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Pharmline Editorial Board

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From the Chief Editor's Desk

Prof. Dr. Boby Johns G

Dear Readers,

With immense pride and a sense of accomplishment, we present the January 2025 issue of Pharmaline. This publication is not just a reflection of our collective efforts but a testimony to the vibrant growth and progress of the Pharmacy Pofession in our State. The past year has been a remarkable journey, with the KPGA spearheading numerous impactful programs aimed at enhancing professional development and fostering innovation in the Pharmaceutical sector.

As we step into a new year, the spotlight is on one of the most anticipated events in our professional calendar- The Kerala Pharmaceutical Congress- 2025. Scheduled to be held on February 21st and 22nd at the prestigious Caritas College of Pharmacy, Ettumanoor.This event promises to be a landmark gathering for pharmacy professionals, educators, researchers, and students. The chosen theme for this year, "AI and Emerging Technologies: Transforming Pharmacy Education and Industry," resonates with the rapid technological advancements reshaping the landscape of healthcare and pharmacy. It underscores the need for the pharmacy community to adapt, innovate, and embrace these changes to remain at the forefront of global healthcare evolution.

The Congress will feature an impressive lineup of experts from academia, industry, and regulatory bodies who will share their insights on leveraging AI and emerging technologies. It will also include workshops, panel discussions, and poster presentations, providing participants with a comprehensive understanding of the latest developments and their practical applications. For pharmacy students, this event is a golden opportunity to interact with industry leaders and gain valuable exposure to cutting-edge advancements.

I urge all members of the Kerala Pharmacy Graduates' Association and the broader pharmacy community to make it a point to attend this Congress. Your involvement is vital in ensuring the event's success and in collectively driving the profession toward new horizons. Let us come together to celebrate the spirit of innovation, collaboration, and excellence that defines our field.

I look forward to seeing you all at the Kerala Pharmaceutical Congress-2025 and wish you a year filled with growth, learning, and success.Thank you once again for your support to this editorial board in bringing out the 9th issue of Pharmline.

Regards,

Prof. Dr. Boby Johns G
Chief Editor, Pharmline

The President Speaks

Dr. PK Sreekumar

Warm greetings to all!

It brings me immense joy to reflect on the remarkable success of the National Pharmacy Week (NPW) Celebration 2024, held at VJT Hall, Thiruvananthapuram. This event stood as a testament to the unity and dedication of our pharmacy fraternity. With 570 participants, including dignitaries, faculty, and students, the program was truly a celebration of our profession. The Pharma Rally, Knowledge Updation Seminar, and engaging panel discussion on "Pharma City" brought valuable insights, while the student entertainment programs added a vibrant touch

A special moment during the event was the launch of the logo for the Kerala Pharmaceutical Congress (KPC) 2025, along with the release of the November 2024 Pharmline issue. It was heartening to announce Ms. Anagha Sreekumar, the winner of the KPC logo competition, whose creativity was commendable.
My heartfelt gratitude goes out to all those who contributed to the event's success—our patrons, organizing team, committee members, and especially the participating colleges. Your enthusiasm and dedication inspire us to continue advancing our profession

As we look ahead, I am excited about the Kerala Pharmaceutical Congress 2025, scheduled for February 21–22, 2025, at Caritas College of Pharmacy, Kottayam. With over 13 committees actively preparing for this grand event, we aim to create a platform for innovative discussions, professional networking, and collaborative opportunities. I urge all pharmacy professionals and students to join us in this endeavor, as your participation will be the cornerstone of its success.

Let us continue to work together to elevate the profession of pharmacy and make a lasting impact on healthcare and society.

Best wishes,

Warm regards,

Dr. PK Sreekumar
President, Kerala Pharmacy Graduates' Association

FIVE YEARS TO THE COVID-19 PANDEMIC

Dr. Sowparnika Treasa Sabu
Associate Editor, Pharmline

Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has significantly impacted global health, economies, and societies since its emergence in December 2019. Declared a global pandemic by the World Health Organization (WHO) on March 11, 2020, it has reshaped our understanding of infectious diseases, health systems, and public health responses. This review reflects on the trajectory, impacts, and lessons learned during the five years of the COVID-19 pandemic.

Initial Outbreak and Global Spread

The pandemic began with a cluster of unexplained pneumonia cases in Wuhan, China. The rapid global spread was facilitated by international travel and interconnectedness, overwhelming healthcare systems worldwide. Key milestones include:

- The initial identification of SARS-CoV-2 in January 2020.
- Early lockdowns in China, followed by global restrictions.
- The first reported case outside China (Thailand, January 13, 2020).

By 2021, several waves driven by variants such as Alpha, Delta, and Omicron underscored the virus's mutability and transmissibility.

Public Health Interventions and Challenges Countries adopted various strategies to curb the spread, ranging from stringent lockdowns and mask mandates to contact tracing and vaccination campaigns. While some countries effectively controlled transmission, others struggled with compliance, misinformation, and inadequate infrastructure. Major challenges included:

- Initial delays in detecting and reporting cases.
- Shortages of personal protective equipment (PPE) and ventilators.
- Vaccine hesitancy and unequal distribution.
- Infodemics, or the rapid spread of misinformation, which hindered public trust.

