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APPROPRIATE TECHNOLOGY IN THE VARIOUS LABORATORY DISCIPLINES
MICROBIOLOGY

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For practical reasons the laboratory activities could be sectionized as follows: bacteriology, mycology, virology, parasitology and immunology. A diagnostic laboratory might be involved in only one but usually more than one of these sections. Although primarily considering technology within the laboratory the pertinent problems cannot be discussed without taking into consideration how the laboratory link should function for clinical as well as epidemiological and public health problems. Therefore an overall picture of this intricate pattern of cooperation has to be considered in order to evaluate the technical aspects of the work carried out by the laboratory.

There are three main partners involved in the service functions of a laboratory.

- (1) the customer i.e. clinicians, epidemiologists and public health officers;
- (2) the people of the laboratory; and
- (3) the financing department.

The partners mentioned have to cooperate closely and to come to an understanding of each others problems. This cooperation implies i.a. that the customer has a list of the fields where he must or would like to have the help of the laboratory. The laboratory has to tell what they can or would like to offer as diagnostic aids taking into consideration available approved techniques as well as financing. The financing department can then be presented with a list with a price tag attached to each item. After discussion between the three partners a budget has to be agreed on. Having this accomplished the laboratory can plan how to run the laboratory in the most efficient way for the budget decided and what standard it will be able to keep.

It would be emphasized that the laboratory is responsible not only for the technical work performed within the laboratory area but also outside this, for example the close cooperation with the category of various customers implying i.a. proper indications and procedures for taking specimens, how to send in specimens and what possible clinical data the laboratory should receive. At the arrival of specimens certain diagnostic routines are performed but it is essential that the laboratory man does not get stuck with routine tests comprising unnecessary investigations. When considering techniques to be applied the laboratory must be aware of what standard it should keep and when the help of a reference laboratory should be considered. The tests in the laboratory should be performed by approved and standardized techniques and a check-up now and then of the quality of the diagnostic work performed at the laboratory is advisable. Inter- as well as intra-laboratory check-ups of this kind should be performed regularly unless this is an already-established routine.

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In order to give the customer the aid needed the laboratory should have two things in mind:

- (a) results should be obtained as rapidly as possible; and
- (b) the accuracy of the investigations performed has to be sufficient.

In relation to this, technological aspects on the tests performed in the laboratory and the education and training of assistants come into focus. Some examples of failures and improvements in this area will be presented and general trends given. Last but not least the necessity of performing adequate cost-benefit analyses will be stressed.