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PLENARY

PL-01

Utilizing Biometric Technologies to Identify Non-Thai Migrant Workers: The Integration of Iris and Facial Recognition for Health and Humanitarian Services in Thailand

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This study aims to document the evolution and extract lessons learned from the application of iris and facial recognition technologies for personal identification among undocumented migrant workers in Thailand. A qualitative research approach was employed, incorporating document review, observation, and focus group discussions with a total of 49 participants, including system users and executive-level personnel. The findings reveal that Thailand began implementing biometric technologies for identification of undocumented migrant workers during the second wave of COVID-19 outbreak in mid-December 2020. In response to the urgent need for accurate identification in public health services, Thai Red Cross Society, in collaboration with NECTEC, has developed Thai Red Cross Biometric Authentication System (TRCBAS). This system enables healthcare facilities to register, identify, and retrieve the records of migrant workers more effectively. Ministry of Public Health subsequently scaled up the implementation of the system, recognizing its high efficiency in individual identification. Between August 2023-April 2025, a total of 139,184 individuals were successfully registered through TRCBAS. Insights from the focus group discussions indicate hospital personnel acknowledged the system's accuracy in biometric identification. However, several challenges remain in scaling and integrating TRCBAS, including the integration of biometric data with existing hospital information systems, the establishment of a unified identification number linked to social security for migrant workers, the creation of mechanisms for nationwide procurement and deployment of biometric technologies, the development of multilingual public communication materials, and active engagement of migrant health volunteers and community leaders to foster understanding around data security and health benefits.

Keywords: Migrant workers, Personal identification, Biometric technology, Iris and facial recognition, public health system

SYMPOSIUM

SY-01

AI in Global Health: Are We Innovating for the 1% or the 99%?

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Artificial Intelligence promises to transform global health – offering new tools for disease detection, outbreak prediction, personalized treatment, and beyond. Yet a stark question demands our attention: are these innovations truly designed for the populations that need them most, or are they reinforcing existing inequities? This talk will discuss the growing gap between technological potential and real-world impact, examining how many AI solutions are disproportionately tailored to high-resource settings while low- and middle-income communities remain underserved. Drawing from case studies across diagnostics, epidemic response, and telemedicine, we will uncover the systemic biases embedded in datasets, design priorities, and deployment models. We will confront the uncomfortable reality that without intentional correction, AI risks deepening – not bridging – the divide in global health outcomes. Beyond critique, this talk will chart a pathway forward: envisioning an inclusive AI future where innovation is grounded in the realities of the 99%. We will discuss models for equitable data sharing, community-driven AI design, and responsible scaling that honors local contexts and amplifies local leadership. Attendees will leave with a renewed call to action – to build technologies that serve not just the digitally connected and economically privileged, but the true global majority. The future of AI in global health is being written today. The critical question remains: who are we innovating for?

Keywords: Artificial Intelligence; Global Health; Health Equity; Developing Countries; Telemedicine; Data Bias

SY-02

Microplastics: The Invisible Global Threat

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Microplastics (MPs) have emerged as an invisible global threat with widespread environmental and health implications. An estimated eight million tons of plastic enter the oceans annually, with projections showing rapid increases in microplastic contamination if interventions are not strengthened. MPs are now detected in air, water, food, and human tissues, with evidence linking exposure to inflammation, oxidative stress, hormonal disruption, and heightened cardiovascular and reproductive risks. Vulnerable populations—including children, pregnant women, and low-income communities near waste sites—face disproportionate exposure. Primordial prevention is needed as shown by the microplastics education and awareness program among 320 high school students in Jakarta. On average, students correctly answered 14 out of 20 knowledge items, demonstrating good understanding of MP impacts and prevention strategies, but significant gaps on sources of MPs in the environment (26%), ocean (48%), and consumption pathways among teenagers (54%). Attitudes toward prevention were generally positive, especially regarding personal responsibility and reducing single-use plastics. However, the lowest score was observed for supporting microplastic campaigns (2.8/5), indicating limited willingness for collective action. Policy responses are already underway, including Indonesia's National Action Plan on Marine Debris (target: 70% reduction by 2025), bans on single-use plastics in Bali, Jakarta, and other districts, as well as international commitments through the UN and Clean Oceans Initiative. Strengthening education remains the most fundamental approach, fostering knowledge, shaping attitudes, and driving behavioral change at the community level. Integrated efforts combining education, policy, and producer responsibility are essential to mitigate the growing microplastic crisis.

Keywords: Microplastics; Environmental Health; Public Awareness; Prevention

SY-03

Innovating for Well Being: Advancing MCH through Health Care Technology and Digital Solution

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Maternal and Child Health (MCH) is central to national well-being and reflects the performance of the healthcare system. Malaysia has achieved significant reductions in maternal and infant mortality; however, challenges remain in ensuring equitable access, care continuity, and integrated data management. The continued dependance on manual maternal health records poses issues such as fragmented information, duplication of data entry, increased workload, difficulty in longitudinal tracking, delays in reporting, and limited accessibility for multi-disciplinary teams. These gaps hinder timely decision-making and coordinated care. Mortality reporting also needs to be more timely and better quality, while teleconsultation should be expanded to improve access. The advancement of healthcare technology presents an opportunity to overcome these barriers. MOH has introduced digital innovations to strengthen MCH services in Malaysia, including virtual consultations and electronic medical records (EMRs) which are being rolled out in stages. An ongoing pilot project is testing full implementation of EMRs in eight selected health clinics, without the use of clinic-held maternal health record books. The project adopted an action research approach, involving continuous engagement with healthcare staff to identify operational issues, propose improvements, and evaluate outcomes, with support from Institute for Health Systems Research. To achieve success, key challenges must be addressed, including infrastructure gaps, digital literacy, system interoperability, and data privacy. By aligning with the national blueprints for health transformation, MCH services can become more efficient, integrated, and patient-centred. Using technology in this way is not only essential for healthcare, but also a vital investment in the nation's future generations.

Keywords: Maternal and Child Health; Electronic Health Records; Telemedicine; Health Care Technology; Data Management; Malaysia

SY-04

Technology and Innovation in Modern Endocrine and Breast Surgery

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The landscape of Endocrine and Breast surgery has been profoundly transformed by recent technological and innovative advancements. These developments aim to enhance surgical precision, improve functional and aesthetic outcomes, and minimize patient morbidity. The adoption of intraoperative nerve monitoring in thyroid surgery has become a valuable adjunct for safeguarding the recurrent laryngeal nerve. Minimally invasive techniques, such as transoral endoscopic vestibular approach (TOEVA), offer superior cosmetic outcomes with smaller incisions. The use energy based surgical devices reduces bleeding and speeds up operative time. In addition, intra operative infrared autofluorescence and indocyanine green (ICG) imaging aids in real-time identification and preservation of parathyroid glands. Breast surgery has embraced oncoplastic techniques, merging oncologic safety with reconstructive principles to optimize both cancer control and cosmesis. Sentinel lymph nodes biopsy, Image-guided localization has streamlined diagnosis and treatment of non-palpable lesions. Immediate and delayed reconstruction options are enhanced by 3D imaging, surgical planning software, and newer biomaterials. Adrenal surgery for instance has benefited from advances in minimally invasive laparoscopic and robotic approaches, enabling precise dissection in challenging retroperitoneal anatomy. Robotic platforms provide improved ergonomics, dexterity, and visualization, particularly in large or complex adrenal tumors. Functional imaging and intraoperative navigation contribute to targeted and safer resections. These innovations reflect a broader paradigm shift toward personalized, minimally invasive, and function-preserving surgical care. Continued integration of digital technologies, robotics, and imaging modalities is poised to further elevate standards of safety, efficiency, and patient satisfaction in modern endocrine and breast surgery.

Keywords: Technology, Innovation, Endocrine & Breast Surgery

SY-05

Nutrition, Food Security and Health: A Multidisciplinary Approach

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Food security and health are deeply interconnected pillars that influence individual well-being, community resilience, and national development. Nutrition serves as a critical bridge between shaping physical growth, cognitive development, and protection against both infectious and non-communicable diseases. However, the complexity of food security extends beyond availability of food; it encompasses accessibility, utilization, stability, agency and sustainability. These dimensions that are influenced by socioeconomic, cultural, environmental, and policy factors. Addressing these challenges requires a multidisciplinary approach that integrates nutrition science, public health, agriculture, economics, social sciences, and policy studies. From the agricultural sector, sustainable production systems must ensure sufficient and nutritious food while minimizing environmental degradation. In the health sector, interventions are needed to prevent malnutrition in all its forms, from undernutrition to obesity and diet-related chronic diseases. Social science perspectives contribute to understanding behavioural patterns, intrahousehold food allocation, and cultural determinants of diet, while economics and policy frameworks ensure equitable food distribution, affordability, and social protection mechanisms. Moreover, climate change and globalization present new risks that demand cross-sectoral collaboration to safeguard both nutrition and health security. This paper highlights the importance of multidisciplinary strategies that move beyond siloed approaches to embrace integrated, people-centred solutions. By aligning food, nutrition, and health agendas, stakeholders can foster resilient systems that not only reduce hunger and malnutrition but also promote healthier, more sustainable societies.

Keywords: Nutrition, Food Security, Health, Multidisciplinary Approach, Sustainability

SY-06

Oral Health Inequalities in Children: A Global Perspective

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Oral health inequalities in children remain a significant global public health challenge, reflecting broader social, economic and environmental disparities. Despite advances in dental care and preventive strategies, millions of children, particularly in low- and middle-income countries continue to experience high rates of dental caries, periodontal diseases, and untreated oral conditions. These inequalities are deeply rooted in social determinants of health, including poverty, education, geographic location, and access to healthcare services. Children from disadvantaged backgrounds are more likely to face barriers such as limited availability of dental professionals, lack of fluoridated water, insufficient oral health education, and high costs of care. Additionally, systemic neglect of oral health within national and global health policies has hindered progress toward equity. Addressing these disparities requires a coordinated, multisectoral approach that emphasizes prevention, universal access to essential oral healthcare, integration of oral health into primary health systems, and targeted policies that prioritize vulnerable populations. Reducing oral health inequalities in children is not only a matter of clinical intervention but also a critical step toward achieving health equity and improving quality of life across generations.

Keywords: Oral Health; Health Inequalities; Child; Dental Caries; Social Determinants of Health; Global Health

SY-07

Biosecurity and Biosafety in Emerging Infectious Diseases

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Emerging Infectious Diseases (EIDs) present a growing threat to global health security, largely due to factors such as increased global travel and urbanization. These elements heighten the risk of pathogens crossing species barriers and initiating widespread outbreaks. Given the unpredictable nature and rapid spread of these pathogens, a comprehensive and integrated strategy—one that extends beyond conventional public health measures—is essential. This abstract underscores that robust biosafety and biosecurity strategies are critical for global health and well-being. Their true effectiveness stems from a multidisciplinary approach that integrates scientific, technological, and human-centric elements. Drawing on insights from recent outbreaks, this work focuses on three key areas of integration: 1) The vital connection between advanced laboratory infrastructure and rigorous personnel training, 2) The merging of physical security with information security to safeguard both biological materials and sensitive data, and 3) The crucial role of global cooperation in standardizing practices and addressing resource disparities. In conclusion, a holistic and integrated approach to biosafety and biosecurity is not just about laboratory management but a fundamental aspect of global health preparedness. By cultivating a culture of safety, collaboration, and continuous improvement, we can strengthen our defenses and protect communities worldwide from future pandemic threats.

Keywords: Biosafety; Biosecurity; Emerging Infectious Diseases; Global Health; Disease Outbreaks; Pandemic Preparedness

SY-08

Role of NGOs in Disaster: Bridging the Gap in Disaster Relief

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Non-governmental organisations (NGOs) play a pivotal role in disaster relief by filling gaps that governments and international agencies cannot always meet. When disasters overwhelm state capacity, NGOs provide immediate aid such as food, water, shelter, and medical care, while also coordinating efforts to reduce duplication and address unmet needs. Their strengths include proximity to communities, flexibility, and the ability to deliver specialised services like psychosocial support, healthcare, education continuity, and protection for vulnerable groups. NGOs also act as intermediaries between affected communities, government, and donors, ensuring resources reach those most in need. Examples range from international organisations like the Red Cross and MSF to national actors such as MERCY Malaysia and local community groups that often respond first on the ground. Despite challenges with funding, coordination, and sustainability, NGOs create long-term opportunities by building community capacity, promoting disaster preparedness, and leveraging technology to strengthen response and recovery.

Keywords: Non-Governmental Organizations; Disaster Relief; Emergency Response; Community Participation; Humanitarian Assistance; Malaysia

SY-09

The Bite of Evidence: Challenges in Forensic Odontology

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Forensic Odontology has emerged as a specialised dentistry field in Malaysia, which focused particularly on age estimation of an individual, human identification, disaster victim identification (DVI), and dento-legal investigations. Despite its growing services in the Ministry of Health Malaysia, the discipline continues to encounter significant challenges that limit its wider application. One of the major concerns is the shortage of trained forensic odontologists in Malaysia, with expertise unevenly distributed and limited opportunities for structured training and specialization. Technical and infrastructural gaps remain pressing, including the lack of centralized dental databases in Malaysia, inconsistent access to advanced imaging technology, and the slow adoption of digital tools that could enhance rapid identification of an individual. Furthermore, within and inter-agency the level of awareness and collaboration with the Forensic Odontology specialty need to be heightened and strengthened, alongside efforts to build strong networks of support. By addressing these issues, this talk aims to raised awareness on forensic odontology specialty in Malaysia among the healthcare community, and explain its role in justice system, disaster response, and public service.

Keywords: Forensic Odontology; Human Identification; Disaster Victim Identification; Workforce Shortage; Dental Database

SY-10

Beyond the Label: The Danger of Undisclosed Ingredients in Health Supplements and Natural Products

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This presentation addresses the critical public health issue of undisclosed ingredients in health supplements and natural products in Malaysia. The increasing use of these products, driven by perceptions of safety, has led to a growing risk of exposure to harmful adulterants. The NPRA's comprehensive post-marketing activities, including its Product Quality Monitoring (PQM) programme, are crucial in identifying and mitigating these risks. We will detail the NPRA's framework, from active and reactive product sampling and laboratory testing for adulterants to monitoring of label compliance and handling of quality reports. The presentation will also outline the regulatory actions taken against non-compliant products. The discussion will further describe the definition, common categories of undisclosed ingredients and the types of products most susceptible to adulteration in the Malaysian market. The regulatory actions taken by the NPRA against companies involved in adulteration will also be highlighted. Ultimately, ensuring the quality, safety, and/or efficacy of health supplements and natural products is a shared responsibility, requiring collaborative efforts from regulatory agencies, industry stakeholders, healthcare professionals, and the public.

Keywords: Health Supplements; Natural Products; Adulteration; Undisclosed Ingredients; Product Quality Monitoring; Malaysia

SY-11

Toxic Beauty: A Pharmaceutical Perspective on Heavy Metal-Free Cosmetics

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The adulteration of cosmetic products with prohibited heavy metals is a significant but often overlooked public health issue. Although perceived as safe, these products can lead to chronic toxicity and present a direct challenge to consumer safety. This presentation provides a pharmaceutical perspective to bridge regulatory science with clinical practice in addressing the issue of “toxic beauty.” The discussion will outline the primary toxic substances regulated under the Poison Act 1952—notably Mercury, Lead, Arsenic, and Cadmium—and detail their health risks. A key focus is placed on the clinical manifestations of poisoning to assist healthcare professionals in recognizing potential signs of exposure. From the viewpoint of the National Pharmaceutical Regulatory Agency (NPRA), an overview of Malaysia’s comprehensive regulatory framework will be provided. This covers the notification process, post-market quality control testing, and the regulatory actions taken against non-compliant products. The presentation concludes with a practical framework for healthcare professionals, emphasizing their vital partnership role through three key actions: CHECKING for NPRA product notification numbers, advising patients to BEWARE of unrealistic claims from unverified sellers, and REPORTING adverse events to enhance the national surveillance system. Ultimately, the discussion reinforces that while the threat of toxic beauty is real, it can be managed by a vigilant regulatory system where the informed healthcare professionals are the most vital partners.