Vaccination Efforts

Vaccines were a pivotal milestone in combating COVID-19. The development, approval, and distribution of vaccines in under a year was unprecedented.

Key highlights

- Emergency use Authorizations for mRNA vaccines (Pfizer-BioNTech, Moderna) and vector vaccines (AstraZeneca, Johnson & Johnson).
- Global initiatives like COVAX aimed to ensure equitable distribution but faced challenges with funding and accessibility.
- Booster doses became critical as immunity waned and new variants emerged.

Socioeconomic Impact

Despite remarkable achievements, disparities in vaccine coverage persisted, with low-income countries lagging significantly behind high-income nations.

The pandemic disrupted every aspect of life:

- **Healthcare Systems:** Overwhelmed with COVID-19 cases, leading to deferred care for non-COVID conditions.
- **Economies:** Global GDP contracted by 3.4% in 2020, with millions losing jobs. Informal workers and small businesses were disproportionately affected.
- **Education:** School closures impacted over 1.5 billion students at the peak of the pandemic, widening educational inequalities.
- **Mental Health:** Isolation, grief, and uncertainty led to a global rise in anxiety and depression rates.

Lessons Learned

- *Preparedness is Crucial:* The pandemic underscored the importance of robust pandemic preparedness plans, emphasizing surveillance, rapid diagnostic tools, and stockpiling essential supplies.
- *Global Cooperation:* Success in managing a pandemic hinges on international collaboration, as seen with vaccine development and data-sharing initiatives.
- *Strengthening Healthcare Systems:* Universal

healthcare, adequate staffing, and infrastructure investment are pivotal in managing future health crises.

Addressing Inequities

Vulnerable populations were disproportionately affected, highlighting the need for policies prioritizing equity.

Advances in Science and Technology

The pandemic accelerated innovation:

- Rapid diagnostics like RT-PCR and antigen tests.
- Telemedicine and digital health solutions scaled globally.
- Advancements in mRNA technology with implications beyond COVID-19, including vaccines for other diseases like cancer

Indian COVID-19 Management and Govt. Initiatives

- India's response to the COVID-19 pandemic was multifaceted, encompassing nationwide lockdowns, testing and vaccination campaigns, technological innovations, and collaborative healthcare strategies. The measures, although initially challenging, highlighted the country's resilience and commitment to safeguarding public health.

1.Nationwide Lockdowns and Travel Restrictions

India implemented one of the world's most extensive lockdowns in March 2020, effectively curbing the rapid spread of the virus. Inter-state and international travel restrictions helped delay community transmission while healthcare systems were scaled up.

2. Testing and Surveillance

Efforts were intensified to expand testing capabilities, moving from centralized RT-PCR laboratories to widespread antigen testing across urban and rural settings. Initiatives like door-to-door surveys, containment zones, and digital contact tracing via the Aarogya Setu app showcased the adoption of innovative strategies to track the disease.

3. Vaccine Development and Distribution

India played a pivotal role in global vaccination efforts. Covaxin and Covishield were developed and manufactured domestically, with the government launching the largest vaccination drive on January 16, 2021. Over 2 billion doses were administered, achieving remarkable coverage in record time. Additionally, India supplied vaccines to several countries under the Vaccine Maitri initiative.

4. Technological Integration

- The CoWIN platform enabled seamless registration, scheduling, and certification of vaccinations, serving as a model for digital health systems lobally.
- Telemedicrvices such as eSanjeevani, provided remote consultations, especially to underserved regions.

5. Healthcare Infrastructure

Temporary COVID care centers and increased ICU capacity addressed the surge in hospitalizations. Public-private collaborations led to the production of medical oxygen, ventilators, and essential medicines to meet demand during the pandemic's peaks.

6. Financial and Food Security Measures

The Pradhan Mantri Garib Kalyan Yojana (PMGKY) provided free rations and direct financial support to vulnerable populations. Schemes like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) helped sustain livelihoods in rural areas during prolonged lockdowns.

7. Public Awareness and Behavioral Interventions

Mass campaigns, including "Mask Up India" and vaccine literacy programs, encouraged adherence to COVID-appropriate behaviors. Social media, radio, and television broadcasts disseminated critical information to combat misinformation.

8. Collaboration with States and Local Bodies

Coordination among central, state, and local governments facilitated region-specific responses. District-level task forces played a crucial role in implementing containment measures and monitoring rural healthcare systems. These initiatives highlighted India's capacity to address an unprecedented crisis while underscoring areas for improvement in healthcare preparedness and equity. Moving forward, the experience provides valuable lessons in resilience and innovation for future public health challenges.

Future Directions

As we move forward, the focus must be on:

- Pandemic Preparedness: Strengthening early warning systems and response frameworks.
- Global Equity: Ensuring access to healthcare and vaccines for all.
- Research: Understanding long COVID and preparing for emerging variants or future pandemics.
- Mental Health: Prioritizing psychological support services to mitigate long-term impacts.

Five years since its onset, the COVID-19 pandemic has fundamentally altered the global landscape. While the losses are profound, the lessons learned offer a path toward resilience and readiness. Moving forward, a concerted global effort is essential to mitigate future pandemics, ensuring a healthier, more equitable world.

