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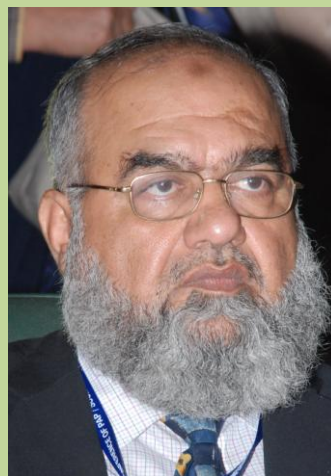
- Do you know?

We want to hear from you

Please send us your comments, feedback and valuable contributions about Chemical Pathology related issues for publication in this newsletter.

ijaz_aamir@hotmail.com
sara.qmc@gmail.com

34 Glorious Years of Excellence



It is a unique honor of Maj Gen Prof Farooq Ahmad Khan, HI (M), (retired) that all the fellows in Chemical Pathology in Pakistan are either his direct students or trainees of his students (with only a few exceptions). Such an example is hard to find in any other specialty. The contributions of Gen Farooq to our specialty are countless. Just at the age of 25 years he got a PhD from University of London, and joined AFIP, Rawalpindi. As a young captain he worked tirelessly to establish a modern Department of Chemical Pathology at AFIP Rawalpindi. Here we must mention his teachers Lt Gen Syed Azhar Ahmad (retired) and Prof D.N. Barron who laid the foundation of an institute-like person in the shape of Gen Farooq. His first two students who passed FCPS in Chemical Pathology in 1992 were Brig (Prof) Abdus Sattar (retired) and Brig (Prof) Dilshad Ahmad Khan, who are also well known names in the specialty. Almost all the instructional and assessment strategies which are still in vogue in FCPS Chemical Pathology were set by Gen Farooq. In addition to FCPS, Gen Farooq also trained many MPhil and PhD students who are now imparting their knowledge and skills to the next generation.

Maj Gen Farooq Ahmad Khan HI(M), MBBS, MCPS, Dip Endocrinology (London), FCPS, FRCP (Ireland), FRC Path (UK), PhD (Lond), retired on 30 Oct 2013 after 34 years of glorious military service. During his tenure he brought revolutionary changes in the departments and the institutes where he was posted. He was elected dean of Combined Faculty of Pathology, CPSP, and worked tirelessly to improve the curriculum of FCPS of all disciplines of Pathology. Recently he has been elected as President of Pakistan College of Pathologists by a majority vote and he is currently working on this post. Last but not most important for us, he was the founder President of PSCP. We hope his retirement just envisages a change of pattern of his dress; otherwise he will be available for all professional activities to us. We pray a long, prosper and healthy life for him and his family.

Message from President PSCP



It is a matter of great pride for me to write this message for 2nd issue of “The Spectrum” – the Newsletter of PSCP. First issue of this Newsletter was published on the occasion of First Joint Conference of Societies of Pathologists and 5th National Conference of PSCP. Generally the Newsletter was appreciated by all the participants of the conference but Chemical Pathologists were especially delighted to find a publication of their own field from Pakistan. I must congratulate the editors of the “The Spectrum” for this great achievement. Now this 2nd issue is in our hands and here I will mention the name of *Dr. Sara Reza*, the newly appointed sub-editor, she has worked day and night for making this Newsletter a success. I can also see a lot of contributions from our budding Chemical Pathologists indicating their eagerness to own this Newsletter and PSCP as a whole. All my prayers and wishes are for this next generation.

In this issue of “The Spectrum” you will find some important news from various institutes in the Newsfeed section and useful scientific material related to the specialty. A few general items have also been included to indicate our endeavor to keep pace with world. At the end I want to express my deep gratitude to the editors of the Newsletter and all the members of the PSCP for patronizing this Newsletter.

Brig Dilshad Ahmad Khan

MBBS, MCPS, FCPS, FRCP (Ireland), FRC Path (UK), PhD

Professor of Pathology, AFIP, Rawalpindi

President, PSCP

‘The Spectrum’ and PSCP welcome participants of 2nd Joint Conference of Pathologists and 6th National Conference of PSCP.

