the ME had been used in relation to possible extreme climate exposure or heavy use.</p>	<p>The donor shall inform the recipient of the environmental condition in which the ME had been used in the past.</p>	<p>Environment in which ME had been used before:</p> <hr/>
	<p><u>7. User training</u> If the recipient hospital receives sophisticated or complicated ME, user training must be provided.</p>	<p>If necessary the donor shall provide user training in how to use ME and provide the recipient hospital with important information related to the use of the ME.</p>	<p>Donor response:</p> <hr/>
III.	<p>Mutual agreement (between Donor and Recipient)</p>	<p>When the donor offers to donate second-hand ME to the recipient, both parties should agree mutually to the following issues to avoid any possible misunderstanding or obstacle.</p>	<p>Remarks</p>
	<p><u>1. Responsibility for initial cost for handover of ME</u> When the donor hands over second-hand ME to the recipient, they should agree on who (donor or recipient) will be responsible for meeting the initial cost.</p>	<p>The donor and the recipient shall discuss who will bear the following cost:</p> <ul style="list-style-type: none"> a. Transportation b. Installation c. Maintenance d. Other expenses, if necessary 	<p>Who will bear the following cost:</p> <ul style="list-style-type: none"> a. Transportation fee b. Installation cost c. Maintenance cost d. Other expenses, if any <hr/> <hr/> <hr/> <hr/>

	<p><u>2. Preparation the Draft of Memorandum of Understanding</u></p> <p>The donor and the recipient shall enter into an MoU and clearly decide on their respective responsibilities.</p>	<p>Prepare the Memorandum of Understanding between the donor and recipient with the following points:</p> <ul style="list-style-type: none"> a. Definition and scope of equipment handover b. Transferring proprietary right c. Responsibility for maintenance management d. Right of disposal transaction e. Contact information 	<p>Prepare MoU:</p> <p style="text-align: center;">_____ Yes / No _____</p>
	<p><u>3. Authorization of product origin standard</u></p> <p>The donor shall confirm that the ME to be handed over to the recipient will have some manufacture authorization labels (such as JIS, CE, and others) that guarantee ME quality.</p>	<p>This label authorization is an additional point to the pre-condition. The donor and the recipient should discuss whether such authorization is important.</p>	<p>Does the ME have an authorization label:</p> <p style="text-align: center;">_____ Yes / No _____</p>

Annex-3: Reference of ME supply (Accessory, Consumable and Spare parts for essential ME)

1. X-ray Diagnostic equipment

Accessories:

- ① X-ray film cassette
- ② X-ray screen



Consumables:

- ① X-ray film



2. X-ray Film Processor

Accessories:

Consumables:

- ① Developer solution
- ② Fixer solution



3. Ultrasound scanner

Accessories:

- ① Convex type probe
- ② Virginal type probe



Consumables:

- ① Echo Gel



4. Electrocardiograph (E.C.G)

Accessories:

- ① Patient cable
- ② Arm stand
- ③ SPO2 probe



Consumables:

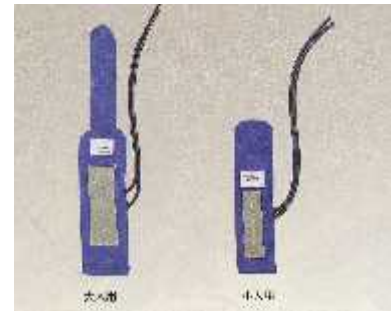
- ① Patient electrode
- ② Electrode gel



5. Patient Monitor

Accessories:

- ① Patient cable
- ② Arm stand
- ③ SPO2 probe
- ④ Cuff of sphygmomanometer



Consumables:

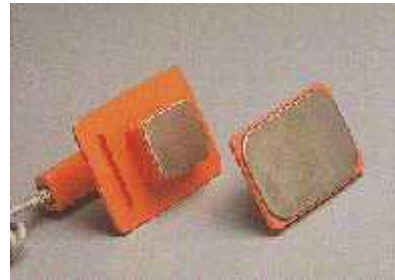
- ① Patient electrode



6. Defibrillator

Accessories:

- ① Patient paddle
- ② Paddle electrode
- ③ ECG electrode
- ④ Joint cable



Consumables:

- ① Rechargeable battery
- ② Paddle gel



7. Pulse Oximeter

Accessories:

- ① SPO2 finger probe
- ② Joint cable



Consumables:

- ① Disposable SPO2 Probe (for child use)



8. Respirator

Accessories:

- ① Oxygen monitor
- ② Test lung bag
- ③ Water trap
- ④ Spiro meter



Consumables:

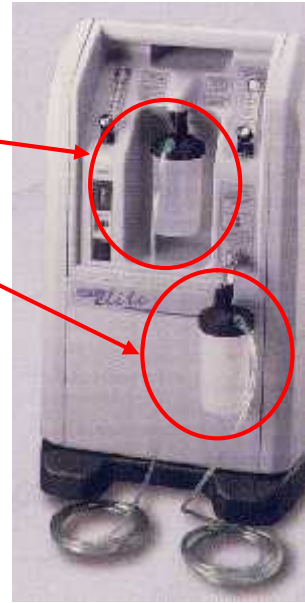
- ① Patient circuit tube
- ② Bacteria filter
- ③ Respiration filter
- ④ Patient mask
- ⑤ Humidifier



9. Oxygen concentrator

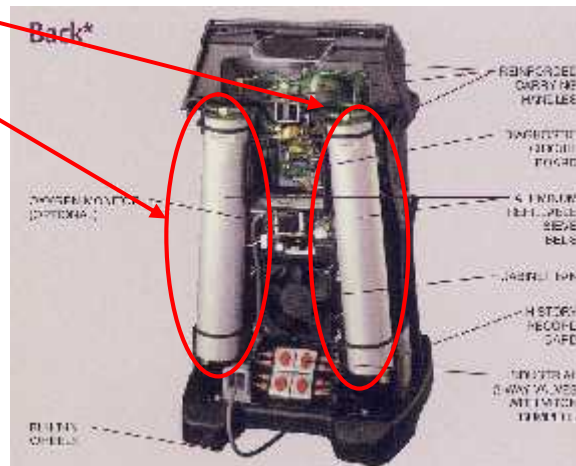
Accessories:

① Oxygen humidifier



Consumables:

① Oxygen filter (consuming spare parts)



10. Nebulizer

Accessories:

- ① Nebulizing unit
- ② Nebulizing tube



Consumables:

- ① Disposal mask
- ② Medicine cup
- ③ Bacteria filter



11. Infusion pump

Accessories:

- 1) Rechargeable battery
- 2) Irrigation stand



Consumables:

- 1) Transfusion set (exclusive design by manufacture)



12. Anesthesia apparatus

Accessories:

- 1) Test lung bag
- 2) Evaporator
- 3) Oxygen monitor



Consumables:

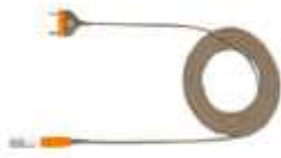
- 1) CO2 absorber
- 2) Patient circuit
- 3) Mask



13. Electro Surgical Unit

Accessories:

- 1) Electrode cable
- 2) Bipolar electrode
- 3) Single type electrode



Consumables:

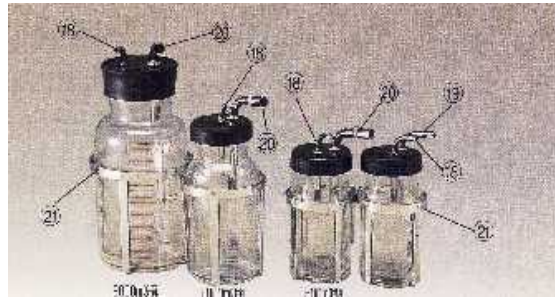
- 1) Electrode chip
- 2) Patient plate with cable
- 3) Patient cable (Disposal type)



14. Suction unit

Accessories:

- 1) Suction bottle set (with rubber cap and tube connection)
- 2) Flow tube
- 3) Insert tube



Consumables:

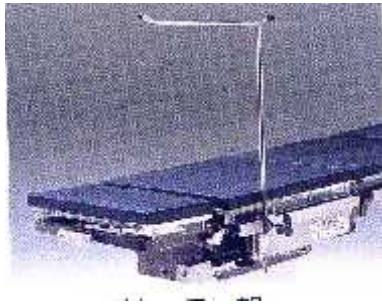
- 1) Silicon tube
- 2) Catheter stopper
- 3) Suction catheter



15. Operation table

Accessories:

- 1) Arm mat
- 2) Curtain hook
- 3) Leg holder
- 4) X-ray cassette holder
- 5) Knee holder
- 6) Head holder



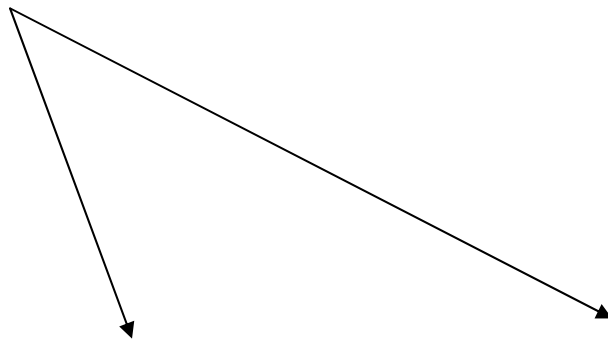
16. Operating light

Accessories:



Consumables:

1) Spare halogen lamp



17. Operation microscope

Accessories:

- 1) Video attachment
- 2) Foot switch



OMS-90

Consumables:

- 1) Halogen lamp



18. Steam Sterilizer

Accessories:

- 1) Sterilizing box



Consumables:

- 1) Door gasket
- 2) Sterilizing indicator



19. Infant Incubator

Accessories:

- 1) Irrigator pole
- 2) Temperature probe
- 3) Oxygen flow meter



Consumables:

- 1) Vinyl food
- 2) Micro filter
- 3) Thermometer
- 4) Humidifier chamber
- 5) Temperature probe cover



20. Bilirubin meter

Accessories:

- 1) Incubation unit



Consumables:

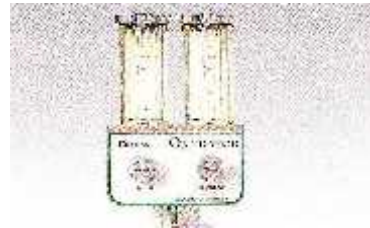
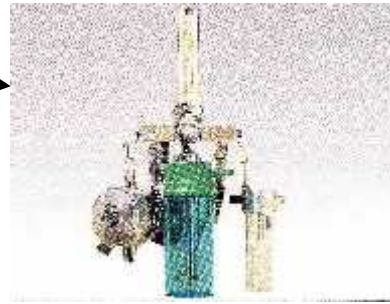
- 1) Tungsten lamp
- 2) Filament lamp
- 3) Capillary tube



21. Phototherapy unit

Accessories:

- 1) Resuscitation unit
- 2) Oxygen mixing chamber
- 3) Suction bottle
- 4) Humidifier



Consumables:

- 1) Fluorescent lamp for phototherapy



22. Doppler Fetus Detector

Accessories:

- 1) Doppler transducer



Consumables:

- 1) Gel for Doppler monitoring



23. Cardiotocograph

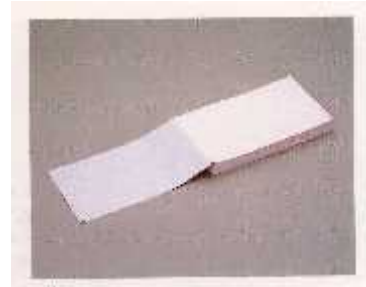
Accessories:

- 1) Doppler transducer (3 p individual)
- 2) Doppler transducer (Complex type)
- 3) Equipment cart



Consumables:

- 1) Recording paper
- 2) Transducer gel
- 3) Transducer belt
- 4) Pen cleaner for recording



24. Centrifuge

Accessories:

- 1) Swing rotor
- 2) Angle rotor
- 3) Tube bracket



Consumables:

- 1) Carbon brush



25. Microscope

Accessories:

- 1) Objective lens
- 2) Eye piece lens
- 3) Condenser lens



Consumables:

- 1) Imaging oil



26. Spectrophotometer

Accessories:

- 1) Thermal printer
- 2) Glass cell
- 3) Incubator cubet



Consumables:

- 1) Tungsten lamp
- 2) Recording paper
- 3) Printer ribbon



27. Water Distiller

Accessories:

- 1) Pipe heater (Spare parts)



Consumables:

- 1) Carbon filter cartridge
- 2) Ion exchange resin

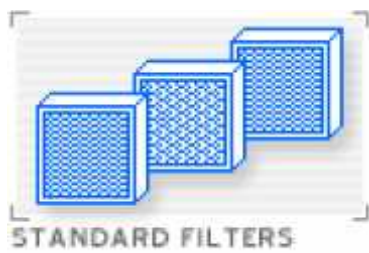


28. Clean bench

Accessories:

Consumables:

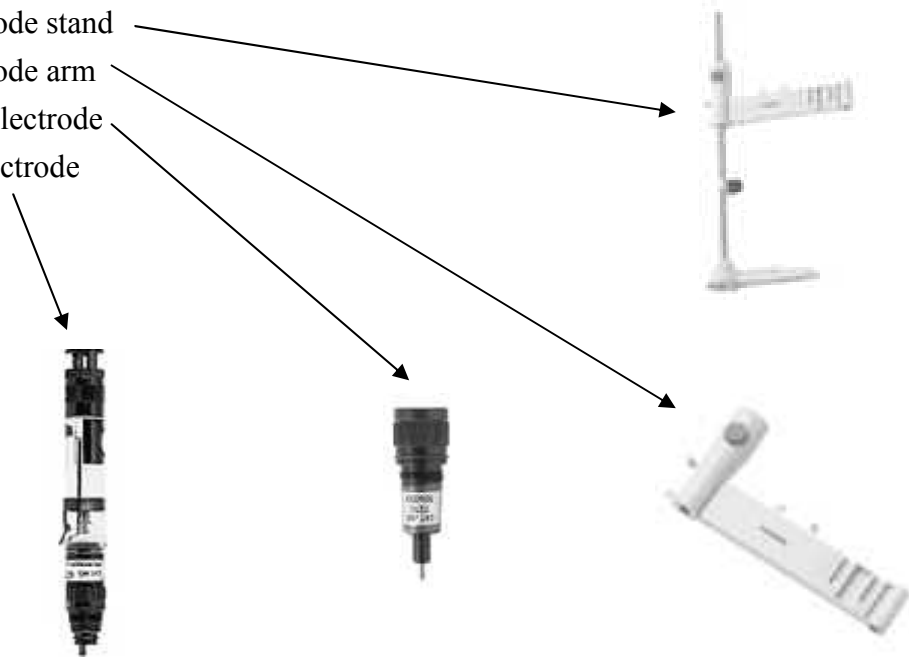
- 1) HEPA filter
- 2) Fluorescent lamp)



29. pH meter

Accessories:

- 1) Electrode stand
- 2) Electrode arm
- 3) Chip electrode
- 4) pH electrode



Consumables:

- 1) pH standard solution
- 2) Cleaning solution



30. Water bath

Accessories:

- 1) Heater unit
- 2) Pipe heater (Spare parts)

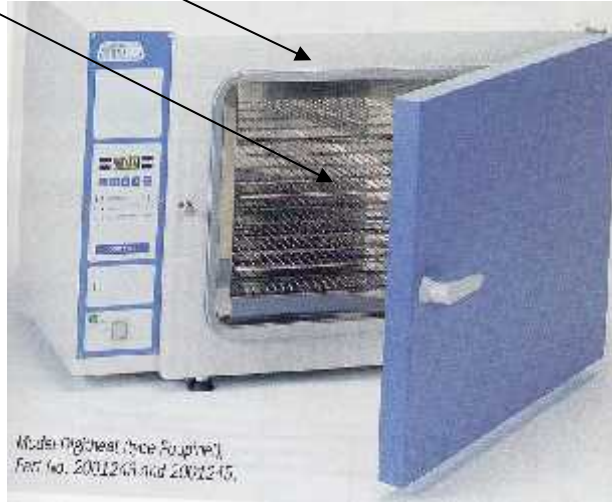


Consumables:

31. Laboratory incubator

Accessories:

- 1) Door gasket
- 2) Shelf



Consumables:

32. Dental chair unit

Accessories:

- 1) Air turbine hand piece
- 2) Micro motor hand piece



Consumables:

- 1) Hand piece chip (Metal bar)
- 2) Hand piece chip (Diamond bar)



33. Syringe pump

Accessories:

- 1) Syringe pump stand



Consumables:

- 1) Rechargeable battery
- 2) Disposal syringe

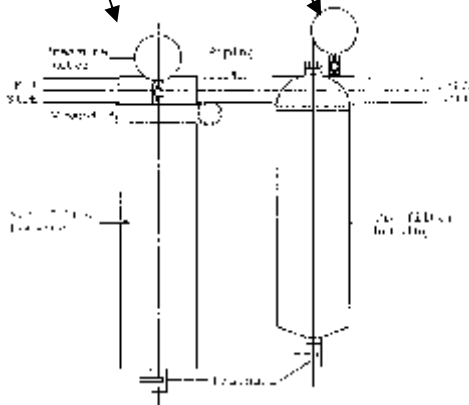


34. UV Sterilizing Scrub unit for OT

Accessories:

Consumables:

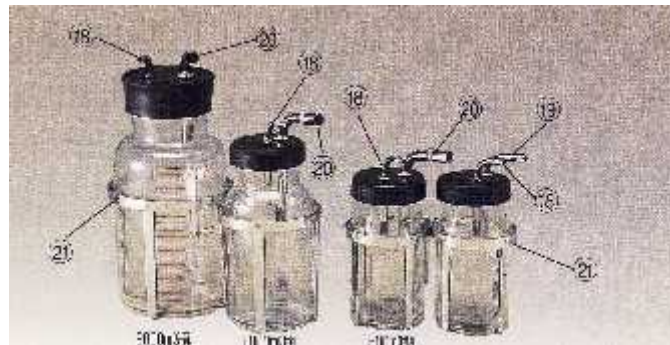
- 1) Fluorescent lamp
- 2) Ultraviolet lamp for sterilizing
- 3) Carbon filter
- 4) Membrane filter



35. Vacuum Extractor

Accessories:

- 1) Extraction cup
- 2) Amniotic vacuum tube
- 3) Suction bottle and rubber cover



Consumables:

- 1) Bacteria filter



Annex-4: Local ME Agent List

No.	Company's name	Person's name; position	Telephone	Fax	Address	Website & E-mail	Dealing Manufacture
1	MediGroup Asia Ltd	Mrs. Sao Makarachan (Sales Supervisor)	023 727 109/ 023 727 108	023 727 109	#91; Oknha Chrun Youhak (St. 294)	eric.meerman@mg.com.kh	Laboratory: Human (Germany) Medical Equipment: GE (American)
2	Medicom Co., LTD.	Mr. Jean Yves CATRY (Managing Director)	023 220 691/ 023 217 573	023 215 691	#22, St 184, Phnom Penh, Cambodia	info@medicomcoltd.com www.medicomcoltd.com	FUKUDA DENSHI, RICHARO WOLF, VWR, ERMA, AIR LIQUIDE.
3	Dynamic Pharma Co., LTD	Mr. Pak Soeun (Service Supervisor)	023 726 018	023 726 016	#432, St Preah Monivong	pharma@dynamic.com.kh	Abbott, Becton and Dickinson, Ebewe Pharma, Fujirebio Diagnostics, Inc. , Golden Cup Pharmaceutical Co.,Ltd , Greater Pharma, Medtronic, Nature Care, Nipro Corp.,Ltd , Olympus, Omron Healthcare Co.,Ltd , Paramount, PT. Dexa Medica, Respiroic ,Sanyo, Schiller, T.C Union Global Public, Takaso Rubber Products Sdn. Bhd , Terumo, The Government Pharmaceutical Organization, Titleray Dental Implants- Straumann, Toshiba

