

## **Knowledge Domain: Training Users**

### **Tools and Parts Required:**

- 1) Paper**
- 2) Writing Utensils**
- 3) Assorted Tools (see Exercise)**

### **Introduction**

A common problem with donated equipment is that users (nurses, doctors, or technicians) do not know how to operate the equipment safely or correctly. They may not have the manual. Or, the equipment may have been donated without training. Therefore, sometimes the equipment is not used. Equipment in good condition can help patients if used. Improper use of equipment is inefficient and dangerous to staff and patients.

Training is also useful if there are other technicians in the hospital. Use training techniques to teach other technicians correct operation, maintenance, and troubleshooting.



The head biomedical technician prepares for a repair, explaining the process to the other technicians.

### **Identification and Diagnosis**

Sometimes hospital staff will not tell you that they do not know how to operate a piece of equipment. While you inventory equipment in the hospital, look for equipment that is not being used but appears to work.

Be alert when you work in the hospital. Staff may report broken equipment because they do not know how to use the equipment. If you repeatedly repair a piece of equipment with the same problem, ask questions to determine how the staff uses the

equipment. Usually someone who uses equipment improperly does not realize their error.

If a company representative installs the equipment, try to learn from them. Ask the representative to teach you the proper use and maintenance of the equipment. Ask the representative to give you any manuals or troubleshooting guides available. Obtain the representative's contact information or business card so you can ask questions after the representative leaves. You may be responsible to train the hospital staff how to use new equipment.

## **Procedure**

Most people only want to learn important things. You must convince the staff that the training information is useful to them and important. Before training, talk to the staff supervisor (head nurse, head of technicians, etc). The supervisor can recommend the training to motivate the staff to learn.

There are two methods to train equipment users: Live training and demonstrations, and Quick Start Guides.

A demonstration for an engineer in a hospital is called live training. Demonstrations allow you to show the staff how to operate the equipment, complete a test or procedure, or complete a protocol. Effective demonstrations include four steps: 1) preparation, 2) motivation, 3) demonstration, and 4) repetition.

**Preparation:** Before the training, you must prepare. List the objectives of the training. List new skills the user will learn. List new equipment the user will understand how to operate after completion of the training.

Prepare the quick start guide. A detailed description of the quick start guide is later in this document.

Gather all the equipment and materials that you need to complete the demonstration.

Practice the demonstration before training. Follow your quick start guide to perform the steps. If the quick start guide lacks important steps or important information, rewrite the quick start guide.

**Motivation:** To start the demonstration, introduce yourself. Next, explain the motivation to the user. Answer the question: why is this important?

Tell the user what will happen. For example, "I will demonstrate how to operate this new piece of equipment. I will perform the steps twice. Then you can try it."

Answer any questions the user has before you begin the demonstration.

**Demonstration:** Perform the entire demonstration more than once. First, complete the steps quickly. Second, repeat the steps more slowly. During each step, explain the step. Explain the reason the step is important.

The user will watch what you are doing more than listen to you. Do not skip any steps. Follow the quick start guide exactly.

When you finish, answer any questions the staff may have.



A visiting engineer explains the controls on an infant warmer to hospital staff. The staff are free to ask questions during the explanation.

**Repetition:** Repetition is very important. Repetition allows the staff to learn the skill. The user will not learn the skill only by watching you. The user must perform the skill themselves.

Give the user the quick start guide. Allow the users to use the quick start guide to try to complete the steps. Allow the users to struggle to remember the steps. Do not intervene until the user tries many times. When the user struggles, communicate suggestions to help solve the problem.

Encourage the user to repeat the task. Stop repetitions when the student can complete all the steps without assistance.



Hospital staff practice applying reusable ECG electrodes to a volunteer. Repetition of the skills is required to complete the training.

**Quick Start Guide:** Prepare the quick start guide during the preparation step of training. The guide shows the user how to complete the task. It is best to use very few words and many pictures.

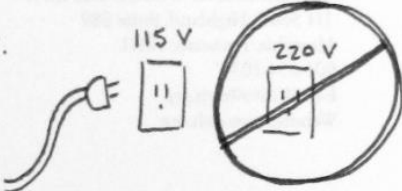


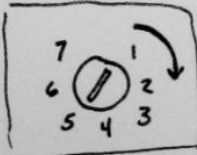

Divide complex operations into multiple tasks. For example, turning the device on and calibrating it may be one step. Using the device to make three different measurements should be divided into three different tasks with three different quick start guides. Each task should be completed in 3-5 steps.

Write the quick start guide in a language the staff easily understands. If the staff uses multiple languages, write the quick start guide in multiple languages.

Example of a quick start guide:

# Readacrit Centrifuge

## QUICK START GUIDE

- ① Plug in centrifuge to 115 V power supply.  
Weka kichujia damu kwa ugavi volti 115.  

- ② Open white cover and place blood in slots.  
Fungua mashine na weka sampuli damu katika mashine.  

- ③ Close white lid and clear cover.  
Funga mashine.  

- ④ Turn timer knob to set time.  
Kipima muda kuweka kengele.  

- ⑤ Do not open until centrifuge has stopped moving.  
Usifungue mpaka mashine imemaliza.  


**Exercise**

To practice training, you will teach your classmates how to operate a piece of equipment using a quick start guide. Write a quick start guide for the skill. Use the four steps to train your classmates until your classmates can complete the task themselves. Be sure the classmate repeats the skill. They will not learn it only by listening.

Your instructor must verify your quick start guide before you continue.

**Final Note**

There will be many opportunities to train the staff when you return to your hospital. Training staff can be difficult. Training is a skill. You must practice training. If you train often, you will improve your training skills.

*Note to Instructors: This is a good opportunity for professional development. Each student must submit a quick start guide to the instructor. The students should prepare a training session for the staff at their hospital and have an administrator or supervisor sign off.*