The PSCP sessions will be:

- a. Plenary Session
- b. Four Scientific Sessions
- c. Post-Conference Workshop

PSCP: Office Bearers 2013-2014

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Maj Gen Prof Farooq Ahmad Khan, HI(M), (retired)

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Dr Munawar H Muree

Counsellor



Dr Adnan M Zuberi

Glimpses of PSPC activities during 2013



Workshop on 'Interpretation of ABG Reports' at Bahria University Medical and College Karachi, April 2013



Dr. Imran Siddiqi represented PSPC at APFCB meeting Baali, Indonesia Oct 2013



Workshop on 'Laboratory automation' at Quaid-e-Azam Medical College, Bahawalpur, May 2013



Pathology week at Quaid-e-Azam Medical College, Bahawalpur, May 2013



Dr. Adnan Zuberi, at a seminar organized by Randox Laboratories Ltd. in association with UK Trade and Investment Pakistan. in May 2013.

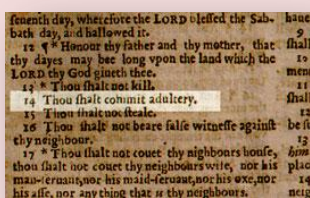


Participants of DLP from Karachi after the farewell meeting on 24 Aug 2013.

PSCP Newsfeed

- **“National pathology week”** organized by College of Pathologists, Pakistan, was celebrated from 13th to 18th May 2013 nationwide. The theme was **“Standardization of laboratories”**. All major departments organized events during the week. Banners and flex signs were displayed in pathology departments. There was overwhelming response from participants and the week turned out to be a success.
- **Major General Muhammad Ayub** has taken over the command of AFIP Rawalpindi – one of the most prestigious institutes in the country. We whole heartedly congratulate him and wish him a big success at his new task.
- The **37th annual conference of the Pakistan Association of Pathologists / 2nd Joint Conference of the Societies of Pathology** is being held in Lahore from the 20th to 22nd December 2013. The theme of the conference is **“Young Pathologists – Our Future.”** ‘The Spectrum’ and PSCP welcome all the participants.
- Workshop on **“Dynamic function tests in endocrinology”** will be held on 22nd December 2013. Facilitators are Brig. Waqar Azeem and Dr. Javaid Subazwari.
- FCPS-II examination was held in May and November this year. There was 50% pass percentage in the written exam while all the candidates appearing for the viva/practical cleared the exam. Next written FCPS-II examination will be conducted on **23rd April 2014**.
- Facebook group **“Pakistan Society of Chemical Pathologists”**, provides a forum to discuss common key issues, concerns and share ideas in the sector of Chemical Pathology. Dr. Usman Munir and Dr Majid Latif are its administrators. It provides a strong academic bonding among trainees and consultants, a platform to collaborate and to instigate mutually beneficial initiatives.

History's Biggest Typo



Typing mistakes are as old as the typing itself. In 1631, bible of the King James was printed in London, UK. In the Ten Commandments (Exodus 20:14), the word ‘not’ in the sentence "Thou shalt not commit adultery" was omitted, thus changing the sentence into "Thou shalt commit adultery". This blunder was spread in a number of copies. The majority of the copies were immediately cancelled and burned but a few survived to be preserved in the museums for our lesson.

Facilitations

Elected President: Our Heartiest Congratulations to Maj Gen Farooq Ahmad Khan HI (M), Commandant AFIP Rawalpindi, Advisor in Pathology and Patron of PSCP, on election of President of College of Pathologists Pakistan.

Award of PhD: We offer our warmest congratulations to Prof Ejaz Hassan Khan, Prof of Chemical Pathology Khyber Medical University Peshawar and Ex-President of PSCP, on award of PhD in Chemical Pathology by Punjab University and appointment as Principal of Khyber Medical College Peshawar.

Accreditation: It gives us immense pleasure to announce the news of recent accreditation of following institutions by College of Physicians and Surgeons (CPSP) for FCPS II training program in the discipline of Chemical Pathology.