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Nucleic Acid Drugs: A New Era in Medicine and Gene Editing

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Abstract

Nucleic acid drugs target the genetic material inside cells to fix mutations or control how genes are expressed. They include small interfering RNA (siRNA), antisense oligonucleotides (ASOs), and mRNA-based vaccines. Unlike traditional medications, these drugs work at the genetic level, providing targeted treatments for conditions such as muscular dystrophy, cystic fibrosis, and certain cancers.The success of mRNA vaccines during the COVID-19 pandemic highlighted how these technologies can be used to fight viruses. This success has also spurred interest in their potential to treat cancers and other immune-related conditions.

Keywords: Nucleic acid drugs, antisense oligonucleotides, personalized medicine.

Introduction

Nucleic acid drugs are making waves in the medical field, offering groundbreaking potential to treat genetic disorders and complex diseases. These innovative therapies, built on genetic material like DNA and RNA, are opening new possibilities in gene therapy and personalized medicine.

What Are Nucleic Acid Drugs?

Nucleic acid drugs target the genetic material inside cells to fix mutations or control how genes are expressed. They include small interfering RNA (siRNA), antisense oligonucleotides (ASOs), and mRNA-based vaccines. Unlike traditional medications, these drugs work at the genetic level, providing targeted treatments for conditions such as muscular dystrophy, cystic fibrosis, and certain cancers.

The success of mRNA vaccines during the COVID-19 pandemic highlighted how these technologies can be used to fight viruses. This success has also spurred interest in their potential to treat cancers and other immune-related conditions.

Advancing Gene Editing Technologies

Nucleic acid drugs go hand in hand with advanced gene editing tools like CRISPR-Cas9. These tools allow scientists to modify DNA with remarkable precision, offering hope for correcting genetic defects and preventing hereditary diseases.

Newer techniques like "base editing" and "prime editing" take this precision even further. They can make small, targeted changes to DNA without breaking its structure. This is particularly promising for treating conditions like sickle cell anemia, which are caused by single genetic mutations. Delivering these therapies effectively is another area of focus. Lipid nanoparticles (LNPs) are being studied as a way to safely transport nucleic acids into cells without them breaking down before reaching their target.

Ethical Questions and Hurdles

Despite their potential, nucleic acid drugs and gene editing technologies raise important ethical issues. The ability to modify human genes has led to debates about the risks of "designer babies" and altering traits unrelated to health. Regulators are keeping a close eye on these developments to ensure that they are used responsibly, with attention to safety and fairness.

There are also scientific challenges to address. Long-term safety, off-target effects, and the lasting impact of genetic changes remain key concerns as these therapies move from trials to wider use.

Looking Ahead

The future of nucleic acid drugs is bright. Researchers are working to improve their delivery, lower costs, and broaden their applications to common health problems like heart disease and neurodegenerative disorders.

The Role of Pharmacy Workflows in Home-based Healthcare (HaH) Programs

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Abstract

Pharmacy workflows in HaH programs refer to the structured procedures and systems involved in managing, reviewing, dispensing, and monitoring medications for patients receiving care at home. The goal is to ensure that patients receive the right medications, at the right time, and in the right manner, reducing risks while enhancing the overall quality of care. Pharmacy workflows in HaH programs consist of several crucial elements designed to maintain high standards of patient safety and care quality
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Keywords: HaH programs, medication review, Telepharmacy , remote support

Home-based Healthcare (HaH) programs have emerged as a transformative approach in modern healthcare, enabling patients to receive quality medical care in the comfort of their homes rather than in traditional hospital settings. One critical component of these programs is the pharmacy workflow—a systematic process for managing and delivering medications to ensure safe, effective, and personalized patient care. This article delves into the pivotal role of pharmacy workflows in HaH programs and their importance in enhancing patient outcomes.

Understanding Pharmacy Workflows in HaH Programs

Pharmacy workflows in HaH programs refer to the structured procedures and systems involved in managing, reviewing, dispensing, and monitoring medications for patients receiving care at home. The goal is to ensure that patients receive the right medications, at the right time, and in the right manner, reducing risks while enhancing the overall quality of care.

Key Components of Pharmacy Workflows in HaH Programs

Pharmacy workflows in HaH programs consist of several crucial elements designed to maintain high standards of patient safety and care quality:

1. Medication Review and Reconciliation

Before a patient is enrolled in an HaH program, a comprehensive review of their current medications is conducted. This step involves:

- Identifying Duplicate Medications: Ensuring patients are not prescribed two drugs with the same active ingredients
- Preventing Drug Interactions: Identifying medications that may react negatively when taken together.
- Updating Medication Records: Keeping detailed, accurate records to ensure proper prescribing and monitoring.
- A well-conducted medication review reduces the likelihood of adverse drug reactions and ensures a safer start to home-based care.

2.Remote Pharmacist Consultations (Telepharmacy)

- Telepharmacy has revolutionized the way pharmacists provide care in HaH programs. Through remote consultations using phone or video calls, pharmacists can:
- Provide Medication Guidance: Educate patients and caregivers on proper medication use and potential side effects.
- Offer Real-time Support: Address medication-related queries as they arise.
- Train Caregivers: Empower family members and caregivers with the knowledge required for safe medication administration.