Keywords: Cosmetics; Heavy Metals; Mercury Poisoning; Consumer Product Safety; Pharmaceutical Regulation; Malaysia

SY-12

Beyond Warfare: The Strategic Role of Armed Forces in Disaster

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Disasters often overwhelm civilian health systems, demanding rapid, coordinated responses that extend beyond conventional resources. The armed forces play a crucial strategic role through their ability to mobilize quickly, sustain logistics, and deliver specialized medical support. Their contributions span three levels: strategic—developing preparedness frameworks, aligning defence with public health priorities, and fostering international collaboration; operational—coordinating relief campaigns, deploying field hospitals, ensuring aeromedical evacuation, and restoring critical infrastructure; and tactical—providing frontline trauma care, evacuation, and disease control. Practical experiences demonstrate these capabilities. During the COVID-19 pandemic, military personnel supported quarantine management, vaccination campaigns and logistics distribution. In Cox's Bazar, humanitarian assistance and disaster relief (HADR) missions provided vital surgical support to displaced populations. Following the Aceh tsunami, we enabled large-scale evacuation, water sanitation, and field surgical services. More recently, earthquake responses in Türkiye and Myanmar highlighted their rapid deployment of mobile surgical teams to stabilize health systems under extreme pressure. These examples show that armed forces bridge critical capacity gaps during crises, strengthening national resilience for future disaster challenges.

Keywords: Armed Forces Medical Services; Disaster Response; Humanitarian Assistance; Emergency Medical Services; Military Medicine; Malaysia

ORAL PRESENTATION

OP1-01

Epidemiological Characteristics of Laboratory-Confirmed Measles Cases and Their Association with Measles Vaccination in Bachok District between 2018 and 2024

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Malaysia aims to eliminate measles by 2030. Despite ongoing immunisation efforts, persistent endemicity in districts like Bachok, Kelantan, highlights gaps in immunisation coverage and population immunity. This study describes the epidemiology of laboratory-confirmed measles cases in Bachok and examines their association with measles vaccination and other clinical factors. A retrospective review of clinical measles cases registered in e-Notifikasi and e-Measles (2018-2024) was conducted. Laboratory-confirmed cases were identified through positive IgM serology, PCR, or culture. Data were analysed using Excel, SPSS, and R. Of 577 clinical measles cases, 8.9% were laboratory-confirmed. The mean age of confirmed cases was 0.9 years (SD 3.4), with most cases occurring in infants aged 9-11 months (29.4%) and children aged 1-6 years (23.5%). Incidence rates fluctuated between 2.4 to 12.8 per 100,000 population, highest in 2024. Refusal rates for MCV1 rose from 0.2% (2018) to 1.1% (2024), and for MCV2 increased from 0.3% to 1.0%. A strong positive correlation was found between MCV2 refusal rate and confirmed cases ($p = 0.80$, $p = 0.032$). Confirmed measles was significantly associated with conjunctivitis (AdjOR = 11.40; 95% CI: 3.54, 37.00), inpatient treatment (AdjOR = 11.50; 95% CI: 2.43, 56.20), and unvaccinated status (AdjOR = 7.91; 95% CI: 2.57, 23.60). These findings support the need for supplementary immunisation activity (SIA). Addressing rising vaccine refusal is critical to ensure successful uptake. High clinical suspicion is warranted in unvaccinated, hospitalised patients or those with conjunctivitis. Control measures should be initiated promptly, without waiting for lab confirmation.

Keywords: Bachok, epidemiology, measles, vaccination, vaccine refusal

OP1-02

Escalating Concerns, Early Gains: HFMD Determinants and Timely Detection in Pasir Mas District (2022-2024)

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Hand, Foot, and Mouth Disease (HFMD) is endemic globally and nationally, with rising concern in high-density areas such as Pasir Mas District, Kelantan. Despite ongoing prevention efforts, recurring outbreaks suggest the presence of local, context-specific determinants. This study aimed to determine the incidence and key determinants of HFMD in Pasir Mas during 2022-2024. A cross-sectional analysis was conducted using 1,332 HFMD notification records obtained from the e-Notification Communicable Disease Control Information System (CDCIS), reported by the Pasir Mas District Health Office. All age groups were included, while incomplete, duplicate, non-citizen, and transferred-out cases were excluded. Data were analyzed using descriptive statistics and logistic regression. The overall incidence rate was 188.1 per 100,000 population. Children aged 0-3 years comprised the majority of cases (58.6%), with peaks observed during the inter-monsoon season (46.5%). Most cases were passively detected (98.2%) and presented within two days of symptom onset (90.6%). Significant determinants included the inter-monsoon season (AOR=2.355; 95% CI: 1.674-3.312) and early healthcare-seeking behavior (AOR=1.933; 95% CI: 1.254-2.977). Protective factors were older age (AOR=0.067-0.372) and homecare settings (AOR=0.260; 95% CI: 0.147-0.459). These findings underscore the seasonal trend of HFMD and the vulnerability of younger children. High parental awareness, as reflected by early treatment-seeking, presents opportunities for community engagement. Strengthened and targeted strategies, particularly in institutional settings, are vital to mitigate HFMD transmission in endemic areas such as Pasir Mas.

Keywords: Hand, Foot, and Mouth Disease (HFMD), incidence, determinants, Pasir Mas, inter-monsoon.

OP1-03

Proportion and Determinants of Unsuccessful Treatment Outcomes among Tuberculosis Patients in Tanah Merah.

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Tuberculosis (TB) is still a significant public health issue in Malaysia. Treatment success is an important measure of TB control, helping to stop disease spread, reduce illness, and prevent drug resistance. Knowing the proportion and determinants of unsuccessful treatment can guide actions to improve patient outcomes. This retrospective cohort study aimed to determine the proportion of unsuccessful treatment among tuberculosis (TB) patients in Tanah Merah from 2020 to 2024. Patients were followed up for at least one year to determine their treatment outcomes. A total of 349 patients were included in the study, of which 270 (77%) achieved successful treatment and 79 (23%) had unsuccessful treatment outcomes. The proportion of unsuccessful treatment was therefore 23%. Every 1 year increase in age was associated with a significant increase in the odds of unsuccessful treatment (OR = 1.04; 95% CI: 1.02, 1.06). HIV pre-diagnosis status was strongly linked to outcome, with HIV-positive patients having higher odds compared to HIV-negative patients (OR = 6.58; 95% CI: 2.66, 16.4). Education level also showed an association, with secondary school/SPM/STPM holders having lower odds than those with primary school or below (OR = 0.51; 95% CI: 0.27, 1.00). Interventions should provide targeted support for HIV-positive patients to overcome barriers such as stigma and HIV-related complications. Age-specific strategies addressing health limitations in older patients, along with educational support to improve treatment literacy, may help increase treatment success rates.

Keywords: Tuberculosis, Treatment outcome, Unsuccessful treatment, Tanah Merah

OP1-04

A Case Control Study of Food Poisoning Outbreak at SMU (A) Maahad Muhammadi Perempuan Pasir Pekan, Tumpat, Kelantan

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A food poisoning outbreak was reported on 22 April 2024 at SMU(A) Maahad Muhammadi Perempuan, Pasir Pekan, Tumpat, Kelantan, involving students, teachers, and staff who had consumed food served during a Hari Raya event on 21 April. This study aimed to describe the outbreak, identify the source and risk factors, and implement appropriate preventive and control measures. A case-control study was conducted involving 277 cases and 276 controls. A case was defined as any individual who developed at least one gastrointestinal symptom after eating at the event. Data collection was conducted using Kelantan KRM tools questionnaire and analysed with Microsoft Excel. Environmental and food premises inspections were conducted, with nine stool samples, four swabs, and one water sample collected. A total of 797 individuals were exposed, with 277 developed symptoms, resulting in an attack rate of 34.8%. The reported symptoms were diarrhea (88.8%), abdominal pain (85.9%), headache (36.5%), nausea (19.1%) and vomiting (10.1%). The median incubation period was 16 hours (range: 3-36 hours). The epidemic curve indicated a common-source outbreak. Statistical analysis identified *ayam masak merah* as the most suspected source of infection, with an odds ratio of 35.63 (95%CI: 16.97-74.81; p-value<0.001). Although the causative organism could not be isolated, *Salmonella* spp. was suspected based on clinical presentation and incubation period. Contributing factors included early food preparation, prolonged holding time and inadequate reheating. Prevention and control measures implemented were health education, hygiene briefings and recommendations for safer food handling practices during large events.

Keywords: Food Poisoning, Case-control Study, Common Source Outbreak, Prevention and Control Measures.

OP1-05

Knowledge, Attitude, and Practice (KAP) of Post-Exposure Prophylaxis (PEP) Against HIV Infection Among Healthcare Practitioners (HCP) in Pejabat Kesihatan Daerah Kota Bharu

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Healthcare practitioners (HCPs) face a significant risk of HIV infection due to occupational exposures, including needlestick injuries and contact with infected body fluids. Post-exposure prophylaxis (PEP) denotes a promising preventive strategy. However, its effectiveness is reliant on the knowledge, attitudes, and practices (KAP) of HCP. This study aimed to assess the knowledge, attitude, and practice (KAP) regarding post-exposure prophylaxis (PEP) among healthcare practitioners (HCPs) in primary care clinics under the Pejabat Kesihatan Daerah Kota Bharu (PKDKB), Kelantan, and to determine the professional demographic factors associated with KAP levels. A cross-sectional study was conducted at four clinics using a structured, self-administered, and validated KAP questionnaire that had been previously applied in international studies. The study employed a comprehensive sampling method including 205 healthcare professionals who met the specified inclusion criteria. Data were analyzed using descriptive statistics and chi-square tests (SPSS v25), with statistical significance set at $p < 0.05$. Of the 205 participants, only 32.2% demonstrated good knowledge of PEP, while 85.9% showed a positive attitude. However, only 12.7% reported good practices in managing occupational HIV exposure. Significant correlations were identified between KAP level and variables such as duration of service, prior occupational exposure and participation in Post-Exposure Prophylaxis (PEP) training. The study indicates that there is a gap between HCPs positive attitude toward HIV PEP and their poor knowledge and inadequate practice. Hence, comprehensive measures such as continuous training, standardized protocols, and institutional support are essential to enhance PEP-related competencies and protect front-line healthcare personnel.

Keywords: Knowledge, Attitude, Practice, Post-Exposure Prophylaxis (PEP), HIV, Healthcare Practitioners, Occupational Exposure

OP1-06

Intensified Case Finding (ICF) for TB Contact Tracing in Kelantan

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Contact tracing has been used in the control of infections including tuberculosis (TB) with the aim to identify potential new cases and detect clusters of cases. Case detection rate in Kelantan was below target in 2019, thus Intensified Case Finding (ICF) was introduced in 2020 as part of TB Plan of Action for Kelantan. ICF focused on contact screening among the community with high incidence of TB as well as close and household contact. Districts will identify locality for ICF based on high incidence of TB and recent outbreaks. ICF strategies consist of community-based TB screening (include door to door screening) and household & close contact screening. Screening methods include symptoms screening, sputum smear, tuberculin skin test and Gene-X pert for Index with bacteriological confirmed TB. Those with a tuberculin skin test of 10 or higher are referred for chest X-ray. Training of ICF was emphasized during TB and Lung Courses for Medical Officers and Paramedics. From 2020 to 2023, there were 115 ICF activities implemented in Kelantan. There were seven TB and lung courses conducted and highlighted regarding ICF activities. The case detection rate was increased from 78.8% in 2019 to 89.1% in 2023. Case finding for tuberculosis is an important tool to improve TB case detection. ICF has successfully increased TB case detection rate in Kelantan.

Keywords: TB Contact Tracing, ICF, Kelantan

OP1-08

Public-Private Synergy in Malaria Case Detection: Three-Year Review of Private General Practitioner BFMP Screening in Gua Musang, Kelantan

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Early detection is vital for malaria control, especially in rainforest areas like Gua Musang, where many foreign workers from malaria-endemic countries prefer visiting private general practitioners (GPs) over government clinics. This study aims to determine the proportions of malaria cases detected and BFMP slide rejections from private GPs in Gua Musang between 2022 and 2024. A cross-sectional study used data from 1 January 2022 to 31 December 2024. Patient details and BFMP results were extracted from screening forms and laboratory records. All slides were examined at the Gua Musang District Vector Laboratory. Descriptive analysis was performed using Microsoft Excel. Over three years, 560 BFMP slides were collected from five participating private GPs. The positivity rates were 8.6% (2022), 29.8% (2023), and 11.7% (2024), with an overall rate of 16.1%. Slide quality was acceptable, with an overall rejection rate of 2.0%. This collaboration contributed 22.4% of all malaria cases detected in Gua Musang, peaking in 2023 when it accounted for nearly one-third of total cases. Among foreign workers, 67.5% of malaria cases were detected through this initiative. Significant variation between clinics was noted, with Klinik Primer contributing 79.5% of all GP screenings. This public-private initiative is able to strengthen the early malaria case detection and serve as a good opportunity to improve malaria surveillance system in the Gua Musang district.

Keywords: malaria screening, public-private partnership, BFMP, general practitioners, Gua Musang

OP1-09

Kelantan Spatial Kit (KSK): A Modular, Open-Source Platform for District-Level Spatial Intelligence on Communicable Diseases

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Rapid, locality-specific insight is critical for controlling communicable diseases, yet spatial analyses are often fragmented, slow and difficult to reproduce. We developed the Kelantan Spatial Kit (KSK), a generalisable, open-source R Shiny application that converts routine surveillance into interactive spatial intelligence for any communicable disease and any district in Kelantan. KSK ingests a standardised line list, subdistrict (“mukim”) boundaries and annual population denominators; automatically harmonises place names and coordinate reference systems; and computes subdistrict incidence per 1,000 population across user-selected years. It renders interactive point maps and configurable choropleth incidence maps (tmap v4) with quantile, equal-interval or Jenks classification, and provides faceted year-by-year views suitable for reporting. Built-in diagnostics flag join mismatches between surveillance, population and shapefile attributes to improve data quality, while demographic summaries and a searchable line list support epidemiological description and follow-up. Using hand, foot and mouth disease as an exemplar, KSK revealed clear within-district heterogeneity and persistent high-incidence subdistricts, offering actionable cues for prioritisation of hygiene promotion, school or childcare interventions and environmental control activities. By packaging data preparation, analysis and visualisation in a single interface, KSK reduces time-to-insight, enhances reproducibility and strengthens decision support for district teams. The platform is designed for statewide adoption and is readily extensible to spatio-temporal clustering and outbreak-linkage analytics.

Keywords: spatial epidemiology, communicable diseases, public health surveillance, Kelantan

OP1-10

The Resurgence of Measles in Kelantan: A 10-Year Analysis (2015-2024)

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Measles transmission resurged in Kelantan across 2015-2024 despite high routine immunisation coverage. The objective is to examine the association between vaccination status, age, gender, and nationality with the odds of measles among reported cases in Kelantan over a 10-year period. A retrospective analysis of SM2 e-Measles database was conducted using notifications of measles from 2015 to 2024. Logistic regression models assessed associations between measles and predictors: vaccination status, age and gender. Odds ratios (OR) with 95% confidence intervals (CI) were reported. 7069 cases of suspected measles were notified. 649 (9.6%) were confirmed case of measles. Median age was 7 years with 52.6% male. Trend shows that confirmed cases and IR of measles peaked in 2019 (n=174; IR 8.9), dipped during the pandemic in 2021 (4; IR 0.3) and resurged in 2024 (158; IR 7.3). Children predominated, yet adult involvement rose (2019 adults: 28; 2024 adults: 41). Kota Bharu contributed the most cases of measles (29.9%). In adjusted models, full vaccination (two doses) reduced measles odds by 69-74% across models (OR range: 0.260-0.314, $p < 0.001$). Gender was not a significant predictor. Kelantan's 2019 peak and sharp 2024 rebound indicate a true resurgence with growing adult involvement and immunity gaps within the community. The findings emphasise the importance of maintaining high two-dose vaccination coverage and implementing catch-up immunisation, particularly for migrant populations and older age groups. Focused outreach to high-risk groups could substantially reduce measles incidence in Kelantan and support national measles elimination goals.

