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Shaukat Khanum Memorial Trust (SKMT)

Pharmacy Newsletter

Volume XIII, Issue # 1, 2023

Issued By:

Drug Information Centre, SKMT

P&TC Updates:

Pharmacy & Therapeutics Committee (P&TC) has approved the following drugs during 2023 at SKMCH&RC:

- **Eltrombopag Tab** - as regular formulary item – Restricted by Cost (Approved for indigent patients with post-transplant graft failure)

ASHP - Pharmacy forecast 2023

The ASHP Pharmacy Forecast 2023 report provides valuable insights. In this article, we will review the report's key takeaways and their implications for the future.

Lessons learned from the COVID pandemic.

The COVID-19 pandemic has highlighted the importance of preparedness for emergencies. The report recommends that healthcare organizations focus on predictive analytics can be used to increase inventories and prevent disruptions in pharmaceutical supply chains. Operational responsibilities should be delegated effectively to ensure efficient leadership.

Regaining public trust

The healthcare system should invest in systematic programs to dispel pseudo-scientific information with scientific facts and logic that is simple enough for the public to understand. On a national level, healthcare systems can regain public trust by working with government agencies, such as the FDA, to provide evidence-based information on medication approval processes.

Addressing health disparities in the healthcare system

Social determinants of health (SDOH) refer to environmental factors in which an individual is born, lives, learns, plays, worships, and works. SDOH can be incorporated into electronic health records (SDOH-EHR) as individual-based or community-based tools that provide tangible resources. Mental health is an emerging trend that healthcare systems should address.

Patient-centered healthcare

Traditional healthcare services have shifted to telemedicine during the COVID-19 pandemic. Hospitals may expand their relationships with third parties to provide patient-centered care outside of hospitals.

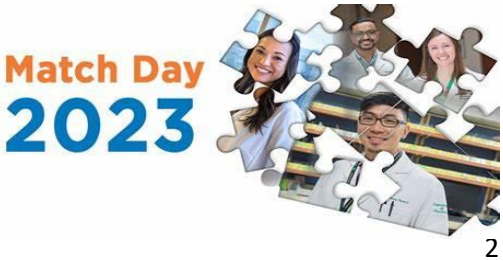
Reliability on AI

Artificial intelligence (AI) is growing in displaying SDOH, making optimized care plans, performing tasks that require human cognition, and detecting patterns in large data sets. Software is developing that provides clinical decision support. However, AI algorithms need improvements and timely evaluation and validation. Healthcare institutions need to hire pharmacists who know how to use and validate AI.

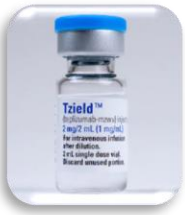
Workforce optimization planning and strengthening.

Leaders with non-pharmacy backgrounds may lack credibility and trust. Healthcare systems should work on hiring and promoting pharmacists. COVID-19 has had a significant impact on new vacancies and modified roles of pharmacists. Leaders and management should work with hiring departments to develop policies and innovative initiatives for retention and hiring of pharmacists.

Ref: *Hoffman, JM., Daniel JC. "Pharmacy Forecast 2023: Balancing the urgency of now versus strategy for tomorrow." AJHP. 80.2 (2023): 1-2.*



FDA Approved – First Ever Agent to Delay Type 1 Diabetes Onset



Teplizumab is a humanized monoclonal antibody that interferes with T-cell-mediated autoimmune destruction of pancreatic beta cells, and it is the first approved treatment to delay the onset of stage 3 type 1 diabetes (T1D) in people with stage 2 T1D. Teplizumab is indicated for people aged 8 years and older who are at high risk of developing T1D. In a pivotal randomized, double-blind, event-driven, placebo-controlled clinical trial, Teplizumab delayed the development of stage 3 T1D by almost 2 years on average. The study enrolled 76 patients, randomized to receive a single 14-day course of either Teplizumab or placebo, with the primary efficacy endpoint being the time from randomization to development of stage 3 T1D diagnosis. The Cox proportional hazards model was used to analyze the time to stage 3 T1D diagnosis, stratified by age and oral glucose tolerance test status at randomization. With a median follow-up time of 51 months, therapy with Teplizumab resulted in a statistically significant delay in the development of stage 3 T1D, with a hazard ratio of 0.41 (95% CI: 0.22 to 0.78; p=0.0066). A 14-day regimen, or a course of the drug would translate to a price of $193,900.

