

Keynote Lecture: The Challenges for the Clinical Laboratory in a Changing Environment

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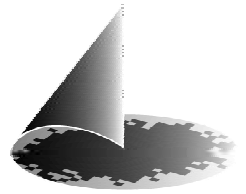
During the past 10 or 15 years many changes in our political, social, ecological and economical environment have occurred. It very much seems, that the periods of changes are getting shorter and shorter. This trend can obviously not be stopped and is also seen in the health care environment, where we might be facing dramatic changes and developments in the coming decade.

Today's health care suppliers do have to cope with the demands and requirements of different groups of stakeholders with different and partly conflicting interests. Patients, health insurance companies, government, doctors, nurses, and service personnel in hospitals, investors and other interest groups and have a driving impact on developments and decisions made in the health care "business".

The patient does and should have the key role in this framework. The relationship between the health care provider and the patient will be that of a service supplier and customer. As for the laboratory, one of the most striking challenges is the overwhelming and still increasing number of tests to be performed, validated and clinically interpreted every day. In many cases these tests must be performed 24hrs per day, 7 days a week. This becomes even more difficult since the cost pressure still remains, leading to cost savings in terms of reduction in personnel. Many times at the expense of eliminating well educated personnel. On the other side, there is a steadily growing demand for shorter turn around times, availability and quality of tests. To cope with these challenges, the lab has to focus on four major fields within the hospital or health care framework.

1. Analytics:

The number of new tests and parameters will further increase. The proof of their clinical utility and application will be an issue and requires clinical evaluations. New systems must involve a flexible and modular architecture to cope with the different requirements in large and smaller specialised labs. Price structure and reimbursement systems must be related to each other. Online quality control systems will help to ensure a real-time quality control and should become the standard in each lab.



2. Workflow and logistics:

A clear strategy for the pre-analytical phase of samples inside and outside the lab, starting from sample collection to the measurement must be defined in each lab. Integration of results from remote or satellite labs (POC) has to be established. All items related to sample transport and storage, result transmission and communication as well as logistics of reagents and disposables must be organised.

3. Results and diagnosis:

Automated result validation and interpretation will become necessary to effectively run a lab. Rule engines and knowledge base-solutions (expert system) need to be implemented increasingly to support the decision making in the lab. Expert networks with fast communication links using telemedicine and internet connections will be established. Security issues of electronic patient data and data archives need to be considered.

4. Hospital and health care:

The environment in which the lab is embedded will have specific demands such as communication between the lab (LIS) and external partners in integrated patient care networks. Furthermore consolidation of hospital lab services and in sourcing from private health care providers, specialisation, and implementation of tailor made solutions will be essential to fulfil individual requirements.

As for these four areas, there are already good examples on how a lab can cope with these challenges. I will present examples that demonstrate the future lab vision of yesterday has already started to become reality today.