- Sheikh Zaid Medical College, Rahim Yar Khan
- Bolan Medical College, Quetta
- Combined Military Hospital, Quetta

We wish to extend our sincere felicitations to the principal / dean of these institutions and the entire team of dedicated doctors on accomplishing this important task. This will certainly enhance the eminence of Chemical Pathology education and training and will facilitate their accreditation internationally.

Award of FRCPath to two of our distinguished teachers i.e. Maj Gen Farooq Ahmad Khan, HI(M) (Rtd) and Brig Dilshad Ahmad Khan. We all are proud of you!!

Passing FRCPath Part I: Dr. Usman Munir (AFIP Rawalpindi) has passed this exam in first attempt. We whole heartedly congratulate him.

International Publications of our Members in 2013

- Dilshad Ahmad Khan, Mushtaq S, Farooq Ahmad Khan, Khan MQ. Toxic effects of chromium on tannery workers at Sialkot. Toxicol Ind Health 2013;29(2): 209-15
- Dilshad Ahmed Khan, Karam Ahad, Wafa Munir Ansari, Hizbullah Khan. Pesticides exposure and endocrine dysfunction in the cotton crop agriculture workers of Southern Punjab, Pakistan. Asia Pac J Public Health 2013; 25(2):181-91.
- Sara Reza, Asma Shaukat, Tariq M Arain, Qasim S Riaz, Maria Mahmud. Expression of osteopontin in patients with thyroid dysfunction. PLoS One. 2013 Feb;8(2):e56533.
- Sikandar H Khan, Aamir Ijaz, Syed Aon Bokhari, M Shahzad Hanif MS, Azam N. Frequency of impaired glucose tolerance and diabetes mellitus in subjects with fasting blood glucose below 6.1 mmol/L (110 mg/dL). East Mediterr Health J. 2013 Feb;19(2):175-80.

Congratulations to new fellows

"The price of success is hard work, dedication to the job at hand, and the determination that whether we win or lose, we have applied the best of ourselves to the task at hand."

Vince Lombardi

The difficulty of FCPS II exams reflects the challenging nature of life as a professional Chemical Pathologist and we would like to offer our heartiest congratulations to the successful candidates Dr. Lubna Sarfraz (QAMC) and Dr. Saleha Zafar (QAMC) who passed the exam in May 2013 and to Dr. Usman Munir (AFIP Rawalpindi), Dr. Ghazanfar Abbas (Zia-Ud-Din University, Karachi), Dr. Maliha Akhtar Zubairy (Zia-Ud-Din University, Karachi), Dr Noreen Sherazi (Aga Khan University, Karachi) and Muhammad Anwar (AFIP Rawalpindi) who passed the recent exam in November 2013. Well done!! The hard work you put in finally paid off. We are sure you will be an asset to our specialty. Wish you a bright future filled with the promise of a wonderful career.



Celebrating the exam success

Journal watch

- **Clinical Chemistry**

Clinical Chemistry is the official journal of the American Association for Clinical Chemistry. The journal has a 2011 impact factor of 7.905.

- **Annals of Clinical Biochemistry**

Official journal of Association of Clinical Biochemistry of UK.

- **Clinical Chemistry and Laboratory Medicine**

It is a scientific journal that is published in association with the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) The journal has a 2011 **impact factor** of 2.150.

