Shaukat Khanum Memorial Cancer Hospital and Research Center

Pharmacy Newsletter

Volume X, Issue # 2, 2020

Issued By:

Drug Information Centre, SKMCH & RC

P&TC Updates:

Following drugs are approved by Pharmacy & Therapeutics Committee (P&TC) during 2020 SKMCH&RC:

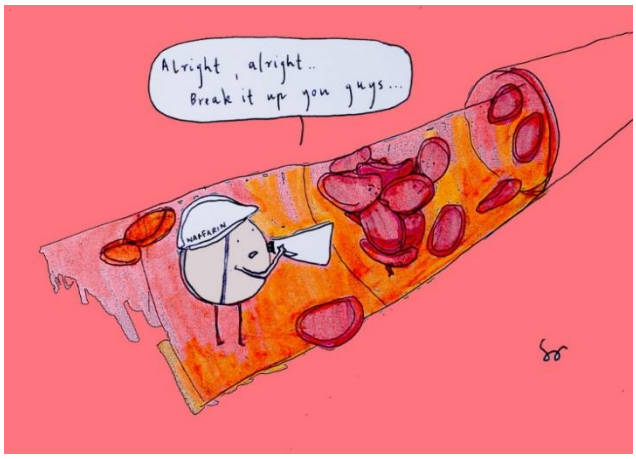
For COVID-19 (Restricted by Services – ICU / IM & ID)

1. **Hydroxychloroquine Tab.**
2. **Chloroquine Tab.**
3. **Tocilizumab Inj**.
4. **Montelukast Tab.**
5. **Ascorbic acid (Vit C) Tab.**

Others

6. **Valacyclovir Tab** – Approved as regular formulary item.
7. **Mometasone Nasal Spray** – Approved as regular formulary item.
8. **Sorafenib Tab** – 4 indigent patients / year (FLT3-ITD Mutated acute myeloid leukemia prior to allogenic transplant)
9. **Plerixafor Inj** – 6 Indigent patients / year (Patients with stem cell harvest failure)

Therapeutic Anticoagulants in SARS-COV 2



Increased inflammatory markers in patients with SARS COV-2 put them in a state of high risk of thrombosis. This risk is much higher in patients who are critically ill, as compared to those with mild to moderate symptoms. In a French prospective multicentred cohort of 150 intensive care unit (ICU) patients, 16.7 % had pulmonary embolism despite prophylactic anticoagulation. Patients with COVID-19 and acute respiratory distress syndrome (ARDS) had increased incidence of pulmonary embolism compared to patients without COVID-19-associated ARDS[1].These patients have elevated D-dimers, which can help in decision making whether therapeutic anticoagulation should be given or not.

As of today, there are no randomized controlled trail available to suggest early therapeutic anticoagulation without evidence of pulmonary embolism or thromboembolism, but some observational/prospective studies have showed benefit in following patients

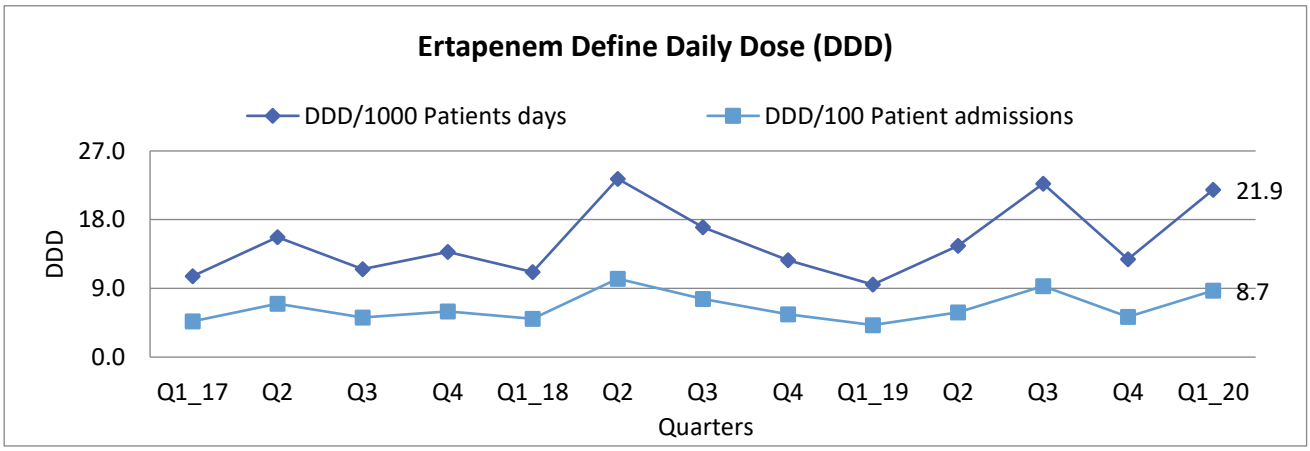
- Increasing D-dimers
- worsening clinical status
- Circuit/ Device clotting (CRRT, ECMO)[2]

