The Golden Mortar

News from the Southern Gauteng Branch of the Pharmaceutical Society of South Africa and associated pharmaceutical sectors.

Edition 6 / August 2013

Pharmacy week 2013 will be held from the 1st to the 8th September this year.

Once again this provides all pharmacists with a valuable opportunity to promote the profession to the public in a very positive way, but it does require the participation of all of us in order to be successful.

This year the specific topic for promotion, under the overall, on-going theme of *Towards Quality Care Together* is "Understanding Generic Medicines".

There is still a considerable amount of confusion among the public regarding generic medicines and this topic allows pharmacists to address the matter directly with patients to try to ensure that they know and understand more about the medicines that are prescribed and dispensed for them. They need to know that generic medicines are good value for money, have been tested and approved, are effective and safe and who better to impart that knowledge than the pharmacist. You are the source of valuable information in terms of the above and can assist the patient tremendously in improving their knowledge of generics and consequently being in a better position to make informed choices.

To support you in this, the PSSA has embraced technology and developed a rather novel approach of disseminating the relevant information this year. It is quick, efficient and cost effective.

Together with TrustaTAG we have developed a system that relies on 2D barcoding to provide direct access to this information, not only to pharmacists, but with your help and support, to your patients as well.

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2D barcodes are accessible by anyone with a smart phone, i-phone or feature phone with a camera and data access facility. All that is required is to download the free application from http://trustatag.mobi or your app. store in the case of smart phones and download Microsoft TAG and you have access to any 2D barcode simply by scanning the Tag itself, selecting the language of your choice and waiting for the data to appear on your screen. Note. Some phones come preloaded with tag scanner software.

The Tags that we have developed for Pharmacy Week are *Generic Medicine* and *Ask your pharmacist.* Each of these is accessible individually as they have their own Tags, examples of which appear below.

In addition to this we have created individual Tags for the Pharmacy Week poster and flyer developed by the Department of Health and these also appear below for easy access.

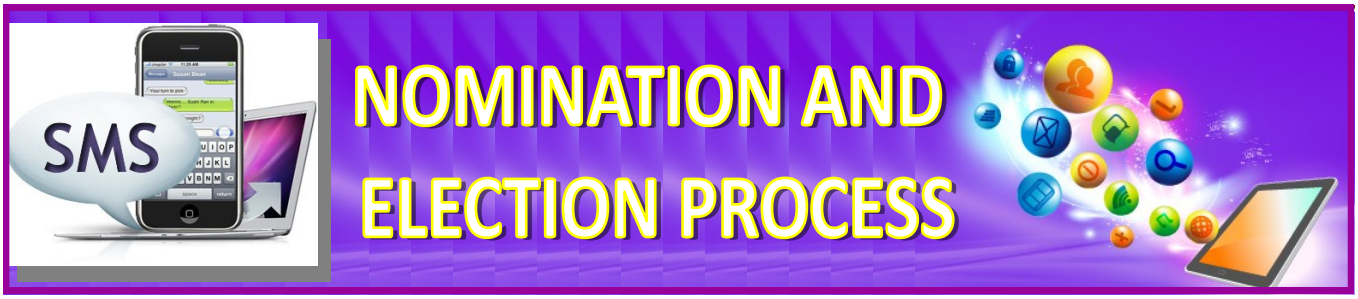
Having the basic information available in this manner, it is important for pharmacists to develop their own imaginative ways of conveying this information to their patients.

This may include providing assistance/information with regard to downloading the TrustaTAG application as described above, printing the 2D barcodes on your stationery, stickers, labels etc. thereby providing patients direct access to the TAGS. The minimum size of the printed Tag for scanning from a distance of 10 - 15cm is 17mm square.

Your promotion could make use of the poster and/or the flyers and these can be downloaded and printed for display in your pharmacy/dispensary and the flyers used as hand-outs.

In the event that you may wish to print the poster or the flyer we suggest that you access the SAPC website www.sapc.za.org and download the print-ready artwork from that source to ensure the quality.

Ask your Pharmacist | **Generic Medicine** | **Pharmacy Week Flyer** | **Pharmacy Week Poster**



Earlier this year we introduced an electronic (SMS) system of calling for nominations and voting for the nominees to serve on the Branch Committee.

