

## Content Sheet 1-1: The Importance of Laboratory Quality

### Definition of quality

Laboratory quality can be defined as accuracy, reliability, and timeliness of the reported test results. The laboratory results must be as accurate as possible, all aspects of the laboratory operations must be reliable, and reporting must be timely in order to be useful in a clinical or public health setting.

### Level of accuracy required

When making measurements, there is always some level of inaccuracy. The challenge is to reduce the level of inaccuracy as much as possible, given the limitations of our testing systems. An accuracy level of 99%

may at first glance appear acceptable, but the resulting 1% error can become quite large in a system where many events occur, such as laboratory testing.



### Negative consequences of laboratory error

Laboratories produce test results that are widely used in clinical and public health settings, and health outcomes depend on the accuracy of the testing and reporting. If inaccurate results are provided, the consequences can be very significant:

- unnecessary treatment; treatment complications
- failure to provide the proper treatment
- delay in correct diagnosis
- additional and unnecessary diagnostic testing.

These consequences result in increased cost in time, personnel effort, and often in poor patient outcomes.

### Minimizing laboratory error

In order to achieve the highest level of accuracy and reliability, it is essential to perform all processes and procedures in the laboratory in the best possible way. The laboratory is a complex system, involving many steps of activity and many people. The complexity of the system requires that many processes and procedures be performed properly. Therefore, the quality management system model, which looks at the entire system, is very important for achieving good laboratory performance.