

Book review — “Patient safety”

Oswald Sonntag

Bio-Rad Laboratories GmbH, Munich, Germany

RECENSION ABSTRACT

Corresponding author:

Oswald Sonntag
Bio-Rad Laboratories GmbH
Heidemannstrasse 164
80939 Munich
Germany
E-mail: Oswald_Sonntag@Bio-Rad.com

Mario Plebani and Oswald Sonntag are editors of a book series on patient safety. Since the Institute of Medicine (IOM) report titled “To Err is Human”, numerous publications have been published on the topic. As such, since 2011, a new series of publication was conceived with deGruyter as the publisher.

Herewith I like to give an overview of the booklets which have been published so far and those which are in the pipeline.

VOLUME 1: JAY KALRA

Medical Errors and Patient Safety - Strategies to reduce and disclose medical errors and improve patient safety – published: May 2011 - ISBN: 978-3-11-024950-7



Is the reporting of medical errors changing? This book illustrates, citing true cases from health care and beyond, that most errors come from flaws in the system. It also shows why they don't get reported and how medical error dis-

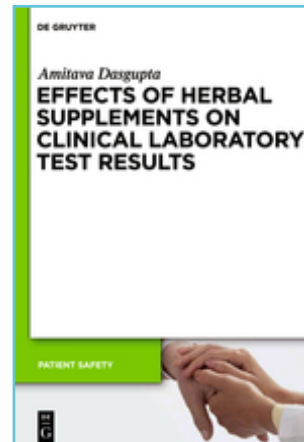
closure around the world is shifting away from blaming people, to a „no-fault“ model that seeks to improve the whole system of care.

The book intends to provide an introduction to medical errors that result in preventable adverse events. It discusses efforts made to reduce preventable adverse events and medical errors, and moreover highlights their impact on clinical laboratories and other areas, including educational, bioethical, and regulatory issues. Varying error rates of 0.1-9.3% in clinical diagnostic laboratories have been reported in the literature. While it is suggested that fewer errors occur in the laboratory than in other hospital settings, the quantum of laboratory tests used in healthcare entails that even a small error rate may reflect a large number of errors. The interdependence of surgical specialties, emergency rooms, and intensive care units - all of which are prone to higher rates of medical errors - with clinical diagnostic laboratories entails that reducing error rates in laboratories is essential to ensure patient safety in other critical areas of healthcare.

The author maintains that many such errors are preventable provided that appropriate attention is paid to systemic factors involved in laboratory errors. This book identifies possible intelligent systemic approaches that can be adopted to help control and eliminate these errors. It is a valuable tool for physicians, clinical biochemists, research scientists, laboratory technologists and anyone interested in reducing adverse events at all levels of healthcare processes.

VOLUME 2: AMITAVA DASGUPTA

Effects of Herbal Supplements on Clinical Laboratory Test Results - published: May 2011 - ISBN: 978-3-11-024562-2



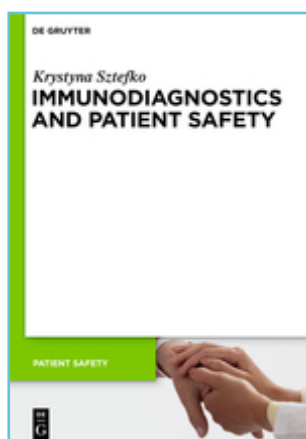
Herbal supplements are available without prescription in many countries throughout the world and accounting for over \$30 billion U.S dollar in sale. A majority of U.S population (25-40%) use herbal supplements while alternative medicines are major forms

of therapy in third world countries used by as much as 80% of the population. Contrary to the popular belief that herbal remedies are safe and effective, many herbal supplements have known toxicity, and unexpected laboratory test results may be the early indication of such toxicity. In addition, some herbal products such as St. John's wort can interact with many Western drugs causing increased clearance of these drugs and hence treatment failure. This monograph would provide information on how herbal supplements affect laboratory test results as such patient safety. This monograph would provide a comprehensive and concise practical guide for laboratory professionals, physicians and other health care

professionals. The emphasis of this monograph is to provide clinically relevant information rather than discussing in detail mechanisms of such effect, although brief explanations would be provided for such unexpected test results.