Ref: 1) Helms, J., Tacquard, C., Severac, F., Leonard-Lorant, I., Ohana, M., Delabranche, X., & Fafi-Kremer, S. (2020). High risk of thrombosis in patients with severe SARS-CoV-2 infection: a multicenter prospective cohort study. Intensive care medicine, 1-10.

Ref: 2) Turshudzhyan A (May 16, 2020) Anticoagulation Options for Coronavirus Disease 2019 (COVID-19)-Induced Coagulopathy. Cureus 12(5): e8150. doi:10.7759/cureus.8150

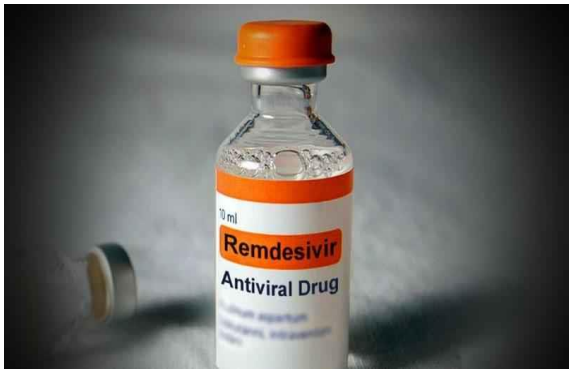
Ertapenem: 1st Quarter 2020 Consumption Analysis at SKMCH & RC

Ertapenem is a carbapenem antibiotic and is mostly used in SKMCH & RC to treat hospital acquired Enterobacteriaceae infections, where it is preferred to be administered as discharge medication or at outpatient parenteral antibiotic therapy (OPAT) bay considering its once daily dosing. This quarterly defined daily dose (DDD) studies for 100 patient admissions and 1000 patient days showed an increase in Ertapenem consumption. We Co-related this rise with Piperacillin-Tazobactam (pip-taz) consumption as mostly patients were switched from pip-taz to Ertapenem. We observed a drop in pip-taz consumption trends providing us with justification in increase in Ertapenem consumption. In March 2020, due to Covid-19 outbreak, many admitted patients who were otherwise stable were discharged on Ertapenem to complete their antibiotic days. So above findings justify increase in consumption trends of Ertapenem. Still both clinical and outpatient department (OPD) pharmacists need to make sure that indication and duration of Ertapenem is appropriate to avoid any unnecessary use in our patients.



New Approvals:

Remdesivir: Wait in Pakistan About to END



Covid-19 — the illness caused by SARS-CoV-2 — is overwhelming health care systems globally. The symptoms vary widely, from asymptomatic disease to pneumonia and life-threatening complications, including acute respiratory distress syndrome, multisystem organ failure, and ultimately, death. Remdesivir is a prodrug of a nucleotide analogue that is intracellularly metabolized to an analogue of adenosine triphosphate that inhibits viral RNA polymerases.

One study containing 61 patients out of which data of 53 patients were retrieved who were given Remdesivir on compassionate use basis. Clinical improvement was observed in 36 of 53 patients (68%).[1]

Another study that was conducted on days of therapy included 397 patients, underwent randomization and began treatment (200 patients for 5 days and 197 for 10 days). Results revealed that, in patients with severe Covid-19 not requiring mechanical ventilation, the trial did not show a significant difference between a 5-day course and a 10-day course of remdesivir.[2] The drug is soon expected to be available in Pakistan, as the government and regulatory authority have granted production license to one of the pharmaceutical industry in Pakistan.