Distance Learning Programme in Chemical Pathology

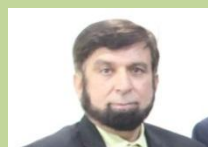


First Edition of Distance Learning Programme (DLP) in Chemical Pathology was conducted under the auspices of PSCP in collaboration with all the senior Chemical Pathologists of the country. The programme was absolutely free and voluntary. Ninety five (95) participants were registered in DLP which included Residents Chemical Pathology FCPS Part II (60), Scholars of MPhil Chemical Pathology (8), Rotational Trainees in Chemical Pathology (9), Medical Laboratory Technologist (2) and Junior Consultant Chemical Pathologists (16). Largest number of participants were from Quaid-e-Azam Medical College Bahawalpur (23) followed by AFIP Rawalpindi (13), PNS SHIFA Karachi (11), AIMC Lahore (9), AKU Karachi (5), Zia-ud-Din University Karachi (4), Army Medical College Rawalpindi (3), LNH Karachi (2), SIUT Karachi (2), Sheikh Zaid Medical College Rahim Yar Khan (2) and other institutes. All these participants were sent 20 lessons on weekly basis from March 2013 to Aug 2013. The participants sent their answers after finding them from internet or books within a stipulated time. A competition was simultaneously held for selection of the best trainee participant called ***Chemical Pathology Laureate*** and other high performers. Electronic methods were successfully used during the course e.g. e-mails, Facebook to provide inter-participant discussion forum and Skype for live discussion with the facilitators. At the end of the course participants gave the feedback of the course on a prescribed proformas. There was an eagerness and enthusiasm of Residents and Consultant Chemical Pathologists to continue the course with some modification in the schedules. Totally paperless nature of the programme was well-depicted in the logo of the course i.e. ***The Green Laurel***.

Lessons I Learnt From DLP

1. *In the Teaching-Learning process both learner and teacher learn but one who learns greater is-----TEACHER.*
2. *You can sit in front of a Laptop for 15 hours a day and----- do not get any cancer.*
3. *Four hours of sleep is sufficient for living and one does not **die** with it.*
4. *Tennis elbow is not only associated with Tennis only but also with ----- **continuous typing**.*
5. *Personal investment in terms of time and money is quite meager as compared to the **love and respect** one earns from students sitting hundreds of miles away.*

Prof (Brig) Aamir Ijaz,
Consultant Chemical Pathologist /
Prof of Chemical Pathology, AFIP, Rawalpindi.



MY GREAT TEACHER

An ode to an inspiring lady

I take this opportunity to pay homage to Prof Asma Shaukat, a remarkable teacher of Quaid-e-Azam Medical College, Bahawalpur. I had the privilege to have her as my teacher during my days in medical college and now my supervisor for FCPS (Chemical Pathology). Teaching in this discipline can be very boring but she always makes it easy, exciting and lively by injecting humour and jokes in between the topics during our PG classes.

You can sense her passion and commitment to her profession by constantly showing her effort and desire for her trainees to learn more and become a better Chemical Pathologist. She is always motivating her trainees to do research projects in different fields.

Despite jokes and humour, madam Asma has an attitude. She can be very strict! Why? Because she sets high expectations for her trainees and she holds them to those expectations.

This lady has been blessed with talent and intelligence. She always has a word of encouragement or a piece of advice. She generously shares what she knows.

What I like most about her is the attention and importance that she gives to her trainees. She is warm and caring, a person who is always approachable. She is the teacher to whom we know we can go with any problem or concern.

She collaborates with her colleagues on an on-going basis. Her communication skills are exemplary, whether she is speaking with an administrator, one of her students or a colleague.

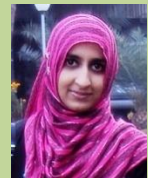


She has taken Pathology Department of Quaid-e-Azam Medical College, Bahawalpur to new heights. Her efforts to make this department recognized for FCPS are commendable. She is a hope for a brighter future in this remote area of our country.

In short, she is not just an ordinary teacher. She is spectacular, dynamic and charismatic. Simply outstanding!

“Thou art a teacher come from God.”

Dr. Sara Reza, Resident Chemical Pathology,
Quaid-e-Azam Medical College,
Bahawalpur



Physicians know more and more about less and less, until they know everything about nothing.
Surgeons know less and less about more and more, until they know nothing about everything.
Pathologists know everything about everything but it's too late for the patient.

Six Sigma: In a nutshell!

Six Sigma is a statistical measure of quality, originally developed by Motorola in 1985. It is a metric that quantifies the performance of processes as a rate of Defects Per Million Opportunities (DPMO). A Six Sigma-capable process has so little random variation that the standard deviation is $1/6^{\text{th}}$ of the quantity that meets the customer requirement for that process. It sets a quantitative goal for process performance and in turn quality improvement. In March 1998 Six Sigma was applied to the healthcare industry for the first time.