Keywords: Measles, Resurgence, Immunisation, Immunity Gaps, Kelantan, Malaysia

OP1-12

A 10-years Analysis of Laboratory-Confirmed Measles Cases and Vaccination Trends in Pasir Puteh District (2015-2024)

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Measles is a vaccine-preventable viral disease targeted for elimination in Malaysia and is highly infectious, with an R_0 of 12-18. This study aimed to describe the characteristics of laboratory-confirmed measles cases and examine their association with vaccination status and measles immunisation coverage in Pasir Puteh District from 2015 to 2024. A cross-sectional analysis was conducted using secondary data from the E-Measles and Pasir Puteh E-Notification systems. Logistic regression analysis was performed using SPSS V30 to assess associations between laboratory-confirmed measles cases and selected factors, including sociodemographic, clinical, and vaccination status. A total of 50 laboratory-confirmed cases were recorded, of which 56% were female, 50% were aged below 6 years, and 74% had not received measles immunisation. Multiple logistic regression showed that increasing age was significantly associated with higher odds of confirmed measles (aOR: 1.58; 95% CI: 1.29-1.93). Clinically, the presence of coryza (aOR: 2.66; 95% CI: 1.04-6.83) and conjunctivitis (aOR: 2.71; 95% CI: 1.08-6.81) was significantly associated with confirmed cases. Hospitalised individuals had substantially greater odds of being confirmed measles cases compared with those not hospitalised (aOR: 8.45; 95% CI: 3.47-20.57). Vaccinated individuals had 56.6% lower odds of laboratory-confirmed measles compared to unvaccinated individuals (AOR = 0.434; 95% CI: 0.298-0.632). In conclusion, older age, hospitalisation, coryza symptom, conjunctivitis symptom and absent immunisation were significantly associated with higher odds of laboratory-confirmed measles. These findings underscore the importance of complete vaccination and support the current National Supplementary Immunisation Activity (SIA).

Keywords: Measles, Vaccination status, Pasir Puteh

OP1-13

Factors associated with Successful Treatment among Tuberculosis Patients in Bachok from 2020-2024

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Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis*, transmitted through the air when individuals with active TB cough, sneeze, or spit. Although TB is preventable and curable, it remains a significant public health concern. This study aimed to determine the factors associated with successful treatment among TB patients in Bachok from 2020 to 2024. Successful treatment was defined as cases that were cured or completed treatment, whereas unsuccessful treatment included cases that resulted in death, default, or treatment failure. A retrospective cross-sectional study was conducted by the Pejabat Kesihatan Daerah Bachok using secondary data from National TB Registry (NTBR) for cases between January 2020 and December 2024. A total of 470 TB cases were registered during this period; 31 were excluded due to ongoing treatment, change of diagnosis, or drug-resistant TB (DR-TB), leaving 439 cases that met the inclusion criteria. Of these, 365 cases (83.1%) achieved successful treatment. Factors significantly associated with successful treatment were Directly Observed Treatment, Short-course (DOTS) during the maintenance phase (adjusted OR: 9.81, 95% CI [2.45, 39.28], $p=0.001$), treatment duration (adjusted OR: 2.16, 95% CI [1.47, 3.16], $p<0.001$), and HIV status (adjusted OR: 0.045, 95% CI [0.008, 0.239], $p<0.001$). Understanding the factors associated with successful TB treatment is essential for optimising patient outcomes, strengthening TB control programmes, and guiding evidence-based resource allocation and intervention strategies.

Keywords: Tuberculosis (TB), Factors associated, Successful treatment

OP1-14

Impact of Gamified HIV Education on Knowledge Retention Among Young Adults: A Longitudinal Study Using Repeated Measures ANCOVA in Kota Bharu, 2025

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This quasi-experimental non-random allocation study evaluated the effectiveness of a gamified HIV education program in improving and retaining HIV-related knowledge among young adults in Kota Bharu, Malaysia. Sample size was estimated a priori using G*Power for a repeated-measures within-between design ($\alpha=0.05$, power=0.80), and the achieved total of 140 participants (70 intervention, 70 control) met the requirement. Recruitment was conducted within a higher education setting in the Kota Bharu district. Participants in the intervention group attended a structured series of gamified educational sessions, whereas those in the control group, identified post hoc, viewed a single 40-minute educational video. Knowledge was assessed using the validated HIV-KQ-18 questionnaire at baseline (Pre), immediately after intervention (Post), and at one-month follow-up (Month_1). Data were analysed in R (version 4.4.1) using RStudio via a two-way mixed-design repeated measures ANCOVA (aov_car() function, afex package), adjusting for age, gender, semester and family income group. A significant time $\times$ group interaction was observed ($F(2, 158) = 46.7$, $p < 0.001$), indicating divergent knowledge trajectories between groups. The main effect of time was significant (Huynh-Feldt, $F(1.34, 185.97) = 608.83$, $p < 0.001$). Bonferroni-adjusted post hoc comparisons showed the intervention group's scores improved significantly from Pre to Post ($p < 0.001$) and were sustained at Month_1 ($p = 0.826$), whereas the control group improved from Pre to Post ($p < 0.001$) but declined at Month_1 ($p < 0.001$). Gamified HIV education demonstrated superior knowledge retention compared with standard video-based delivery and represents a scalable, evidence-informed approach for public health education in similar populations.

Keywords: Game-Based Learning, HIV Education, Knowledge Retention, Health Education, Quasi-Experimental Studies

OP2-02

Silent Dependency, Violent Exit: A Case of Severe Benzodiazepine Withdrawal

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Benzodiazepines are widely prescribed and approved by the US Food and Drug Administration (FDA) for conditions such as generalized anxiety disorder, insomnia, seizures, panic disorders, and social phobia. However, their recommended use is limited to 2-4 weeks, as higher doses and prolonged use are associated with physiological dependence. Abrupt discontinuation or rapid tapering can lead to withdrawal symptoms ranging from mild discomfort to life-threatening complications. While seizures are a well-known severe manifestation, non-convulsive symptoms such as delirium and agitation are equally important to recognize. We report the case of a 35-year-old man with no prior psychiatric history who presented with a sudden onset of delirium-like state, disoriented to time, place, and person, after repeatedly banging his head against a wall, resulting in multiple scalp hematomas, bruises, and lacerations. He exhibited marked jitteriness, agitation, and transient unconscious episodes. A detailed history revealed chronic consumption of approximately 20 tablets of 10 mg nitrazepam daily to counteract the stimulant effects of amphetamine. Abrupt cessation of nitrazepam led to acute benzodiazepine withdrawal symptoms, known as “cold turkey.” Without prompt intervention, such withdrawal could have escalated to seizures or intracranial bleeding from self-inflicted trauma. The patient was diagnosed with benzodiazepine withdrawal syndrome and treated with intravenous diazepam loading, resulting in gradual stabilization and full recovery under a supervised tapering plan. This case highlights the importance of early detection and multidisciplinary management of benzodiazepine withdrawal, as well as the need for patient and clinician education about proper, time-limited use of these medications.

Keywords: Benzodiazepine Withdrawal, Benzodiazepine Dependence, Delirium, Self-Injury, Seizure

OP2-03

Proportion and Associated Factors of Absent Endocervical Cells in Pap Smear Samples in Tumpat Health Clinic: 2023-2024

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The presence of endocervical/transformation zone (EC/TZ) components in Pap smear samples is critical for accurate cervical cancer screening, as their absence can significantly compromise test sensitivity, hence potentially delay detection and treatment. This study aimed to determine the proportion of Pap smear samples with absent EC/TZ components and to identify associated factors at Tumpat Health Clinic. A record review was conducted involving 268 Pap smear records among women aged 18 and above who underwent screening at the clinic between 2023 and 2024. Duplicate entries were excluded, and only the most recent sample per individual was included in the analysis. Data were extracted from the clinic's registry and analysed using RStudio (version 2025.05.1, Build 513) with R version 4.4.1, employing binary logistic regression. The proportion of Pap smear samples with absent EC/TZ components was 28.7% (n = 77). After adjusting for confounders, higher body mass index (BMI) was significantly associated with increased odds of EC/TZ absence (adjusted OR = 1.07; 95% CI: 1.02-1.13; p = 0.014). Additionally, women who reported hormonal contraceptive use, showed significantly decreased odds of EC/TZ absence compared to those not using contraception (OR = 0.26; 95% CI: 0.09-0.62; p = 0.004). Other factors, including age, race, cervical appearance, and occupation, were not significant. The findings suggest that higher BMI and hormonal contraceptive use may impact the adequacy of Pap smear samples. Enhanced sampling techniques and targeted training addressing those factors may improve sample quality and the overall effectiveness of cervical cancer screening programs.

Keywords: Pap smear, transformation zone, cervical cancer screening, endocervical cells, Malaysia

OP2-04

Effect of Pre- and Post-Empagliflozin on Diabetic Patients: A Retrospective Cohort Study in District Clinic of Tumpat, Kelantan

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With the rising prevalence of Type 2 Diabetes Mellitus (T2DM) in Malaysia, local primary care data on Empagliflozin remains limited. This study aimed to determine mean reduction of HbA1c, body weight (BW), systolic blood pressure (SBP) and diastolic blood pressure (DBP) from baseline among those were prescribed with Empagliflozin 10mg and 25 mg and to determine the association of different dosage of Empagliflozin on HbA1c, BW, SBP and DBP in Tumpat health clinic. This retrospective cohort study included 97 T2DM patients (predominantly Malay) from six clinics, analyzing data from January 2023 to December 2024. The mean age of participants was 59.4 years in the 10 mg cohort (n=28) and 57.7 years in the 25 mg cohort (n=69). Multiple linear regression was used to compare outcomes between the doses, while paired t-tests assessed within-group changes from baseline. The primary findings showed that HbA1c ($p<0.001$) and DBP (<0.05) showed significant mean reduction in both dosages. However, for SBP, only 10 mg presented with significant mean reduction ($p<0.001$) whereas 25 mg revealed a significant median weight reduction ($p<0.001$). After adjusting for confounding variables, only BW for Empagliflozin 25mg alone ($p=0.006$) and combined with other medication ($p=0.001$) showed a significantly larger reduction compared to 10mg. Thus, these findings provide information for therapeutic choices in Malaysian primary care.

Keywords: Empagliflozin, Diabetes, Primary care

OP2-05

Age, Ethnic and Geographic Differences in Breast Cancer Survival in Malaysia: A Nationwide Population-Based Study

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Differences in breast cancer survival remain a critical global health challenge, reflecting variations in access to early detection and treatment services. Addressing these gaps is key to achieving equitable cancer care. This retrospective cohort study analyzed survival differences by age group, ethnicity and geographic region among Malaysian women with breast cancer diagnosed between 2015 to 2019, using data from the Malaysian National Cancer Registry. Kaplan-Meier methods were used to compare survival across groups, with differences were assessed using a log-rank test. Among 26,867 eligible cases, five-year observed survival was higher among women under 50 years (61.3%) than in those aged 50 years and above (55.4%) (log rank $p < 0.001$). Chinese women had better five-year observed survival (64.7%) than Malay women (52.7%) (log-rank $p < 0.001$). Across regions, the Eastern region recorded the highest five-year observed survival at 59.6%, while the East Coast region had the lowest at 49.3% (log-rank $p < 0.001$). Persistent differences in breast cancer survival by age, ethnicity, and geographic regions in Malaysia highlight the need for equitable access to screening, timely diagnosis, and effective treatment. These findings mirror global patterns of cancer survival variation, particularly in low- and middle-income countries, and reinforce the importance of multidisciplinary strategies to achieve the Sustainable Development Goals for reducing premature mortality from non-communicable diseases.

Keywords: Breast cancer, survival, age, ethnic, geographic

OP2-06

Factors Associated with Diabetic Complications among Type 2 Diabetes Mellitus Patients in Bachok District from 2020 to 2024

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Type 2 diabetes mellitus (T2DM) is a growing public health concern associated with significant long-term complications. Both macrovascular and microvascular complications contribute to increased morbidity, mortality, and healthcare costs. While national data are available, there is limited evidence on the local determinants of these complications, especially in rural districts like Bachok. This study to determine the factors associated with diabetic complications among T2DM patients in Bachok District from 2020 to 2024 using audited data from the National Diabetes Registry. A retrospective cross-sectional study was conducted among T2DM patients registered in the Bachok District from 2020 to 2024. Data on demographics, clinical profiles, and treatment characteristics were extracted. Complications included diabetic retinopathy, nephropathy, neuropathy, ischemic heart disease, and diabetic foot ulcers. Statistical analysis involved univariable and multivariable logistic regression to identify associated factors. Out of 2,947 patients, 70.2% were female and 98.3% were Malay, with a mean age of 61.7 years. The prevalence of hypertension and dyslipidemia was 74.6% and 75.9%, respectively. Multivariable analysis showed that being female (aOR: 0.56, 95% CI: 0.46-0.62), presence of dyslipidemia (aOR: 4.60), presence of hypertension (aOR: 2.47), higher HbA1c levels (aOR: 1.11) were significantly associated with the presence of complications ($p < 0.05$). The findings indicate that both modifiable (HbA1c, dyslipidemia, hypertension) and non-modifiable (sex) factors contribute to the risk of diabetic complications. Targeted interventions focused on glycemic, blood pressure and lipid control, especially among high-risk groups, are essential for reducing the burden of complications in this population.

Keywords: Type 2 diabetes mellitus, risk factors, Bachok, Malaysia, diabetic complications

OP2-07

Unveiling the Gaps: Absence of Endocervical /Transformation Zone in Pap Smears and Associated Factors in Pasir Mas, 2024

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The presence of endocervical/transformation zone (EC/TZ) components in Pap smear samples is crucial for accurate cervical cancer screening. Absence of these components may reduce test sensitivity and lead to missed diagnoses. A high rate of EC/TZ absence has been noted in Pasir Mas District, yet contributing factors remain underexplored. To determine the proportion of Pap smears without EC/TZ components and identify associated patient-related factors among women attending government health clinics in Pasir Mas. A cross-sectional study using secondary data involved 234 women aged 30-65 years who underwent Pap smears in 2024. Simple random sampling was applied. Sociodemographic and clinical data were analyzed using simple and multiple logistic regression. The absence of EC/TZ components was found in 42.6% of samples. Significant factors included age (AOR = 0.952; 95% CI: 0.925-0.979; $p < 0.001$) and use of contraception (AOR = 5.695; 95% CI: 2.998-10.817; $p < 0.001$). Age and use of contraception were associated with higher risk of EC/TZ absence. Nearly half of Pap smears in Pasir Mas lacked EC/TZ components. Age and use of contraception were key predictors. Enhanced training in sampling techniques and targeted interventions are recommended to improve screening adequacy.

Keywords: Pap smear, EC/TZ absence, cervical screening, Pasir Mas District

OP2-08

Wounds that won't heal: Unraveling the burden and recovery predictors in PKD Pasir Mas (2022-2024)

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Wound healing is a complex biological process influenced by multiple factors, and delayed healing poses a significant burden on patients and healthcare systems. This study aimed to identify demographic, clinical, and wound-specific predictors of delayed healing among patients managed in PKD Pasir Mas. A retrospective cross-sectional study was conducted involving 102 patients receiving wound care. Data were extracted from outpatient and wound care records, including demographic details, comorbidities (e.g., diabetes, chronic kidney disease, hypertension), smoking status, wound characteristics (type, size, site, number), and healing outcomes. Statistical analyses included descriptive and logistic regression methods to examine associations with chronic wound development, defined as wounds not healing within three months. Among 102 patients, 55.9% had chronic wounds while 44.1% healed within three months. Diabetes mellitus emerged as a significant predictor of delayed healing. Diabetic patients had lower odds of healing within the 3-month period (Adjusted Odds Ratio [AOR]: 3.46; 95% CI: 1.33-8.97; p=0.011). The number of wounds did not significantly affect healing outcomes (p=0.362). Diabetes significantly contributes to delayed wound healing. Systemic factors such as diabetes, renal disease, and wound characteristics play a more critical role than the number of wounds. These results support previous findings and emphasize the importance of targeted intervention in high-risk groups. Early identification and focused management of high-risk patients are crucial in improving wound healing outcomes and minimizing complications.

Keyword: wound care, chronic wound, predictive factors, diabetes, primary healthcare

OP2-09

Preventable Yet Persistent: Unmasking Determinants of Under-Five Mortality in Pasir Mas - A Five-Year Review (2020-2024)

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Under-five mortality is a sensitive indicator of child health and healthcare system performance. In alignment with the Sustainable Development Goals (SDGs) 2016-2030, Malaysia adopted the SU5MR (Stillbirth and Under-Five Mortality Reporting) system to standardize surveillance and improve the response to child deaths. This study aimed to assess the proportion and identify key factors associated with preventable under-five mortality in Pasir Mas district from 2020 to 2024. A cross-sectional study was conducted involving all 164 under-five death notifications reported during the study period. Data were extracted from the Stillbirth and Under-Five Notification System and SU5MR-1/2023 forms. Descriptive analysis and multiple logistic regression were performed to explore associations with preventable deaths. A total of 42.7% of under-five deaths were classified as preventable. Children aged 7-28 days were significantly less likely to experience preventable death (AOR = 0.065; 95% CI: 0.018-0.232; $p < 0.001$). Risk factors associated with higher odds of preventable death included female gender (AOR = 2.467; 95% CI: 1.119-5.443; $p = 0.025$), presence of comorbidities (AOR = 4.048; 95% CI: 1.780-9.204; $p = 0.001$), and substandard care (AOR = 4.928; 95% CI: 2.115-11.482; $p < 0.001$). Nearly half of under-five deaths in Pasir Mas were preventable. Strengthening early detection, addressing comorbidities, improving care quality, and targeting high-risk groups are essential to reduce preventable child mortality.

