

Preventive maintenance

3-4: Implementing an equipment maintenance programme

Preventive maintenance includes measures such as systematic and routine cleaning, adjustment and replacement of equipment parts at scheduled intervals. Manufacturers generally recommend a set of equipment maintenance tasks that should be performed at regular intervals: daily, weekly, monthly or yearly. Following these recommendations will ensure that the equipment performs at maximum efficiency and will increase the lifespan of the equipment. This will also help to prevent:

- inaccurate test results due to equipment failure
- delays in reporting results
- low productivity
- large repair costs.

Maintenance plan

A maintenance plan will include preventive maintenance procedures as well as provision for inventory, troubleshooting and repair of equipment. When implementing an equipment maintenance program, some of the initial steps will include:

- assigning responsibility for providing oversight;
- developing written policies and procedures for maintaining equipment, including routine maintenance plans for each piece of equipment that specify the frequency with which all maintenance tasks should be performed;
- developing the format for records, creating logs and forms, and establishing the processes to maintain records;
- training staff on the use and maintenance of the equipment, and ensuring that all staff understand their specific responsibilities.



Equipment inventory

It is recommended that a label is attached to the instrument indicating when the next maintenance or service should be performed.

The laboratory should keep an inventory log of all equipment in the laboratory. The log should be updated with information on new equipment and include documentation of when old equipment is retired. For each piece of equipment, the equipment inventory log should have a record of:

- instrument type, make and model number, and serial number so that any problems can be discussed with the manufacturer;
- date the equipment was purchased, and whether it was purchased new, used or reconditioned;
- manufacturer/vendor contact information;
- presence or absence of documentation, spare parts and maintenance contract;
- warranty's expiration date;
- specific inventory number indicating the year of acquisition (this is especially useful for larger laboratories); for example, use the style "YY-number" (04-001, 04-002, etc.) where "YY-number" equals the last two numbers of the year followed by a number attributed in the year.

Inventory of spare parts

An inventory process must be conducted if the laboratory does not have an existing inventory system for equipment. This could be conveniently organized following a model grid, room by room; for example, conduct an inventory of equipment in the reception area, then the sample collection area, the serology testing area, and the parasitology testing area. During the inventory, the condition of the equipment should be documented as functional, partially functional or nonfunctional. Equipment that is not functioning needs to be evaluated as to whether or not it can be repaired. Nonrepairable equipment should be retired, and work should be scheduled for equipment needing repair.

To ensure that the laboratory does not run out of spare parts, an inventory record of those used most frequently should be kept for each piece of equipment. The record should include:

- part name and number;
- average use of the part, and the minimum to keep on hand;
- cost;
- date when the part is placed into storage and when it is used (in and out stock log);
- quantity of each part remaining in inventory.