This remote support bridges the gap between patients and healthcare professionals, ensuring continuous care even outside hospital settings.

3. Medicine Dispensing and Delivery

Timely and accurate delivery of medications is a cornerstone of HaH programs. Pharmacy workflows ensure:

- Direct Home Delivery: Medications are sent directly to the patient's home.
- Proper Storage Management: Medications requiring special storage conditions, such as refrigeration, are handled carefully.
- Error Prevention: Modern digital tools are used to verify prescriptions and avoid dispensing mistakes.

This streamlined approach not only simplifies the process for patients but also reduces logistical challenges for caregivers.

4. Monitoring and Managing Side Effects

Ongoing monitoring is vital to ensure that patients respond well to their medications. Pharmacy workflows incorporate:

- Digital Health Tools: Apps and virtual platforms to track medication adherence and side effects.
- Prompt Action on Adverse Reactions: Pharmacists can intervene immediately if side effects occur.
- Clear Communication: Continuous updates between the healthcare team and the patient for effective care management.

This proactive monitoring helps prevent complications and enhances the safety of HaH programs.

Benefits of Optimized Pharmacy Workflows in HaH Programs

Implementing a structured pharmacy workflow brings numerous advantages to both patients and healthcare systems.

1. **Enhanced Patient Safety**

- Error Reduction: Thorough medication reviews prevent harmful drug interactions and duplications.
- Safer Transitions of Care: Accurate record-keeping minimizes mistakes during care transitions.

2. Improved Medication Adherence

- Personalized Counseling: Pharmacists educate patients and caregivers on the importance of proper medication use.
- Automated Reminders: Apps and digital tools help patients stay on track with their medication schedules.

3. Cost Savings and Operational Efficiency

- Reduced Hospital Readmissions: Proper medication management lowers the risk of complications that could lead to hospital visits.

Optimized Staffing: Clear workflows reduce the need for additional healthcare personnel without compromising quality.

4. Patient-Centered Care

- Comfort and Familiarity: Patients receive care in their own homes, promoting emotional well-being.
- Stronger Patient-Pharmacist Relationships: Direct interactions with pharmacists offer personalized care and build trust.

Pharmacy Workflows in HaH Programs: The Indian Context

India is witnessing a growing demand for HaH programs due to its expanding aging population and the need for cost-effective healthcare solutions. Implementing standardized pharmacy workflows in HaH services can be a game-changer by:

- Addressing Medication Errors: Preventing errors in a country where polypharmacy (multiple medications) is common.
- Reducing Healthcare Costs: Minimizing hospital visits and preventing medication-related complications.
- Expanding Access: Using telepharmacy to reach patients in remote areas where healthcare facilities are limited.

Conclusion

A Critical Pillar for Home-based Healthcare Success,Pharmacy workflows play a crucial role in the success of Home-based Healthcare programs by ensuring that patients receive safe, effective, and personalized medication management at home. From medication review and remote consultations to timely dispensing and continuous monitoring, every step contributes to better patient outcomes and a more efficient healthcare system.

As HaH programs continue to grow, particularly in countries like India, optimizing pharmacy workflows will be essential for ensuring safe, cost-effective, and patient-centered care, ultimately transforming the way healthcare is delivered.

Heavy Metals in Plants : Challenges and Solutions

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Abstract

Heavy metals, defined as elements with high atomic weights and densities, are omnipresent in our environment. While some, like zinc (Zn) and copper (Cu), are essential for biological functions, others, such as lead (Pb), cadmium (Cd), and mercury (Hg), are notorious for their toxicity. The accumulation of heavy metals in plants has become a pressing concern, especially for agriculture, food safety, and pharmaceutical industries.

Keywords: Heavy metals,WHO, Effluents, Nanotechnology

Heavy metals, defined as elements with high atomic weights and densities, are omnipresent in our environment. While some, like zinc (Zn) and copper (Cu), are essential for biological functions, others, such as lead (Pb), cadmium (Cd), and mercury (Hg), are notorious for their toxicity. The accumulation of heavy metals in plants has become a pressing concern, especially for agriculture, food safety, and pharmaceutical industries.

Sources of Heavy Metals in Plants

Heavy metals infiltrate agricultural systems from both natural and anthropogenic sources:

1. Natural Sources: Weathering of rocks, volcanic activity, and forest fires release metals like arsenic (As) and selenium (Se) into the environment.

2. Human Activities: Industrial effluents, mining, smelting operations, and excessive use of chemical fertilizers, pesticides, and sewage sludge have led to unprecedented soil contamination.

3. Atmospheric Deposition: Airborne pollutants settle on soil and plant surfaces, further amplifying the risk ofh contamination

Impact on Plant Physiology

Heavy metals affect plants in multifaceted ways:
Toxicity at High Levels: Metals like Pb and Cd disrupt enzymatic activities, induce oxidative stress by generating reactive oxygen species (ROS), and impair nutrient uptake, leading to reduced growth and productivity.

Nutritional Benefits at Trace Levels: Essential metals like Zn, Cu, and iron (Fe) are vital for photosynthesis, protein synthesis, and enzymatic functions. Their deficiency can result in poor crop health.