Keywords: Under-five Mortality, Preventable Deaths, Child Health, Associated Factors, Substandard Care

OP2-10

Prevalence and Determinants of Poor Glycaemic Control Among Patients with Type 2 Diabetes Mellitus in Jeli District, Kelantan

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Type 2 Diabetes Mellitus (T2DM) poses a growing public health challenge in Malaysia, particularly in rural districts like Jeli, Kelantan. Poor glycaemic control increases the risk of complications and healthcare burden. Understanding local determinants is essential for targeted interventions. This study aimed to determine the prevalence of poor glycaemic control and identify associated socio-demographic and clinical factors among adult T2DM patients in Jeli District, Kelantan. A cross-sectional study was conducted using secondary data from the National Diabetes Registry (NDR) for patients registered between January 2022 and December 2024. A total of 2,087 T2DM patients were included. Data were analysed using descriptive statistics and multiple logistic regression in SPSS Version 27. Glycaemic control was categorized as good (HbA1c $\leq$ 6.5%) or poor (HbA1c >6.5%). The majority of T2DM patients in Jeli were female (65.0%), Malay (99.3%), and aged 60 years and above (56.8%). Clinically, a majority had hypertension (80.9%) and dyslipidaemia (71.8%), while 30.8% had diabetes duration of 10 years or more. The prevalence of poor glycaemic control (HbA1c > 6.5%) was 66.0%. Multiple logistic regression confirmed that longer disease duration, early onset, elevated diastolic pressure, hypertension, and higher BMI were independent predictors of poor control. These findings suggest that patients with early-onset diabetes and longer disease duration may need closer monitoring and personalized care. Supporting lifestyle changes and managing high blood pressure could help improve blood sugar control. This study offers useful guidance for improving diabetes care in rural areas.

Keywords: Type 2 Diabetes Mellitus; Glycaemic Control; Rural Health; Predictive factors

OP2-11

Prevalence of Anaemia and Associated Risk Factors Among Adolescent Pregnancies in Pasir Puteh District, Kelantan: A Cross-Sectional Study (2021-2024)

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Anaemia in adolescent pregnancy is an important public health concern in Malaysia, with potential adverse obstetric and neonatal outcomes. This study aimed to determine sociodemographic profiles and associated risk factors of anaemia among adolescent pregnancies in Pasir Puteh District, Kelantan. A cross-sectional analysis was conducted using secondary data from Adolescent Pregnancy Registry of Pasir Puteh District Health Office (2021-2024) and antenatal records. Descriptive statistics presented categorical data as frequencies (percentage) and numerical data as mean (SD). Binary logistic regression was used to determine anaemia risk factors. Anaemia was defined as haemoglobin level below 11.0 g/dL during the booking visit. This study involved 161 pregnant adolescents, revealing anaemia prevalence of 16.1%. Predominantly, 49.7% adolescents were aged above 18 years, 91.9% were married, 65.2% had upper secondary education or higher, with mean BMI of 23.3 kg/m² (SD 4.88). Obstetrically, 81.4% were primigravida and most participants (60.9%) had antenatal bookings in first trimester. Risk factors associated with increase risk of anaemia among pregnant adolescents include non-married adolescents (Adj OR = 5.66; 95% CI: 1.51, 21.20; p = 0.010) and late antenatal booking during the second or third trimester (Adj OR = 3.71; 95% CI: 1.36, 10.16; p = 0.011). Conversely, higher BMI was associated with lower odds of anaemia (Adj OR = 0.82; 95% CI: 0.72, 0.94; p = 0.005). The findings of this study provide valuable insights for developing targeted interventions and support systems aimed at reducing the risk of anaemia among adolescent pregnancies in Pasir Puteh district.

Keywords: Anaemia, Adolescent Pregnancy, Risk Factors of Anaemia

OP2-12

Prevalence and Factors Associated with Preventable Under-Five Mortality in Tumpat District, Kelantan (2020-2024)

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The Sustainable Development Goals (SDG) aim to eliminate preventable mortality among children under five by 2030, targeting an under-five mortality rate (U5MR) of less than 25 per 1,000 live births. U5MR serves as a vital indicator of child health and national development. Despite overall improvements, Malaysia has yet to achieve its national target of 5.6 per 1,000 live births. This study aimed to determine the prevalence and factors associated with preventable under-five mortality in Tumpat District, Kelantan (2020-2024). A retrospective cross-sectional study was conducted using secondary data reported to the Kelantan State Health Department. Data were analysed using descriptive statistics, simple logistic regression (SLR), and multiple logistic regression (MLR) to identify factors associated with preventable under-five mortality in Tumpat District, Kelantan. Among the 131 cases reviewed, 48 (37%) were considered preventable. Multiple logistic regression analysis showed that a shortfall in the quality of care was significantly associated with increased odds of a case being classified as preventable mortality (adjusted odds ratio: 12.3; 95% confidence interval: 4.27-39.9; $p < 0.001$). In contrast, the presence of comorbidity was associated with significantly lower odds of classification as preventable mortality (adjusted odds ratio: 0.13; 95% confidence interval: 0.04-0.39; $p < 0.001$). These findings were lower than national and regional reports, highlighting gaps in healthcare delivery particularly in early recognition and timely intervention. This study further emphasizes the urgent need to strengthen clinical governance, referral pathways, and capacity building in rural districts. Addressing these gaps is crucial to reducing preventable mortality and achieving Malaysia's SDG targets.

Keywords: Under-Five Mortality, Preventable Death, Quality of Care, Comorbidity, Kelantan

OP2-13

Unravelling Survival Disparities in Type 2 Diabetes Mellitus: Evidence from Bachok District, Kelantan, Malaysia using registry data up to 31 December 2024

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Type 2 Diabetes Mellitus (T2DM) is a major contributor to global morbidity and mortality, with survival outcomes often influenced by demographic and clinical disparities. This study aims to investigate survival disparities among patients with T2DM in Bachok District, Kelantan, focusing on the influence of demographic characteristics and clinical factors on patient outcomes. This retrospective cohort study investigated survival disparities among 8,512 patients with T2DM in Bachok District, Kelantan, using data registered in the National Diabetes Registry up to 31 December 2024. Using survival analysis, the research highlights significant variations in survival based on age, sex, amputation status, and comorbidities. The overall median survival time was estimated at 417 months (95% CI: 391 to NA), while among patients who died during follow-up, the median survival was 110 months (95% CI: 105-114 months). Using Cox proportional hazards regression, male sex (HR 1.65, 95% CI: 1.46-1.87) and amputation (HR 2.19, 95% CI: 1.50-3.21) emerged as significant predictors of increased mortality risk among diabetic patients. Interestingly, the presence of multiple comorbidities was associated with a lower hazard ratio (HR 0.74, 95% CI: 0.63-0.87), suggesting a possible protective effect, potentially due to more intensive follow-up or earlier engagement with the healthcare system. These findings underline the need for tailored healthcare interventions in managing T2DM patients based on demographic and clinical characteristics to improve survival outcomes in the region.

Keywords: Type 2 Diabetes Mellitus, Survival Analysis, Median survival time, Hazard ratio

OP2-14

Healthcare Access Among Elderly with Lack of Support in Kelantan: A Qualitative Study

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Elderly individuals with a lack of support are vulnerable in accessing healthcare. Many older adults face physical, emotional, and logistical barriers that prevent them from seeking timely care. This study aimed to explore the healthcare access experiences and to explain how various factors contribute to poor healthcare access among elderly individuals with low social support in Kelantan. A qualitative study was conducted using a phenomenological approach. Twelve participants aged 60 and above were purposively selected from community elderly support programmes across Kelantan. Data were collected through face-to-face, semi-structured in-depth interviews conducted in the local dialect. Interviews were transcribed verbatim and analysed inductively using thematic analysis. One core theme emerged - minimising burden to oneself and others - supported by three sub-themes: dependency, seeking simplicity in healthcare, and normalisation of illness. Participants described how reliance on others, emotional burden, preferences for convenient services, and the belief that illness is part of ageing contributed to delays in seeking care. The study highlights that healthcare access among socially vulnerable elderly is shaped not only by availability of services, but also by emotional readiness and personal decision. Addressing these underlying concerns through community-integrated, person-centred approaches is essential to ensuring equitable access for the ageing population.

Keywords: elderly, healthcare access, social support, qualitative study, ageing, Kelantan

OP3-01

Psychometric Validation of the Malay Patient-Doctor Relationship Questionnaire (MyPDRQ): A Study Among Haemodialysis Patients in Kelantan, Malaysia

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The patient-doctor relationship is a key determinant of patient-centred care, particularly in chronic disease settings such as haemodialysis, where long-term interactions are common. While the Patient-Doctor Relationship Questionnaire (PDRQ-9) has been widely used in Western populations, no validated Malay version was available to assess this relationship among Malaysian patients. This study aimed to assess the psychometric properties of the Malay-translated version of the PDRQ-9 (MyPDRQ) among haemodialysis patients in Kelantan, Malaysia. A cross-sectional validation study was conducted involving 300 Malay-speaking haemodialysis patients at a teaching hospital at east coast of Malaysia. The translation and cultural adaptation followed international guidelines, including forward-backward translation, expert review, and cognitive debriefing with patients. Face validity and content validity were assessed by clinical experts and target users. Confirmatory factor analysis (CFA) was used to evaluate construct validity, while internal consistency reliability was examined using Raykov's rho. The MyPDRQ showed strong evidence of face and content validity, with item-level indices between 0.90 and 1.00. CFA supported a unidimensional model with excellent fit indices (RMSEA = 0.025, SRMR = 0.030, CFI = 1.000, TLI = 1.000). The internal consistency was high (Raykov's rho = 0.906), indicating that the scale reliably measures the construct of the patient-doctor relationship within this population. The Malay version of the PDRQ-9 (MyPDRQ) is a valid and reliable instrument for assessing patient-doctor relationships among haemodialysis patients in Malaysia. Its application may enhance future research and clinical practice in promoting patient-centred care. Further validation in diverse clinical contexts is recommended.

Keywords: Patient-doctor relationship, Questionnaire validation, Psychometric Validation, Haemodialysis patients, Cross-cultural adaptation

OP3-04

EFFECT OF CHIA SEEDS (SALVIA HISPANICA L.) AS AN ADJUNCT FOR GLYCEMIC CONTROL AND WEIGHT REDUCTION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC REVIEW AND META ANALYSIS

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This systematic review and meta-analysis aimed to assess the effectiveness of chia seeds as an adjunct therapy for glycemic control and weight management in patients with type 2 diabetes mellitus (T2DM). Relevant randomized controlled trials (RCTs) were identified through the Cochrane Central Register of Controlled Trials (Central) and PubMed (1985 to January 2022). Data from the trials were analysed using random-effects models to determine mean differences (MDs) and 95% confidence intervals (CIs) for continuous outcomes. Risk of bias, heterogeneity, sensitivity, reporting bias, and quality of evidence were evaluated. Four RCTs with 184 participants met the inclusion criteria. In comparisons between chia seed and control groups, chia seeds significantly reduced HbA1c levels (MD -0.20, 95% CI -0.25 to -0.15; $I^2 = 0$; $p < 0.001$) and fasting blood glucose (MD -0.68, 95% CI -1.45 to 3.13; $I^2 = 30\%$; $p = 0.03$) across three trials involving 140 participants. A second comparison between polyherbal preparations containing chia seeds and controls showed further reductions in HbA1c (MD -0.27, 95% CI -0.31 to -0.23; $p < 0.001$) and fasting blood sugar (MD 0.13, 95% CI 0.02 to 0.24; $p = 0.02$) in 87 participants. Chia seeds improve glycaemic control by reducing HbA1c, fasting blood glucose, and waist circumference in patients with T2DM. However, no significant effects were observed on cardiovascular risk factors, including blood pressure, lipid profiles, body weight, or body mass index (BMI).

Keywords: glycaemic control; Salvia hispanica seed extract; type 2 diabetes mellitus; weight reduction

OP3-05

Comparing the Effectiveness of Video-Based and Verbal Oral Hygiene Instructions in Patients with Fixed Orthodontic Appliances

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Maintaining good oral-hygiene can be challenging for patients undergoing fixed-orthodontic treatment due to presence of brackets, archwires and multiple accessories which are plaque-retentive factors. Inadequate oral hygiene can lead to white spot-lesion, dental-caries and gingivitis. Providing clear and effective oral hygiene instructions at the start of treatment is essential in preventing these complications. Oral hygiene instructions are routinely delivered verbally, however, the content can vary depending on clinicians and this may be time-consuming especially in busy clinical settings. Video-based instructions may be more consistent and time-efficient. This study aimed to compare the effectiveness of video-based and verbal oral hygiene instructions among patients with fixed appliances. A randomised control trial was conducted involving 70 patients aged 13 to 23 years old. Participants were randomly allocated into two groups: intervention group which received video-based instructions and control group which received verbal instructions. The effectiveness of both methods was assessed using mean plaque scores of Modified Silness and Loe Plaque Index. All participants underwent professional prophylaxis prior to fixed appliance placement (T0), ensuring a baseline plaque score of 0. Plaque scores were recorded again at 4 weeks (T1) and 8 weeks (T2). Data were analysed using repeated measures ANOVA with SPSS version 30. No significant differences in plaque scores between groups ($p=0.319$), and the time-group interaction was also not significant ($p=0.095$). These findings suggest that video-based instruction is a comparable option to routine verbal instructions, and may be considered as a supportive strategy in clinical settings where time or staff availability is limited.

Keywords: Orthodontic Fixed Appliance, Oral Hygiene Instruction, Video-based Instruction

OP3-06

Salivary Parameters and Oral Health Status in Children with Autism Spectrum Disorder (ASD): A Comparative Clinical and Laboratory Analysis

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Children with autism spectrum disorder (ASD) are at a higher risk of oral health problems compared to their typically developing peers. While they may not display distinct oral characteristics, their condition can still impact oral health outcomes. This study aimed to compare salivary parameters and oral health status between children with ASD and without ASD. A total of 28 children aged 3 to 16 years with ASD and 30 age-and-gender-matched children without ASD attending the Faculty of Dentistry, Universiti Teknologi MARA (UiTM), were recruited. Clinical assessments included the dental caries distribution according to ICDAS classification, Modified Gingival Index (MGI), simplified Basic Periodontal Examination (sBPE) and Oral Hygiene-Simplified Index (OHI-S). Unstimulated and stimulated saliva were analysed for pH, buffering capacity and bacterial counts of *Streptococcus mutans*, *Lactobacilli*, and *Porphyromonas gingivalis*. Children with ASD had a higher prevalence of poor oral hygiene compared, moderate gingival inflammation, and higher plaque accumulation than controls. Laboratory analysis showed lower salivary pH and buffering capacity compared to the control group. Bacterial colony-forming unit (CFU) counts were significantly higher in ASD children, particularly in stimulated saliva. Findings highlight the potential of salivary diagnostics as a non-invasive screening tool and the need for tailored oral hygiene interventions for children with ASD to mitigate their heightened risk of dental diseases.

Keywords: autism spectrum, children, oral health, caries, periodontal disease, saliva

OP3-07

Knowledge, Awareness and Perception on Contraception Among Healthcare Workers in District Hospitals in Kelantan: A Cross-Sectional Study

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Contraception is key to reducing unintended pregnancies and sexually transmitted diseases, yet usage remains suboptimal in Malaysia. Healthcare workers (HCWs) play a central role in educating patients, making their understanding and attitudes crucial. This study aimed to assess the level of knowledge, awareness and perception of contraception among HCWs in Hospital Jeli and Hospital Tumpat. A prospective, cross-sectional observational study was conducted from May 2023 to June 2025 among 221 HCWs in both hospitals using a validated online questionnaire. Stratified sampling methods were applied to include pharmacists, doctors, nurses, medical assistants, and pharmacy assistants. Descriptive statistics, Chi-square and Pearson correlation tests were used to analyse data. Most participants were female (71.9%) and aged 30-39 years (60.2%). A majority (73.8%) showed good knowledge (mean=5.33±1.39), and 96.8% had good awareness (mean=36.39±5.29). However, only 6.8% demonstrated good perception (mean=26.94±5.23). Significant associations were found between knowledge and position/education, awareness with age/position, and perception with position/education. Weak but statistically significant positive correlations were observed between knowledge and awareness ($r=0.215$, $p=0.004$) and between awareness and perception ($r=0.161$, $p=0.032$). However, no significant correlation was found between knowledge and perception. Despite high awareness and moderate knowledge, negative perceptions among HCWs highlight the need for targeted training to enhance contraceptive counselling in district hospitals.