A Six Sigma process is one in which 99.9997% of the products manufactured are statistically expected to be free of defects or errors (3.4 defects per million). Higher sigma values indicate better performance and vice versa. Quality is assessed on the sigma scale with a criterion of 3-sigma as the minimum allowable sigma and a sigma of 6 being the goal for world-class quality. Six Sigma projects follow two project methodologies with acronyms DMAIC and DMADV (Table 1). To improve an existing process the DMAIC methodology is used and to implement a new process or product DMADV is used.

A major difference between Six Sigma and other quality programs is that Six Sigma incorporates a control phase with ongoing checks, meaning once improvement is achieved it is not temporary but is maintained over time. Six Sigma methodologies are well suited for application to laboratory settings because of the inherent need for statistical precision and quality control in laboratory testing. It can serve as a quality indicator for pre-analytical, analytical and post analytical processes. Six Sigma values can be calculated for quantitative assays (total allowable error – bias / CV), for internal quality control data and also in proficiency testing. The Clinical Laboratory Improvement Amendments of 1988 and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requires laboratories to perform external comparison of their performance with others in a process commonly known as benchmarking. The evolving Six Sigma studies and projects can become the tool for benchmarking and comparison of laboratory error rates with those in industry.

Table 1: Six sigma methodologies.

DMAIC	DMADV
Define: process of interest that needs to be improved	Define: goals as per customer demands and satisfaction
Measure: relevant data, measure performance	Measure: production capabilities and risks
Analyse: what is affecting our processes	Analyse: to develop alternatives
Improve/Innovate: redefine the process, remove cause, brain storming needed	Design: an improved alternative
Control: documentation of new process and training, monitor the process	Verify: run pilot run to verify design

Dr Lena Jafri, Chemical Pathologist,
Agha Khan University Hospital,
Karachi



Book Review

Oxford handbook of clinical and laboratory investigation

By Drew Provan and Andrew Krentz

This invaluable handbook provides a comprehensive overview and guidance on the best use of the many tests and investigations currently available in modern medical practice. Modern medicine is highly complex and investigations play a major role in the diagnostic process. This book provides a patient-oriented approach to these investigations. The contents are subdivided in two parts. The first part describes key signs and symptoms along with tests that may lead to a diagnosis. The remainder of the book is specialty-centred and provides a compendium of all available tests within a given subject. Throughout, the book the aim is to emphasize the need to avoid over-investigation which is expensive for the hospital and unpleasant for the patient. It compiles which tests are of value, when tests are not likely to be helpful, along with pitfalls in the interpretation of results. Extensive illustrations and algorithms aid in understanding of the more complex investigations and interpretation of results by providing a logical flow of information.



We warmly recommend this book as an indispensable guide to investigative techniques, not only for postgraduate residents but also for the consultants.

Online information/ useful websites

www.medscape.com

Medscape from WebMD offers specialists, primary care physicians, and other health professionals the Web's most robust and integrated medical information and educational tools. You can register in this website for free and receive important material of your specialty by email alerts.

www.labtestsonline.org

Peer-reviewed, non-commercial, patient centered site produced by AACC, designed to help you as a medical professional and can serve as a quick reference tool or as a resource for keeping up with advances in laboratory science.

Recent Guidelines

Management of hyperglycaemia in hospitalized patients in non-critical care setting: an Endocrine Society clinical practice guideline.

Umpierrez GE, Hellman R, Korytkowski MT, Kosiborod M, Maynard GA, Montori VM, Seley JJ, Van den Berghe G; Endocrine Society.

J Clin Endocrinol Metab. 2012 Jan;97(1):16-38

Waiting for the National Cholesterol Education Program Adult Treatment Panel IV Guidelines, and in the Meantime, Some Challenges and Recommendations.

Martin SS, Metkus TS, Horne A, Blaha MJ, Hasan R, Campbell CY, Yousuf O, et al.

Am J Cardiol. 2012 Apr 10.