Human Health Implications

Plants contaminated with heavy metals directly impact human health through dietary exposure. Chronic ingestion of these metals can lead to serious health conditions:

Lead (Pb): Associated with cognitive impairments, cardiovascular issues, and kidney dysfunction.

Cadmium (Cd): Linked to bone demineralization, renal damage, and increased risk of cancer.

Mercury (Hg): Causes neurotoxicity, especially in developing fetuses and children.

Arsenic (As): Long-term exposure can lead to skin lesions, cancer, and cardiovascular diseases.

The contamination of staple crops like rice, wheat, and leafy vegetables is a growing concern globally, necessitating stringent monitoring and regulation.

Impact on Medicinal Plants and Pharmaceuticals

Medicinal plants form the backbone of traditional and modern medicine. However, their ability to bioaccumulate heavy metals can compromise therapeutic efficacy and patient safety. For instance:

Studies have shown elevated levels of Pb, Hg, and arsenic in Ayurvedic and herbal preparations, leading to global recalls.

The World Health Organization (WHO) has highlighted the need for regulating heavy metals in medicinal products, emphasizing the importance of sourcing raw materials from uncontaminated regions.

Mitigation Strategies

To combat the challenges posed by heavy metal contamination, a multi-pronged approach is essential:

i**. Soil Remediation Technique**:

Phytoremediation: Using hyper accumulator plants like Brassica juncea (Indian mustard) to extract heavy metals from contaminated soil.

Chemical Stabilization: Adding substances like lime or biochar to immobilize metals in the soil.

ii Regulated Agrochemical Use: Reducing the use of fertilizers and pesticides containing heavy metals.

iii. Advanced Monitoring Systems:

Employing atomic absorption spectroscopy (AAS) and inductively coupled plasma mass spectrometry (ICP-MS) for precise detection.

i**v. Geographical Conditions**

Herbs harvested from Perumbavoor, Kerala, contain heavy metals, whereas those from Idukki are free from such contamination due toh significant environmental differences. Perumbavoor's industrial activities, polluted water sources, and urbanization likely contribute to soil and air contamination, leading to heavy metal accumulation in plants. In contrast, Idukki's pristine environment, reliance on clean mountain water, and minimal industrial impact result in cleaner herbs. This highlights the importance of sourcing herbs from unpolluted areas like Idukki and implementing stringent quality checks to ensure the safety and efficacy of Ayurvedic products.

4. Policy and Regulation:
Implementing and enforcing maximum permissible limits for heavy metals in soil, water, and crops as per standards by FAO, WHO, and local authorities.

5. Public Awareness: Educating farmers and stake holders about sustainable farming practices and the risks of heavy metal contamination.

Future Outlook

The intersection of agriculture, health, and industry calls for innovative solutions. The integration of nanotechnology for metal detection,biotechnological advances to develop metal-resistant crop varieties, and stricter quality assurance protocols in pharmaceuticals are promising pathways.

As pharmacists and healthcare professionals, ensuring the safety of plant-based food and medicinal products is not just an ethical obligation but also a cornerstone of public health. Collaborative efforts between scientists, policymakers, and industries are pivotal to addressing this global challenge.

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Activities & News

Mr. Abdul Nazeer PU
Gen.Secretary, KPGA

It gives me immense pleasure to present the activity repot of KPGA for 2024–2025.

Annual General Body Meeting 2024

The annual general body meeting pf KPGA for the year 2024 was conducted on 4th august 2024, 10 am at KPGA bhavan, Thiruvananthapuram. Program started with prayer song followed by welcome speech by Mr. Mathew. Kokkad, KPGA executive member. Thereafter Dr. C. R. Sudhakaran Nair delivered a condolence speech as a tribute to Dr Mohammed. Majeed. Dr P K Sreekumar, Former deputy Drugs Controller and President of KPGA presided over the meeting. As KPGA general secretary, Sri Abdul Nazeer couldn't attend the meeting due to some health issues, Ms Sangeetha. R, Joint scretary of KPGA presented Annual report for the year 2023- 24 and minutes of last GB. Treasurer Mr. Sunil Kumar. D presented the audited financial report.
Dr. Kala. D, Vice president KPGA and Chairperson- Student project scheme presented report on student funding.After lunch break general discussion was conducted and the programme concluded with vote of thanks by Ms. Sangeetha. R.

National Symposium 24

Sreekrishna College of Pharmacy and Research Centre (SKCPRC) in association with KPGA conducted a National Symposium with the theme 'Mastering the art of learning pharmacy laws and important amendments on 6th august, 2024. programme started at 10 am with prayer song. Chief guest and resource person of the program was P K Sreekumar, President of KPGA and delivered a wonderful speech on the topic 'Latest amendments of Dugs and cosmetic acts ' followed by discussions. Thereafter second session started on the topic 'Artificial Intelligence impact on contemporary drug research and pharmaceutical formulations which was led by Prof Dr. Daniel Xaviour Prasad, Department of Pharmacognosy, SKCPRC. Programme concluded with the speech of Dr Prasobh, Principal of SKCPRC.

