4-1: Overview

Role in quality management system

Purchasing and inventory management is a critical and essential component of the quality management system.

Efficient and cost-effective laboratory operations need the uninterrupted availability of reagents, supplies and services. Inability to test, even for a short time, is very disruptive to clinical care, prevention activities and public health programmes.

Benefits

Careful management of inventory helps to prevent waste, which can occur if reagents and supplies are stored improperly, or if reagents become outdated before they can be used. Establishing a purchasing and inventory management programme will ensure that:

- supplies and reagents are always available when needed;
- high-quality reagents are obtained at an appropriate cost;
- reagents and supplies are not lost due to improper storage, or kept and used beyond expiration.

Considerations

Methods for obtaining reagents and supplies vary considerably between laboratories. Some laboratories may purchase directly but, in many countries, a national procurement system is in place with a central stores area that distributes directly to the laboratories. Also, in many places, donors have a major role in the procurement of supplies and reagents.

The laboratory system for managing the reagents and supplies must take into account these variables.

Challenges

The challenge of inventory management is balancing the availability of supplies and reagents in stock with their expiration dates. The lifespan of reagents can vary from a few weeks to a number of years. It is important to continuously monitor the expiration dates to make sure needed reagents are always on hand and have not expired. However, it is too costly and wasteful to overstock.

Equipment and supplies received or accepted from donors must meet the clients' needs and the operational needs of the laboratory. Managers may sometimes need to refuse donations, but this should be done in a diplomatic way to ensure future offers are not discouraged.

Key components

Successful purchasing and inventory management requires that policies and procedures be established for managing all critical materials and services. Some of the key components to address are:

- vendor/manufacturer qualifications;
- purchase agreements;
- receiving, inspecting, testing, storing, and handling of materials—all purchased material should be inspected and appropriately tested to ensure that specifications are met, and policies should be established for storing and handling materials as they are delivered to the laboratory;
- tracking materials to individual patients—the management system must allow for tracking materials to individual patients; that is, the laboratory should be able to identify specific test materials used for performing tests on any given day, so that if there is a problem with a patient result, the laboratory will know what reagents were used;
- assessing and maintaining inventory;
- controlling expiration periods;
- dispatching supplies to satellite laboratories.

4-2: Purchasing

Selecting vendors

It is very important to set expectations and build and maintain relationships with providers of materials and services. Laboratories that purchase directly should look very carefully at vendors' and manufacturers' qualifications, examining such things as specifications and methods of transport. Laboratories that receive reagents and supplies from a central stores area managed by their government should interact with those managing the central stores area to accomplish these same objectives.

At the outset, the laboratory should:

- define criteria for supplies or materials to be purchased;
- look for the best price, taking into account the qualifications and credibility of the supplier;
- consider the advantages and disadvantages of purchasing "brand name" compared to "generic" products (e.g. is it better to purchase specific pipette tips for a specific pipette, or is it just as effective to use generic pipette tips that cost less?).

It may be useful to seek information from other laboratories when considering quality, reliability of supply, and cost.

It is equally important to evaluate vendors after purchase. Consider such factors as whether the vendor delivered the specified goods, or whether the central procurement body assured that user specifications were met.

Considerations

When setting up procedures for purchasing, there are a number of considerations.

- Understand any local or national government requirements that need to be accommodated in the contracts.
- Negotiate for the best price without undermining quality.
- Carefully review all contracts to make sure the laboratory's requirements are being met. Contracts should clearly address payment mechanisms and provisions to assure reliable availability and delivery of reagents and supplies. Ask if there are penalties for ending a contract.
- Determine how payments will be made, and how the vendor will assure reliable availability and delivery of supplies and reagents.