Electronic Laboratory Reporting; a Means to Improve the Timeliness of Result Reporting

Electronic Laboratory Reporting (ELR) is an evolving concept, defined as electronic transmission of lab reports using one or more electronic communication protocols. This represents a good tool for patients and physicians in their quest to quickly and conveniently receive results and for clinical laboratories to improve turnaround time (TAT) for test results reporting. Electronic reporting from clinical laboratories has been proposed as a solution to aforementioned problem. For ELR laboratories need to interface their instrumentation to computer, transmit reports via internet, and provide assistance via e-mail for results interpretation. A patient can access their report anytime from anywhere with help of identification codes given by laboratory.

One such self-service model for patients was introduced at clinical laboratories of Aga Khan University hospital in November 2010. Individual patients were given user ID & passwords, for viewing online reports. Abnormal results are highlighted and physiologically related analytes are grouped together. Introduction of this model led to improved TAT of result reporting. Before ELR introduction patient had to wait at least 24 hours to get results of their tests. They had to come to lab to collect test results hard copy and in case of city disturbances or due to any other reason when they were unable to come, patients used to call laboratories to know their results. With introduction of ELR not only timeliness of reporting improved but technologist time consumed in answering phones was saved and utilized in other service related activities. Decreased patient's inflow for reports collection to reception areas of laboratories led to increased efficiency of front line reception staff and better patient satisfaction due to early and convenient report collection. We suggest that clinical laboratories should step-up to electronic reporting of laboratory results to improve the timeliness and reporting efficiency. With ELR adoption laboratories will be able to better utilize their resources, patients will get earlier results and physicians will reach medical diagnosis with efficiency.

Dr Hafsa Majid,
Resident Chemical Pathology,
Aga Khan University Hospital Karachi



Test Your Lazy Brain

Can you find an editing error in the following statement? Please don't bother about the technical aspects. Check answer and explanation at Page No 15

**ALT and AST
are the
the markers of hepatitis**

Total Laboratory Automation of Chemical Pathology at Dow Diagnostics Research and Reference Laboratory- a Step Ahead towards Excellence

Dow Diagnostic Research & Reference Laboratory (DDRRL) provides services to two tertiary care hospitals including Civil hospital and Dow University Hospital, Ojha campus at Karachi. Currently, the DDRRL has 10 collection points across Karachi metropolis and 2 outreach units in the interior Sindh. The laboratory is comprised of Histopathology, Molecular Pathology, Chemical Pathology, Haematology and Microbiology sections. DDRRL also provides testing facilities to Postgraduates, M.Phil. and PhD students for conducting their research projects.

The section of Chemical Pathology at DDRRL is performing on an average around 1 million tests per year. TLA is functional since August 2013 and is adopted to improve the overall efficiency of laboratory output with the capability to streamline testing process and enable accurate reporting with efficient turnaround time while dealing with high volume of tests at a time.

The total automation at the section of Chemical Pathology is equipped with a functional LIS system, sample manager, input and output modules, inbuilt centrifuges, aliquotor for daughter tubes, analyzers, de-caper and re-sealer, track and refrigeration system to process the bar-coded tubes. Along with the conventional testing of the section including Routine Chemistry and immunoassays the TLA system is also incorporated with microbiology related serological testing of infectious diseases to build an example of multidisciplinary testing on a single platform.

Dr. Sahar Iqbal, Assistant Professor &
Consultant Chemical Pathologist
DIMC, DUHS, Karachi



Pre-analytical variables and their influence on the quality of laboratory results

A 59-year-old woman treated with a cholinesterase inhibitor had the following electrolyte profile. Sodium 140 mmol/L, potassium 4.2 mmol/L, chloride 114 mmol/L and bicarbonate 34 mmol/L (normal 22-26). The anion gap was negative which is theoretically impossible. On further investigation we learn that the cholinesterase inhibitor administered to the patient is pyridostigmine bromide (3-hydroxy-1-methylpyridinium bromide dimethyl carbamate). Since the ion-selective electrode that was used to measure chloride is equally sensitive to bromide, chloride was overestimated resulting in a negative anion gap.