Ref: 1) Grein, J., Ohmagari, N., Shin, D., Diaz, G., Asperges, E., Castagna, A., & Nicastri, E. (2020). Compassionate use of remdesivir for patients with severe Covid-19. New England Journal of Medicine.

Ref: 2) Goldman, J. D., Lye, D. C., Hui, D. S., Marks, K. M., Bruno, R., Montejano, R., & Chen, Y. S. (2020). Remdesivir for 5 or 10 days in patients with severe Covid-19. New England Journal of Medicine.

Dexamethasone Opens New Doors Against COVID-19: Recovery Trial

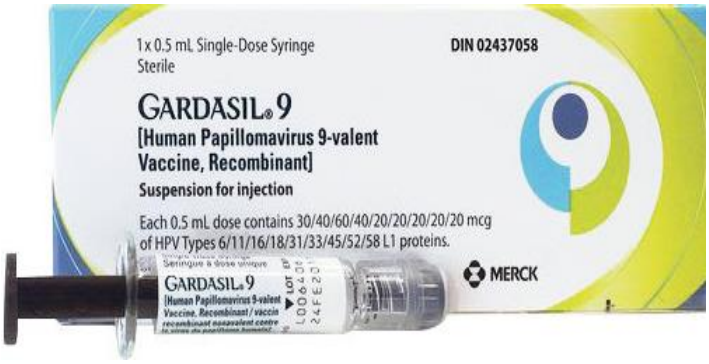
A preliminary, unpublished analysis of "Randomized Evaluation of COVID-19 Therapy (RECOVERY)" study showed that patients who were randomized to receive dexamethasone had a reduced rate of mortality compared to those who received standard of care. An initial analysis was performed on 6,425 participants, with 2,104 participants in the dexamethasone arm and 4,321 in the control arm. For the primary endpoint of 28-day mortality, overall, 21.6% of participants in the dexamethasone arm and 24.6% of those in the control arm died within 28 days of study enrolment. In participants requiring invasive mechanical ventilation at randomization: 29.0% of these participants died within 28 days of study enrolment compared with 40.7% in the control arm showing survival benefit among dexamethasone treated patients. Additionally, 21.5% of dexamethasone-treated patients who required supplemental oxygen at enrolment died within 28 days of enrolment compared with 25.0% in the control arm. However, no survival benefit was observed among the participants who did not require oxygen therapy at enrolment.

Based on these preliminary results:

1. The panel recommends using dexamethasone (at a dose of 6 mg per day for up to 10 days) in patients with COVID-19 who are mechanically ventilated and in patients with COVID-19 who require supplemental oxygen but who are not mechanically ventilated
2. The panel recommends against using dexamethasone in patients with COVID-19 who do not require supplemental oxygen

Ref: https://www.covid19treatmentguidelines.nih.gov/dexamethasone/

Nine-Valent HPV Vaccine: Gardasil 9 Finds New Approvals by FDA



The U.S. Food and Drug Administration (FDA), has granted an accelerated approval of an expanded indication for GARDASIL 9 for the prevention of oropharyngeal and other head and neck cancers caused by HPV Types 16, 18, 31, 33, 45, 52, and 58. The vaccine is indicated for use in both males and females aged 9 through 45 years, for the prevention of different cancers caused by HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58.

For intramuscular use in the deltoid or anterolateral area of the thigh, in individuals 9 through 14 years of age, it can be administered using a 2-dose or 3-dose schedule. For the 2-dose schedule, the second dose should be administered 6-12 months after the first dose. If the second dose is administered less than 5 months after the first dose, a third dose should be given at least 4 months after the second dose. For the 3-dose schedule, GARDASIL 9 should be administered at 0, 2 months, and 6 months. For individuals 15 through 45 years of age, GARDASIL 9 is administered using a 3-dose schedule at 0, 2 months, and 6 months.

The most common (≥ 10%) local and systemic adverse reactions like injection site pain, swelling, erythema, and headache in females, whereas injection site pain, swelling, and erythema in males could be the result of treatment with this vaccine.