Keywords: Contraception, Knowledge, Awareness, Perception, Healthcare Workers

OP3-08

Preliminary Validation of a Malay Questionnaire Assessing Knowledge, Attitude, and Practice among Dementia Caregivers: Content and Face Validation Findings

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Dementia poses a significant burden on caregivers, especially in low and middle-income countries like Malaysia, where prevalence reaches 8.5%. Research shows caregivers having limited knowledge, moderate attitudes, and poor practices, which negatively affect their well-being and patient outcomes. Although global instruments exist to assess caregiver knowledge, attitude, and practice (KAP), their direct applicability in Malaysia is limited due to linguistic and cultural differences. This study aimed to evaluate content and face validity of a newly developed Malay-language KAP questionnaire for dementia-caregivers. Three validated instruments were translated and adapted: Dementia Knowledge Assessment Tool Version 2 (DKAT-2), Dementia Attitudes Scale (DAS), and Caregiver Task Inventory-25 (CTI-25). Forward-backward translation was followed by expert content validation and face validation with ten dementia caregivers. Content validation showed excellent agreement. In the Knowledge domain (21 items), 20 items achieved an I-CVI of 1.00, and one item scored 0.833. The S-CVI/Ave ranged from 0.992 to 1.00. Both the Attitude (20 items) and Practice (25 items) domains demonstrated perfect I-CVI scores (1.00). Face-validation confirmed strong clarity and cultural appropriateness. The Knowledge domain achieved I-FVI and Universal Agreement (UA) scores of 1.000. The Attitude domain recorded an average I-FVI of 0.995 and UA of 0.950, while the Practice domain scored I-FVI of 1.000 and UA of 0.998. In conclusion, the questionnaire demonstrated strong content and face-validity, supporting its use in evidence-based interventions aimed at dementia caregivers in Malaysia and other similar multicultural LMIC settings. These findings contribute to global efforts in advancing equitable and sustainable public health solutions.

Keywords: Dementia caregivers, Knowledge, Attitude, Practice (KAP), Questionnaire validation, Content and face validity.

OP3-09

A Social Media Research Framework for Public Health: Leveraging Artificial Intelligence for Scalable Video Content Analysis

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Social media is a double-edged sword, it powerfully shapes public health narratives, influencing behaviours and perceptions, yet also facilitates the rapid spread of misinformation and the promotion of harmful products such as tobacco, alcohol, and drugs, which can significantly undermine public health efforts. However, its dynamic and heterogeneous language and cultural expressions pose significant methodological challenges for conventional public health research to analyse these multifaceted and high-volume content effectively. This study introduces a systematic and scalable social media research framework that leverages artificial intelligence for video content-analysis to support real-time public health surveillance. The process begins by extracting textual, audio, and visual data from social media videos using a third-party scraping service, filtered through relevant hashtags or keywords. Videos are then manually screened for relevance to the research objectives. A codebook on items of interest will be developed using an inductive method through the manual coding of 10% of the total sampled videos. This codebook is then used to prompt a large vision-language model, such as LLaVA-Video, to detect and classify those items. To ensure accuracy, 10% of outputs for each item will undergo human evaluation. This iterative process will refine the model and codebook, targeting substantial agreement (Cohen's Kappa>0.6) between machine and human assessments. This framework is adaptable across a range of public health domains including tobacco control, vaccine-hesitancy, or mental health for the exploration of public sentiment, misinformation, and marketing strategies to facilitate timely multidisciplinary responses, from policy development, regulatory enforcement to targeted health interventions for global well-being.

Keywords: social media, research framework, artificial intelligence, content analysis

OP3-10

Mind the Gap: Hidden Pitfalls in AED Therapeutic Monitoring at Pasir Mas Health Clinics, 2023-2024

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Epilepsy is a chronic neurological condition managed primarily with antiepileptic drugs (AEDs). Due to their narrow therapeutic index and variability in drug metabolism, therapeutic drug monitoring (TDM) is crucial to ensure efficacy and minimize toxicity. This study aimed to determine the proportion of abnormal TDM levels of AEDs and identify associated factors among epilepsy patients attending Pasir Mas health clinics. A cross-sectional study was conducted from February to June 2025 using secondary data from January 2023 to December 2024. A total of 112 samples from government health clinics in Pasir Mas were included. Data was extracted from pharmacy and clinical records and analyzed using IBM SPSS Version 26. The mean age of patients was 42 years (SD = 15.2), with 67.9% males and 98.2% Malays. Polypharmacy and potential drug-drug interactions were present in 51.8%. Despite 75% of patients's self reporting good adherence, 62.5% had abnormal TDM levels. Univariate analysis identified sex, duration of treatment, and carbamazepine use as significant factors. Multivariable analysis confirmed that carbamazepine use ($p = 0.004$) and longer treatment duration ($p = 0.018$) were independently associated with normal TDM levels. The high proportions of abnormal TDM levels underscores the need for improved and individualized monitoring protocols. Patients on non-carbamazepine AEDs or with shorter treatment durations may benefit from closer TDM follow-up. Carbamazepine may offer a more stable long-term treatment option, potentially reducing the need for intensive monitoring.

Key word: Epilepsy, Therapeutic Drug Monitoring (TDM), Antiepileptic drugs (AEDs), carbamazepine, Pasir Mas Health Clinic

OP3-11

Development of the Sense of Coherence-based Intervention Module: Empowering Adolescents in Oral Hygiene Care

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The prevailing approach to promoting oral health primarily focuses on the prevention and treatment of disease. In contrast, the Salutogenic framework, which centres on the concept of Sense of Coherence (SOC), adopts a health-oriented perspective—emphasising how individuals are able to maintain and enhance their well-being despite challenges. This work aims to describe the development of an oral health intervention module designed to promote oral hygiene behaviours among 14-year-old school adolescents by strengthening their sense of coherence. The core components of SOC—comprehensibility, manageability, and meaningfulness—were used to guide the content and structure of the module. The development process consisted of three key stages: (1) preparing a module draft; (2) conducting pilot testing; and (3) validation by subject-matter experts using the Fuzzy Delphi Method (FDM). The expert panel included teachers, academicians, psychologists, and dental public health professionals. A total of 12 experts assessed the module, with FDM threshold values ranging from 0.02 to 0.10, Fuzzy scores between 0.89 and 0.93, and an expert consensus rate of 100%, indicating strong agreement. Feedback from the panel was used to enhance the module's clarity, cultural relevance, and engagement value. The final product is an interactive, activity-based module designed to foster adolescents' self-regulation in oral hygiene care. This work concludes that a systematic, theory-driven module development—grounded in SOC principles and validated by expert consensus—offers a promising strategy for empowering adolescents to sustain positive oral hygiene behaviours.

Keyword: Sense of Coherence (SOC), Salutogenic Approach, Oral Health Promotion, Adolescent, Intervention Module Development, Fuzzy Delphi Method, Oral Hygiene Behaviour

OP3-12

Noise-Related Hearing Disorder Among Vector Control Workers in Kelantan

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Noise-related hearing disorder (NRHD) is the highest reported occupational disease and a major compensable occupational hazard in Malaysia. With the increase in dengue cases, the need for vector control workers to control the spread of dengue at the expense of being exposed to noisy fogging machines is critical. Thus, this study aimed to determine the factors that could be responsible for the NRHD status. A cross-sectional study was conducted among vector control workers in Kelantan. A self-administered questionnaire was used to collect sociodemographic, medical and occupational information. NRHD was confirmed by an audiogram test. As quoted by the Department of Occupational, Safety and Health (DOSH), NRHD was defined as noise-induced hearing loss (NIHL), hearing impairment (HI) and permanent standard threshold shift (STS). A sample of eligible 227 workers from Northern districts of Kelantan were included, 15.4% of them had NRHD and the mean age was 40.00 (8.85). Following logistic regression, the factor associated with NRHD among vector control workers was low educational level (Adj. OR 14.00; 95% CI: 1.62, 21.37, p-value=0.017). The risk of NRHD was higher among foggers who had longer duration of noise exposure (Adj. OR 2.87; 95% CI: 1.11, 7.45, p-value=0.030). Vector control workers especially the foggers must be protected from occupational noise hazards through the implementation of effective hearing conservation programs in the workplace.

Keywords: Fogger, Hearing Loss, Noise Exposure, NRHD, Vector

OP3-14

Recalibrating an AI-Driven Fasting Blood Glucose Risk Prediction Model Using XGBoost for Healthcare Worker Screening in Machang, Kelantan

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The early detection of diabetes among healthcare workers is vital to safeguarding workforce health and sustaining service delivery. This study recalibrated a Fasting Blood Glucose (FBG) risk prediction model to facilitate risk prediction for high blood glucose by leveraging screening data from healthcare workers in the Machang District Health Office, Kelantan, in 2025. The dataset comprised 375 participants, of whom 44 (11.7%) had abnormal FBG (≥ 5.6 mmol/L). Predictors included age, body mass index, waist circumference, blood pressure, family history of diabetes, hypertension, and dyslipidaemia, as well as smoking status. Model development employed eXtreme Gradient Boosting (XGBoost), incorporating the Synthetic Minority Over-sampling Technique (SMOTE) to address class imbalance. The SMOTE-adjusted XGBoost model achieved 77.6% accuracy, 85.1% sensitivity, 22.2% specificity, and an AUC of 0.368, indicating high sensitivity but limited discriminative ability. Variable importance analysis identified age, waist circumference, and systolic blood pressure as key predictors. Planned recalibration will explore class weight adjustments and inclusion of additional demographic variables such as gender and ethnicity to improve performance. Embedding the optimized model into KOSPEN-DIAPro will enable personalized, probability-based risk assessment, empowering healthcare workers to undertake timely lifestyle modifications and preventive actions. This initiative illustrates the feasibility of translating machine learning into practical, workplace-focused digital health tools, enhancing occupational health surveillance and fostering a healthier healthcare workforce.

Keywords: XGBoost, fasting blood glucose, diabetes risk prediction, healthcare worker, screening

POSTER PRESENTATION

PP1-01

Smoking Prevalence and Its Associated Factors among TB Patients in Kelantan; 3 Years Record Review 2021-2023

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Smoking remains a major public health concern in Malaysia, particularly among tuberculosis (TB) patients. Understanding its prevalence and associated factors is crucial for targeted interventions. This study aims to determine the smoking prevalence and its associated factors among TB patients in Kelantan. A cross-sectional study was conducted using secondary data from MyTB between January 2021 and December 2023. This study included Malaysian TB patients aged 18 years and above, excluding those who transferred out, changed diagnosis, or were still undergoing treatment during the data collection period. Statistical analysis was performed using SPSS version 25.0, applying multiple logistic regression analysis. Ethical clearance was obtained from MREC, MOH. Of 2,815 TB cases in Kelantan, 1,013 (36%) patients were smokers. The mean $\pm$ SD age was 42.3 ± 10.1 years, with a range of 19 to 75 years. After adjusting for confounding variables, smoking was significantly associated with age (AdjOR=0.988, 95% CI=0.982, 0.994, $P<0.001$), female (AdjOR=0.005, 95% CI=0.002, 0.013, $P<0.001$), non-Malays (AdjOR=0.50, 95% CI=0.32, 0.77, $P=0.002$), IPT education level (AdjOR=0.31, 95% CI=0.18, 0.54, $P<0.001$), HIV-negative (AdjOR=0.55, 95% CI=0.38, 0.79, $P=0.001$), EPTB anatomy (AdjOR=0.66, 95% CI=0.46, 0.96, $P=0.029$), and far advanced CXR (AdjOR=2.17, 95% CI=1.23, 3.82, $P=0.007$). Smoking prevalence among TB patients in Kelantan remains alarmingly high at 36%. The findings highlight that age, gender, race, education level, HIV status, TB anatomy, and CXR status were significantly associated with smoking. These insights underscore the need for integrated cessation efforts tailored to TB patient profiles, especially among those at higher clinical risk.

Keywords: Smoking, Prevalence, Associated Factor, Tuberculosis (TB)

PP1-02

PROSTAR 2.0: A Youth-Centred, Multidisciplinary Strategy for HIV Prevention in Seberang Perai Tengah, Pulau Pinang

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Youth are at risk of misinformation and vulnerability regarding HIV/AIDS. The 'Program Sihat Tanpa AIDS Untuk Remaja' (PROSTAR) 2.0, developed by the Ministry of Health Malaysia, incorporates a multidisciplinary and peer-led approach to equip youth with essential knowledge, resilience, and leadership skills in HIV prevention. A one-group pretest-posttest study design was conducted involving 158 tertiary education students aged 19-24 years in Seberang Perai Tengah District, who participated in a 2-day PROSTAR 2.0 training program. Participants completed a standardised 15-item HIV knowledge questionnaire before and after the intervention. Data were analysed using paired-sample t-tests in SPSS; Cohen's d was used to determine effect size. The mean pre-test score was 8.70 (SD = 3.24), increasing to 13.15 (SD = 2.12) post-intervention. This difference was statistically significant ($t(157) = -18.939, p < 0.001$), with a mean gain of 4.45 points. The effect size was large (Cohen's d = 1.507), indicating strong program impact. PROSTAR 2.0 significantly improves HIV/AIDS knowledge among Malaysian youth. Its multidisciplinary, interactive, and peer-led model also empowers youths as sexual health advocates. The program highlights the importance of a multidisciplinary approach, offering a model adaptable for broader interagency HIV prevention efforts.

Keywords: Youth, PROSTAR, HIV Prevention, Malaysia

PP1-06

A 10-Year Shift Toward MSM-Linked HIV Transmission in Seberang Perai Tengah: Implications for Public Health Action

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Global health advancement depends on a contextual understanding of disease dynamics within key populations. In Malaysia, shifting HIV transmission patterns highlight the need for context-specific and multidisciplinary public health responses. This study examines 10-year trends in modes of HIV exposure among individuals diagnosed with HIV/AIDS in Seberang Perai Tengah. A retrospective analysis of 660 cases diagnosed between 2015 and 2024 was conducted. Multinomial logistic regression assessed the association between year of diagnosis and reported mode of exposure. Men who have sex with men (MSM) accounted for 57.6% of cases, followed by heterosexual contact (39.8%) and injecting drug use (IVDU) (2.6%). A significant decline in heterosexual transmission from 2018 onward was observed, indicating an increasing predominance of MSM-related transmission. Classification accuracy was highest for MSM (74.2%). This study demonstrates a clear epidemiological shift toward MSM as the dominant mode of HIV exposure in Seberang Perai Tengah. These findings highlight the urgent need for multidisciplinary, culturally responsive interventions, particularly targeting MSM through behavioural change programs, digital outreach, and stigma-free healthcare services. Targeted public health strategies are vital to advancing health equity and improving population well-being.

Keywords: HIV/AIDS, Transmission Trends, Malaysia

PP1-07

Foodborne Illness in Schools: Epidemiological Insights from *Bacillus cereus* Outbreaks in Kelantan

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Food poisoning remains a major public health concern in school settings, especially in upper middle-income countries like Malaysia. This cross-sectional study analysed foodborne outbreaks caused by *Bacillus cereus* in secondary schools across Kelantan from 2022 to 2024. A total of 860 students were included, with 52.2% classified as cases and 47.8% as controls. Most exposures occurred in school canteens (57.7%) and urban areas (78.5%). Females comprised 69.4% of the sample, with a mean age of 14.77 years. Rice/grain and poultry consumption were reported by 45.3% and 37.4%, respectively. Common food safety lapses included inadequate cooking or reheating (63.8%), incorrect storage (57.7%), and cross-contamination (21.5%). Multivariable logistic regression revealed that eating poultry (AOR = 5.70; 95% CI: 2.91-11.18), rice/grain (AOR = 4.27; 95% CI: 2.38-7.64), and food served in hostel canteens (AOR = 4.13; 95% CI: 1.81-9.40) significantly increased the odds of illness. Significant interaction terms showed amplified risk when poultry and rice were consumed together, especially in hostel canteen settings. These findings highlight the need for a multidisciplinary approach to school food safety, involving collaboration between educators, food handlers, health inspectors, and policy makers. Enhancing school-based education in handwashing and food hygiene while implementing critical control measures can reduce outbreak risk and promote student health. This study supports the global health agenda by demonstrating how integrated actions can prevent foodborne illness in educational institutions.