Laboratory Standard

The Occupational Safety and Health Administration (OSHA) regulation, more commonly known as the **Laboratory Standard**, is designed to ensure that laboratory personnel are properly informed about hazardous chemicals in their workplace and are protected from chemical exposures above allowable levels.

The key elements of the Laboratory Standard are as follows:

1. The laboratory must maintain a written **Chemical Hygiene Plan** that provides detailed procedures and policies to protect laboratory workers.
2. Hazardous chemicals must be properly identified.
3. Information that must be provided to laboratory workers by Principal Investigators/Lab Directors includes:
 - The contents of the OSHA Lab Standard
 - The Chemical Hygiene Plan for the laboratory.
 - Permissible exposure limits and signs and symptoms associated with exposure for hazardous chemicals in the lab. This information is available on **Material Safety Data Sheets (MSDS)**.
 - Location and availability of known reference material on the hazards, safe handling, storage and disposal of hazardous chemicals in the lab including, but not limited to, MSDS. MSDS must be maintained for all hazardous chemicals in the lab and must be readily accessible to lab workers.
4. Employee exposures to hazardous chemicals must be minimized and cannot exceed permissible limits.
5. Medical consultation and examinations related to employee exposure to chemicals must be provided.
6. Training must be provided to laboratory workers by the Principal Investigator/Lab Director.
7. Laboratory-specific chemical inventories must be maintained.
8. Periodic inspections must be performed to evaluate compliance with the OSHA Laboratory Standard and Chemical Hygiene Plan.

Dr. Nudrat Khan, Resident Chemical Pathology,
Quaid-e-Azam Medical College,
Bahawalpur



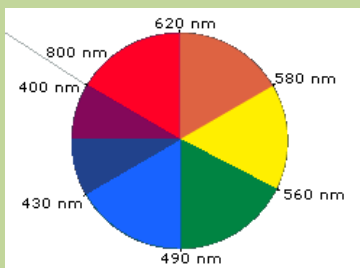
Crystal Ball



1. Two books in pipeline “*Laurels in Chemical Pathology – For Postgraduates*” and “*Laurels in Chemical Pathology for Undergraduates*”.
2. “*Intensive Course in Chemical Pathology*” is planned in March / April 2014 at AFIP Rawalpindi for FCPS and MPhil students with hands-on practical sessions
3. Second edition of *DLP in Chemical Pathology* is likely to start in mid-January 2014.
4. “*Update in Chemical Pathology*” a video-link course will be run by CPSP somewhere in Feb / March 2013.

Do You Know??

1. The colour wheel:



Why we measure pink-coloured glucose solution after GOD-PAP reaction at a wavelength of 520-530 nm? As shown in the colour wheel above the complimentary colour of pink (a shade of red) is green and its wavelength is in this range. This colour wheel is also used by other professionals e.g. painters to produce different colour combinations.

2. The Lovibond Comparators:



These are the earliest photometers consisting of colour discs for various colour reactions and do not require electricity for functioning. Separate discs were used to estimate analytes after reactions. Still manufactured for areas deprived of electricity. May be useful in our country during load-shedding!!

3. Gerber Centrifuge:



The Gerber Method and Gerber Centrifuge were developed and patented by Dr. Niklaus Gerber of Switzerland in 1891 for centrifuging and analysis of milk samples. Our technicians used to call it a “Garbar- گربار centrifuge”.

Answer of Test Your Lazy Brain (from page 12)

Word ‘the’ has been written twice!! If you have detected this error then the following explanation is not for you.

Actually our brain is very lazy. It collects information that is just sufficient to draw a meaning and ignore details. Although this particular error can be detected by grammar-checks, similar errors may go undetected in the editing. One solution is to get your manuscript checked by a second and third reader who may use a fresher brain.

Chemical Pathology on SKYPE

On every Saturday at 10 am a SKYPE session is held on a predetermined topic. Prof Aamir Ijaz and other teachers answer questions of PG students and discuss various important aspects of the topic. If you want to join, please contact at following SKYPE ID: aamir.ijaz71

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<http://www.randox247.com/>

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