Ref: https://investors.merck.com/news/press-release-details/2020/FDA-Approves-Mercks-GARDASIL-9-for-the-Prevention-of-Certain-HPV-Related-Head-and-Neck-Cancers/default.aspx

Tucatinib: First New Drug Approved Under International Collaboration for HER2+ve Metastatic Breast Cancer

Tukysa, a tyrosine kinase inhibitor has just received approval from FDA to be used in combination with chemotherapy (Trastuzumab and Capecitabine) on the basis of a phase 3 HER2CLIMB trial that enrolled 612 patients with HER2-positive unresectable locally advanced or metastatic breast cancer who had previously received, either separately or in combination, trastuzumab, pertuzumab, and ado-trastuzumab emtansine (T-DM1). All patients (nearly 48% with brain metastasis) received trastuzumab 3 weekly and capecitabine 1000mg/m2 PO BID, day 1-14 of each 21 days cycle and were randomly assigned to either tucatinib 300mg PO BID, or placebo orally twice daily.

1-year progression-free survival was 33.1% VS 12.3% and overall survival at 2 years was 44.9% VS 26.6% in tucatinib and the placebo-combination group, respectively. Median duration of progression-free survival was 7.8 months VS 5.6 months, and median overall survival was 21.9 months VS 17.4 months, in tucatinib and the placebo-combination group respectively.

With a dosing recommendation of 300 mg twice daily PO (in combination with trastuzumab and capecitabine) until disease progression or unacceptable toxicity, common side effects were diarrhea, palmar-plantar erythrodysesthesia syndrome, nausea, fatigue, hepatotoxicity, vomiting, stomatitis, decreased appetite, abdominal pain, headache, anemia, and rash.

Ref: https://www.fda.gov/news-events/press-announcements/fda-approves-first-new-drug-under-international-collaboration-treatment-option-patients-her2

New indications for "Atezolizumab"

On 19 May 2020, Roche® pharmaceuticals announced that FDA has granted approval to atezolizimab as a first-line (initial) treatment for adults with metastatic non-small cell lung cancer (NSCLC) with high PD-L1 expression on tumor cells or PD-L1 stained tumor-infiltrating immune cells, with no EGFR or ALK genomic tumor aberrations. The Phase III IMpower110 study interim analysis showed atezolizumab monotherapy improved overall survival (OS) by 7.1 months compared with chemotherapy[1].

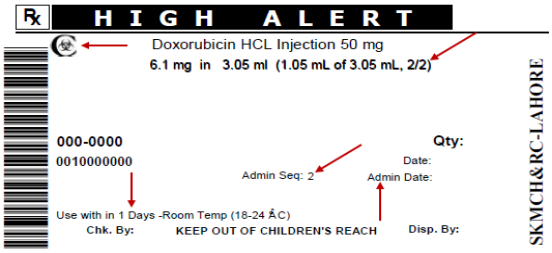
FDA approved Atezolizumab to be used in combination with bevacizumab for patients with unresectable or metastatic hepatocellular carcinoma who have not received prior systemic therapy, on May 29, 2020. IMbrave150, a multicenter, international, open-label, randomized trial investigated the efficacy of combination in comparison to sorafenib. Median OS was not reached in the patients who received atezolizumab plus bevacizumab and was 13.2 months in the patients who received sorafenib with an estimated median PFS of 6.8 months vs. 4.3 months, respectively[2].

Ref: 1) https://www.roche.com/media/releases/med-cor-2020-05-19.htm

Ref: 2) https://www.fda.gov/drugs/drug-approvals-and-databases/fda-approves-atezolizumab-plus-bevacizumab-unresectable-hepatocellular-carcinoma

Pharmacy Practices & HIS Updates:

1. Online review and verification of chemotherapy protocol by pharmacist through HIS.
2. All ADRs entered by healthcare professionals will now be reviewed and finalized by pharmacist.
3. Oral chemotherapy leaflets made online.
4. Chemotherapy labels have been updated and will now show the following additional features,
   - Chemotherapy symbol
   - Stability information
   - Administration date
   - Sequence number
   - Number of bags in case of multiple bags



Regulatory Updates:

Ketamine & Ketamine Hydrochloride Salt Addition in Psychotropic Substances List

On Wednesday May 20, 2020, ministry of narcotics control Pakistan published a notification in the gazette of Pakistan, stating the inclusion of "Ketamine" in the list of psychotropic substances. The authority not only included Ketamine, but also included Ketamine Hydrochloride Salt along with its chemical formula.