4	KUANG HSIEN Medical Instrument Co., LTD	Mr. Narin (Sale Manager)	023 882 829/ 023 885 799/ 017 757 595/ 016 861 494/ 012 958 709/ 012 620 704	023 885 798	#131Z, St 265, Tuk Laak II, Toul Kork, Phnom Penh	rapidservice@camnet.com.kh	Sysmex, Elitech group, Heinz, Hirschmann, GBO, Analyticon, Pointe scientific, BioHit, Biotix, Chison, Diamond
5	MIG Group Co Ltd	Mr. Ly Bunleng (General Manager)	023 224 673/ 023 224 674/ 012 710 509/ 012 765 506/ 016 445 573/ 012 337 112 / 011 701 244 / 017 502 759	023 224 674/ 023 224 673	#113A, Street 103	mig_group@online.com.kh	Microlab 300, Sturdy, Hettich, Nihon Kollden, Japan, USA, Taiwan, Korea, China, Thailand, Italy, Germany
6	MEES	Mr. Sam Tetra (General Manager)	023 883 118/ 011 606 019/ 012 858 734	023 883 118	#295C, Oknha Tep Phan (St. 182) 12157 Phnom Penh Phnom Penh	mees@everyday.com.kh	Hitachi, Carl Zeiss, Aloka, Inami, Stryker, Fujinon, Ameri-comp, ERBE, Mindray, Acoma, Hadeco, Daiwha, Takeuchi, Sturdy, Hersill, Technologie Medical, Ellipse, AceLaser Lightmed, Leisegang
7	MET GROUP CO., LTD	Mr.Keo Vibol (General Manager)	023 220 827/ 012 836 608/ 016 826 792/ 097 8282351/ 011 249 144/ 015 249 144	023 215 953	#297, Sihanouk (St. 274), Phnom Penh	met@online.com.kh	SHIMADZU, MEDISON, NIHON KOHDEN, HOLOGIC, MEK, PATIENT CARE EQUIPMENT, BOKWANG, OPERATING EQUIPMENT
8	Ly Owtry	Mr. Ly Owtry (General Manager)	023 220 735/ 016 816 056/ 012 440 641		# 284AEo, Canadia (St. 284) 12312 Phnom Penh		Honda, INAMJ, Shimazu

9	H.S.R Co., Ltd.	Ms. Chhun Nary (Sale Manager)	081 822 822	023 995 470	# 34, Street 376, Boeung Keng Kang III, Chamkar Morn	sales@hsrco.com/ hsr822@gmail.com	Meditech
10	Safety - Tech Co Ltd	Mr. Kim Heang (General Manager)	012 980 535/ 016 980 535		# 300Eo, Street 150 , Sangkat kek lork II, Tul kork Phnom Penh		AIRLIFE, Aerial, ACCURATE ONE TOUCH ULTRA
11	Europe Continents	Mr. Khy Srun (Healthcare Senior Sales)	012 645 502/ 023 986 228		#22, St 184, Phnom Penh, Cambodia	healthcarecb@europ-continents.com	Apelem, Philip, Sturdy, Aloka, ABZ, MEDICA, Korea, China, Storz, Fujinon
12	Khmer Healthcare Co Ltd	Mr. Sochea Meas (General Manager)	023 222 238/ 011 234 999		# 343AB, Tumnup Thmey (St. 371) 12351 Phnom Penh	sochea.meas@khc.com.kh/ salesinfo@khmerhealthcare.com	Heine-Germany, Hamilton Medical-Switzerland, Raphael XTC, Hamilton C- 2 and Galileo Goal, Boule Swelab, Alfa-Sweden, CYAN Express-Belgium, Royal-Medical-Korea, Infopia-Korea, Rexmed- Taiwan, Daiwah-Korea, Mingchu Corp-Korea, NewTech-USA
13	Kim Tech Co Ltd	Mr. Var Seila (Sale & marketing)	023 218 121/ 012 511 561/ 016 826792/ 092 123 201		# 362, Sihanouk (St. 274) 12312 Phnom Penh	kimtech@online.com	Medison, Kongsak (KELEX), Hyundai, SAMIL, Bionet