With our members understanding and acceptance of this new and more efficient method we received a greater number of nominations and much more member participation in the voting process than had been the case for the past number of years - something which we interpreted as a success.

Consequently, we intend to conduct the process of nomination and election in the same manner for 2014, the only difference being that it will take place much earlier, - in fact before the end of this year. This will mean that efficiencies will be improved in that the newly elected committee can start its work a lot earlier in the New Year than has been the case in recent years.

The important dates in the process are as follows;

1. Call for nominations for members to serve on Branch Committee - 18th to 22nd November 2013.
2. Voting for six of these nominees to serve on Branch Committee - 2nd to 6th December 2013.
3. Branch Annual General Meeting - 27th January 2014
4. Once we have received the nominations we intend to make available a short CV of each candidate to provide members with more information about those for whom they may wish to vote.

It is also important for members to be assured that complete confidentiality is maintained throughout the entire procedure and that only cell phone numbers registered in our membership database are accepted during the process. In addition, each registered cell phone number can only be used once for voting purposes and a comprehensive, auditable reporting system is in place to ensure that these controls are strictly adhered to.

In order that you are able to participate in this important process please ensure that you have informed us of any changes that may have occurred in regard to your contact details.

The Branch received a complaint from a member of the public about the non-delivery of products that were ordered and paid for from an internet source that claimed to be a registered South African pharmacy.

Our enquiries showed that no such pharmacy is registered with the South African Pharmacy Council.

In this case, fortunately, the loss was only monetary. In cases reported from the USA, Canada, Africa and elsewhere, the losses have been severe including damage to health and even death, from medicines which are adulterated with dangerous excipients, have no active ingredients or are under or over the recommended dosage.

Pharmacists should be aware that this is a large international problem and is used by the unsuspecting public as a supposedly easy way to order on line. Many of these so called pharmacy sites exist only in cyberspace which enables them to move regularly and at the press of a button. They cannot, therefore, be traced and there can be no recourse when someone suffers damage from a product ordered online.

The responsible Pharmacy Councils in the USA have drafted legislation designed to warn the public of the dangers of accessing unregistered internet pharmacies. They have established a register with an official access code which indicates a legitimate internet pharmacy.

The South African Pharmacy Council does have regulations which provide for the operation of a legal internet pharmacy. The public, however, has not been informed of the necessity to verify the legality of such pharmacies which may operate in South Africa.

Vaccines for the traveller

J. Souter B Pharm

Amayeza Info Centre

With world-wide travel accessible to many people, clients are likely to ask the pharmacist for advice on what vaccines are needed for travel to different parts of the world. In this article we will highlight various travel vaccines. The travel vaccines have been divided into those that are mandatory, those that protect against diseases transmitted by contaminated food and water and vaccines that should be considered for use in the individual traveller.

MANDATORY VACCINES

Yellow fever vaccine:

The yellow fever vaccine is given to:

1. Protect the individual traveller who may be exposed to the yellow fever virus by travel to tropical areas of Africa and Central and South America and
2. To prevent importation of the yellow fever virus into countries where yellow fever does not occur but where the mosquito vector (*Aedes aegypti*) and non-human primate hosts are present. Proof of a yellow fever vaccine is required for those travelling from or transiting through a yellow fever-affected or endemic country arriving in a country that harbours the mosquitoes, such as South Africa. See the following website: www.who.int/ith/chapters/ith2012en_annexes.pdf for the World Health Organization's list of countries with risk of yellow fever transmission and countries requiring yellow fever vaccination.

The international certificate of vaccination for yellow fever vaccine becomes valid 10 days after receiving the vaccine and remains valid for 10 years. If the yellow fever vaccine is contraindicated for medical reasons, a letter of medical exemption must be given. The yellow fever vaccine and the waiver letter may only be obtained from a practitioner who has a yellow fever license.