PPMA warns about medicinal raw material shortage in Pakistan

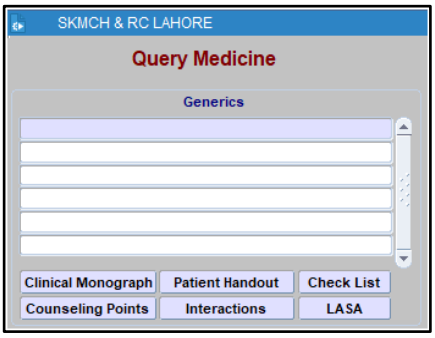
Pakistan Pharmaceutical Manufacturers' Association (PPMA) has raised the concern that due to a lockdown in several foreign countries the raw material required to produce medication are running short and difficult to import. The raw material is mostly imported from China and India, but the political tension and scarcity of raw material have halted the various import processes. This may affect the medicines production and supply chain in coming few months.

Investigational Drugs & Trials:

In SKMCH&RC, Lahore currently two trails are in process which include RIFASHOT & WHO Solidarity trial. One is related to estimation of toxicity and efficacy of anti-tuberculosis drugs, whereas other is involved in finding and effective treatment against COVID-19. Department of pharmaceutical services SKMCH & RC is responsible for keeping and maintaining the stock inventory, preparation and dispensing of the investigational drugs.

Drug Resources at SKMCH & RC

Other than pharmacy drug information services extension 3260, 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 T-guidelines in HIS.

Prescribing guidelines for concentrated electrolytes are now available in T-Guidelines

Drug Allergies

Do's Don'ts

DOs:

- Collect detailed information of allergies at the time of reconciliation
- Distinguish ADR as a side effect, toxicity, intolerance, idiosyncrasy, or allergy
- Consider standardized fields for reaction type, description and patient preference
- Reconcile allergy information with patient

DON'T:

- Use free texts to enter allergy, rather use allergy column to mark drug name and its combinations
- Mark intolerance and side effects to any drug as allergy
- Forget about allergy to a drug taken at home, and write a physician note for it

Report Allergy
Before It Reports in Emergency

Drug Allergy

FAST FACTS

- *Can be life threatening*
- *Always Document*
  - *Use HIS*
  - *Consider similar generics / class*
- *For any support*
  Call Pharmacy Drug Information
  EXT 3260

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.

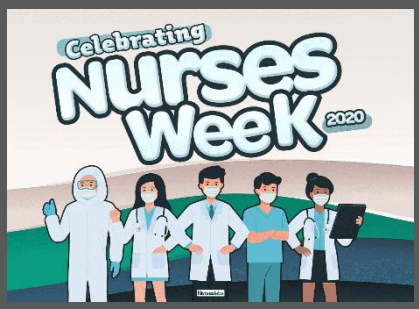
a. Allergies
b. Fatal drug/drug interactions
c. Weight based dosage
d. Potential organ toxicity

JCI Mock Survey:

Recently a team from SKMCH & RC Peshawar has conducted a mock survey of SKMCH & RC Lahore, it was wonderful experience and best way to rehearse all staff.

Tribute to Nursing Services at SKMCH&RC

Department of Pharmaceutical Services SKMCH & RC celebrated national nurses' week on May 6-12, 2020. We appreciate and acknowledge the hardworking, care, and dedication of our nursing staff in the COVID-19 pandemic.



Pharmacy Online Internship Program

In order to continue training and development of fresh pharmacist graduates during the COVID-19, the department of pharmaceutical services has introduced an online internship program, the first ever program of online education and training of the region. The first batch of 10 students has successfully completed their online internship and thus will be awarded certificates of completion of one-month online internship program.