Ref: Herold, Kevan C., et al. "An anti-CD3 antibody, teplizumab, in relatives at risk for type 1 diabetes." New England Journal of Medicine 381.7 (2019): 603-613.

FDA Approved - New Intranasal spray for Acute Migraine Treatment

More than 10% of people worldwide are thought to suffer from migraines. Migraine is approximately three times more prevalent in women than in men. The most common symptom is a throbbing pain in the head that can last for hours or days. Other symptoms include sensitivity to light or sound, nausea, vomiting, or visual disturbances.

Zavegepant (ZAVZPRET) is the first and only calcitonin gene-related peptide (CGRP) receptor antagonist nasal spray for the acute treatment of migraine in adults. CGRP causes intense inflammation in the meninges of the brain. Excessive CGRP release in the brain, due to any stimuli, aggravates the pain of a migraine attack. CGRP receptor antagonists work as an antagonist to CGRP receptors. The FDA approval is based on two pivotal randomized, double-blind, placebo-controlled studies that established the efficacy, tolerability and safety profiles of zavegepant for the acute treatment of migraine.

For migraine sufferers for whom oral medications are ineffective, slow-acting, or intolerable due to nausea and vomiting, intranasal formulations can be an option. Consider use if triptans are contraindicated (eg, cardiovascular risk factors), ineffective, or poorly tolerated. Administration early in the course of a migraine attack, at the first sign of pain, may improve response to treatment. Published study in Lancet Neurology, about 24% of participants in treatment group reported to be pain free, 2 hours after, a single 10 mg dose. This was statistically different from 15% of the participants who received placebo. The side effects from zavegepant identified in study were, dysgeusia, nasal discomfort and nausea.

Patients who are hypersensitive to zavegepant or any of its components should not take it and neither co-administer with medications that induce or inhibit OATP1B3 or NTCP transporters. Avoid using decongestants that are inhaled; If zavegepant administration is unavoidable, intranasal decongestants should be administered at least one hour later. Patients with severe liver impairment should not use it as well as patients whose creatinine clearance is less than 30 mL/min. The availability of the zavegepant's intranasal formulation is anticipated in July 2023 in USA.

Ref: *Lipton, Richard B., et al. "Safety, tolerability, and efficacy of zavegepant 10 mg nasal spray for the acute treatment of migraine in the USA: a phase 3, double-blind, randomised, placebo-controlled multicentre trial." The Lancet Neurology 22.3 (2023): 209-217.*

Tamoxifen - Higher risk of developing endometrial and uterine cancers.

A study conducted over an 18-year period found a strong relationship between tamoxifen use and the development of endometrial and uterine cancers in premenopausal women aged 20 to 50 years who were diagnosed with breast cancer. The study divided women into two groups, those who received tamoxifen for breast cancer and those who did not. The group of women receiving tamoxifen was further subdivided by duration of tamoxifen use. Study endpoints included the occurrence of endometrial polyps, hyperplasia, and cancer, other uterine malignant neoplasms, and the combined results of these conditions. The results showed that the risk of uterine disease was significantly increased in those who received tamoxifen for 5 or fewer years or more than 5 years for all measures. The risk ranged from a 1.49-fold increase in other uterine cancers to 4.78-fold increase for uterine hyperplasia for those premenopausal women who received tamoxifen for the shorter duration. Among those who received tamoxifen for more than 5 years, risk of disease ranged from a 1.79-fold increase for other uterine cancers to 3.43-fold increase in uterine hyperplasia.