Independence Day Celebration August 15, 2024

KPGA student's wing conducted an online program on August 15 at 11.00 AM in connection with Independence Day Celebration. The program was started with a prayer song by Mrs Namitha. K.N (Associate professor, ECPS). Welcome address was given by Aathira.R.S (Online Pharmacy tutor, Hyderabad) and presided by Professor Pankajakshy (Rtd principal, Dale view college of pharmacy). The programme was anchored by Saranya. T. R and Anitha. K, Assistant professors, Sree gokulam SNGM college of pharmacy.

The Independence Day message was delivered by Prof. S. M. Sandhya (Head of Pharmaceutical chemistry department, ECPS). Studens forum tmembers of KPGA Aswin S (Dale view college of pharmacy) and Mary Jinsha (SreeGokulam SNGM college of pharmacy) were given Independence day speech followed by musical performances by Mridula Madhu (SreeGokulam SNGM college of pharmacy), Sivani (Dale view college of pharmacy), Phoeba Sara Cherian (CPS, Kottayam). Vote of thanks was proposed by Shanthi. Nair (Vice pricipal, Sree Gokulam SNGM college of pharmacy).The Program came to an end with National Anthem.

Word Pharmacist Day 2024 celebrations

KPGA co organised the world pharmacists day celebrations with five prominent pharmacy college on 25th september 2024 with the theme 'Pharmacists: Meeting Global heath Needs' Dale view college of pharmacy in association with KPGA celebrated world pharmacst day from 9 am. Programs started with rally andflash mob and honouring pharmacists which conducted at Nedumangad. Quiz competition and speech competition were conducted in the college auditorium.KPGA representatives, Dale view college of pharmacy principal were partiicipated in the program.

a. Ezhuthachan college of pharmacy conducted variety of programs on world pharmacist day in association with KPGA including official inaugural function,awareness class, pharmarally, Tree plantation, Blood donation camp, Pharma Expo, competitions like essay writing, poster making, quiz competition, slogan and logo making. Smt. Sudha. M (General secretary, Ezhuthachan national academy) inaugurated the function and Shri. Santhosh. K. Mathew, Asst Drugs Controller was the chief guest. Expert talk session on the topic 'Awareness on generic medicines' was started from 11:00 am including pharma experts from different fields:- Sri. SunilKumar{Academics), Sri G. Kalappan (Industry), Smt. Radhadevi. D (Analytical & Regulatory), Smt. Preetha. S(Hospital Pharmacy), Dr. S.C. Godwin (Clinical Pharmacy), Smt. Sunu. V. Jayan (Community Pharmacy). As a part of Blood Donation camp awareness class on the topic 'Share the gift of life: The vital role of blood donation' was led by Dr. P. K. Sreekumar (President of KPGA).

b. Dr. Joseph Marthoma institute of pharmaceutical sciences and research in association with KPGA celebrated world pharmacist day with programmes including awareness class and student road shows. Mr Arun. G. Krishnan (Associate professor, Dept of pharmaceutics) was the speaker of the awareness class which was on the theme of World pharmacist day 2024.

c. SreeGokulam SNGM college of pharmacy jointly with KPGA celebrated world pharmacist day by conducting an awareness class at college auditorium by Sri. Sanal. C, pharmacist, Alappuzha on the topic 'Alarming Statistics The rising threat of anibiotic resistance- A world pharmacist day insight' which was a very informative speech.

d. Caritas College of Pharmacy in association with KPGA conducted a intercollegiate pharma Quiz challenge named Quiz Rx 2k24 on the occasion of World pharmacist day celebrations 2024 from 1:30pm. It was an entertaining experience which highlighted the significance and pharmacy profession.

Webinar

KPGA women's wing conducted an onine webinar on the topic 'Proposals for research funding: Major hurdles and the way forward on 3rd October 2024 at 7pm. The program started with a Prayer song by Aathira. R. S(Online Pharma Tutor, Hyderabad). Master of ceremony was M. S. Anita Elsa Kuriakose (Asst professor, SreeGokulam SNGM college of pharmacy, Thuravoor) and she welcomed the resource person of the webinar with an introduction. The resource person of the program was Dr. M.K.Unnikrishnan, Former professor, Manipal College of Pharmaceutical sciences and he deliveresa very informative session. Welcome address was given by Ms. Veena. Rajesh, Senior pharmacist, Dubaidutyfree, Dubai International airport. Dr. Sapna Shrikumar, Dean- Research and placement and Prof and HOD, Dept of pharmacognsy, Nehru college of pharmacy chaired the session. Dr. Rajasree. R. S, Dean faculty of pharmaceutical sciences, Kuhs and prof and head, CPS, TDMC, Alapuzha presided over the function followed by felicitation given by Dr. K. Radha, prof CPS, Govt medical college, Kottayam. The program ended up with vote of thanks given by Mrs. Nagalekshmi. R (Prof, Dept of pharmaceutical chemistry, Elims college of pharmacy, Thrissur).

