

Book review

“Practical Clinical Chemistry: Core Concepts”

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REVIEWED BOOK

**“Practical Clinical Chemistry:
Core Concepts”**

by Tahir Pillay, MBChB, PhD, FRCPath

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RECENSION

Nowadays, the majority of clinical laboratories operate as high throughput factories. Financial reasons and quality control issues both justify the widespread application of automated systems and ready-to-use reagents. While technical evolution lead to an exceptional improvement in the productivity of clinical labs and the generation of high quality data, on the other hand, however, we have to pay the price of this development. This price is particularly not one of an economic nature; it is rather some loss of the miracles of the *in vitro* world that attracted older generations – assistants, chemists, laboratory doctors and other professionals – to the lab.

Once these miracles had included a quite range of colorful reactions reflecting the successful compilation of reagents; the dramatically increasing absorbance values as the result of the functioning of a vivid serum enzyme in the tube; or the appearance of stripes on an electrophoretic gel after a fierce overnight work to isolate proteins. Unfortunately for many, these miracles were switched by such simple processes as ‘push the button’, ‘load the system’, ‘save’ or ‘print’ the results etc. and all the lab work was getting to resemble to a black box that generates somehow results from samples. And, while all the results may completely fit to external and internal QC programs, the personal contribution of professionals gets to become minimal. (In line with this trend I also noticed in a personal pilot survey that an almost negligible minority of labs working in the field of

clinical chemistry use routinely scales, pH-measurement device, spectrophotometers in a university environment.) Finally, there is a new generation already working in clinical chemistry 'factories' that has less and less personal experience with in vitro world.

The book "Practical Clinical Chemistry: Core Concepts" may be a tool to bring back some of the essence of the good old times for students and even for younger colleagues. Its structure, problem-based approach and well-designed practical demonstrations in each chapter are efficient tools to introduce the beauties and also the challenges of clinical chemistry methods for the interested readers. Although the size of this book is limited to 126 pages, being presented in 14 chapters gives a very impressive overview of clinical chemistry lab work.

The first page of each chapter defines clearly the objectives of the knowledge transfer. Then, the chapter is divided on two major parts. Yellow color-coded pages indicate the practical tasks for students to perform, while light blue pages contain instructor's guide along with the explanation of observation and, also, a condensed explanation of clinical usefulness of results. Clear and high-quality figures and photos are also incorporated in a justified amount that supports the understanding of the described material. This design and structure largely support the professional consistency of the book and help the readers to orientate themselves easily.

This fascinating book provides a well-designed and didactic way that covers almost all the major fields that are 70-100 per cent automated in our days. Chapters let a short insight into basic laboratory practices; present the difference between end-point and kinetic assays; indicate basic principles of protein assays and immunoassays etc. The readers can learn basic ideas behind immunoassays, electrophoresis of proteins. A specific chapter is also devoted to introduce some very basic molecular biology methods. After the successful completion of presented practical tasks and learning the attached explanations the students will be understand basic mechanisms leading to the generation of laboratory results. With this knowledge they may be able to look critically at data generated with the use of automated systems and, possibly, to intervene in case of urgency.

I am convinced that this novel book will largely support the graduate and post-graduate education in clinical chemistry. One minor limitation with this educational tool is that currently iPhone/iPad/Mac is the only medium where it is available; therefore, a significant part of the clinical chemistry community having no iPhone still has no chance to obtain it. I hope that observed positive experience will foster producers to extend this book for PC or other systems and make it more widely available.