***Ref**: Ryu, Ki-Jin, et al. "Risk of Endometrial Polyps, Hyperplasia, Carcinoma, and Uterine Cancer After Tamoxifen Treatment in Premenopausal Women With Breast Cancer." JAMA Network Open 5.11 (2022): e2243951-e2243951*

Isoflurane Labelled - "For Animal Use Only" in Cartons of Isoflurane Intended for Human Use

ISMP has received reports from several healthcare institutions that recently received cardboard cases labelled "Isoflurane USP 100 mL" by Piramal Critical Care that actually contained bottles of Isoflurane USP 100 mL labelled "for animal use only" by Covetrus. Isoflurane is a general anaesthetic administered via inhalation.

Manufacturer states that the product labelled "for animal use only" is only approved for horses and dogs and there were no clinical studies completed using this product in humans. According to manufacturer there are no differences in chemical composition between the products labelled for human and animal use. Furthermore, both products are pure isoflurane without any chemical stabilizers and they are made under the same sterile conditions. Even though the products have the exact same composition, if a practitioner receives this product they may be shocked to find it labelled "for animal use only." If you purchase this product, inspect your supply to confirm you have the product approved for human use (NDC 66794-017-10) and do not use isoflurane labelled "for animal use only" (NDC 11695-6777-1). Sequester the product and notify the manufacturer, ISMP, and the FDA.

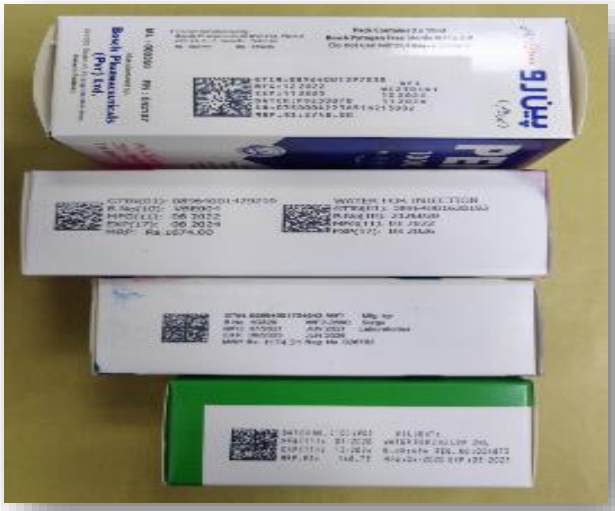
***Ref:** ISMP SPECIAL ALERTS: Isoflurane Labeled "For Animal Use Only" in Cartons of Isoflurane Intended for Human Use. https://www.ismp.org/alerts/isoflurane-labeled-animal-use-only-cartons-isoflurane-intended-human-use*

Easy Approach - Assignment of Beyond Use Date (BUD)

The Beyond Use Date (BUD) is a crucial parameter that determines the date or time after which a Compounded Sterile Preparation (CSP) shall not be stored or transported. The BUD is calculated from the date or time the preparation is compounded and is used to ensure that the CSP maintains its stability, potency, and safety until the point of administration. The BUD is particularly important in the context of sterile compounding, as CSPs are susceptible to various physical, chemical, and microbiological changes that can compromise their quality and safety. For instance, the dilution of a sterile product might result in the loss of its antioxidant, buffering, or anti-microbial properties, which can further compromise the stability of the active ingredient or the formulation as a whole. Moreover, the hydrolysis reaction is one of the most important chemical reactions that can lead to the degradation of CSPs. Therefore, determining the BUD is crucial to ensure that the CSP remains stable and safe for use.

Beyond Use Dating for CPs According to Risk Level			
Risk Level	BUD at Room Temperature (20 to 25 °C)	BUD Under Refrigeration (2 to 8 °C)	BUD with Frozen Storage (-20 to -10 °C)
Immediate Use	1 hour	N/A	N/A
Low Risk with 12 h BUD	12 hours	12 hours	N/A
Low Risk	48 hours	14 days	45 days
Medium Risk	30 hours	9 days	45 days
High Risk	24 hours	3 days	45 days

Misleading Expiry: Beware!

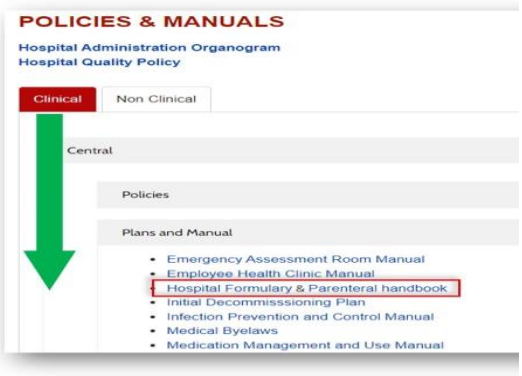


The discrepancy in expiry dates between water for injection (WFI) and generic drugs is a notable issue in the current market trend. Companies should reassess their practices to mitigate challenges related to storage, procurement, and wastage. In some cases, the expiry date of WFI may be shorter than that of the generic drug. This means that if companies adhere strictly to the expiry date of the WFI, they may end up discarding unused portions of the generic drug, leading to wastage and increased costs. On the other hand, if the expiry date of WFI is longer than that of the generic drug, it may pose challenges in terms of procurement and storage. Companies may need to ensure that they have a continuous supply of WFI with the correct expiry date to match the production timeline of the generic drug, which can be logistically complex and costly. Additionally, companies may need to implement robust inventory management systems to monitor and control the expiry dates of WFI, and adjust procurement practices accordingly.

Alert: Hospital Formulary & Parenteral Handbook Path updated on Intranet

Following document's location update on intranet

Path: Policies & Manuals > Clinical> Central >Hospital Formulary & Parenteral Handbook



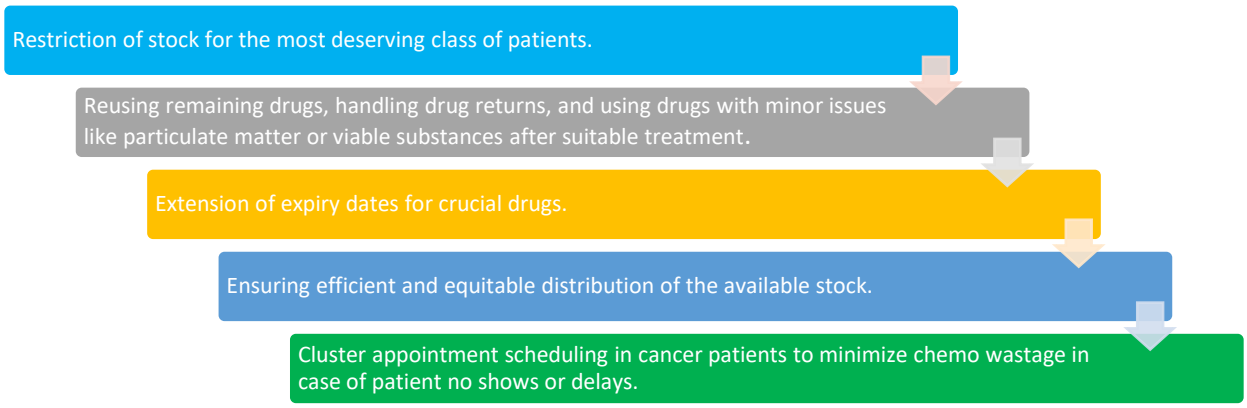
Drug Shortage: Causes, Impact, and Mitigation Strategies

According to the World Health Organization (WHO), a drug shortage occurs when the demand or need for a medically necessary drug exceeds its supply. Drug shortages, whether long-term or short-term, can have serious consequences for patients, healthcare providers, and public health systems, including delayed or interrupted treatment, compromised patient safety, increased healthcare costs, and reduced access to essential medicines.

Nearly all types of medicines including antimicrobials, antivirals, anticancer, analgesics, cardiovascular as well as neurological drugs have been reported for drug shortages. The causes underlying drug shortage can be related to both supply and demand problems. Manufacturing issues, unavailability of raw materials, business, technical and logistic issues are the major factors that determine drug supply in the market. Changes in market drug demand like urgent requisitions, unmonitored or uncontrolled marketing and tendering system delays can also cause drug shortage. Last but not the least, regulatory issues and changes in the policies on a macro level.

The business of medicine production is a global trade where APIs are exported from various parts of the world. Ultimately, the production in one country depends on the API supply of the other country – export and import has been a big challenge in the Covid-19 era which highlighted the need of drug shortage mitigation strategies to a new extent.

The WHO encourages countries to develop strategies to prevent and mitigate drug shortages, such as improving supply chain management, increasing manufacturing capacity, and promoting rational use of medicines. There are a few officially recommended drug shortage mitigation strategies which are as follows:



Ref: *Shukar, S., Zahoor, F., Hayat, K., Saeed, A., Gillani, A. H., Omer, S., ... & Yang, C. (2021). Drug shortage: causes, impact, and mitigation strategies. Frontiers in pharmacology, 12, 693426.*

Ibrexafungerp - A new addition in antifungal arsenal

Ibrexafungerp is the first triterpenoid antifungal. Similarly, to echinocandins, it inhibits the synthesis of 1,3-β-D-glucan. However, it binds to a different site on the enzyme than echinocandins, resulting in limited cross-resistance. Ibrexafungerp exerts concentration-dependent fungicidal activity against *Candida* species and retains in vitro activity against most fluconazole-resistant strains. It is also active against *Aspergillus* species. Ibrexafungerp has been shown to be safe and effective in the treatment of vulvovaginal candidiasis caused by *Candida albicans* in phase 2 and phase 3 trials clinical trials. It is approved for vulvovaginal candidiasis in adult and postmenarchal pediatric females and is given as two 150mg tablets orally, administered 12 hours apart. Ibrexafungerp is contraindicated in pregnancy. The most commonly reported adverse reactions were diarrhea, nausea, abdominal pain, dizziness and vomiting. Ibrexafungerp should be avoided with strong or moderate CYP3A inducers, and the dose should be reduced with strong CYP3A inhibitors. Ibrexafungerp may be useful for patients who are not able to receive fluconazole or prefer oral therapy for the treatment of vulvovaginal candidiasis. Ibrexafungerp is an alternative to fluconazole for the treatment of vulvovaginal candidiasis in nonpregnant females. It has the potential to be useful for recurrent and complicated vulvovaginal candidiasis as well as certain invasive fungal infections. Clinical trials are ongoing for recurrent and complicated vulvovaginal candidiasis as well as invasive candidiasis and pulmonary aspergillosis. The cost of 4 tablets of ibrexafungerp is around $600.

Ref: *Sucher, Allana J., et al. "Ibrexafungerp: A new triterpenoid antifungal." American Journal of Health-System Pharmacy 79.24 (2022): 2208-2221.*

Endocarditis - Partial Oral versus Intravenous Antibiotic Treatment

The POET trial was conducted to determine if switching patients with left-sided endocarditis from intravenous to oral antibiotics once they are stable would be as safe and effective as continued intravenous treatment. The randomized, non-inferiority, multicenter trial enrolled 400 adults who met specific criteria and were assigned in a 1:1 ratio. Intravenous antibiotic treatment was administered in accordance with guidelines, while oral antibiotic treatment regimens were developed as part of the trial. The results were based on four primary outcomes, with follow-up done for six months. The primary composite outcome are shown in table 1. The odds ratio and confidence interval were 0.72; 95% [CI], 0.37

Component	Intravenous Treatment (N=199)	Oral Treatment (N=201)	Difference	Hazard Ratio (95% CI)
	number (percent)		*percentage points (95% CI)*	
All-cause mortality	13 (6.5)	7 (3.5)	3.0 (–1.4 to 7.7)	0.53 (0.21 to 1.32)
Unplanned cardiac surgery	6 (3.0)	6 (3.0)	0 (–3.3 to 3.4)	0.99 (0.32 to 3.07)
Embolic event	3 (1.5)	3 (1.5)	0 (–2.4 to 2.4)	0.97 (0.20 to 4.82)
Relapse of the positive blood culture†	5 (2.5)	5 (2.5)	0 (–3.1 to 3.1)	0.97 (0.28 to 3.33)

* Six patients, three in each group, had two outcomes.
† For details about relapse of the positive blood culture, see the Supplementary Appendix.

Table 1Distribution of the four components of the Primary Composite Outcome

to 1.36) respectively. The between-group difference was 3.1 percentage points (95% CI, –3.4 to 9.6; P=0.40) in favor of oral treatment, and the criterion for non-inferiority was met. The major limitations of the trial were that only patients with left-sided endocarditis were enrolled, only patients with endocarditis caused by certain bacterial species were eligible, and a smaller number of effective antibiotics could be used in areas with a higher degree of antibacterial resistance. The duration of outpatient treatment may have also been underestimated as discharge of patients to outpatient was solely at the discretion of the clinician and patient preference.

Ref: *Iversen K, Iet al.. Partial Oral versus Intravenous Antibiotic Treatment of Endocarditis. N Engl J Med. 2019 Jan 31;380(5):415-424. doi: 10.1056/NEJMoa1808312. Epub 2018 Aug 28. PMID: 30152252.*

Revised Colistin Breakpoints by CLSI & challenges related to treatment of systemic infections

Polymyxins represent a class of polypeptide antibiotics that includes five compounds, from polymyxin A to E. Of these, polymyxin B and polymyxin E are used in human medicine, with only one amino acid difference between them and comparable biological activity. Colistin, a member of the polymyxin class, binds to the outer membrane lipopolysaccharides of Gram-negative bacteria, causing disruption of cell membrane and leading to cell death. The presence of mcr (mobile colistin resistance) genes can lead to plasmid-mediated colistin resistance by modulating lipid-A residues, resulting in lower binding affinity of colistin to its target site.

In the past, colistin susceptibility was determined by MIC (minimum inhibitory concentration) values, with MIC values of <2 µg/mL considered sensitive, 2-4 µg/mL considered intermediate, and >4 µg/mL considered resistant. However, the Clinical and Laboratory Standards Institute (CLSI) has recently changed its MIC cutoffs, removing the sensitive cutoff and now providing only intermediate and resistant cutoffs. The CLSI now assigns an “intermediate” interpretation to any MIC value of 2 µg/mL or less, and a “resistant” interpretation to any MIC value above 2 µg/mL. Consequently, there is no longer a susceptible breakpoint.

The pharmacokinetic profile of colistin is not ideal for the treatment of systemic infections, and current recommendations favor its use in the treatment of urinary tract infections. Achieving an average steady-state concentration of 2 µg/mL in the blood is nearly impossible in patients with normally functioning kidneys, and higher dosing increases the risk of nephrotoxicity. Moreover, intravenous administration of colistin does not result in adequate concentrations in the lungs for the treatment of pneumonia. Currently only colistin is available in Pakistan and we are using it to treat all sort of infections caused by MDR gram negative infections. With new upcoming developments we may need to look for polymyxin B and other alternative options to treat MDR organisms.

Pharmacy Staff Achievements – Alumni Highest Achievement Award 2023

Salbia Shereen - Staff Pharmacist, Department of Pharmacy, SKMCH&RC, has been awarded UCP Alumni Highest Achievement Award 2023, recognizing excellent performance throughout course of study in the Doctor of Pharmacy curriculum. Upon outstanding contribution in pharmacy profession at SKMCH & exceptional involvement in medication safety services in pharmacy, she has brought benefit to community, humanity and honor to the University of Central Punjab by embodying the values and spirit.

Certificate Completion

Following individuals in Pharmacy Department completed, online course,**'Antimicrobial Stewardship: A certificates course for Pediatricians'**, from Lahore University of Management Sciences (LUMS):

1. Ms. Saba Mazhar (Deputy Manager Pharmacy)
2. Mr. Adeel Siddiqui (Assistant Manager Pharmacy)
3. Ms. Saleha Nadeem (Clinical Pharmacist)
4. Ms. Rabia Maqsood (Staff Pharmacist)

The course contents included, antimicrobial resistance, transmission and global spread antimicrobial stewardship and why we need it, bug/drug combination, antibiograms stewardship in Respiratory tract, UTI, GI infections, Soft tissue infections, Meningitis, Blood stream infections, Fungal infections and diagnostic stewardship.

English Language Course Completion

Learning essential skills is vital for career progression as well as improvement of performance in assigned tasks. We hope that the knowledge and skills learnt during the course would be beneficial for ourstaff in excelling in their job responsibilities. Following employee from pharmacy department have successfully completed Basic English Course:

- Hafiz Muhammad Tahir (Pharmacy Technician)

Publications

In recent times, following research publications, collaborated & submitted by pharmacists of SKMCH& RC, Lahore and Peshawar, have been accepted and published online, in well-reputed international journals:

Jamshed Ali, **Nuzhat Humayun**, **Shameen Ikram**, Muhammad Abu Bakar, Umm-e-Kulsoom, Rizwan Masood Sheikh. Comparison of the effects of perioperative and adjuvant chemotherapy on outcomes of operable gastric cancer: A retrospective cohort experience from a tertiary cancer center. J Pak Med Assoc. 2023. 73: 812-5. **Impact Factor: 1.002**


Adeel Siddiqui, Sunil Shrestha, Ali Ahmed, **Omar Akhlaq Bhutta**. Oncology stewardship: Role of the pharmacists for contribution in low and middle-income countries. J Oncol Pharm Pract. 2023. 3:10781552231154465. doi: 10.1177/10781552231154465. **Impact Factor: 1.416**

Sharing Is Caring

Workshop on Pharmacovigilance

Ms. Saba Mazhar, Deputy Manager Pharmacy, presented on topic of 'Mechanism of Adverse Drug Reaction (ADR) reporting' on the online virtual workshop on Implementation of Pharmacovigilance (PV) in Pakistan, organized by Pakistan Health-Systems Pharmacists.

PACE Summit 2023

Ms. Saba Mazhar, Deputy Manager Pharmacy, presented as Keynote speaker on topic of 'The Changing Landscape In Pharmacy & Collaborative Practice In Pharmacy' on the conference on Pharmacist Alliance in Continuing Excellence (PACE) Summit 2023, organized at Ramada Hotel, Lahore.

TPN – RIPS 2023


Ms. Aleeshba Usman, Clinical Pharmacist, SKMCH&RC, had recently been invited as a guest lecturer at Riphah International University Lahore, to educate on total parenteral nutrition.

Oncology Pharmacy – LCWU 2023

Miss Saleha Nadeem, Clinical Pharmacist, SKMCH&RC, was invited guest speaker for Seminar, at Lahore College for Women on "Risk factors & treatment therapies for leading female cancers".

Hospital Orientation Session with Pharm D Students – University College of Pharmacy.

60 Students along with 2 senior faculty members visited SKMCH&RC, Lahore, on 8th March 2023. Mr. Shoaib Shammas (Manager Pharmacy, Lahore) along with his colleagues gave detail briefing about hospital pharmacy and role of clinical pharmacists.

International Conference on Emerging Trends In Pharmaceutical Sciences (ICETPS)

Mr. Omar Akhlaq Bhutta, Associate Director & Head Pharmacy, SKMT, was invited as guest speaker in Conference organized by CUST, Islamabad. He talked about "Preparing next generation of Pharmacy Leadership".


6th International Conference on Patient Safety (ICPS) – RIPS 2023

Mr. Omar Akhlaq Bhutta, Associate Director & Head Pharmacy, SKMT, was invited as moderator in Workshop organized by ICPS at Indus Hospital, Manawa Campus, Lahore. He talked about 'Cold Chain Syndrome – Gaps & Solutions in Medication Supply Chains'.

Pharmacy Initiates Hospital-wide Nursing Orientation on HIS Updates and Processes

The Pharmacy department, at SKMCH&RC, Lahore, has initiated a hospital-wide nursing orientation session aimed at updating nursing staff on new changes in the hospital information system (HIS) and related processes. The orientation session is centrally operated and open to all nursing staff. The focus of the orientation is to ensure that nursing staff are up-to-date on the latest changes and updates to the HIS system, as well as related processes that impact their work. At the end of the session, nursing staff have the opportunity to ask any questions they may have related to the new changes or processes. This initiative by the Pharmacy department demonstrates a proactive approach towards ensuring that all staff are informed and equipped to perform their duties efficiently and effectively.

Observership by Pharmacists from Lady Reading Hospital at SKMCH&RC, Peshawar

Hospital pharmacists from LRH Hospital attended a two-day observership at the pharmacy department of SKMCH&RC, Peshawar. The observership allowed them to learn about best practices and advanced technologies used in SKMCH's pharmacy department, including medication dispensing, clinical pharmacy services, aseptic pharmacy services, inventory management, and medication safety practices. The LRH Hospital pharmacists attended educational sessions conducted by experienced pharmacists, gaining valuable insights into challenges faced by hospital pharmacists and strategies to overcome them. This observership was a valuable learning experience for the LRH pharmacists and an opportunity to improve the quality of care provided to their patients.

Extracurricular Activities

Pharmacy Sports Gala, SKMCH&RC Lahore

Excursion Trip to Khanpur, SKMCH&RC Peshawar

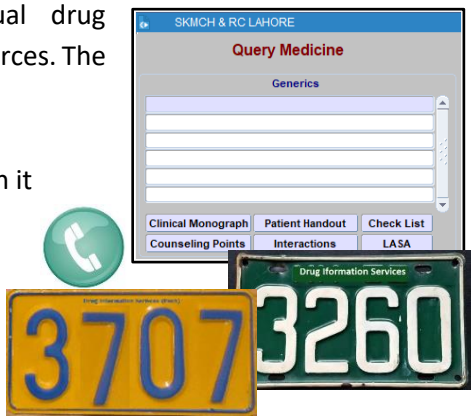
World Health Day – Department of Pharmacy, SKMCH, Peshawar





Drug Resources at SKMT

Other than pharmacy drug information services extension 3260 (Lahore) & 3707 (Peshawar), the hospital information system enables the users to access individual drug monographs which are updated on regular intervals, as drug resources. The pathway is as following.



1. Login HIS
2. Search “Query Medicine” in the “Start with” menu & open it
3. Type required drug name in the generics
4. Click on “Clinical Monograph”

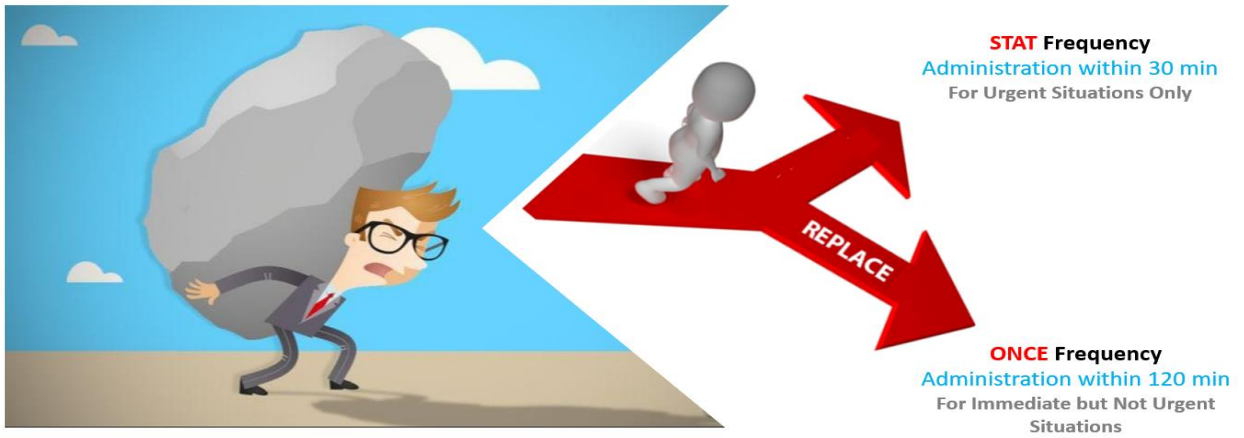
Hospital formulary & Parenteral handbook can access through Intranet and Treatment guidelines (T. Guidelines) in HIS.

Prescribing guidelines including concentrated electrolytes are available in T. Guidelines.

ONCE Frequency

Act Wisely

Reduce the Prescription burden of STAT orders



Feedback

To keep the Pharmacy Newsletter updated,
Please contact at druginfo@skm.org.pk