One day Seminar

KPGA in association with IQAC & Dept of Pharmaceutics, National college of pharmacy organised an one day seminar on the topic 'Emerging trends in pharmacy: A glimpse in to the future on 18th october 2024. Program includedfour sessions. First session was taken by Mr. Rajesh Thalapparambath, Chief executive officer, Qualer, Banglore and it was on the topic 'Optimising patient care: The role of pharmacy and therapeutic committee in hospital formulary management. Session II was on the topic 'The role of the pharmacist in psychiatry: Enhancing mental health care which was taken by Dr. Jeny Samuel, Associate Professor, St Joseph College of pharmacy. Afternoon sessions started with talk on the topic ' Unlocking AI A fresh look at the basics' by Dr. Boby , Prof and Head, Dept of pharmaceutics, st Joseph college of pharmacy followed by fourth session taken by Dr. P. K. Sreekumar,president of KPGA on the topic 'Insights into the Drug Regulatory framework and functions of government regulatory agencies'. All the sessions were very informative and was on currently relevant topics.

Report on the KPC Organizing Committee Meeting

Date: 9th November 2024
Venue: Caritas College of Pharmacy, Ettumanoor
Time: 10:00 AM onwards

The Organizing Committee Meeting for Kerala Pharmaceutical Congress (KPC) 2025 was held on 9th November 2024 at Caritas College of Pharmacy, Ettumanoor. The meeting aimed to discuss the roles, responsibilities, and coordination strategies for ensuring the success of KPC 2025.

Program Schedule

a)Prayer: The meeting commenced with an invocation, seeking blessings for the success of KPC 2025.
b)Welcome Speech:
Dr. Sajan Jose, Chairman, KPC 2025, warmly welcomed the committee members, acknowledging their dedication and commitment to the event.
c)Addressing the Gathering:
Rev. Dr. Binu Kunnath, Patron of KPC 2025, delivered a motivational address, emphasizing the importance of the congress and its theme: "AI and Emerging Technologies Transforming Pharmaceutical Education and Industry."
d)Introducing KPC 2025 to the Committee Members:
Dr. P.K. Sreekumar, Co-Chairman, KPC 2025, provided an overview of the event, highlighting its objectives, significance, and expected outcomes.
e)Introducing Different Committees of KPC 2025:
Dr. Kala D, Organizing Secretary, KPC 2025, presented the structure of various committees, ensuring clarity about their roles.
f)Presenting Duties & Responsibilities of Different Committees:
Dr. Cinu Thomas A, Organizing Secretary, KPC 2025, outlined the specific responsibilities assigned to each committee, ensuring transparency and accountability.
g)Group Discussion of Different Committees:
Members divided into respective committee groups to discuss their tasks, challenges, and strategies for execution.
h)Suggestions Presentation by Each Committee Convenors:
Each committee convenor presented suggestions and action plans for their assigned tasks, fostering a collaborative environment.
i)Concluding Remarks:
Dr. Bobby Johns, Organizing Secretary, KPC 2025, provided a summary of the discussions and emphasized the need for teamwork and proactive efforts.
j)Vote of Thanks:
Dr BobyJohns, OrganizingSecretary, KPC 2025, expressed gratitude to all attendees for their active participation and valuable contributions.
k)National Anthem:
The meeting concluded with the National Anthem, marking the end of a productive session.

Highlights of the Meeting

a) Detailed introduction and discussion of KPC 2025 committees.
b) Clear allocation of roles and responsibilities to ensure seamless execution.
c) Effective group discussions and collaborative brainstorming sessions.
d) Presentation of innovative ideas and solutions by committee convenors.

Outcome

The meeting successfully set the groundwork for the Kerala Pharmaceutical Congress 2025. With well-defined responsibilities and actionable plans, the Organizing Committee is well-prepared to make KPC

2025 a milestone event in the pharmaceutical domain.

Acknowledgment

The Organizing Secretary and Core Committee members extend their sincere appreciation to all attendees for their dedication and enthusiasm.

National Pharmacy Week Programme 2024

The Kerala Pharmacy Graduates' Association (KPGA) hosted the National Pharmacy Week 2024 at Mahatma Ayyankali Hall, Thiruvananthapuram, on 18th November 2024, under the theme "Think Health; Think Pharmacy."

The program was inaugurated by Honorable Minister for Food and Civil Supplies, Mr. G.R. Anil, and presided over by KPGA President, Dr. P.K. Sreekumar. A warm welcome address was delivered by KPGA Treasurer, Mr. Sunil Kumar D, and vote of thanks was delivered by Advocate Unnikrishna Panicker M.K.

Highlights included a Pharma Rally, knowledge sessions on "Essential Counseling Skills for Enhanced Patient Care", a symposium on the "Pharma City" project, entertainment programs, and student engagement activities. A special moment of the day was the logo launch for the Kerala Pharmaceutical Congress 2025.

Esteemed dignitaries, including Dr. Sujith Kumar, Drugs Controller, Kerala, Dr Dileep K J,Chairman UG Board of Studies Pharma Sciences, KUHS, Dr. Thomas Mathew, Director of Medical Education, and Shri Balagopal Chandrasekhar, Chairman of KSIDC, delivered keynote addresses and felicitated the gathering.

GALLERY

63rd National Pharmacy Week Celebration- 2024

Ayyankali Hall, Thiruvananthapuram On 18/11/2024

Kerala Pharmaceutical Congress KPC-2025

AI and Emerging Technologies- THEME: Transforming Pharmacy Education & Industry

Venue:

Caritas College of Pharmacy

Caritas Educity, Ettumanoor, Kottayam- 686 631, Kerala

2025 February 21 & 22

Kerala Pharmacy Graduates' Association

KPC-2025 Logo and Brochure Launch at VJT Hall, Thiruvananthapuram on 18/11/2024
by Hon. Minister for Food & Civil Supplies Shri. G R Anil

Congratulations!