VOLUME 3: KRYSZYNA SZTEFKO

Immunodiagnosics and Patient Safety - published: May 2011 - ISBN: 978-3-11-024948-4.



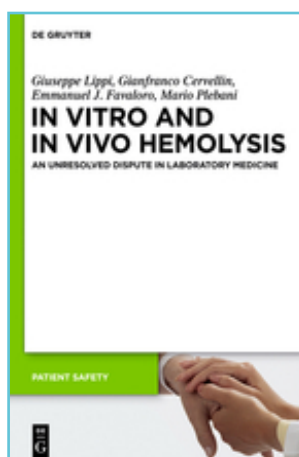
Today most of immunochemistry methods for the determination of proteins, peptides, drugs, and many small molecules are fully automated, with good precision, excellent sensitivity and short reaction time. However, inaccuracy

due to poor standardization and the presence of interfering substances in biological samples is still a serious and life-threatening issue. Proper validation of methods and quality assurance have little effect on frequency of occurrence of false positive or false negative results, which, if unrecognized, may lead to patient's misdiagnosis, unnecessary treatment or even unnecessary surgery. Deep knowledge of basic principles of immunochemical methods (antigen-antibody reaction, standardization, matrix effect, limit of detection, cross-reactivity, etc.), sources of analyte-independent interferences (preanalytical errors, the presence of binding proteins, the presence of autoantibodies) and analyte-dependent interferences (presence of heterophilic antibodies, high-dose effect) are very important to understand, detect, reduce and/or eliminate the interferences. This book helps to reduce

false results and, at the same time, improve patient's care and patient's safety.

VOLUME 4: GIUSEPPE LIPPI, GIANFRANCO CERVELLIN, EMMANUEL J. FAVALORO AND MARIO PLEBANI

In Vitro and In Vivo Hemolysis - An Unresolved Dispute in Laboratory Medicine - published: July 2012 - ISBN: 978-3-11-024614-8

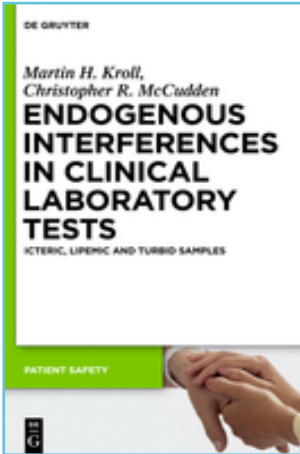


Introduces clinically relevant findings about hemolysis. Indicates possible laboratory errors caused by hemolysis. Covers management of hemolytic specimens.

Defined as red blood cell break down and the release of hemoglobin and intracellular contents into the plasma, hemolysis can seriously impact patient care as well as the laboratory's reputation through its affect on test results. Therefore, the European Preanalytical Scientific Committee, in collaboration with the International Federation of Clinical Chemistry Working Group on Patient Safety, have designed a questionnaire to collect data on prevalence and management of hemolytic specimens referred to the clinical laboratories for clinical chemistry testing. This book will help identify the areas where hemolysis occurs most frequently, which can, in turn, guide further analysis about why it is occurring. Once these elements are known, practices and procedures can be implemented to dramatically reduce hemolysis and avoid erroneous laboratory results affecting patient care and increasing laboratory costs.

**VOLUME 5: MARTIN H. KROLL AND
CHRISTOPHER R. MCCUDDEN**

Endogenous Interferences in Clinical Laboratory Tests - Icteric, Lipemic and Turbid Samples - published: December 2012 - ISBN: 978-3-11-026622-1



Offers the proper approach to evaluating the impact of bilirubinemia and lipemia on clinical laboratory results. Provides the empirical and theoretical foundation for evaluating the effect of bilirubinemia and lipemia on clinical laboratory test results.

The goal of clinical laboratories is to produce accurate information for clinical decision making in medicine. More than half of the medical decisions made depend on clinical laboratory tests.