Pharmacy Residency

Department of pharmaceutical services presents the highlights of visit to Wilshire laboratories by the ASHP resident Ms. Hamayal Khalid. The purpose of this visit was to explore the ideas and concepts involved in aseptic procedures for the development of pharmaceutical products.


Certificate of Achievement

Adeel Siddiqui

has completed the following course:

COVID-19: TACKLING THE NOVEL CORONAVIRUS
LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE AND UK PUBLIC HEALTH RAPID SUPPORT TEAM

With the outbreak of a novel coronavirus declared a pandemic by the World Health Organisation, people worldwide are working to address it. This course taught the latest of what we know about COVID-19, presented by international experts.

3 weeks, 4 hours per week

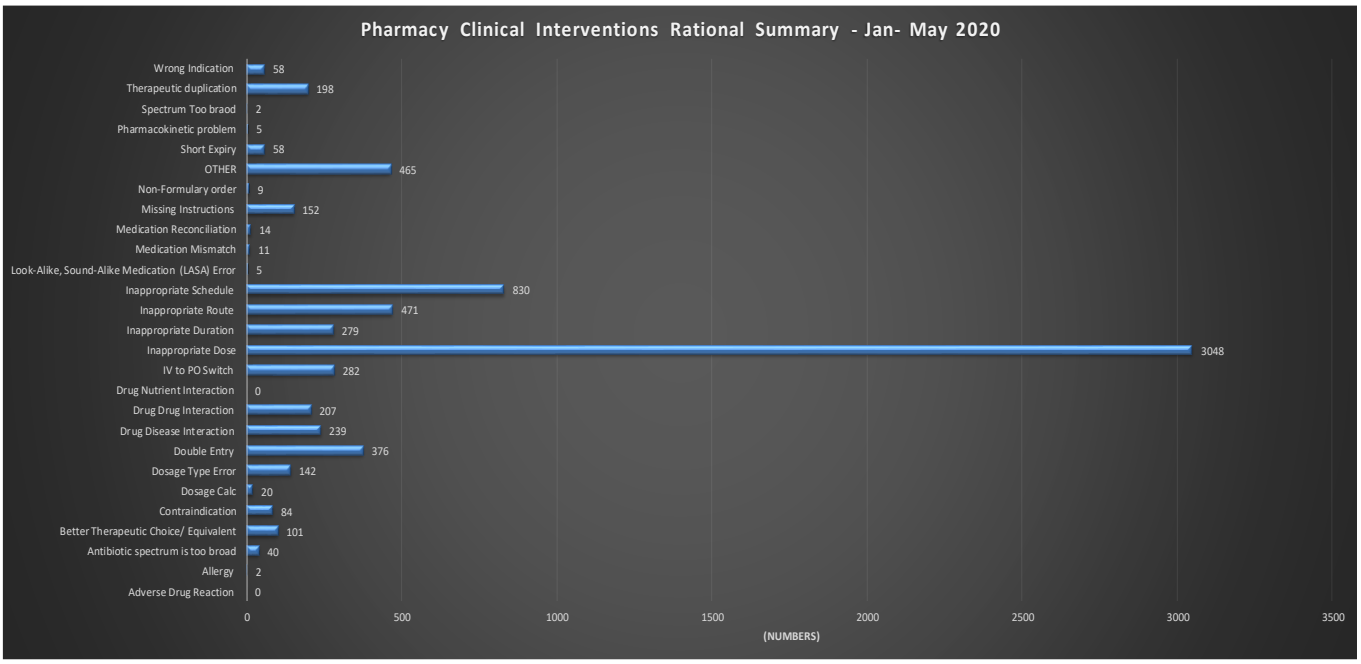
Dr Anna Seale
Associate Professor, Wellcome Trust Career Development Fellow and Deputy Director for Research for the UK Public Health Rapid Support Team
London School of Hygiene & Tropical Medicine