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Ms. ANAGHA SREEKUMAR
Sixth Semester B.Pharm Student
Mar Dioscorus College of Pharmacy
Thiruvananthapuram

KPGA

2nd KERALA PHARMACEUTICAL CONGRESS (KPC-2025)

CARITAS COLLEGE OF PHARMACY

SCIENTIFIC PROGRAMME

DAY 1 (21-02-2025)

Registration : 8:00 AM - 9:15 AM
Inaugural Session : 9:30 AM -10:45 AM

Session I : 11:00 AM - 11:40 AM

Topic: "Pharmacy Education in the Era of AI and AR: Bridging Industrial and Clinical Needs"
Resource Person: **Dr. B Suresh**, Pro Chancellor, JSS Academy of Higher Education & Research, Mysuru & Former President, Pharmacy Council of India

Dr. B Suresh

Session II : 11:45 AM - 12:25 PM

Topic: *"Challenges and Opportunities of Pharmaceutical Research in the Era of Artificial Intelligence"*
Resource Person: **Prof. Dr. Sabu Thomas**, Director, International and Inter- University Centre for Nanoscience and Nanotechnology & Former Vice-Chancellor, Mahatma Gandhi University, Kottayam, Kerala

Dr. Sabu Thomas

LUNCH BREAK : 12:30 PM

Session III : 2:00 PM - 2:40 PM

Topic: *"Revolutionizing Pharmaceutical Education: AI Powwered learning strtegies for students "*
Resource Person: **Dr. Jijo Ulahannan**, Assoc. Professor, Govt. College , Kasargod

Dr. Jijo Ulahannan

Panel Discussion: 3:00 PM Onwards

KPGA **2nd KERALA PHARMACEUTICAL CONGRESS (KPC-2025)** CARITAS COLLEGE OF PHARMACY

SCIENTIFIC PROGRAMME

DAY 2 (22-02-2025)

Session IV : 10:00 AM - 10: 40 AM

Topic : *"Transforming Pharmaceutical Operations using Automation and Emerging technologies"*
Resource Person: **Mr. Ganadhish Kamat ,**
(Technical Advisor to Boston Consulting Group)

Mr. Ganadhish Kamat

Session V : 11:00 AM - 11:40 AM

Topic : *"Facets of Industry-4.0"*
Resource Person: **Dr. Sunil S Chiplunkar**,
VP, Business Development, Group Pharmaceuticals, Bangalore

Dr. Sunil S Chiplunkar

Session VI : 11:45 PM - 12:25 PM

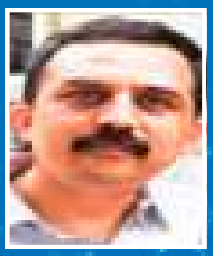
Topic : *"AI Evolution in Clinical Pharmacy Practice: The Era of Personalised Medicine"*
Resource Person: **Dr. Priyank Tripathi**,
Clinical Pharmacologist & Group Head, Department of Clinical Pharmacology, HCG Enterprises Ltd., Bangalore

Dr. Priyank Tripathi

LUNCH BREAK : 12:30 PM

Session VII : 1:30 PM - 2:10 PM

Topic : "Tips for Achieving Success in AI Era"
Resource Person: **Mr. Indu Shankar**,
Trainer, Motivator & Pharma Expert, Bangalore



Mr. Indu Shankar

VALEDICTORY SESSION : 2:15 PM - 3:00 PM

Pharmacist's Oath

- I swear by the code of ethics of Pharmacy Council of India, in relation to the community and shall act as an integral part of health care team.
- I shall uphold the laws and standards governing my profession.
- I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.
- I shall follow the system which I consider best for Pharmaceutical care and counseling of patients.
- I shall endeavor to discover and manufacture drugs of quality to alleviate sufferings of humanity.
- I shall hold in confidence the knowledge gained about the patients in connection with my professional practice and never divulge unless compelled to do so by the law.
- I shall associate with organizations having their objectives for betterment of the profession of Pharmacy and make contribution to carry out the work of those organizations.
- While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of pharmacy respected by all, at all times !
- Should I trespass and violate this oath, may the reverse be my lot !

PHARMLINE

The Official Publication of Kerala Pharmacy Graduates' Association

PHARMLINE is the official publication of KPGA and is published since 1981. It is a tri annual publication. The main aim of the publication is to keep Pharmacists informed on current issues and best practices, as well as serving as a platform for the exchange of ideas, knowledge and opinion among Pharmacists and related disciplines. The Publishers welcome contributions of Pharmaceutical relevance. Original articles are considered for publication on the condition that they have not been published, accepted or submitted for publication elsewhere. The Editors reserves the right to edit manuscripts to fit articles with in space available and to ensure conciseness, clarity and stylistic consistency. All scientific articles submitted for publication are subject to a double-blind review procedure.

Please send your articles to *kpgapharmline@gmail.com*

Contact us

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BJG CREATIONS

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