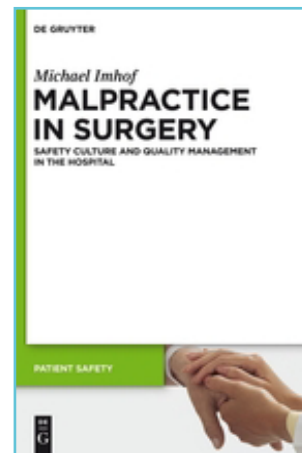
Patient safety represents an important and critical problem for laboratories. They need to assure that the information they deliver to physicians is accurate, and therefore safe for clinicians to use. Endogenous compounds can interfere with laboratory tests, decreasing accuracy and threatening patient safety. Elevated bilirubin (bilirubinemia) and elevated lipids (lipemia) are common conditions that cause significant interferences with laboratory results. Clinicians depend on laboratories to detect these endogenous interferences. Laboratories must have the means to detect these endogenous interferences, make decisions about reporting results, and evaluate their impact.

Most clinical pathology books provide only an abbreviated introduction to the subject, or provide a long list of references, without the necessary foundation for evaluating their significance.

Package inserts typically provide scant information. This book provides the empirical and theoretical foundation for these interferences, describes the clinical settings where they occur, and explains their evaluation and detection, allowing the laboratory to interpret the available data on interferences and make the appropriate decision to effectively report test results while protecting patient safety.

VOLUME 6: MICHAEL IMHOF

Malpractice in Surgery - Safety Culture and Quality Management in the Hospital - published: December 2012 - ISBN: 978-3-11-027160-7



This book covers the improved management of medical errors and a description how to establish an efficient quality management system in hospitals. Explains medical errors and their negative influence on doctor-patient relationship.

Tentative estimates suggest that one in ten patients suffers from an adverse event in hospital. In Germany, approx. 1.8 million out of approx. 18 million inpatients suffer from adverse events; 50 percent of these cases are estimated to be avoidable. In the US, nearly 100,000 people die from the consequences of mistreatment.

The intensive care units record 1.7 medical errors per patient and day. The most affected disciplines are the operative disciplines, particularly general surgery. Medical errors mainly occur when the indication for surgery is being made, during surgery and post-surgery. Suspicious oncological diagnostic results and post-operative complications are also often ignored.

This book deals with complications and typical medical errors in surgery. It shows solutions and ways of dealing effectively with these errors and how to establish an efficient security management system

VOLUME 7: GIUSTINA DE SILVESTRO, ARIANNA VERONESI AND MARIA VICARIOTO

Transfusion Medicine and Patient Safety – published: December 2012
- ISBN: 978-3-11-028707-3



Blood transfusion is considered a life-saving therapy since ancient times, but, at the same time, a high-risk procedure. Nowadays the common perception is that infection is the greatest risk, even if the blood has never been safer from this point of view.

Currently, the residual risk of transfusion must be related mainly to immunological mechanisms underlying to ABO and minor blood systems, to compatibility of blood transfused and to development of irregular antibodies in transfused patients.

„Transfusion Medicine and Patient Safety“ aims to provide the basics of immunohematology to readers and to analyze the *transfusional* process highlighting the most critical points, thus more exposed to errors.

Screening on blood and blood components for infectious diseases along with the surveillance action on emerging viruses results in the drastic reduction of post-transfusion infection, together with the potential to further increase the level of security from infection through the inactivation of blood components.

The text also describes the major diagnostic systems and organizational models that modern technology provides us with a correct *immunohematological* diagnosis and an appropriate transfusional therapy.

VOLUME 8: HANNES ZACHER

Patient Safety - A Psychological Perspective – published: February 2014- ISBN: 978-3-11-028192-7



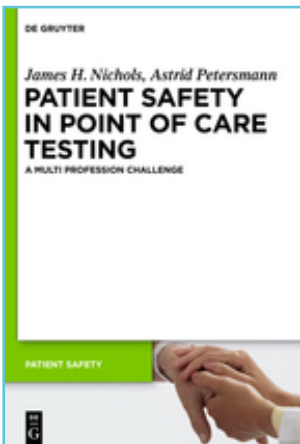
This comprehensive book takes a psychological perspective on patient safety. It is based on the most recent theoretical and empirical research evidence from psychology (including clinical, work, and organizational psychology) and adjacent social and

behavioral sciences such as human factors. Factors that influence safety-related experiences, behaviors, and outcomes of patients and professionals working in clinical settings such as medical practices and hospitals are reviewed, structured, and critically evaluated. Consistent with the complexity of the topic, the author takes a multi-level approach to patient safety, which includes a review of individual, team, and organizational factors and outcomes. The book describes how these factors, by themselves and in combination, can facilitate or impede patient safety. Individual factors include safety-relevant knowledge, skills, abilities, and personality traits such as conscientiousness and emotional stability. Team factors include group communication, training, and leadership. Finally, organizational factors include the safety culture and climate. Throughout the book, different evidence-based intervention programs are described that can

help practitioners promote patient safety and prevent accidents. The book is a valuable resource for both researchers and practitioners interested in understanding, maintaining, and improving patient safety in a variety of applied settings. It is based on the most up-to-date research evidence from psychology and neighboring disciplines, and it is written in a clear and non-technical language understandable for a wide audience.

VOLUME 9: JAMES H. NICHOLS, ASTRID PETERSMANN AND ANDERS KALLNER

Patient Safety in Point of Care Testing - A Multi Profession Challenge - planned: 2016 - ISBN: 978-3-11-027285-7



Having patient results available immediately at the patients' bedside has led to obvious improvements in patient care. The introduction of automated blood gas analyzers saved many lives. Glucose measurements close to the patient originated

in the field of patient self control. Besides these two traditional application of POC tests many more are available on the market today their use stretching from ambulatory to highly complex sites such as intensive care units.

In POCT an impressive potential of improving patient care is combined with increased risks for patient safety. Thoroughly balanced decisions for the use of POCT are a key to patient safety in this field. Depending on the extent of use within an organization, a POCT concept can aid to minimize risks for patient care. As the use of POCT expands experiences gained can serve as guides for future use. POCT is closely related

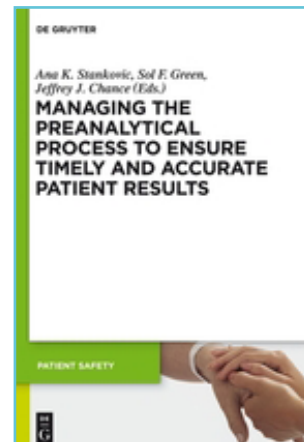
to laboratory medicine but follows completely different rules with a tremendous impact on patient safety. To create awareness for this fact is one aim of this book addressing all involved professions.

The reader will find a comprehensive overview of\$

- benefits of POCT and the potential risks for patient safety,
- perspectives of involved professions on POCT,
- POCT strategies for health care providers
- Checklists of important aspects of patient safety in conducting POCT for both individual and institutional use.

VOLUME 10: ANA K. STANKOVIC, SOL F. GREEN AND JEFFREY J. CHANCE

Managing the Preanalytical Process to Ensure Timely and Accurate Patient Results – planned: 2016 - ISBN: 978-3-11-028161-3



The preanalytical phase of laboratory testing—defined as the time from test ordering by the physician until the sample is ready for analysis—encompasses numerous critical steps. The correct specimen must be obtained from the correct patient using correct

technique, and specimens must be handled and processed in a manner which ensures specimen integrity. Along the way, there are numerous factors and variables where medical error may be introduced, with the potential to impact patient safety. It is estimated that preanalytical errors may account for up to 70% of total laboratory errors. In addition, delays and rework in the preanalytical phase prolong the time from

order to results. As such, improvements in this area may deliver the greatest gains in the overall quality of laboratory services and patient care, and can help control the overall costs of health-care delivery. This book provides an overview of the preanalytical phase, including test ordering,

patient identification, specimen collection, specimen handling and processing. In each step of the process, the variables which influence result accuracy and turnaround time are identified and discussed. Guidelines and best practice recommendations are also included.