Annex-5: Sample of Memorandum of Understanding on Second-hand ME Handover

The donor agency (the "donor") and the hospital (the Recipient) agree to the following articles with respect to the handover of second-and medical equipment:

Article 1: Definition and Scope of the Handover

This article aims to define the scope of equipment handover. The donor shall have the responsibility to hand over to the recipient medical equipment (ME) in a ready to use state.

The donor shall have the following responsibilities:

1. Transportation: Transportation expense from the use/storage place of the donor to the recipient's location, including taxes and other related costs.
2. Installation: On-site installation at the recipient's location, including reassemble and other necessary costs.
3. Operation test: The donor will arrange to send some specialists (their own staff or engineers from the manufacturer) who are able to conduct operational tests on ME to confirm their functions.
4. User training: The donor will arrange to send instructor(s) to teach and train users on the recipient side.
5. Handover: After the aforementioned items are fulfilled, the donor will submit the second-hand ME handover report to the recipient with the signatures of both parties.

Article 2: Transferring proprietary right

After the handover of the second-hand ME from the donor to the recipient, the proprietary right will be transferred from the donor to the recipient. However, before doing so the donor shall retain some responsibility for such matters as transportation to the site of the recipient, assembly, installation, operation test and user training.

Article 3: Responsibility for maintenance management

Upon the transfer of the proprietary right to the recipient, the recipient shall have the responsibility for maintenance management to ensure proper operation, utilization and efficiency. Therefore, the recipient has the task of preparing a budget to cover the cost of technical support and maintenance management of second-hand ME.

Article 4: Right of disposal transaction

According to the proprietary right, the recipient shall also hold the responsibility and authority to dispose of the ME received from the donor.

Article 5: Contact information

In order to maintain good communication between the donor and the recipient, both parties should continue to contact each other through the following means and information.

For the donor

Name of Institution	
Person in-charge	
Address	
Telephone number	
Fax number	
E-mail address	
Remarks	

For the recipient side

Name of Institution	
Person in-charge	
Address	
Telephone number	
Fax number	
E-mail address	
Remarks	

In witness thereof, this Memorandum of Understanding is duly agreed upon and signed by both parties in duplicate with each party holding an authentic copy.

Phnom Penh, (date) ~~, ~~, 2010

The Donor

The Recipient

Mr. ~~~~~

Mr. ~~~~~

Name of Institution: ~~~~~

Hospital ~~~~~

Managing Director

Hospital Director

Annex-6: ME Information Sheet (For Acceptance of Second-hand ME)

Sheet No. : _____

Hospital Name: _____

ID No.		Date of Installation	/	/
Department				

Date of Inspection	Inspected by (MET name & sign)
Date of Approval	Approved by (MEDM name & signature)

Name of Equipment			
Name of Equipment (Khmer)			
Manufacturer		Model	
Serial No.		Price (US\$)	
Product year		Expiry date of guarantee	

Specification of Power supply	Voltage	100 / 110 / 120 / 220 / 230 / 240 V AC
	Frequency	50 / 60 Hz
	Phase	Single / Three phase
	Power consumption	W / A

Manuals	Operation	Khmer / English / Other
	Service	Khmer / English / Other
	Holder	

Accessories	Model	Specification	Price (US\$)	Qty.

Consumables	Model	Specification	Price (US\$)	Qty

Function Test	GOOD / FAIR / BAD / UNKOWN
	Comment (In case except "GOOD"):

Inspector	

Local Agent			
Person In-charge			
Address of Local agent			
	TEL		FAX

Provider	
----------	--

Record of User Training				
Date	Participants	Training detail	Instructor	Remarks

Record of Maintenance Training				
Date	Participants	Training detail	Instructor	Remarks

Date of condemn	
-----------------	--

Remarks:

