Shaukat Khanum Memorial Cancer Hospital and Research Centre

Pharmacy Newsletter

Volume XI, Issue # 4, 2021

Issued By:

Drug Information Centre, SKMCH & RC

P&TC Updates:

Following drugs are approved by Pharmacy & Therapeutics Committee (P&TC) during 2021 SKMCH&RC:

1. **Chlorhexidine Topical Solution (4%) –** as a regular formulary item
2. **Covid Vaccine –** as a regular formulary item
3. **Tapentadol Tab (IR) –** as regular formulary item
4. **Morphine Sulfate Inj (Preservative Free) for IT -** as a regular formulary item
5. **Palbociclib Tab –** Restricted by Cost (In Stage IV metastatic breast cancer only)
6. **Brentuximab Inj.-** Restricted by Cost (3 Indigent slots/year)
7. **Venetoclax Inj. -** Restricted by Cost (6 Indigent cycles/year)
8. **Azacitidine Inj. -** Restricted by Cost (6 Indigent cycles/year)
9. **Carbocisteine Tab/ Syp –** as regular formulary item
10. **Beclomethasone / Formoterol Inhaler. –** as a regular formulary item
11. **Rocuronium Inj. –** as a regular formulary item
12. **Vortioxetine Tab –** Restricted by service (Psychiatrist only)
13. **Venlafaxine Tab/Cap –** Restricted by service (Psychiatrist only)
14. **Aripiprazole Tab –** Restricted by service (Psychiatrist only)
15. **Lurasidone Tab –** Restricted by service (Psychiatrist only)
16. **Pembrolizumab Inj -** Restricted by Cost
17. **Blinatumomab Inj. -** Restricted by Cost
18. **Paclitaxel (Albumin-bound) -** Restricted by Cost
19. **Ribociclib Tab 200mg -** Restricted by Cost
20. **Molnupiravir Cap.** – as regular formulary item (Restricted by ID)

Pharmacist's Counselling of Visually Impaired Patients

By Adeel Siddiqui

Patient care for visually impaired – The Need

Pharmaceutical care of visually impaired population requires special attention. Provision of safe and effective use of medicines and the delivery of pharmaceutical care services to people with visual impairment is crucial.

Assisting patients can begin with thoughtfulness. If a patient struggles with reading a medicine label, as a pharmacist, take a moment to ask if he or she would be helped by counselling or education. Offer to help patients and their caregivers list all their medications, vitamins, and supplements. It is important to counsel on a high-risk or new medication and going over its side effects and necessary precautions.

Common eye disorders

- **Presbyopia;** makes it hard for the lens to focus
- **Cataracts;** make the lens cloudy
- **Glaucoma;** damages the optic nerve
- **Macular degeneration;** damages the macula, the part of the eye that allows you to see fine detail
- **Diabetic retinopathy;** damages the blood vessels in the retina(receives and sends images to the brain)

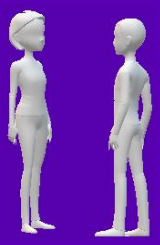
Suggestions for the patients

Here are a few other tips pharmacists can suggest to patients:

- Reduce the number of bottles by throwing away medication that has expired.
- For best visual-contrast against medicine, use dark trays.
- Keep a light or magnifying glass near where you take your medications, each day.

It is imperative for pharmacists that they should have some resources at hand which include a list of organizations for patients who are blind or visually impaired and names of locally available Braille translators.

Patient medication counselling: Tips and Tools



- Offer Braille or large-print labels on medication containers
- Ask the patient to sense the texture of their medications and recognize the different shapes and sizes
- Ask the patient to differentiate containers by size or shape, such as OTC medications or unusually shaped bottles.
- Guide the patients to keep medications in their original containers and, if possible, learn which tablets are kept in the bottles.
- Educate the patients to keep medicines in alphabetical order and placing medicine where they take them (e.g., evening medications on the nightstand and morning medications at the breakfast table).
- Encourage patients to improvise, one example, is to mark the bottles with rubber bands. Distinguish between greater than two bottles with number of rubber bands on each bottle.

Further Information: Visual impairment caused by chemotherapeutic drugs

Chemotherapeutic drugs that cause ocular toxicities

Epidermal growth factor receptor (EGFR) inhibitors (cetuximab, panitumumab, and erlotinib)

Human epidermal growth factor receptor 2 (HER2) inhibitor (trastuzumab)

Small-molecule tyrosine kinase inhibitors (TKIs) (nilotinib and imatinib)

Steroid antagonists (tamoxifen and toremifene)

The alkylating agents (busulfan, fluoropyrimidines)

BRAF inhibitors (vemurafenib, dabrafenib, and encorafenib)

Antimetabolites (fluorouracil and pemetrexed)

Proteasome inhibitor (bortezomib)

The anaplastic lymphoma kinase inhibitors (especially crizotinib)

Platinum analogs (cisplatin, carboplatin, and oxaliplatin)

The retinoic acid derivative all-trans-retinoic acid (tretinoin)

Taxanes (docetaxel and paclitaxel)

Others (Ipilimumab, Methotrexate, Cytarabine, Interferon)

Common ocular toxicities due to chemotherapeutic drugs

- Cornea and anterior segment toxicities
- Uveitis
- Periocular toxicities
- Periocular toxicities
- Optic nerve toxicities

Fluoroquinolones: Low Blood Sugar and Mental Health Adverse Effect - The FDA Alert

By Hafiz Muhammad Usman

Fluoroquinolones are approved by FDA, to treat certain bacterial infections, and have been used for more than 30 years.

Most fluoroquinolone antibiotic drug labels contain a warning about blood sugar changes.

Previously, ranges of mental health side effects are described under 'Central Nervous System effects', in the 'Warnings and Precautions' section of the fluoroquinolone antibiotic class.

The new label modification adds that low blood sugar levels can lead to coma. The new label makes the mental health side effects more prominent and more consistent across the systemic fluoroquinolone drug class.

Following are the mental health side effects, updated in drug literature of fluoroquinolones:

Agitation	Memory impairment
Disorientation	Nervousness
Disturbances in attention	Serious disturbances in mental abilities called delirium

Recommendation for healthcare practitioners

Healthcare Practitioners are advised to remain cognisant of the potential risk of hypoglycemia causing coma, occurring more frequently in the elderly and those with diabetes taking an oral hypoglycemic medicine or insulin.

It is recommended to inform patients about the risk of psychiatric adverse reactions that can occur after just one dose. In this case, fluoroquinolone treatment should immediately be stopped and switch to a non-fluoroquinolone antibiotic, if possible.

Likewise, its recommended to stop fluoroquinolone treatment immediately, if a patient reports serious side effects involving the tendons, muscles, joints, or nerves, and switch to a non-fluoroquinolone antibiotic to complete the patient's treatment course.

Avoid prescribing fluoroquinolones to patients who have other treatment options (e.g. acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, and uncomplicated UTIs) because the risks outweigh the benefits in these patients.

Recommendation for patients

Patients are advised to inform their physician about any diabetes medicine that they have taking, especially when healthcare professional is considering prescribing an antibiotic. If they have a history of low blood sugar or relevant symptoms, administering a fluoroquinolone in the past.

Following are the early signs and symptoms of low blood sugar:

Confusion	Pounding heart or very fast pulse
Dizziness	Feeling shaky
Pale skin	Sweating
Unusual hunger	Headaches
Trembling	Weakness
Irritability	Unusual anxiety

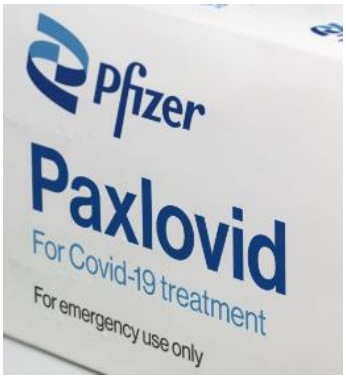
In diabetic patients, healthcare professionals must counsel patients to check their blood sugar more often while taking fluoroquinolone.

Ref. https://www.ismp.org/alerts/fluoroquinolones-low-blood-sugar-and-mental-health-adverse-effects

COVID Pills – The update

By Muhammad Rehan Khan & Wardah Masood

1- Paxlovid



- Pfizer has submitted its first COVID 19 pill 'Paxlovid' for FDA authorization. If accepted, Paxlovid will be a good choice of drug, for home-based therapy. Therefore, it will be a cheaper alternative compared to earlier choices in the pandemic. Paxlovid is a combination of two components, an experimental molecule called PF-07321332 (nirmatrelvir) and a low dose of ritonavir (a protease inhibitor), that reduces the ability of SARS-CoV-2 (the virus that causes COVID-19) to multiply in the body.
- Pfizer has submitted their Covid-19 drug pill to the US Food and Drug Administration (FDA) for emergency use authorization after concluding a phase 3 trial. Specifically, Pfizer wants the drug available for adults who have mild-to-moderate COVID-19 infections and are at risk of becoming seriously ill.
- Efficacy was consistent across all age, sex, race, and ethnicity demographics with 94% efficacy in adults aged over 65 years. Pfizer reported earlier that its pill cuts hospitalizations and deaths by 89 percent among high-risk adults who had early symptoms of COVID-19.
- The recommended dose is 300 mg nirmatrelvir plus 100 mg ritonavir (co-packaged) q12h for 5 days. Pfizer did not detail any side effects of its pill but said adverse events, including nausea and diarrhea, occurred in about 20 percent of patients. Tentative cost for 5 days' therapy will cost approximately 95000/- PKR.

2- Molnupiravir

- Merck has submitted their COVID 19 pill 'Molnupiravir' (MK-4482/EIDD-2801) for FDA authorization. Molnupiravir is an investigational oral antiviral medicine, significantly reduced the risk of hospitalization or death at a planned interim analysis of Phase 3 MOVe-OUT trial in, at risk non-hospitalized adult patients with mild-to-moderate COVID-19
- At the interim analysis, molnupiravir reduced the risk of hospitalization or death by approximately 50%; 7.3% of patients who received molnupiravir were either hospitalized or died through Day 29 following randomization (28/385), compared with 14.1% of placebo-treated patients (53/377); p=0.0012. No deaths were reported in patients who received molnupiravir, as compared to 8 deaths in patients who received placebo. At the recommendation of an independent Data Monitoring Committee and in consultation with the U.S. Food and Drug Administration (FDA), recruitment into the study is being stopped early due to these positive results
- On November 4, 2021, the Medicines and Healthcare Products Regulatory Agency (MHRA) in UK authorized the use of molnupiravir for its use in people who have:
    - Been symptomatic for no more than 3-5 days or have mild to moderate COVID-19
    - Have at least one risk factor for developing severe illness (Obesity, >60years, Diabetes mellitus, and heart disease)
- Recommended dose is 800mg q12h for 5 days in adults more than 18 years of age. Whereas, the side effects associated with molnupiravir are diarrhea and nausea. Tentative cost for 5 days' therapy will cost approximately 14000/- PKR.

Ref. https://www.pfizer.com/news/press-release/press-release-detail/pfizers-novel-covid-19-oral-antiviral-treatment-candidate, https://www.merck.com/news/merck-and-ridgeback-announce-submission-of-emergency-use-authorization-application-to-the-u-s-fda-for-molnupiravir-an-investigational-oral-antiviral-medicine-for-the-treatment-of-mild-to-moderate-c/

FDA Approves First Treatment for Common Type of Post-Transplant Infection that is Resistant to Other Drugs

By Saad Bin Zulfiqar

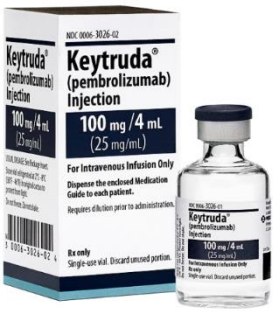
The Food and Drug Administration (FDA) approved Maribavir (LIVTENCITY, Takeda) tablets for cytomegalovirus (CMV), a type of herpes virus that commonly causes infection in patients after a stem cell or organ transplant. CMV infection can lead to CMV disease and have a major negative impact on transplant recipients, including loss of the transplanted organ and death. LIVTENCITY is a CMV pUL97 kinase inhibitor indicated for the treatment of adults and pediatric patients (12 years of age and older and weighing at least 35 kg) with post-transplant CMV infection/disease that is refractory to treatment (with or without genotypic resistance) with ganciclovir, valganciclovir, cidofovir or foscarnet.

The most common adverse events (>10%) in subjects treated are taste disturbance, nausea, diarrhea, vomiting, fatigue, decreased hemoglobin, decreased platelet count, and increased serum creatinine. It may antagonize the antiviral activity of ganciclovir and valganciclovir, therefore, co-administration is not recommended. Maribavir is a substrate of CYP3A4 and a weak inhibitor of CYP3A4, P-glycoprotein, and breast cancer resistance protein (BCRP). Co-administration with drugs that are sensitive substrates of CYP3A, P-glycoprotein, and BCRP may result in a clinically relevant increase in plasma concentrations of these substrates.

Ref. https://www.fda.gov/news-events/press-announcements/fda-approves-first-treatment-common-type-post-transplant-infection-resistant-other-drugs

FDA approves Pembrolizumab for adjuvant treatment of stage IIB or IIC melanoma

By Saleha Nadeem & Soban Ahmed Khan



The Food and Drug Administration (FDA) approved Pembrolizumab (Keytruda, Merck) for the adjuvant treatment of adults and children (greater than 12 years of age) with stage IIB or IIC melanoma after full resection.

Efficacy was assessed in patients with totally resected stage IIB or IIC melanoma in KEYNOTE-716, a multicentre, randomized (1:1), double-blind, placebo-controlled trial. Patients were randomly assigned to receive Pembrolizumab 200 mg or the pediatric dose of 2 mg/kg intravenously (up to a maximum of 200 mg) every three weeks, or placebo, until disease recurrence or intolerable toxicity. Investigator-assessed recurrence-free survival (RFS), was the primary efficacy outcome measure. The trial showed a statistically significant improvement in RFS for individuals allocated to the Pembrolizumab arm compared to placebo at the first interim analysis, with a hazard ratio of 0.65 (95 percent CI: 0.46, 0.92; p=0.0132).

Fatigue, diarrhea, pruritus, and arthralgia were the most prevalent side events recorded in KEYNOTE-716 (≥20%).

Ref. https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-pembrolizumab-adjuvant-treatment-stage-iib-or-iic-melanoma

Abatacept for prophylaxis of acute graft versus host disease

By Ehsan Elahi

For the prophylaxis of acute graft versus host disease (aGVHD), Food and Drug Administration (FDA) approved Abatacept on December 15, 2021, in combination with calcineurin inhibitors (CNI) and methotrexate (MTX). This is the first drug approved to prevent aGVHD in patients 2 years of age and older undergoing hematopoietic stem cell transplantation (HSCT) from a matched or 1 allele-mismatched unrelated donor. GVHD-1 & GVHD-2 studies evaluated the efficacy of abatacept for this indication.

In GVHD-1, a randomized, double-blind, placebo-controlled clinical trial, patients with 8 of 8 Human Leukocyte Antigen (HLA)-matched HSCT, received abatacept or placebo in combination with a CNI and MTX. For severe (grade III-IV), Day 180 after transplantation overall survival (OS) rate & a GVHD-free-survival were assessed. For OS rate, results were comparable 97% (95% CI: 89%, 99%) for abatacept versus 84% (95% CI: 73%, 91%) placebo group, but for a GVHD-free-survival no significant difference in improvement was reported between the two groups (HR 0.55; 95% CI 0.26, 1.18). On the other side, a GVHD-free survival rate at Day 180 after HSCT for moderate-severe (grade II-IV), was 50% (95% CI: 38%, 61%) for patients who received abatacept compared to 32% (95% CI: 21%, 43%) for patients who received a placebo (HR 0.54; 95% CI: 0.35, 0.83).

GVHD-2 study provided further evidence of effectiveness utilizing patients who underwent a 7 of 8 HLA-matched HSCT between 2011 and 2018. Outcomes of 54 patients treated with abatacept in combination with a CNI and MTX were analyzed in comparison with 162 patients selected randomly, who were treated with a CNI and MTX alone. In abatacept with CNI and MTX group, the OS rate at Day 180 after HSCT was 98% (95% CI: 78%, 100%) compared to 75% (95% CI: 67%, 82%) for patients who received CNI and MTX alone.

The recommended dose of abatacept depends upon the age of the patient. Patients must receive antiviral prophylaxis for Epstein-Barr virus infection before starting treatment and for six months post-transplantation and be monitored for cytomegalovirus (CMV) infection/reactivation for six months post-transplant. Anemia, hypertension, CMV reactivation/infection, pyrexia, pneumonia, epistaxis, CD4 lymphocytes decreased, hypermagnesemia, and acute kidney injury are the most common adverse effects of abatacept used for prophylaxis of aGVHD.

Ref. https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-abatacept-prophylaxis-acute-graft-versus-host-disease

Preoperative opioid use: a risk factor for poor postoperative outcomes

By Saman Sadaqat

Immune suppression

The impact of opioids on the immune system is due to the presence of opioid receptors on the surface of various immune cells, including macrophages, natural killer cells and dendritic cells of the innate immune system, and T and B lymphocytes of the adaptive immune system. In addition, opioids affect sympathetic nervous system which modulate immune responses that may lead to the downregulation of the immune system. Morphine is the most studied opioid and has repeatedly been shown to lead to immunosuppression.

Endocrine and metabolic effects

Opioids have various effects on the neuroendocrine system and metabolism. Many endocrine disorders related to the long-term and, to a lesser extent, short-term opioid use have been identified. Most importantly, secondary hypoadrenalism caused by opioids can reduce the stress response in patients undergoing all types of surgery. Major endocrine and metabolic effects of opioids are weight gain, insulin resistance, infertility, osteoporosis, depression, decreased muscle mass in men and amenorrhea in women.

Ref. Quinlan J, Levy N, Lobo DN, Macintyre PE. Preoperative opioid use: a modifiable risk factor for poor postoperative outcomes. Br J Anaesth. 2021 Sep;127(3):327-331. doi: 10.1016/j.bja.2021.04.017. Epub 2021 Jun 2. Erratum in: Br J Anaesth. 2021

Medication Management & Use Summary – 2021

A comprehensive review of medication management system (MMS) covering planning, organizing, selection, procurement, storage, ordering, transcribing, preparing, dispensation, administering, monitoring, adverse drug events, and evaluations is completed and presented in P&TC. All essential elements were reviewed and approved.

Total P&TC in 2021: **4**

New Drugs Approved	Drug Request Rejected	Drugs Excluded	Rx Restriction Applied
20	1	Nil	Nil

Tender 2021-22

Generic and Brand List reviewed	Chemical Equivalency Conducted
✓	5

Drug Recall	Hospital Formulary Edition	Parenteral handbook Edition	Pharmacy Newsletter
Nil	10	7th	4

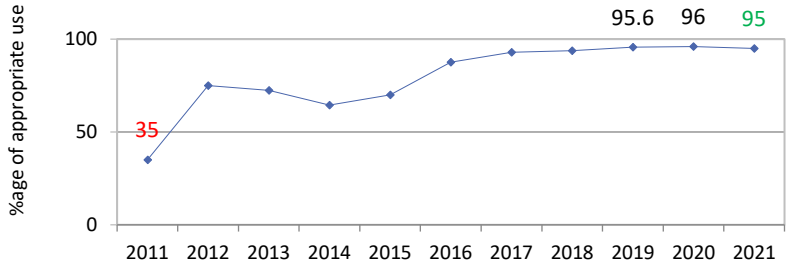
Adverse Drug Events (ADE's) Reported

ADR's		Med. Error		Near Miss	
Lahore	Peshawar	Lahore	Peshawar	Lahore	Peshawar
331	36	38	07	145	10

Accreditation by the American Society of Health-System Pharmacists (ASHP) – Resident Status

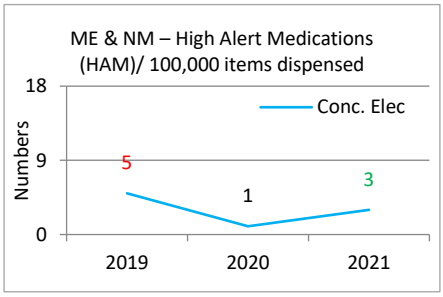
Completed	Ongoing
01	02

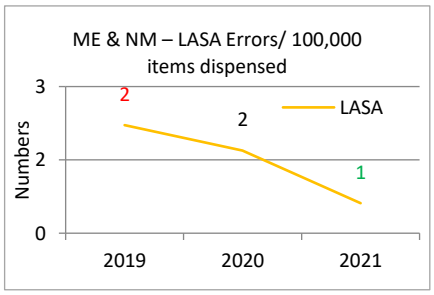
Antibiotic Stewardship Compliance - DUR

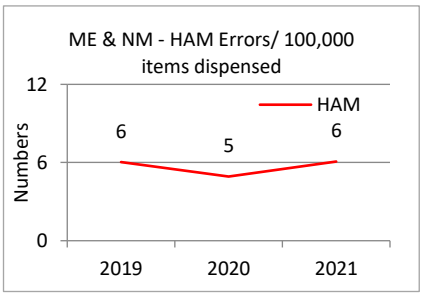


Monthly Ward Stock Audits

Medication stored outside pharmacy were reviewed on periodic basis and problem fixed on site.







DUR - Drug Utilization Review of all new formulary drugs included in 2021 were presented in P&TC

Quality Improvement Project – Department of Pharmacy

Reduction of dispensing and administering errors associated with LASA drugs by implementing new stacking plan at Pharmacy, SKMCH & RC

Introduction

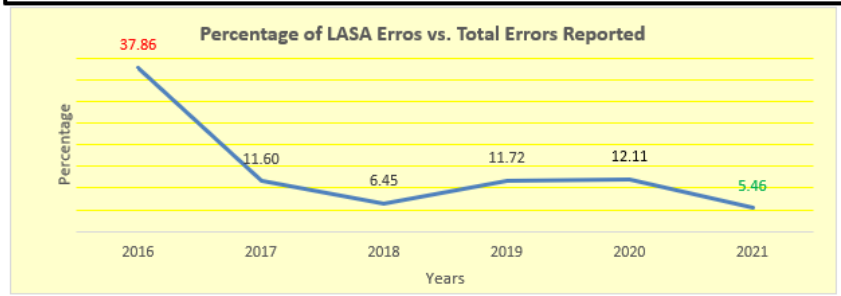
A medication error is an unintended failure in the drug treatment process that leads to, or has the potential to lead to, harm to the patient. Mistakes in the prescribing, dispensing, storing, preparation and administration of a medicine are the most common preventable cause of undesired adverse events in medication practice and present a major public health burden

Problem Statement

In 2016, Total 103 errors were reported, and LASA drugs were found to be the most leading cause of errors and contributing **37.86%** of rest of the errors.

Objective

The Objective of study was to reduce the dispensing and administering errors associated with LASA drugs at SKMCH&RC.



Act

- Staff education is further required to understand the LASA concept
- Development of new Medication room in OR with full compliance of stacking plan
- Involve DRAP to apply LASA concept including bar coding at country level
- Annual review of list during tender 2018-19
- Bar / QR coding
- Focused training on new staff
- Education in DQI
- Strict follow up against each error associated with LASA

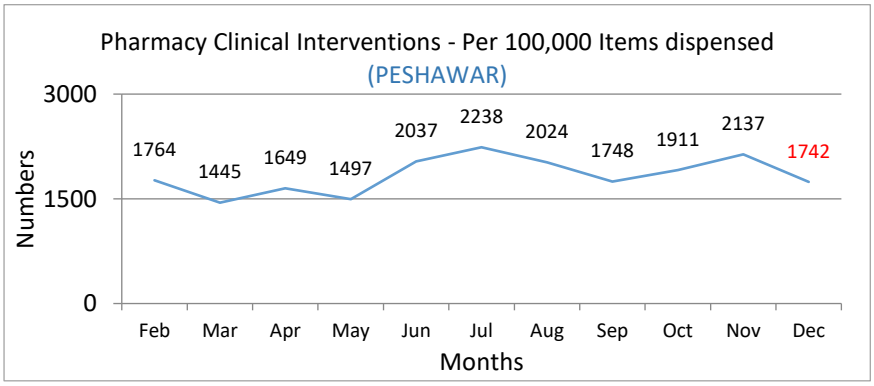
Check

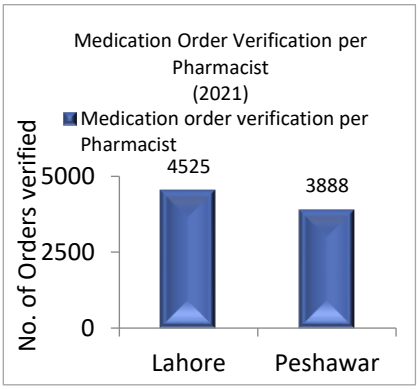
- In 2017, above mentioned strategies were applied and observe significant drop is LASA errors, which is **11.6 %** among 250 errors reported.
- Look alike sound alike (LASA) drugs identified and list prepared and circulated to units
- Review most common drugs reported in errors with list identified - Comply
- All identified drugs are link with online information system for double check - Comply
- Medications are stacked as per color coding - Comply
- Few medications rooms (e.g. OR) still needs improved stacking plan – Comply
- In 2018, LASA error dropped to 6.45% (34 LASA error /527 total incidents)
- Staff concept of LASA needs to be improved (Scope expand to new staff particularly) – Comply
- In 2019, LASA error raised again to 11.72% (34 LASA error / 290 QIR reported) – New staff
- In 2020, double check reinforcement through trained staff (relatively low turnover of staff and low workload due to COVID-19)
- In 2021, strict monitoring is ensured at the level or procurement, stacking and dispensing of drugs. List revision with generic vs brand LASA make the significant impact.

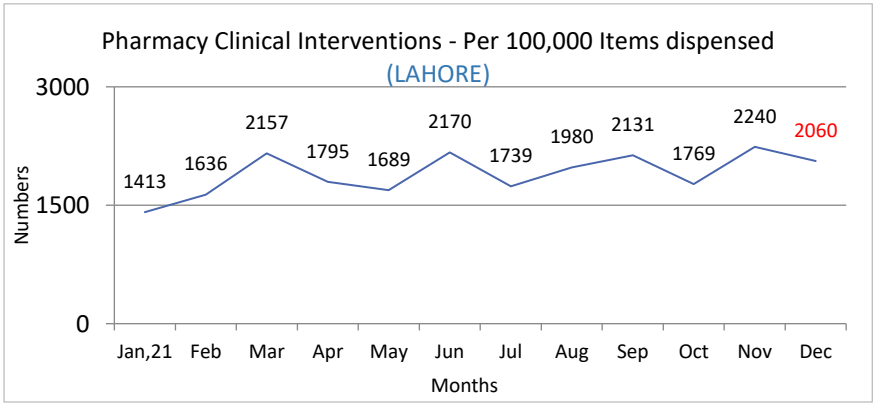
Do

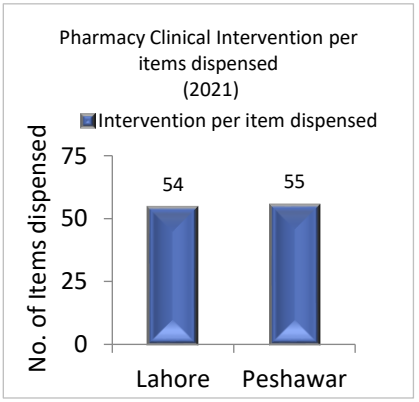
- Identification of LASA Drugs
- Restriction at the level of formulary selection Development of new stacking plan
- Identification of LASA drug on label
- Double check at the level of medication dispensing
- Double check at the level of drug administration
- Training of new staff in Q1 2018
- New brands identified and CA taken in 2019
- In 2020, Educates new staff in DQI
- Double check reinforcement
- LASA list revised with brand vs generic form

Pharmacy Clinical Interventions



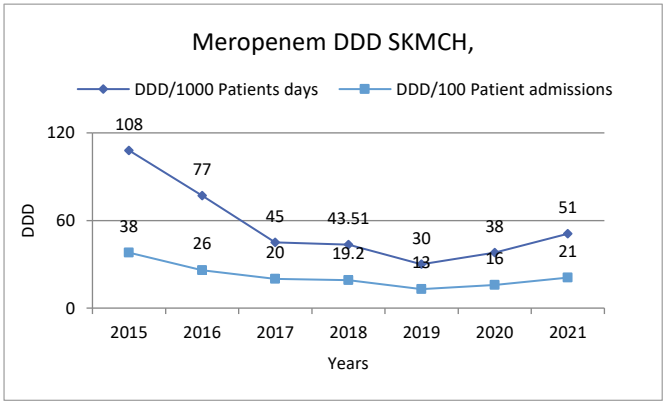


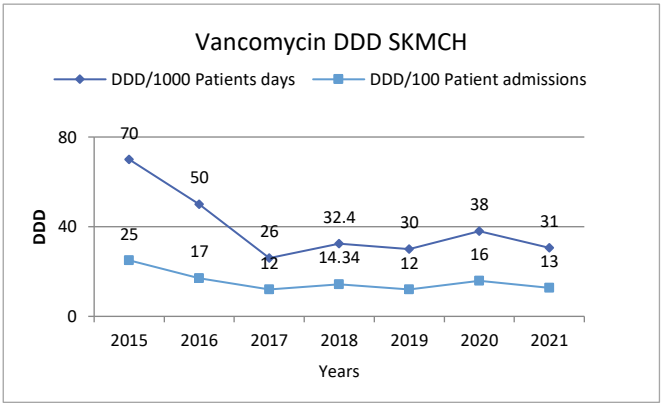


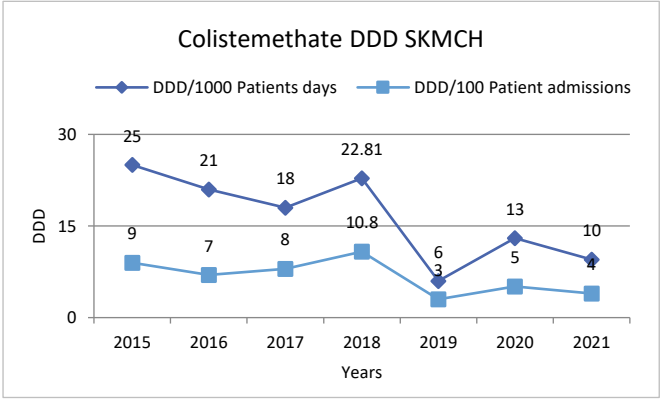


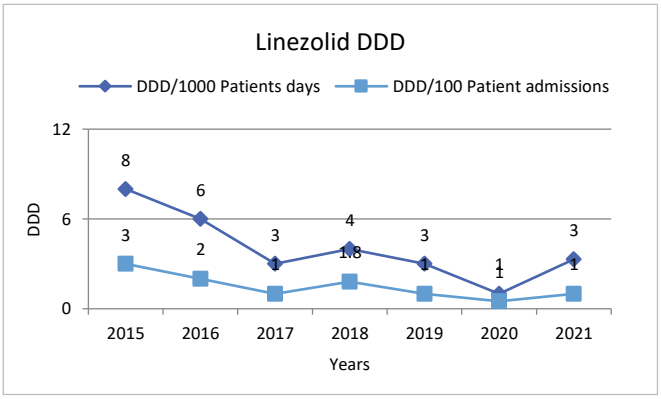
Antimicrobial Stewardship Program (ASP) – SKMCH&RC

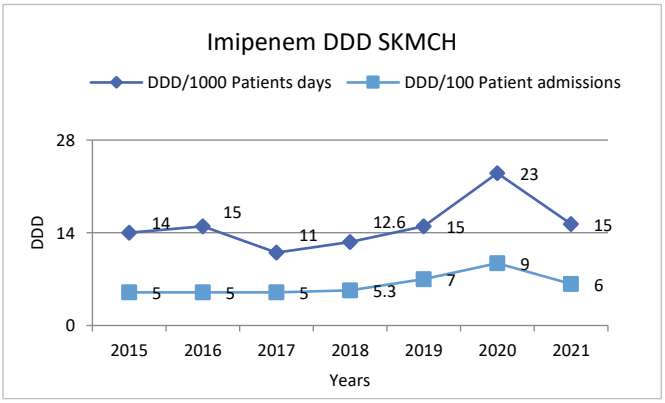
ASP is a coordinated approach towards appropriate use of antibiotics – probably, the only tool the world has today, against the ever-emerging resistant microorganisms. The program was implemented in SKMCH&RC Lahore in 2011 headed by pharmacy and therapeutic committee (P&TC). Effectiveness review of ASP is carried out through antibiogram review, defined daily dose (DDD), duration of therapy (DOT), and drug utilization review (DUR) results. DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults. It provides a measure of exposure or therapeutic intensity in a defined population, allowing comparisons across various time periods and population groups. Presented in the graphs here, is a comparison for DDD of restricted antibiotics from 2015, till 2021.

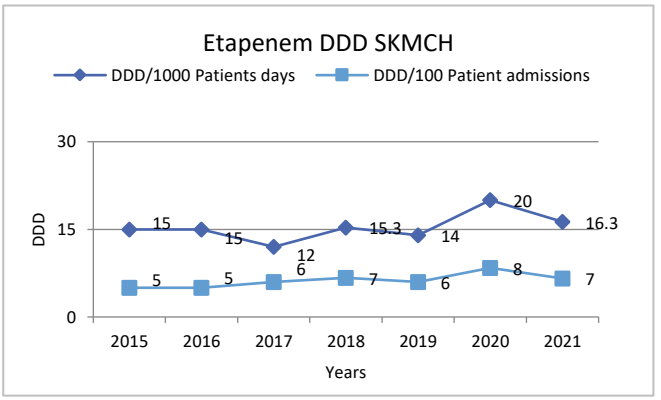


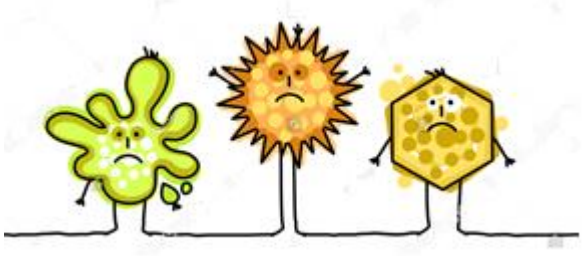






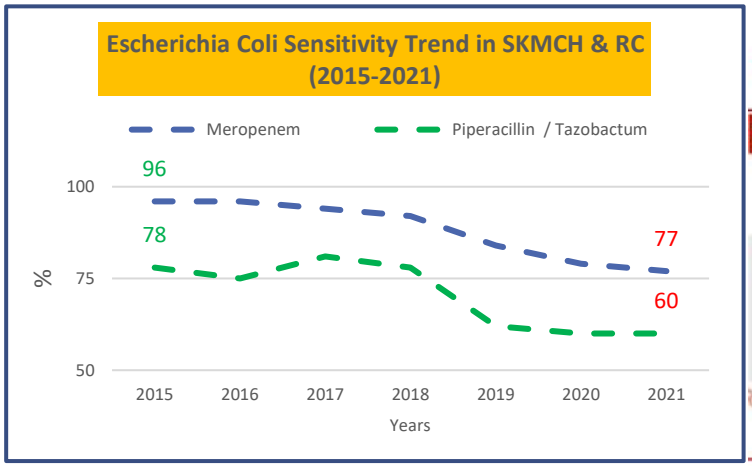


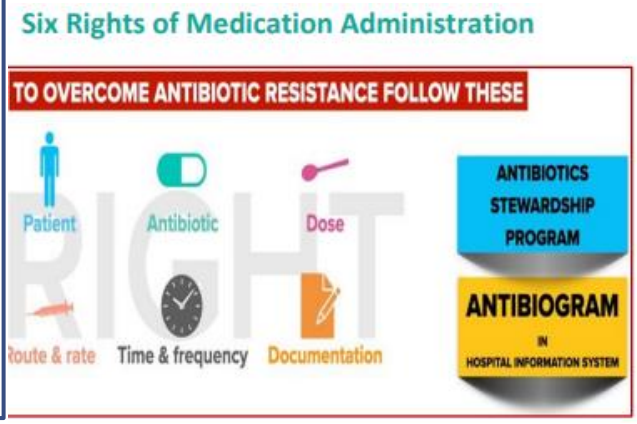




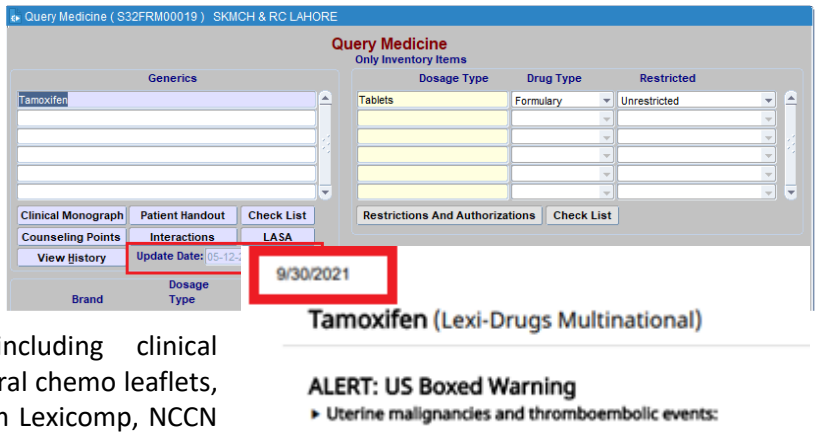
Antibiotic Resistance – Update

Irrational prescribing and utilization, of antibiotics has led to an increase in antibiotic resistance all over the world. The trends of resistance may vary from one place to another, but collectively they are moving towards increasing end. The antibiogram of Escherichia Coli at SKMCH & RC, has shown a gradual decrease in sensitivity from 2015 to 2021, of Piperacillin/Tazobactam 78% to 60% and Meropenem 96% to 77%, respectively. This trend of decreasing sensitivity is alarming and indicating that one day we would not be able to use these antibiotics against this organism. Six rights of medication administration must be followed to prevent antimicrobial resistance





Drug Data Update In HIS



Periodic up-gradation of drug data is essential to ensure that health informatics is updated and optimum for management and decision-making while treating our patients. Drug data update is based on a clinical decision support system (CDSS) and knowledge-based system (KBS) which is updated in 2021. All necessary information including clinical monographs, chemotherapy protocols, oral chemo leaflets, and essential checks, were updated from Lexicomp, NCCN guidelines, etc. In 2021, hospital approved a few more drug information resources through which strengthen the drug data and drug information services at SKMCH&RC.

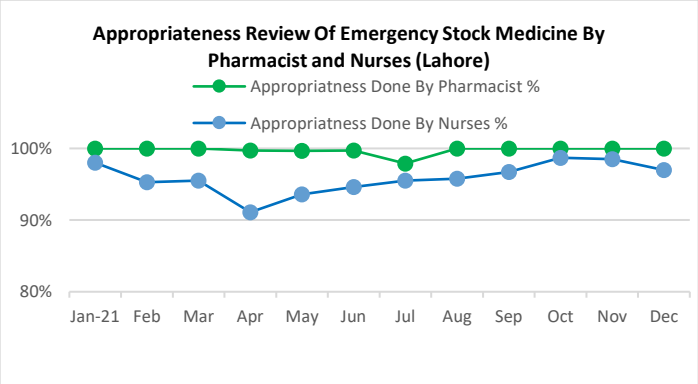
Investigational Drugs & Trials

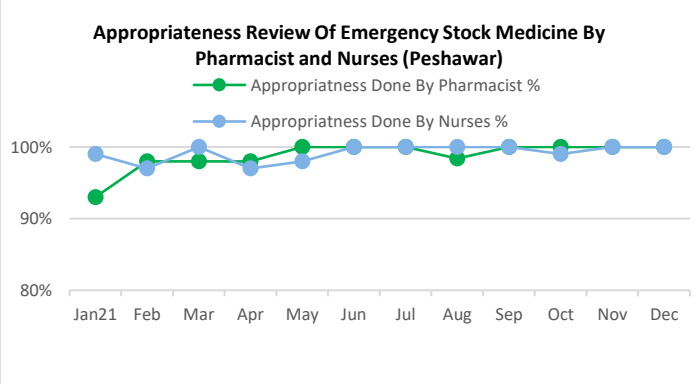
A global phase III clinical trial to evaluate the efficacy, safety, immunogenicity of Ad5-nCoV manufactured by Cansino and Beijing Institute of Biotechnology, in healthy adults aged 18 years old and above, was carried out at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Lahore. It was a global multicentre, randomized, double blind, placebo-controlled, adaptive designed phase Ⅲ clinical trial, therefore, in the second stage, vaccine immunization was scheduled for patients who were administered placebo.

Appropriateness Review: JCI Recommendations

In areas where "unit emergency stock medication" is placed and pharmacy review is not possible/delayed, a trained individual staff nurse will conduct a review of critical elements a) through d) for the first dose and a full appropriateness review will be conducted by the designated licensed pharmacist within 24 hours.

a. Allergies
b. Fatal drug/drug interactions
c. Weight-based dosage
d. Potential organ toxicity





Hazardous Drugs – Refresher

Hazardous drug definition: Hazardous drugs (HDs) are those drugs that exhibit one or more of the characteristics of carcinogenicity, teratogenicity or other developmental toxicity, reproductive toxicity, organ toxicity at low doses, genotoxicity, structure, and toxicity that mimics existing hazardous chemotherapy drugs.[1]

Types Hazardous Drugs

Group 1: Antineoplastic drugs. Many of these drugs may also pose a reproductive risk for susceptible populations.
Group 2: Non-antineoplastic drugs that meet one or more of the NIOSH criteria for an HD. Some of these drugs may also pose a reproductive risk for susceptible populations.
Group 3: Drugs that primarily pose a reproductive risk to men and women who are actively trying to conceive and women who are pregnant or breastfeeding.

1. *Reference – Policy on Safe Handling of Hazardous Drugs (MMU Ref # 13)*

Pharmacy Practices and HIS Updates

1. Intervention on rate by a pharmacist
2. Pharmacist interventions on discharge medications
3. Pharmacist interventions on OPAT medications
4. Chemotherapy protocol & routine medication duplication order alert for pharmacists
5. Location-wise inventory control in HIS
6. New chemotherapy preparation module interface
7. Restricted antibiotic approval alert on discharge medication
8. Late drug administration sign & monitoring
9. Patient own medication duration admission entry in HIS – In Process

Sharing is Caring - Presentations, Webinars, Conferences & Publications

The pharmacy department, as per tradition, has participated in various events and continued on this trajectory, in the last quarter of 2021.

1. Virtual Symposium: 20th Shaukat Khanum Virtual Cancer Symposium

During the Shaukat Khanum Cancer Symposium, the department of pharmacy organized a successful session on 'International advanced pharmacy practices; going beyond adaptation'.

Moderators, participants and delegates, taking part in the online event at SKCS 2021

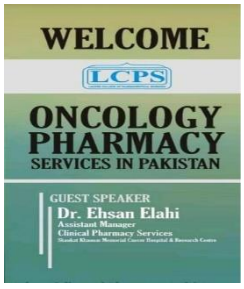
2. Webinar: Antibiotic Stewardship and Antimicrobial Resistance at SKMCH&RC, Lahore

Mr. Muhammad Rehan Khan, Infectious Disease Clinical Pharmacist, along with department of Pharmacy raised awareness about the antibiotic stewardship program and took part in organizing a Webinar on 'Antibiotic Stewardship and Antimicrobial resistance at SKMCH&RC'.

Moderators, participants and delegates, taking part in the online in webinar

3. On-site lecture: Oncology Pharmacy Services in Pakistan, LCPS, Lahore

Mr. Ehsan Elahi, Oncology Clinical Pharmacist, delivered an information-rich lecture at Lahore College of Pharmaceutical Sciences, Lahore, titled 'Oncology Pharmacy Services in Pakistan'.



4. SKMCH & LUMS Collaboration

LUMS Healthcare Management Intern Ms. Hiba Aleem completed the first round of her internship in the pharmacy department SKMCH & RC, where she gained a thorough understanding of the medication management system. She identified bottlenecks in these processes and shared them with POIC for review and improvement, where applicable.

5. Antimicrobial stewardship certificate course

Information about the Course

The Syed Babar Ali School of Science and Engineering at Lahore University of Management Sciences and Pakistan Kidney and Liver Institute and Research Center, currently, offer three day program that provides education on the pharmacist's role in the appropriate use of antimicrobial agents. Program consist of 17 lectures, in form of live-sessions with some online lectures too. The program will include key learning objectives, essential to develop, conduct, and publicize antimicrobial stewardship research and endeavors. Furthermore, there will be pre-assessment quizzes, case studies and a post assessment quiz.

To register

For further information go the link sbasse.lums.edu.pk/antimicrobial-stewardship and register yourself at www.register.lums.edu.pk/

6. Miscellaneous

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