Venue: PYRAMID 2
21st August 2007
1130-1245 hr

Symposium 1A: Current updates on laboratory management

S1A-1. Reconstruction of the clinical laboratory – extended service to clinical medicine

Tetsuro Sugiura

Department of Laboratory Medicine, Kochi Medical School, Kochi, Japan

Laboratory Automation System (LAS) was adopted in the clinical laboratory in the early 1980s for laboratory testing. In 1981, and Kochi Medical School was the laboratory which incorporated the first Belt Track System. Since then, LAS has made laboratory operation more efficient and saved labor. On the other hand, revision of medical treatment fees resulted in the decrease in test items and the operation with a large multi-item analyzer shifted to the use of multiple single multi-line analyzers.

Although we were satisfied with our home made original LAS, it became over 25 years since first construction. We had to consider reconstruction of our laboratory to implement effective and economically feasible LAS. We chose the Open LA 21 Modular Automation System. This highly integrated modular automation system is "open", "space saving design" and "user oriented". "Open" and "user oriented" environment allows various manufacturers to participate in the consolidation of various types of analyzers including chemistry, immunochemistry, coagulation, hematology, urinalysis and others. Some of our goals to be achieved by using new LAS are:

1. Reduce reagent and maintenance cost
2. Integrated workflow
3. Integration of analyzers
4. Reduce turn around time
5. Reduced man power for core laboratory
6. Expand physiology testing and new business

As an originator of LAS, we are still improving our system and laboratory workflow to extend our service to clinical medicine.

S1A-2. Total laboratory automation – pros and cons

Sunil Sethi

Department of Laboratory Medicine, National University Hospital, Singapore

The practice of laboratory medicine has changed in recent years due to advances in science and technology in both the instrumentations used and the methodology employed. The use of a Laboratory Automation System is emerging as the contemporary laboratory solution and is well established in handling large volumes of specimens in laboratories in Canada, USA, Japan and Western Europe. At present, the pre-analytical specimen handling process for routine biochemistry and haematology tests is done manually. The steps include sorting and labelling of specimens, centrifugation, specimen loading and unloading on instruments, decapping and recapping of blood containers, pipetting serum for different tests, and aliquoting of samples to different analysers. These processes have multiple pitfalls. The existing manual process of preparing specimens for laboratory tests cannot keep pace with the increasing demand for laboratory service and is lagging behind developments in the practice of laboratory medicine. Currently there is a limited market and a limited choice for total laboratory automation, hence many vendors have developed modular workstations that are able to provide scalability to accommodate the large variety of variable needs in laboratories of today. One significant drawback

of the modular approach at the moment is the lack of standardization in terms of connectivity of the various modules. The key to successful laboratory consolidation and the integration of automation is a carefully defined plan involving staff members who develop partnerships with analyser vendors and the LIS IT software vendor.

S1A-3. The role of the clinical pathologist in supporting clinical decisions

Edwards GA

Chemical Pathologist, St John of God Pathology, Wembley, Western Australia

Clinical laboratory medicine is at a cross roads. Automation in our large pathology factories brings significant gains in efficiency and productivity. However, laboratory tests are increasingly seen as low value commodities, and this threatens to swamp the clinical platform on which pathology was built.

Clearly a strong core of clinical expertise, and clinical practice, remains in pathology. In many countries, pathologists are closely involved in the operation and supervision of laboratories, and they are active in consultation, reporting, and teaching. Yet evidence from clinicians shows that they expect better, and more consistent, clinical input. For example, we release most test results without a clinical pathologist's opinion. Since we have lost access to request forms in real time we also consistently ignore questions and information from clinicians. Furthermore, when we do provide an opinion we rarely have systems for monitoring the clinicians' response to that advice.

Restoring a comprehensive clinical role requires investment in people and systems. Medical training will accentuate the clinical role of the laboratory. New software, including decision support tools, will allow pathologists' to keep pace with the growth in testing. Investment in these systems requires better demonstration of the benefits in well designed, published studies.

We also need pathologists to engage with the decision makers in health policy. Laboratory medicine is central to many of the burgeoning public health issues such as diabetes, coronary heart disease and infectious diseases – yet pathologists' voices are not being heard loudly enough in the public health domain.

In the next five years, our investment choices will determine the extent to which laboratory medicine remains relevant in the professional and clinical environment. Pathologists need to work with their medical colleagues, consumers and laboratory directors to establish clinical standards for practice. We can then make prudent investment decisions that allow laboratories to grow in parallel with, rather than at the expense of, clinical quality.