Keywords: Food poisoning, *Bacillus cereus*, Secondary school, Kelantan

PP1-08

Tuberculosis Case Fatality Rate and Its Associated Factors in Machang District, Kelantan from 2020 to 2024: A Cross-Sectional Study

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Tuberculosis (TB) remains a major public health challenge in Malaysia, particularly in Kelantan, where disease burden and mortality persist despite national control measures. This cross-sectional study aimed to determine the TB case fatality rate (CFR) and its associated factors among patients registered in Machang District between 2020 and 2024. Data from the National TB Registry were reviewed, including all eligible TB patients, while excluding those with unknown outcomes, changed diagnoses, incomplete data, or ongoing treatment. A total of 232 patients were analysed, with an overall CFR of 15.5%. Simple logistic regression identified significant associations between TB mortality and older age, place of diagnosis, and TB anatomical site. In the multiple logistic regression model, older age (adjusted OR: 1.050, 95% CI: 1.023-1.079, $p < 0.001$) and diagnosis at hospital level (adjusted OR: 3.304, 95% CI: 1.174-9.415, $p = 0.024$) were independent predictors of TB death. Patients diagnosed at hospitals likely represent late-stage or severe presentations, underscoring the need for proactive screening and diagnosis at the primary care level. Strengthening community-based health education, improving awareness of early TB symptoms, and integrating systematic screening in health clinics—especially for high-risk groups such as the elderly—are warranted to facilitate earlier detection, timely treatment initiation, and ultimately reduce TB mortality in the district.

Keywords: Tuberculosis, case fatality rate, mortality, associated factors, Machang, Kelantan, Malaysia, public health

PP1-09

Radiographic Severity of Pulmonary Tuberculosis at Diagnosis: A Comparison Between Prison Inmates and the General Population in Machang District, Kelantan, 2020-2024

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Tuberculosis (TB) remains a global health challenge, with correctional facilities disproportionately affected due to overcrowding, inadequate ventilation, and delayed diagnosis. This study compared the radiographic severity of pulmonary TB at diagnosis between prison inmates and the general population in Machang District, Kelantan. A retrospective review of 232 confirmed pulmonary TB cases registered in the National Tuberculosis Registry (2020-2024) was conducted. Eligible cases included those with baseline chest X-ray findings. Demographic and clinical data were analyzed using descriptive statistics, while multiple logistic regression assessed the association between inmate status and radiographic severity, adjusting for smoking status. Of the 232 patients, 72 (31.0%) were inmates and 160 (69.0%) were from the general population. The mean age was 41.6 years (SD = 15.2), and 26.7% were current smokers. Radiographic evaluation revealed 136 patients (58.6%) with advanced disease. Advanced radiographic findings were significantly higher among inmates (72.2%) than the general population (52.5%). After adjustment, inmate status remained a strong predictor of advanced radiographic disease (adjOR 2.58, 95% CI 1.27-5.26, $p = 0.009$). These findings highlight the urgent need for strengthened TB surveillance, early case detection, and targeted interventions in correctional settings to reduce transmission and safeguard both inmates and the wider community.

Keywords: Tuberculosis, Radiographic Severity, Prison, Machang, Kelantan

PP1-12

Midnight Meal, Morning Mayhem: Sahur-linked Outbreak at KV Bunut Susu, 2024

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Food poisoning remains a significant public health concern, particularly in communal settings like educational institutions. On 1 April 2024, a food poisoning incident involving students from Kolej Vokasional (KV) Bunut Susu was reported, marking the first outbreak in Pasir Mas district for the year. This study investigates the causative agent, source, and mode of transmission of the outbreak. An epidemiological, environmental, and laboratory investigation was conducted. A 1:1 case-control study was used. A case was defined as anyone who consumed food at the KV hostel on 1 April and developed at least one symptom (e.g., vomiting, diarrhea). A control was an asymptomatic individual who consumed the same meal. Out of 386 students (aged 16-20), 264 were included in the study, with an attack rate of 34.2%. Common symptoms included abdominal pain (98.5%), diarrhea (80.3%), dizziness (41.6%), nausea (29.5%), vomiting (12.9%), and fever (4.5%). The outbreak was linked to a single-source exposure, with symptom onset between 5:00 AM and 11:00 PM and an incubation period of 1-19 hours. Consumption of sahur meal was significantly associated with illness (OR: 2.94; 95% CI: 1.78-4.85). Laboratory results confirmed *Bacillus cereus* in food samples. HACCP review revealed improper handling of leftover rice. The outbreak was likely caused by *Bacillus cereus*-contaminated food. Control measures included kitchen closure, disinfection, and food safety education. This incident highlights the need for strict adherence to hygienic food handling in institutional settings.

Keywords: Food poisoning, Educational institution, Outbreak, *Bacillus Cereus*

PP1-15

Enhancing Malaria Diagnosis in Kelantan: The Role of Real-Time qPCR at Kota Bharu Public Health Laboratory

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Malaria remains a public health concern in Malaysia, particularly in Kelantan, which records the highest number of cases in Peninsular Malaysia. Accurate laboratory diagnosis is crucial for effective treatment and outbreak control. While microscopy is the standard diagnostic method, it has limitations in detecting low parasitaemia infections and accurately identifying *Plasmodium* species. This cross-sectional study, conducted at Kota Bharu Public Health Laboratory (KBPHL), evaluated the use of real-time polymerase chain reaction (qPCR) for malaria diagnosis. A total of 497 microscopy-positive blood film for malaria parasite (BFMP) slides, received from healthcare facilities across Kelantan between 2023 and June 2025. These slides were re-examined by trained Medical Laboratory Technologists and Science Officers as part of a quality assurance program. All cases were subsequently subjected to real-time qPCR for *Plasmodium* species confirmation, using EDTA blood samples or slide scrapings. Of the 497 cases, 37 (7.4%) showed discrepancies between microscopy and PCR results, with annual breakdowns of 18 cases in 2023, 13 in 2024, and 6 in the first half of 2025. 8 cases were “Not Detected” by PCR, potentially due to prior anti-malarial treatment or misinterpretation of artefacts on microscopy. *P. vivax* and *P. knowlesi* were the most frequently misidentified species (10 cases each), followed by *P. malariae* (4), *P. falciparum* (3), and *P. ovale* (1). These findings highlight the superior sensitivity and specificity of qPCR compared to microscopy. Incorporating PCR testing for all microscopy-positive malaria cases, especially those with low parasitaemia or suspected misidentification, could significantly enhance diagnostic accuracy in endemic regions.

Keywords: Malaria, real-time qPCR, BFMP, discrepancy

PP1-16

Spatial Intensity and Temporal Patterns of Dengue Transmission in Jeli, a Rural District in Kelantan: A Five-Year Analysis

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Dengue fever remains a significant public health concern in Malaysia, particularly in rural districts like Jeli, Kelantan. Understanding the spatial and temporal dynamics of dengue is crucial for identifying high-risk areas and implementing targeted control strategies. This study aimed to assess dengue trends and spatial distribution in Jeli between 2020 and 2024. A total of 420 confirmed dengue cases reported in Jeli were analyzed. Trend and spatial analyses were performed in R software. Kernel Density Estimation (KDE) was applied to identify high-intensity areas while Nearest Neighbor Index (NNI) analysis evaluated clustering patterns. Spatial points and intensity maps were generated to visualize yearly distribution. The lowest incidence occurred in 2021 (incidence rate of 10.79 per 100,000), coinciding with COVID-19 movement restrictions, followed by a sharp increase to 261 cases in 2024 (453.91 per 100,000 population). KDE analysis revealed persistent and intensifying hotspots in Ayer Lanas and Gemang throughout the study period, with additional small clusters emerging in Batu Melintang and Kuala Balah in 2023-2024. NNI values indicated progressively stronger clustering from 2022 (NNI = 0.47) to 2024 (NNI = 0.41), highlighting spatial concentration of infections. The dengue burden in Jeli has intensified over time, with clear spatial clustering in high-density localities. Localized vector control strategies should prioritize hotspot areas such as Ayer Lanas and Gemang to effectively curb future outbreaks. These findings offer valuable insights for enhancing surveillance and targeted public health interventions.

Keywords: Dengue, Spatial analysis, Kernel Density Estimation, Jeli Kelantan

PP1-18

Point Pattern and Average Nearest Neighbour Analysis of Sporadic Dengue Cases in Bachok District, Kelantan, Malaysia 2020-2024

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Dengue fever remains a significant public health burden in Malaysia. While outbreak clusters receive intensified vector control, sporadic cases are defined as single-case notifications not linked to outbreaks and often managed with routine peridomestic responses and may be underestimated in their epidemiological relevance. In Bachok District, Kelantan, a rising number of sporadic dengue cases between 2020 and 2024 prompted spatial analysis to detect hidden clustering patterns. A retrospective review of 1,289 geocoded cases from the national eDengue surveillance system was conducted. All spatial analyses were performed using R version 4.3.1 with spatstat, sf, tmap, and spatialECO packages. Quadrat count analysis revealed statistically significant deviation from Complete Spatial Randomness (CSR) in all five years, suggesting non-random distribution. Kernel Density Estimation (KDE) visualised consistent hotspots along coastal and subdistrict areas such as Tawang, Perupok, and Melawi. Average Nearest Neighbour (ANN) analysis showed clustering for 2020, 2022, 2023, and 2024 (Nearest Neighbour Index <1; $p < 0.001$), while 2021 showed no significant clustering, likely due to low case counts. These findings suggest that certain sporadic cases may reflect silent transmission zones and warrant further attention. Integration of spatial methods into routine surveillance can enhance early detection, guide targeted vector control, and inform more strategic public health responses especially in high-recurrence areas.

Keywords: Point pattern analysis, average nearest neighbour, Kernel Density Estimation, spatial clustering, dengue, sporadic cases, Bachok, vector control, hotspot detection

PP1-20

A Persistent Threat: An epidemiological profile of Leptospirosis among Orang Asli Population of Gua Musang, Kelantan through a Five-Year Surveillance Data Analysis (2020-2024)

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The traditional, forest-based lifestyle of Peninsular Malaysia's indigenous Orang Asli creates a unique human-animal-environment interface that elevates their vulnerability to zoonotic diseases especially leptospirosis. Leptospirosis poses a considerable public health challenge within this population. Therefore, this study aimed to characterize the epidemiological patterns of leptospirosis among the Orang Asli populations in the Gua Musang district through retrospective surveillance data over a five-year period. A cross-sectional study was conducted on districts surveillance data sourced from the Communicable Disease Control Information System. All cases of leptospirosis from 1st January 2020 to 31st December 2024 were extracted for analysis. Descriptive statistics were employed to characterize the temporal, demographic, socio-economic, and geographic distribution of cases. A total of 67 cases were documented, with a significant temporal spike in 2023 (32.8%). The epidemiological profile reveals a clear predisposition among males (50.7%) and the economically active 25 to 44-year age group (35.8%). However, Unemployment stood out as a dominant socio-economic factor (37.3%), and the Bertam sub-district emerged as a pronounced geographic hotspot. All cases were identified through passive surveillance at government hospitals, with laboratory confirmation, per national guidelines, achieved in 59.7% of instances. The findings offer actionable intelligence for developing geographically focused preventative strategies tailored to high-risk demographics. Key recommendations include promoting the use of waterproof boots during prolonged contact with soil, mud, or river water, and delivering culturally competent health education through trusted local champions.

Keywords: Leptospirosis, Zoonotic disease, Orang Asli, Gua Musang, Epidemiology, Retrospective, Public Health

PP1-23

Associations Between Rainfall, Temperature, and *Aedes* Ovitrap Indices in Bandar Baru Pasir Puteh: A Two-Year (2023-2024) Observational Study

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Aedes mosquitoes are the primary vectors of dengue. Ovitrap are widely used for the early detection and monitoring of *Aedes* populations. Meteorological factors, such as temperature and rainfall, play a crucial role in influencing *Aedes* population dynamics. This study investigates the relationship between rainfall and temperature with the Ovitrap index and mosquito egg counts in Bandar Baru Pasir Puteh, Kelantan, Malaysia. A cross-sectional study was conducted over two years (2023-2024), deploying 3,150 Ovitrap. Meteorological data were obtained from the Meteorological Department of Malaysia. The dependent variables were the Ovitrap index and mosquito egg counts. Descriptive and correlation analyses were conducted at a significance level of $p < 0.05$. *Aedes albopictus* was found to be more prevalent than *Aedes aegypti*, with 18,458 and 5,689 larvae recorded, respectively. A moderate positive correlation was observed between the Ovitrap index and temperature ($r = 0.31$, $p = 0.0046$), indicating that higher temperatures are associated with increased *Aedes* populations. However, no significant correlation was found between the Ovitrap index and rainfall ($r = 0.05$, $p = 4.64 \times 10^{-13}$). Egg counts showed a weak negative correlation with temperature ($r = -0.18$, $p = 1.52 \times 10^{-18}$) and no significant relationship with rainfall ($r = -0.09$, $p = 2.29 \times 10^{-20}$). Temperature was shown to significantly influence *Aedes* populations, demonstrating a weak positive relationship with the Ovitrap index and a negative correlation with egg counts. Rainfall had minimal impact on mosquito abundance or egg production, underscoring the importance of temperature monitoring for effective vector control.

Keywords: *Aedes* mosquitoes, Ovitrap Index, temperature, rainfall, dengue

PP1-25

An Analysis of Dengue Mortality in the State of Selangor, Malaysia, In the Year 2024

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Dengue mortality remains a key indicator of the effectiveness of surveillance, diagnosis, and clinical management systems. In Selangor, Malaysia's most populous state with the highest dengue burden, understanding trends and contributing factors to dengue-related deaths is essential for strengthening health system responses. This study reviewed dengue mortality trends in Selangor for the year 2024 and to identify modifiable contributing factors for intervention. A cross-sectional study was conducted using findings documented in the dengue mortality audits for all dengue-related deaths in Selangor in 2024. A total of 16 dengue deaths were reported in 2024, a reduction of two cases compared to 2023. Of these, 75% had underlying comorbidities, and four cases were brought-in-dead (BID). Multiple contributing factors were identified. Patient-related factors included delayed healthcare-seeking behaviour, presentation with severe dengue upon arrival, and limited awareness of the disease's severity. At the primary care level, delayed or incorrect diagnoses, low index of suspicion, lack of baseline investigations, and atypical clinical presentations contributed to missed or late detection. Clinical management issues such as inadequate fluid resuscitation and the use of contraindicated medications (e.g. NSAIDs) were also observed. Systemic gaps were noted at both primary and tertiary levels, including insufficient training on Clinical Practice Guidelines (CPG) and inconsistent use of point-of-care diagnostic tests. Recommendations include mandatory biennial dengue management training, strengthening referral systems, and improving community education on warning signs. This study underscores the importance of early detection, timely diagnosis, protocol adherence, and coordinated multisectoral action in reducing dengue mortality in Selangor.

Keywords: Dengue Mortality, Selangor, Vector-borne disease

PP2-01

Cross-Cultural Adaptation and Psychometric Validation of the Malay Doctor-Patient Communication Questionnaire (MyD-PCQ) Among Haemodialysis Patients in East Coast Malaysia

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Effective doctor-patient communication is fundamental to high-quality, patient-centred care, especially for individuals with chronic illnesses such as haemodialysis patients. Despite the frequent interactions between patients and healthcare providers in dialysis settings, a validated communication assessment tool in the Malay language has been lacking. This study aimed to perform cross-cultural adaptation and psychometric validation of the Malay version of the Doctor-Patient Communication Questionnaire (MyD-PCQ) among haemodialysis patients in East Coast Malaysia. A cross-sectional validation study was conducted involving 300 Malay-speaking haemodialysis patients at a tertiary teaching hospital in Kelantan, Malaysia. The translation process followed internationally recognised guidelines, including forward-backward translation, expert panel review, and cognitive debriefing. Face and content validity were assessed by clinicians and target users, yielding strong indices for relevance and clarity (S-CVI = 0.94). Construct validity was evaluated using confirmatory factor analysis (CFA), and internal consistency was assessed with Raykov's rho. The CFA supported a unidimensional structure with excellent model fit: SRMR = 0.037, RMSEA = 0.029, CFI = 0.982, and TLI = 0.979. Factor loadings ranged from 0.50 to 0.64, indicating acceptable item performance. The MyD-PCQ demonstrated high internal consistency (Raykov's rho = 0.887). The total mean score was 37.31, suggesting moderate to high perceived communication quality among respondents. The MyD-PCQ is a culturally appropriate, valid, and reliable instrument for assessing doctor-patient communication among haemodialysis patients in Malaysia. Its use can enhance research and practice in patient-centred communication. Further validation in diverse clinical populations is recommended.