Meningococcal disease

Travellers to Saudi Arabia for Hajj, Umrah or seasonal work must produce a certificate of vaccination with the quadrivalent A, C, W-135, and Y meningococcal vaccine issued not more than 3 years previously and not less than 10 days before arrival. Crowded conditions lead to high rates of transmission of *N. meningitides and outbreaks of meningococcal disease following Hajj occurred in 1987, 2000 and 2001. Pilgrims, who are asymptomatic carriers of N. meningitides, may bring the disease back to their home countries. Secondary cases of meningococcal disease have been seen in close contacts of returning pilgrims. Therefore, the Ministry of Health of Saudi Arabia requires a certificate of vaccination against meningococcal disease for entry into Saudi Arabia.*

The meningococcal vaccine is also recommended for travellers going to the African meningitis belt, especially for long-term travellers, those who will be in close contact with the local community and/or those who travel during December to June. However, vaccination in not mandatory in this instance. The African meningitis belt is a region in sub-Saharan Africa stretching from Senegal to Ethiopia, which has the highest annual incidence of meningococcal disease in the world. The incidence of meningococcal disease in the meningitis belt increases during the dry season, which is from December to June.

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Food and water borne diseases

Hepatitis A, Typhoid fever and Cholera

Hepatitis A, typhoid fever and cholera are acquired by ingestion of contaminated food or water. Hepatitis A and typhoid fever are more prevalent in areas with poor hygiene and sanitation. Vaccination is recommended when travelling to countries in Africa, Asia, Central and South America, the Caribbean, the Middle East and some parts of Eastern and Southern Europe.

Cholera occurs in countries where there is a lack of clean drinking water, inadequate sanitation and where the infrastructure has broken down, such as in war-torn areas and after natural disasters. Humanitarian relief workers in disaster areas and refugee camps as well as travellers to an outbreak area who cannot avoid potentially contaminated food and water may be at risk and vaccination is recommended.

Other vaccines that may be recommended

Rabies

Rabies occurs in all parts of the world. However, most human deaths are reported from Africa and Asia. Vaccination is recommended for travellers who will be in contact with animals and bats. Adventure travellers to rural areas who will be involved in activities such as hiking, biking and camping should also receive pre-exposure prophylaxis. Children going to high risk areas should be vaccinated as they are more likely to play with animals and may not tell anyone about potential exposures.

Should a traveller be exposed to rabies by a bite, scratch or mucosal exposure from a potentially rabid animal, immediate medical attention must be sought even if the traveller had pre-exposure prophylaxis.

Hepatitis B

The risk of contracting hepatitis B does not depend entirely on the destination, but on the individuals risk profile. Hepatitis B is transmitted by contact with infected body fluid. Therefore, sexual contact, healthcare interventions, and exposure to needles e.g. acupuncture, piercing, tattoos and injectable drug use will increase the traveler's risk of contracting hepatitis B. Hepatitis B vaccination was introduced into the South African Expanded Programme on Immunisation in 1995. Therefore children born after 1995 should have been vaccinated.

Tetanus, diphtheria, pertussis and poliomyelitis

Travelers should ensure that they are up-to-date with their routine vaccines. In adulthood, a booster dose against tetanus, diphtheria, pertussis and poliomyelitis is recommended. If not already done, this can be given before travel. This will protect the traveller against tetanus in the event of a tetanus prone injury. Pertussis protection is particularly important for travellers who are going to be in contact with new babies. Ensuring polio immunity is important as global polio eradication has not yet occurred and polio remains endemic in Afghanistan, Pakistan and Nigeria. Polio-free countries remain at risk of importation of polio and new outbreaks.

Measles, mumps and rubella

These diseases are still common in many parts of Asia, Africa, the Indian sub-continent and South America. More recently, there have been outbreaks of measles and mumps in many developed countries including the US, Canada, Japan, Israel and several European countries, including the UK. Risk for travellers is greater if they are living or working with the local population.