UK Public Health Rapid Support Team

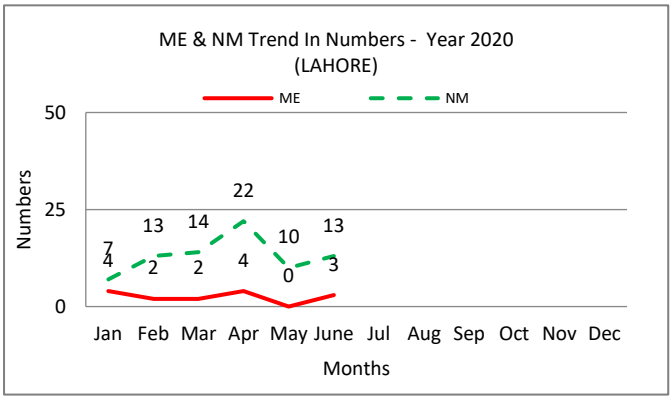
Certificate of Achievement
COVID-19: Tackling the Novel Coronavirus

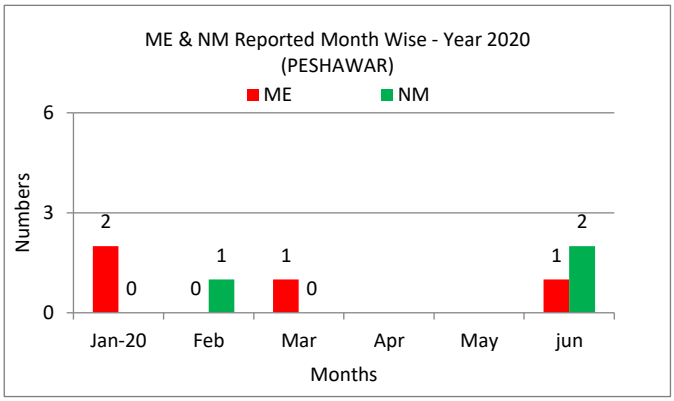
Adeel Siddiqui
Staff Pharmacist, Clinical Pharmacy Services
ASHP Preceptor- Surgical Services

Clinical Pharmacy Interventions Update

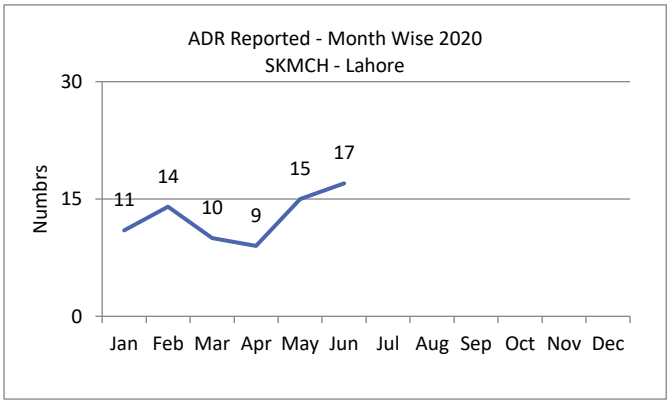


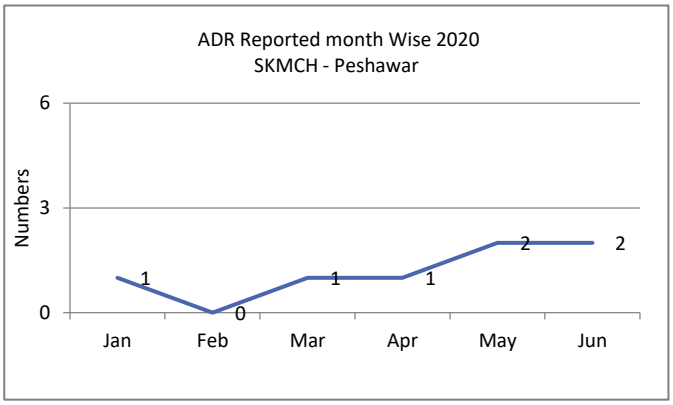
Medication Errors and Near Miss Update





Adverse Drug Reactions (ADR's) Update





P&TC Update – 17th April 2020

MMU Policies Updated:

- Policy on Intrathecal (IT) Medications.
- Policy on Oral Chemotherapy Workflow.
- Policy on Chemotherapy Associated Hypersensitivity.
- Policy on Chemotherapy Extravasation.
- Policy on IV admixture.

Feed Back

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