Keywords: Doctor-patient communication, Haemodialysis, Psychometric validation, Malay-version questionnaire

PP2-02

Translation and Validation of the Health Beliefs Related to Cardiovascular Disease (HBCVD) Scale: The Malay Version

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Health belief in the preventability of illness is an important predictor of cardiovascular disease (CVD) events. Despite their higher risk, women often report low perceived susceptibility to CVD. The Health Belief on Cardiovascular Disease (HBCVD) scale, developed in English, has not yet been validated for Malay speakers. This study translated and tested the reliability and validity of the Malay version (HBCVD-M). A cross-sectional study was conducted among 286 single mothers in four randomly selected districts in Kelantan, Malaysia. Respondents were registered under the Women's Development Department (WDD). Single mothers aged 18-60 years, without underlying CVD, and who consented to participate were included, while non-Malaysians were excluded. Simple random sampling proportionate to size was applied to determine the number of respondents from each district. Forward-backward translation was carried out, followed by content validity (six expert panels) and face validity (ten representatives from the target population). Data were collected using a self-administered questionnaire. Confirmatory factor analysis (CFA) with robust maximum likelihood estimation was performed using R software. The content validity index was 0.87 and the face validity index was 0.96. CFA supported a four-factor model with 21 items, showing acceptable fit indices [RMSEA = 0.072 (90% CI: 0.061-0.082); SRMR = 0.060; TLI = 0.90; CFI = 0.92]. Internal consistency reliability was strong, with composite reliability (Raykov's Rho) ranging from 0.745 to 0.902 and Cronbach's alpha from 0.744 to 0.890. In conclusion, the HBCVD-M is a reliable and valid self-administered tool for assessing health beliefs related to CVD among Malay-speaking women.

Keywords: Validity, Reliability, Health Beliefs, Single Mothers, Cardiovascular Disease

PP2-07

Prevalence and Associated Factors of Gestational Diabetes Mellitus Among Women in Kota Bharu in 2024

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Gestational Diabetes Mellitus (GDM) poses short- and long-term health risks for both mother and child. The increasing prevalence of GDM in Malaysia may contribute to the growing burden of diabetes among women of reproductive age. Identifying the prevalence and associated risk factors of GDM is critical for informing clinical practice and enhancing maternal healthcare services, particularly in local settings where data remain limited. This study aimed to determine the prevalence of GDM and its associated factors among pregnant women attending government health clinics in Kota Bharu in 2024. A cross-sectional study was conducted using secondary data extracted from antenatal records across 19 government health clinics. A total of 386 pregnant women were selected using proportionate stratified random sampling. Women with pre-existing T2DM were excluded. Data on socio-demographic characteristics, obstetric risk factors, and GDM outcomes were collected and analysed. Descriptive statistics were used to estimate GDM prevalence, while multiple logistic regression (MLR) was performed to identify factors independently associated with GDM. Statistical analyses were conducted using RStudio. The study found a high GDM prevalence of 34.7% among the study population. MLR revealed two significant predictors: family history of diabetes mellitus (AOR: 1.64; 95% CI: 1.06-2.56; $p = 0.027$) and previous history of GDM (AOR: 2.69; 95% CI: 1.59-4.55; $p < 0.001$). These findings emphasize the need for early screening, targeted lifestyle interventions, and preconception counselling for high-risk women. Establishing a centralized GDM registry may enhance long-term follow-up and reduce future risk of T2DM.

Keywords: Gestational Diabetes Mellitus, GDM Risk factors, Maternal healthcare, GDM Registry, T2DM

PP2-08

Unstable Angina in a Young Malay Male with Wolff-Parkinson-White Pattern and Sinus Bradycardia: A Rare Clinical Intersection

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Wolff-Parkinson-White (WPW) syndrome is commonly linked to tachyarrhythmias, while sinus bradycardia is rare. The presence of the WPW pattern alongside acute coronary syndrome (ACS), especially unstable angina, poses a distinct diagnostic and treatment challenge, particularly when associated with bradyarrhythmia. We report a case involving a 38-year-old previously healthy Malay man who presented to the emergency department with compressive left sided chest pain and radiated to the left arm, along with sweating. ECG showed sinus bradycardia (heart rate of 40-45 bpm) and type B WPW pattern. Cardiac enzymes indicated an increasing CKMB trend despite no definitive ST-T changes, aligning with unstable angina. Echocardiography showed no significant findings. The patient was treated with dual antiplatelet therapy and fondaparinux. AV nodal blockers and atropine were not given due to concern of exacerbating conduction issues or triggering tachyarrhythmias. The patient showed good improvement with conservative ACS treatment and was referred for cardiology follow-up. Sinus bradycardia in WPW is rare and may indicate existing sinus node dysfunction, which could be ischemic in nature, particularly with right coronary artery involvement. Standard pharmacological approaches for tachyarrhythmias, such as AV nodal blockers, carry risks in WPW. Similarly, the use of atropine for bradycardia is debated because of its potential to cause arrhythmias WPW. This case underscores the complexity of managing ACS in patients with WPW and bradycardia. It highlights the need for individualized care, careful therapeutic selection, and early cardiology input to optimize outcomes in such diagnostically and therapeutically challenging presentations.

Keywords: Wolff-Parkinson-White (WPW) syndrome, Acute Coronary Syndrome (ACS), Unstable Angina, Sinus Bradycardia, Delta Waves

PP2-09

Assessing the Effects Of Transitioning To Analogue Insulin On Glycaemic Control In Type 2 Diabetes Patients In Hospital Sultan Ismail Petra

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Type 2 diabetes mellitus (T2DM) is a common chronic condition resulting in high blood sugar and a greater risk of vascular issues. Effective glycaemic control is important in reducing complications in T2DM patients. This study aims to assess the effects and cost implications of transitioning from human insulin to insulin analogues on glycaemic control in T2DM patients in HSIP. This retrospective pre-post study at HSIP included adult T2DM patients (diagnosed ≥ 1 year) who attended outpatient clinic and pharmacy in Jan 2022-Dec 2024 and used human insulin for ≥ 3 months, followed by analogue insulin for ≥ 3 months. Data on patients, HbA1c, FBS, and insulin costs were retrieved from pharmacy and medical systems. Paired t-tests compared mean HbA1c, FBS, and 3-month total insulin cost before and after switching insulins. Of 925 T2DM patients in HSIP who switched from human to analogue insulin, 264 were analyzed. The cohort (115 males, 149 females; ages 23-80, mean 56) was mostly aged 41-60 (50%). Post-intensification, 115 patients (43.6%) were on basal, 149 (52.4%) on premixed regimens. Analogue insulin led to a mean HbA1c reduction of 0.33% and a statistically significant 3-month cost difference, averaging RM311.32. Despite the increased expense, transitioning patients from human insulin to analogue insulin did not result in clinically significant improvements in HbA1c and fasting blood sugar (FBS) levels.

Keywords: HbA1c, FBS, Human Insulin, Analogue Insulin

PP2-11

Hidden Genes, Visible Impact: Insights from Thalassaemia Screening Among Youth in Pasir Mas (2022-2024)

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The National Thalassaemia Program is a government-led public health initiative to reduce the burden of thalassaemia, a hereditary blood disorder; through prevention, early detection, management, and education. Early identification of carriers is crucial to prevent the birth of affected children. This study aimed to determine the proportion of thalassaemia carriers and associated factors among Form 4 students in Pasir Mas from 2022 to 2024. A retrospective cross-sectional study was conducted using data from the School Thalassaemia Registry. A total of 8,244 students were included, excluding those with incomplete data. The main outcome was thalassaemia carrier status. Independent variables included gender, subdistrict, health clinic, haemoglobin (Hb), and mean corpuscular haemoglobin (MCH) level. Logistic regression was used to identify associated factors and gender-specific trends. Most participants were from Subdistrict Pasir Mas (28.5%). Overall, 13.8% of students were identified as thalassaemia carriers, with a higher prevalence among girls. Low MCH level was strongly associated with carrier status (AOR=0.25; 95% CI: 0.23-0.28; $p<0.001$). Girls from Subdistrict Chetok had lower odds of being carriers (AOR=0.56), while those from Bunut Susu had higher odds (AOR=2.41; 95% CI: 1.09-5.32; $p=0.030$). About 1 in 7 Form 4 students in Pasir Mas are thalassaemia carriers. MCH and gender are significant predictors, with notable gender-specific patterns. These findings highlight the need for gender-sensitive screening and tailored counselling strategies in schools, especially in high-risk areas.

Keywords: Thalassaemia, Screening, Youth, MCH level, Gender

PP2-12

Wrapped in A Kafan, Wrapped in Misdiagnosis: When Autism Hides Behind Depression. A Case Report.

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This case report presents the diagnostic complexity of Autism Spectrum Disorder (ASD) in a high-achieving 16-year-old Malay adolescent female attending a boarding school. Initially diagnosed with Major Depressive Disorder (MDD) after recurrent self-harm and persistent low mood, her condition escalated despite antidepressant therapy. At primary care clinic follow-up, she was tearful, emotionally withdrawn, and expressed vivid suicidal ideation - reporting intrusive thoughts of herself wrapped in a kafan as a corpse. She had formed a concrete suicidal plan involving a paracetamol overdose and had contemplated jumping from her hostel but hesitated due to fear of physical pain. These thoughts were triggered by perceived academic failure (a minor drop in her English exam score from 85 to 84) and ongoing difficulties fitting in socially. Her emotional deterioration and acute risk prompted urgent psychiatric admission. A comprehensive inpatient evaluation revealed longstanding neurodevelopmental traits such as rigid thinking, sensory sensitivity, social communication deficits, and masking behaviour supporting a revised diagnosis of ASD (Level 1) with comorbid moderate MDD with suicidal plan. Her high academic performance and ability to mimic social norms had delayed recognition of ASD, while living away from her family limited early developmental insight. This case underscores the importance of maintaining diagnostic vigilance for ASD in adolescent females with internalizing symptoms and suicidality, especially in high-achieving individuals. It also highlights the critical role of collaboration between primary care and psychiatric teams, and the value of inpatient multidisciplinary assessment in unveiling masked neurodevelopmental conditions.

Keywords: Autism Spectrum Disorder (ASD), Major Depressive Disorder (MDD), Adolescent Mental Health, Suicidal Ideation, Social Masking, Multidisciplinary Assessment

PP2-13

Sleep Quality and its Associated Factors Among Infertile Patients In Kelantan

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Poor sleep has been reported as significant among infertile patients. Levels of sleep quality are influenced by many factors including sociodemographic and lifestyle, but the relationship between these parameters and infertility has not been established. Therefore, the aim of this study was to assess sleep quality among infertile patients and examine its associated factors to identify potential risks related to infertility. This cross-sectional study was conducted among patients attending the two main referral fertility centres in Kelantan, namely Hospital Pakar Universiti Sains Malaysia and Hospital Raja Perempuan Zainab II, between April and September 2024. Data was obtained through a self-reported questionnaire, which encompassed sociodemographic characteristics, diet intake, physical activities and the Malay Version of the Pittsburgh Sleep Quality Index (PSQI-M). A total of 214 patients participated in the study. The analysis revealed that 42% of participants with infertility exhibited poor sleep quality. Among the variables assessed, physical inactivity was the only factor substantially associated with poor sleep quality. The participants who were physically inactive had 3.34 times higher odds of experiencing poor sleep quality compared to their physically active counterparts (Adjusted OR = 3.34, 95% CI: 1.72-6.49, Wald statistic = 12.71, $p < 0.001$). The proportion of poor sleep quality among infertile patients in Kelantan was considerably high. Physical inactivity emerged as a significant predictor, while sociodemographic factors, medical conditions, smoking, and dietary practices did not demonstrate a significant association.

Keywords: sleep quality, infertility, physical inactivity

PP2-14

Trend Analysis of Thalassaemia Status Among Form 4 Students in Machang, Kelantan from 2016 to 2023

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Thalassaemia is a hereditary blood disorder in Malaysia, with Kelantan having a high prevalence of 6%. The National Thalassaemia Screening Program for Form 4 students is a key public health strategy for early carrier detection. This study aimed to analyze the trend of thalassaemia status and identify its demographic patterns from 2016 to 2023. A retrospective analysis was conducted using secondary data from the Machang School Health Unit over the eight-year period. Data points included thalassaemia status, gender, and ethnicity. Descriptive statistics were done to assess patterns and changes over time. A total of 10,915 students were screened. The overall prevalence of thalassaemia carriers was 9.0%. Among carriers, Haemoglobin E (HbE) trait was the most common, accounting for 53% of cases. The carrier rate was found to be higher among male students and was most prevalent within the Malay ethnicity. Trend analysis revealed a stable carrier detection rate across the study period, with the highest absolute number of carriers identified in 2016. The 9% carrier rate highlights a significant and stable burden of thalassaemia in the adolescent population of Machang. This program is effective in identifying at-risk groups. These findings underscore the critical need for sustained health education, genetic counseling, and community awareness initiatives to mitigate the long-term impact of thalassaemia in the region.

Keywords: Thalassaemia, form 4 screening, Machang

PP2-15

A Surveillance-Based Analysis of Under-Five Mortality in Kepong Health Office (2022-2024): The Trends and Determinants of Preventable Deaths

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The under-five mortality rate is a critical indicator of a nation's social development and progress towards Sustainable Development Goal 3 by 2030. In Malaysia, the rates have plateaued, underscoring the need to understand local patterns to guide targeted strategies. Therefore, this study aimed to examine the trends and determinants of under-five mortality in Kepong Health Office from 2022-2024, and to estimate the proportion of preventable deaths and their associated factors. This is a retrospective cross-sectional study utilising Kepong's under-five mortality registry data from January 2022 to 31 December 2024. Data were obtained from seven government maternal-child health clinics in Kepong. Variables included maternal sociodemographic and medical factors, child-related factors, and service provider characteristics, with preventable death as the primary outcome. Descriptive statistics, univariable and multivariable logistic regression analyses were conducted using SPSS version 26. A total of 134 subjects who fulfilled the inclusion and exclusion criteria were studied. The average under-five mortality rate from 2022-2024 was 7.95 per 1,000 live births, with annual rates ranging from 6.03-10.05. The proportion of preventable deaths in Kepong accounts for 37.3% of under-five mortality. Further analysis using simple and multiple logistic regression showed that under-five mortality was significantly associated with children's age group (aOR 1.957, 95%CI:1.936,25.595; p=0.003), maternal ethnicity (aOR 1.021, 95%CI:1.007,7.652; p=0.049), place of death (aOR 1.213, 95%CI:1.141,9.922; p=0.018), and substandard care (aOR 2.473, 95%CI:3.102,50.626; p<0.001). This study provides insights into factors influencing under-five mortality in Kepong Health Office, supporting targeted, evidence-based policies to reduce preventable deaths and improve child health outcomes.

Keywords: Under-five mortality, Preventable Deaths, Sustainable Development Goals (SDGs)

PP2-17

Genetic Counselling That Changed Everything: An SMA case

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Spinal Muscular Atrophy (SMA) is a severe autosomal recessive neuromuscular disorder caused by homozygous deletion or mutation of the Survival Motor Neuron 1 (SMN1) gene. This case report presents the reproductive journey of a 28-year-old Malay lady Mrs NAR and her husband—both are carriers of the SMN1 gene—through five pregnancies. Two of their four children were diagnosed with SMA Type 1 and died in early infancy due to recurrent hospital-acquired pneumonia and respiratory failure. Previous pregnancies lacked genetic counselling and prenatal testing, primarily due to limited awareness and financial constraints. In her fifth and unplanned pregnancy, Mrs NAR accessed early antenatal care and was referred to a tertiary centre. The couple consented to amniocentesis at 30 weeks' gestation. Genetic analysis showed the foetus is a carrier of SMN1 with three copies of SMN2, indicating it is unaffected by SMA. The current pregnancy is uneventful, no antenatal complication and delivery is planned at term. The couple expresses significant emotional relief and now intend to pursue definitive family planning. This case highlights the importance of accessible pre-pregnancy counselling (PPC), timely genetic testing and effective communication in layman's terms within primary care settings. Strengthened collaboration between primary and tertiary care is vital for comprehensive management, especially in socioeconomically challenged families at risk for SMA. Empowering patients with knowledge and psychosocial support can facilitate informed decision-making, improve treatment strategies and alleviate psychological distress in the pregnant SMA carrier.