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TABLE 1: TRAVEL VACCINES AND ADULT DOSING SCHEDULES

Vaccine	Trade name	Adult schedule	Booster or revaccination
Yellow fever	Stamaril®	1 dose (0.5 ml)	Booster after 10 years
Neisseria meningitidis serogroups A,C,W-135 and Y	Menomune® Mencevax®	1 dose (0.5 ml)	Revaccinate every 3-5 years if at risk.
Hepatitis A	Avaxim® Havrix®	1 dose (0.5 ml)	Booster after 6 months
Typhoid fever	Typhim VI® Typherix®	1 dose (0.5 ml)	Revaccinate every 3 years if still at risk
Hepatitis A and Typhoid combination vaccine	Vivaxim®	1 dose (1 ml)	Hepatitis A booster 6 months later. Typhoid booster 3 years later if still needed.
Cholera and enterotoxigenic Eshcerichia coli (ETEC) vaccine	Dukoral®	2 oral doses given between 1 and 6 weeks apart	Booster after 2 years if necessary
Hepatitis B	Heberbiovac® Engerix B® Euvax®	Series of 3 doses (1.0 ml) usually given. Check manufacturer's information for various schedules.	Boosters not usually needed
Hepatitis A and Hepatitis B combination	Twinrix®	1 dose (1.0 ml) given at 0, 1 and 6 months. Or accelerated schedule given on 0, 7 and 21 days.	Booster needed at 12 months if accelerated schedule is used.
Rabies	Verorab® Rabipor®	Pre-exposure prophylaxis: 1 dose (0.5 ml) given on days 0, 7 and 21 or 28	Boosters given according to ongoing risk.
Tetanus, diphtheria, acellular pertussis and inactivated polio	Adacel quadra® Boostrix tetra®	1 dose (0.5 ml)	
Measles, Mumps and Rubella	Trimovax® Priorix®	2 doses (0.5 ml each) with a minimum interval of 4 weeks between them.	

CONCLUSION

Travellers should be made aware that there are vaccines available to protect them from diseases they may encounter during their travels. Before travel, it is advisable to check for any disease outbreaks occurring in the country to be visited. The anticipated activities may also influence which vaccines are recommended. Some vaccines may require 1 dose before travel whereas others require a full series. Therefore, referral to a travel clinic preferably at least 1 month before travel is advised.

References
Available on request

PILLS AND PILL MAKING

By Ray Pogir, FPS - Curator of the National Pharmacy Museum

The production of a good set of pills in a pharmacy was regarded as a most important aspect of the skill of the pharmacist, in the days before the tablet manufacturing processes of today.

The preparation of pills required much practical experience and judgment. The prescriber relied entirely on the knowledge and expertise of the pharmacist to produce pills which would have the required effect.

Well-prepared pills had to be:

* Not too soft.
* Non-sticky, smooth and properly rounded.
* All of the same size and each pill to have a similar proportion of the active ingredients.
* Soluble, so as to be absorbed in the intended area of the digestive system.
* Elegant in appearance.

In addition, the pharmacist had to be sure that the excipients did not react with the active ingredients. This also required knowledge of the therapeutic action of the ingredients in order to achieve the prescriber's intention.

The prescriber would generally state the quantity of the ingredients for each pill and state the number of pills to be dispensed. Thus, each set of pills was unique for the needs of the patient. The pharmacist would calculate the full amount needed, weigh out the ingredients and mix them in a pill mortar. The excipients used varied according to the nature of the active ingredients. Syrup of glucose and Glycerin of Tragacanth were commonly used to form a pliable pill mass. Since the quantities of active ingredients were often very small, the pharmacist would select an "inert" powder, such as starch, to make up the weight required to produce an acceptable size pill.

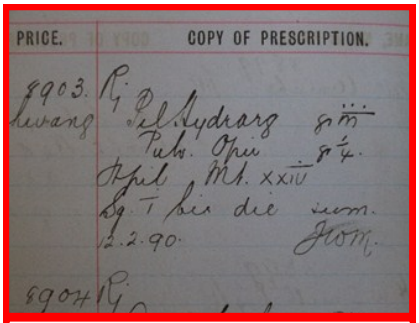
After thorough mixing, the pill mass was rolled out in an even cylinder to the length of the number of pills required. This is then placed on the lower half of the plate of the pill-cutter. The top half would then be used in a dexterous cutting motion to cut the tube into the number of pills required.

A pill-rounder was then used to form uniform round pills. Some pills could be sugar coated, silver coated or lacquered.

The accompanying photographs are examples of the equipment used in pharmacies for dispensing pills and some prescriptions for pills from the late 1800's from our collection of prescription books of that time.

Pill cutter, pill rounder & pill pestle and mortar.

Pill making equipment including pill coaters.



Copy of a pill prescription

Digesting PPI treatment

By Hester Coetzee

Proton pump inhibitors are one of the most prescribed classes of medications worldwide. They ranked as the sixth most frequently dispensed therapeutic classes in the US and third in Ireland in 2009. H2-blockers were the mainstay of therapy for acid reflux before PPIs. They inhibit acid secretion by about 30%. Then PPIs were developed. They are much more potent and can potentially inhibit meal stimulated acid secretion completely, - if taken correctly.

We continually aim for optimal drug usage and the safety of patients while using medication. Whether PPI treatment is initiated, or whether a patient on long-term treatment is managed, it is important to take the time to educate and counsel patients. This ensures compliance with drug therapy and proper medication administration.

- PPIs must be taken every day, continuously and on a long-term basis in order for (it) them to be effective. They will not provide adequate acid inhibition if taken on an 'as needed' basis.
- It is extremely important to take PPIs correctly. To maximize the absorption of PPIs, they must be taken in the morning because the amount of enzymes (proton pumps) located on the parietal cells is greatest at that time. They must also be taken at least one hour before food.
- To maximize the effectiveness of the medication, the first meal after taking the PPI must be a protein rich meal, for example containing milk, cheese, egg, yogurt etc. If there is not sufficient protein in the breakfast, only about 10% of the proton pumps will be stimulated by the meal and the other 90% will remain 'inactive'. Enough protein in the meal ensures that gastrin is secreted to stimulate all protein pumps so that all (100%) of the 'meal stimulated acid' can be inhibited. Professor Stuart Frank uses the analogy of money. He explains that if you don't take your PPI with protein, it is like getting only 10 cents worth from every Rand you spend towards your PPI.
- Dosing is highly individualised and sometimes dose escalation is necessary. Twice a day dosing should be taken in the morning 1 hour before a protein rich breakfast, and in the evening 1 hour before a dinner with protein.
- Sometimes patients still have nocturnal acid breakthrough so an H2-blocker can be taken at bedtime. Be sure to separate the PPI taken 1 hour before dinner and the H2-blocker taken at bedtime as far as possible. This will ensure optimal acid inhibition.

In general PPIs are considered safe, BUT …..

- They are associated with atrophic gastritis and an increased risk of enteric infections and nosocomial pneumonia due to decreased gastric acidity (Gastric acid is important in eliminating ingested pathogens from the digestive tract.). It is important especially to avoid traveller's diarrhoea when travelling to high risk areas. Warn patients to report persistent diarrhoea.
- Long term and multiple daily doses have been linked to increased risk of osteoporosis-related fractures of the spine, hip and wrist fracture. Make suggestions such as increased calcium intake. Consider other risk factors such as age, female gender and smoking.
- It is said that dependence or addictiveness of these drugs occurs after taking PPIs for as little as four weeks. Rebound Acid Hypersecretion is a definite risk. It was found that stopping the medicines abruptly can worsen acid reflux symptoms in some patients. The dosage should thus be tapered off if possible or patients must be instructed to take the medicine every other day.

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- The most recent FDA warning about low magnesium levels caused by PPIs suggests that doctors test a patient's magnesium level prior to prescribing proton pump inhibitors and then "periodically'' thereafter, but no clear instructions are given. However, hypomagnesaemia is a definite risk. Severe Magnesium Deficiency can increase the likelihood of fatal heart rhythm disruptions. Note. Patients taking PPIs may also be on other medications that prolong the QT interval on an electrocardiogram, which could cause complications for patients with low magnesium, increasing the risk of arrhythmias.
- Recently I read a doctor's opinion that stated that PPI's were damaging to health due to food not being properly digested through lack of stomach acid. It was claimed that PPI's should only be used for a short-term fix, and should not be used long term.
- For a minority of patients with severe acid reflux problems, long-term use of proton pump inhibitors is essential, which is of concern to us because of the medicine's potential effect on a patient's ability to absorb iron. The development of a vitamin B 12 deficiency is also a concern.

Drug interactions may also occur e.g.

- The decreased intragastric acidity during treatment with PPIs might increase or decrease the absorption of drugs if the mechanism of absorption is influenced by gastric acidity. These drugs should not be taken at the same time.
- All PPIs undergo considerable biotransformation in the liver before elimination. Out of the different isoenzymes of the CYP system, mainly (>80%) CYP2C19 and CYP3A4 participate in the metabolism of the PPIs, except rabeprazole that is not metabolised via CYP3A4.
- Omeprazole and esomeprazole are strong inhibitors of CYP2C19.

Medication compliance with any chronic medication is important. Try to determine if the patient is compliant and *ask* the patient when and how he/she takes the PPI. It is also suggested that Pharmaceutical Care Reviewing or Medicine Use Reviews (procedure code 0011) be done. **Ask** patients about any changes and updates to medications. You really need a complete list of all the medications a patient takes. **Ask** about lifestyle modifications as they are just as important in controlling and relieving symptoms.

No therapy is completely without risk—whether pharmacologic, surgical, or psychological and no matter how benign or straightforward it may appear to be. Consequently, no drug, procedure, or treatment plan should be ordered without a valid indication. Even with an indication, the risk-benefit ratio of the therapy prescribed should always be considered. If the indication for a PPI is weak or uncertain, then even a slight risk tips the balance away from the medicine and the treatment should be discontinued. When dealing with patients in long-term care, the indication and necessity for all medicines, including PPIs, needs to be reviewed.

Are long counters with cubicles separating Pharmacists from their patients creating more than physical barriers between the Pharmacist and the patient? Recently, I saw proposed plans for the ideal layout of a Pharmacy with a long counter with small cubicles. This got me thinking about the little local Pharmacies that served the public so well. People used to refer to them as "my Pharmacy" or "my Pharmacist".

In my days, dispensaries were open-plan and you chatted to the patient while you were dispensing their medication. In that way you really got to know your patients. You could find out from the patient exactly what their medical problem was, and explain as you went along what the medication you were busy preparing for them was used for, how to take it, storage conditions, and enquire what other medication they were taking. The best intervention was during the dispensing of a repeat prescription. Patients would ask many questions about other pharmaceuticals, their family, etc. It also gave you a great opportunity to discuss how the medication was working, and getting to know a little more about them as an individual. During these times you turned a **patient** into a **customer** and recommended effective OTC's. Pharmacists knew the customer's whole family.

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We drill into students how important it is to get a proper history from the patient, especially with respect to other medications that they may be were taking. The students most definitely see the importance of this intervention, yet when they get out into practice, this intervention seems to be completely forgotten. At least that is what I observe every month when I get my prescription filled. I sometimes think that maybe it has something to do with the design of the Pharmacy. Maybe it's the long counter with cubicles? I have so many friends phoning me about their medication and what it is used for. When I ask them what the Pharmacist told them, most reply that no one gave them any information about their medication. All they want to know is which one is the antibiotic and which one is the painkiller!

A friend of mine remarked the other day that they get more information about their take away burger than they get from their pharmacist.

Maybe it's time someone came up with a new design for a dispensary that encourages patient participation? So come on all you readers, write into the Golden Mortar with ideas.

Author known but requested anonymity

Editor's Comment:
Are the pharmacists not missing an opportunity in providing a medicine information service by using a programme such as Complienz and providing the patient with up-to-date information on medicine interactions and charging the patient for the service?

Who or What is WPSC?

By Jasmine Duxbury
President, Wits Pharmacy Student Council

The Wits Pharmacy Student Council (WPSC - pronounced "whoopsie"), is an on-campus organization comprised of Wits pharmacy students; from first to final year. It is a council that was put in place for the students, by the students, to determine and address the needs of the students; it also serves as a platform that allows students to interact on a social level. Our aim is to focus on student academic needs as well as showing students that there is more to pharmacy beyond the walls of the lecture theatres. WPSC gives students the opportunity to get involved, gather in socials and unwind from the demanding pharmacy curriculum.

We organize a number of events throughout the year, ranging from charity events to fundraisers. At the beginning of this year we took part in a South African Pharmaceutical Student Federation (SAPSF) initiative, the "I want to be a Pharmacist Campaign", which was held on Wits Focus Day. It was an opportunity to enlighten Grade 11 and Grade 12 students about Pharmacy. The fourth year students together with the Pharmacy and Pharmacology Department carried out a variety of screening tests, such as glucose, blood pressure and peak flow tests. The purpose of the campaign was to expose Pharmacy in the hope that more students will consider Pharmacy as a profession.

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Next on the agenda was the 60th Annual SAPSF Conference, hosted at The North-West University, Potchefstroom Campus. WPSC looks forward to the conference every year and was honoured to host the 59th Annual SAPSF Conference last year. This year, we left Potchefstroom with pride as a result of the numerous awards that we had received, including what most would consider our most valued, "Spirit Award", which we have now won for three consecutive years. We were also proud to announce that two of our WPSC members made it onto the SAPSF Presidential Committee (2013/2014); Jameelah Shaikjee as the Treasurer, and Sophia Bogulubova as the Student Exchange Officer.

Besides our dedication to our fellow students we are also dedicated to serving our community. At the beginning of July we visited The Princess Alice Adoption Home where we handed over tin-cans for the staff and baby items for the babies. Furthermore, we spent the afternoon feeding and playing with the babies, as well as taking care of any of their other needs; such as tidying up the rooms. We also recently held a Book Collection Drive as our contribution to Nelson Mandela Day for a primary school in Ivory Park, Midrand.

SAPSF runs a student exchange programme and WPSC was honoured to host exchange students from Ghana for a day. Tshwane University of Technology plus University of Limpopo Medunsa Campus were their main hosts for the time they were here. An eventful day was planned which included, trips to Rosenttenville and Riverlea Clinics, the PSSA Southern Gauteng Branch and Wits Main and Medical Campus.

Upcoming events include the Pre-Test De-Stress Social, where students are given tea and cake, socialize and share exam tips with one another. We are also preparing for our Annual Pharmacy Ball and Pharmacy Week which will be taking place on the 13th and 30th of September 2013 respectively.

We hope that our council progresses in this vein and continues to grow in the future.

Visit www.three.myconference.co.za to register and view the programme or phone Denise at 021 671 4473

CPD Report

By David Sieff

On 24th July 2013, Professor Jose Ramos presented an illustrated talk on "Common Liver Conditions of which the Pharmacist should be aware" to a large group of pharmacists in the auditorium of the PSSA, Southern Gauteng Branch.

He explained how pharmacists are exposed to liver disease in patients who seek advice regarding their symptoms, diagnosis, medications prescribed, and any side effects reported, while the pharmacists in turn might notice clinical signs, note medicines prescribed, and become aware of possible side effects or interactions.

Prof Ramos detailed the anatomy and physiology of the liver, and its various functions, before elucidating the symptoms and signs of liver disease, and how it affects the liver, and showed the consequences.

He then showed how the disease is investigated, using specific liver function blood tests and imaging options, detailing certain enzymes which reflect liver damage; the causes and types of jaundice were shown, and important advice to give to patients was listed.

Hepatitis and its causes were explained, as well as cirrhosis and its complications, and types of liver tumours were classified, while the different kinds of gallstones and their symptoms, diagnosis and treatment were detailed, as were fatty liver and drug-induced liver injury causes and treatment, with particular emphasis on the risk factors for paracetamol-induced hepatotoxicity. Prof Ramos expressed caution in the supply and use of dietary supplements and tonics, and drugs of abuse, many of which are associated with toxicity, as might anti-retrovirals and anti-tuberculosis agents.

Prof Ramos listed important conclusions arising from his talk. He responded to many questions from the floor, to end a very informative, interesting and much appreciated presentation.

Attendees of the CPD session on July 24.
L to R Carolie Rutherford, Maria Vilar, Patricia Smallwood and Geeta Ghela.

Attendees of the CPD session on July 24.
L to R. Rudolph Mathode, Lebo Rakgwale, Thabo Rammekoa, Ephraim Mulaudzi & Andiwe Funde

CPD 24 July – Ray Pogir thanks Prof Jose Ramos

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The Editorial Board acknowledges, with thanks, the contributions made by the CPS Southern Gauteng Branch to the production of this newsletter.

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