Keywords: SMA, SMN1, PPC

PP2-19

Behind Every Session: The Client Profile of Counselling Services in Pasir Puteh District, Kelantan

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Mental health remains a growing concern in primary care, with increasing demand for psychosocial support. Understanding client profiles is essential to improve service delivery and planning. This study aimed to describe the demographic characteristics, case categories, and counselling modalities among clients attending counselling services under the Pasir Puteh District Health Office. A cross-sectional analysis was conducted using secondary data from monthly counselling records between 2023 and 2025. Client characteristics such as gender, age, marital status, occupation, and case type were summarised. The proportions of new versus follow-up clients and the methods of counselling (face-to-face or online) were also examined. Frequencies and percentages were calculated using Microsoft Excel. A total of 1,072 clients were recorded, receiving 2,201 counselling sessions. Most clients were female (68.4%), Malay (98.5%), and single (51.0%). Students (30.4%) and unemployed individuals (24.4%) formed the largest occupational groups. The majority were aged 20-59 years (61.7%), followed by adolescents aged 13-19 years (29.7%). Mental health issues accounted for 92.7% of all cases. Other categories, including suicidal behaviour, drug abuse, and chronic illness, were infrequently reported. Face-to-face counselling was the predominant method (96.5%), and 54.6% of clients were new. In conclusion, clients attending counselling services were primarily young, female, and socioeconomically at risk, with mental health concerns being the dominant issue. The low reporting of suicidal behaviour and substance abuse may reflect under-recognition or stigma. These findings underscore the need for improved mental health outreach to enhance care delivery in primary healthcare settings.

Keywords: Counselling; Client profile; Primary healthcare

PP2-20

Exploring the Lived Experience of Teenage Pregnancy Among Orang Asli Adolescents in Bera, Malaysia: A Qualitative Study

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Teenage pregnancy poses major health, social, and economic challenges in Malaysia, with over 18,000 cases in 2018 while in Bera, Pahang, half of 2023 cases involved Orang Asli adolescents. This study aims to explore the lived experience of teenage pregnancy among Orang Asli in Bera District, Pahang, Malaysia. Twelve Orang Asli women seeking antenatal care within the year 2020 to 2023 were recruited as study participants. This qualitative study used in-depth interviews with open-ended questions, covering five main topics and semi-guided by interview guidelines. Each interview lasted approximately 45 to 60 minutes, was anonymously audio-recorded with participants' consent, and transcribed verbatim. All transcripts reviewed by researchers and thematic analysis was employed during analysing the data. Transcripts were first analysed individually, then compared for similarities and differences. The participants' age of first pregnancy ranged from 15 to 19 years old. Half the participants were married during pregnancy while 25% conceived pre-marriage, and 25% remained unmarried. Seven main themes emerged: teenage motherhood experience, social support and cultural acceptance, coping strategy with teen motherhood, expectation and future planning, sexual activity background, reproductive health services and accessibility, local community belief and perception. These findings reveal varied personal and social acceptance of teenage pregnancy, leading to different coping strategies among young mothers. Community beliefs and cultural perspectives were found to significantly influence decisions around early pregnancy. This study provides important insights for healthcare providers, policymakers, and community leaders in creating interventions to reduce teenage pregnancies and support Orang Asli adolescents.

Keywords: Teenage Pregnancy, Orang Asli, Indigenous Communities, Adolescent Health, Qualitative Research

PP2-21

Factors Influencing Non-Compliance with Postnatal Oral Glucose Tolerance Test Among Mothers with Gestational Diabetes Mellitus in Kuala Krai, Kelantan, 2023

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The six-week postpartum Oral Glucose Tolerance Test (OGTT) is a crucial screening tool for detecting abnormal glucose tolerance in women with prior Gestational Diabetes Mellitus (GDM). Despite national guidelines advocating for postnatal OGTT, adherence rates remain low, particularly in rural areas such as Kuala Krai. We aimed to determine the proportion of mothers with GDM in Kuala Krai who defaulted on postnatal OGTT and to identify the factors associated with non-compliance to the test. This cross-sectional study retrospectively reviewed medical records of mothers with GDM followed up at 10 health clinics under PKD Kuala Krai from January to December 2023. Descriptive statistics and multiple logistic regression analysis were performed using IBM SPSS version 27. Of the 318 GDM mothers reviewed, 67 (21.1%) defaulted on postnatal OGTT, while 251 (78.9%) were compliant. GDM mothers with age <35 years (AOR=3.33; 95% CI: 1.19-9.29; $p=0.022$), primiparous (AOR=3.16; 95% CI: 1.41-7.08; $p=0.005$), unemployed (AOR=3.41; 95% CI: 1.89-6.16; $p<0.001$), and underweight (AOR=30.1; 95% CI: 3.4-270.02; $p=0.002$) were found to be significantly associated with postnatal OGTT non-compliance. In conclusion, the non-compliance rate for postnatal OGTT among GDM mothers in PKD Kuala Krai was within an acceptable range but remained below the national target. The findings from this study may aid in the development of targeted interventions to enhance postnatal screening adherence and reduce long-term maternal complications and adverse outcomes in subsequent pregnancies.

Keywords: Gestational Diabetes Mellitus (GDM), Postnatal OGTT, Non-compliance, Primary Care

PP2-22

Anemia Trends Among Antenatal Mothers in Tumpat District, Kelantan

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Anemia in pregnancy, particularly in the third trimester, remains a significant public health concern due to its association with adverse maternal and perinatal outcomes. Reducing anemia rates among antenatal mothers remains a priority within Malaysia's maternal health strategy. This study aimed to evaluate the anemia trends among antenatal mothers at 36 weeks of gestation in Tumpat District, Kelantan over 5 years (2020-2024). A retrospective review was conducted using antenatal records from nine government health clinics in Tumpat District from 2020 to 2024. Inclusion criteria were antenatal mothers aged 15 to 49 years registered at clinics with at least 1,000 women of reproductive age. Anemia was defined as a hemoglobin (Hb) level <11.0 g/dL at 36 weeks gestation. Data were analyzed to assess annual anemia prevalence and compared to the national target of <5%. A total of 10,418 antenatal mothers were reviewed, with 458 cases (4.39%) identified as anemic. The overall anemia trends showed a downward trend from 6.13% in 2020 to 3.27% in 2023. A slight increase was observed in 2024, with a rate of 3.56%. All clinics demonstrated reductions in anemia rates. The national target of <5% was achieved and sustained from 2022 onward. The sustained reduction in anemia rates among antenatal mothers reflects the effectiveness of current maternal health interventions, including multidisciplinary care, routine antenatal screening, nutritional support, health education and early treatment. However, slight increase in 2024 emphasizes the importance of continuous monitoring and reinforcing anemia prevention strategies to maintain progress and address potential service gaps.

Keywords: Anemia, Pregnancy complications, Maternal Health Services, Antenatal Care, Malaysia

PP2-26

Trends and Complications of Type 2 Diabetes Mellitus in Kelantan: A Decade Review (2011-2020)

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Type 2 diabetes is rising globally, with 537 million cases today projected to reach 783 million by 2045. Malaysia has Southeast Asia's highest prevalence consist of one in five adults. This study reviews Kelantan's decade-long National Diabetes Registry data to examine demographic shifts and comorbidity patterns. All adults (18 years old and above) with T2DM in the National Diabetes Registry who is audited using simple random sampling from 2011-2020 were included (n = 65 974). Registry size tripled (22 604 to 65 974). Median age at diagnosis remained 53 years, with women comprising 62 %. Mean HbA1c declined modestly (8.6 to 8.2%) while patients achieving ≤ 6.5 % increased from 24.4 to 32.5 % and those with ≥ 10 % fell from 26.0 to 20.4 %. Hypertension prevalence increased (62.6 to 80.6%) and dyslipidaemia climbed (46.2 to 75.1%). Nephropathy (9.3 to 14.5%) and retinopathy (7.0 to 12.3%). Erectile Dysfunction also increased (3.26 to 11.3%). Ischaemic Heart Disease increased slightly (3.82 to 5.57%). Cerebrovascular Disease also increased slightly (0.77 to 1.95%). Diabetic Foot Ulcer remains around 1%. Amputation remains steady below 1%. Although monitoring has intensified and modest glycaemic gains occurred, the steep rise in cardio-metabolic comorbidities signals widening vascular risk. Prevention programmes and integrated hypertension-lipid-glucose management are urgently required. Kelantan's NDR shows a swiftly expanding diabetes burden, modest but inadequate gains in glycaemic control, and rising cardio-metabolic complications. These findings call for statewide, integrated risk-factor management and strategic resource allocation to curb future morbidity and healthcare costs.

Keywords: Diabetes; Kelantan; Hypertension; Dyslipidemia; Complications.

PP2-30

Measuring Adolescent Health Knowledge: A Tool for Evaluating School-Based Programs

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Adolescence is a critical period for establishing lifelong health behaviours and school-based initiatives are essential for building adolescents' knowledge and skills. Kota Bharu District Health Office has implemented the *Road Tour Youth for Tomorrow* programme to empower adolescents in making healthy lifestyle choices since several years ago. The programme covers key health topics: sexual and reproductive organs, safe touch, pornography addiction, sexually transmitted diseases and HIV infection, vaping and cigarette smoking, mental health (assertiveness), and time management. Therefore, assessing its effectiveness is needed to guide improvements. This study aimed to develop and validate a knowledge questionnaire aligned with the programme's content. The initial 21-item draft was developed through literature reviews and experts' opinion via Nominal Group Technique. Content validity was assessed by six adolescent health experts and face validity by ten students, achieving item- and scale-level indices ≥ 0.83 . One item was removed due to redundancy. Construct validity was evaluated using the two-parameter logistic Item Response Theory (2PL-IRT) model on pre-test data from 200 students. Most items demonstrated acceptable difficulty and discrimination estimates. The model showed good fit, with total information coverage of 80.92% across the ability range of -3 to +3 and marginal reliability of 0.72. In conclusion, the questionnaire demonstrates good psychometric properties and is a valid, reliable tool for assessing adolescent health knowledge. Its application can support programme evaluation and guide improvements in future school-based health interventions.

Keywords: Adolescent health, School-based intervention, Questionnaire validation, Item response theory

PP2-31

Profiling Non-Hodgkin Lymphoma (NHL) in Kelantan: WHO 2008 Classification and Survival Insights from a 2008-2017 Cohort

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Non-Hodgkin lymphoma (NHL) is the 12th most common cancer globally, and the 5th in Kelantan. This study described NHL subtypes by WHO 2008 classification and examined survival patterns. A retrospective review of Kelantan Cancer Registry data was conducted for cases diagnosed from 2008-2017, with follow-up until December 2022. Vital status was confirmed via the National Registration Department. Data were analysed using SPSS v28, with survival estimated by the Kaplan-Meier method. Eighty-three cases, including duplicates and records with >30% missing data, were excluded, leaving 448 eligible patients. The mean (SD) age was 50.2 (18.0) years, 60.7% were male and 96.4% Malay. Moderate and aggressive grade disease predominated (87.3%), with mature B-cell lymphomas accounting for 74.3% of cases. The most frequent subtypes were splenic B-cell lymphoma, unclassifiable (ICD-O-3: 9591/3, 43.5%) and diffuse large B-cell lymphoma, NOS (ICD-O-3: 9680/3, 19.2%), followed by malignant lymphoma, NOS (12.3%), precursor lymphoid neoplasms (6.7%) and mature T/NK-cell lymphomas (4.7%). The overall 5-year survival was 28.3% (95%CI: 24.1,32.5). Survival was higher for age <60 years 34.0% (95% CI: 28.5, 39.5) compared to ≥60 years 18.1% (95%CI: 12.2, 24.1), females were 33.5% (95%CI: 26.6, 40.5) instead of males 25.0% (95%CI: 19.9, 30.2), and chemotherapy recipients were 33.5% (95%CI: 26.6, 40.4) compared to no chemotherapy 21.6% (95% CI: 16.2,27.0). Mature B-cell lymphomas had the highest survival of 30.6% (95%CI: 25.7,35.6), while very aggressive disease had the lowest 16.1% (95%CI: 3.2,28.9). Findings highlight the need for targeted strategies and multidisciplinary collaboration to improve NHL outcomes in Kelantan.

Keywords: Non-Hodgkin lymphoma, WHO 2008 classification, mature B-cell lymphoma, survival rate

PP2-33

Knowledge and Adherence to Oral Iron Consumption Among Pregnant Women Attending Health Clinic in PKD Machang

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Anemia in pregnancy is a significant public health concern. In PKD Machang, there has been an increasing number of anemic pregnant mother, leading to a rising demand for iron sucrose injections due to failure of oral iron therapy. A cross-sectional study conducted on 376 pregnant women attending 11 Maternal and Child Health Clinics under PKD Machang from 1st September to 31st December 2024. Data were collected using a validated, self-administered questionnaire in Malay consisting of 49 items across four sections. Descriptive statistics were used to analyze sociodemographic profiles, pregnancy characteristics, oral iron supplementation details, knowledge, and adherence. Associations were assessed using correlation, independent sample t-tests, and one-way ANOVA. Where ANOVA results were significant, Bonferroni post hoc tests were applied. The association between knowledge score and adherence score was analyzed using Pearson's correlation. Among 376 respondents, only 69 (18.4%) demonstrated good knowledge, while 255 (67.8%) had good adherence to oral iron consumption. Marital status, education level, occupation, husband's education level, gestational age, gravidity, history of anemia in previous pregnancy, history of oral iron intake, awareness of their hemoglobin level, name and dose of oral iron pills were significantly associated with knowledge score. Alternatively, history of oral iron intake in previous pregnancy and education level were significantly associated with adherence score. There is a significant correlation between knowledge score and adherence score ($p=0.046$). Knowledge regarding oral iron supplementation is significantly associated with adherence. Improving maternal knowledge through targeted health education may enhance adherence, thus reducing iron-deficiency anemia in pregnancy.

Keywords: Pregnant women, anemia, oral iron consumption, knowledge, adherence

PP3-02

The Intra and Inter Reliability of Digital Tracing in Cephalometric Analysis

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Cephalometric analysis is a cornerstone in orthodontic diagnosis, orthognathic surgery planning, and the assessment of obstructive sleep apnoea (OSA), with lateral cephalograms serving as the primary imaging modality for these clinical applications. As digital tracing methods increasingly replace manual techniques, it is essential to establish their reliability to ensure accurate diagnosis and effective patient care. This study evaluated both intra- and inter-rater reliability of digital cephalometric tracing using OPAL software. Twenty-four lateral cephalograms were traced for six key anatomical landmarks based on the Eastman Analysis. Intra-rater reliability was assessed by having a single examiner trace all cephalograms twice, six weeks apart, while inter-rater reliability involved two independent examiners using the same protocol. Results demonstrated excellent consistency for most parameters, with intra-class correlation coefficients (ICCs) such as SNB (0.946), ANB (0.957), and Lia (0.903), and good reliability for MMPA (0.632), all statistically significant ($p < 0.001$). These findings confirm that digital tracing provides consistent and reproducible measurements, allowing dental officers and specialists to reach mutual agreement when standardised protocols are followed. This supports the integration of digital cephalometric analysis into routine workflows for multidisciplinary care in orthodontics, orthognathic surgery, and OSA management. Furthermore, this research can be expanded to a broader scope by including additional digital tracing software available in the market and involving more examiners from diverse professional backgrounds, which would further validate and enhance the generalisability of digital cephalometric analysis in various clinical settings.

Keywords: Cephalometric analysis, Digital Tracing, Intra Reliability, Inter Reliability

PP3-04

Saving a Lost Tooth - Emergency Reimplantation of an Avulsed Tooth

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Tooth avulsion is the most severe form of dental trauma and requires urgent intervention to optimize long-term prognosis. Reimplantation within 30-60 minutes offers the best outcomes, but delayed presentation still warrants intervention to preserve aesthetics and function, especially in paediatric patients. This report describes the emergency management of a 9-year-old boy who presented 24 hours after avulsion of tooth 11 due to a fall at a swimming pool. The tooth had been stored in plain water before presentation. Clinical examination revealed an avulsed tooth 11 and an intruded tooth 21. The avulsed tooth was carefully rinsed, stored in saline, and underwent retrograde root canal therapy before reimplantation under local anesthesia. Both teeth were stabilized with a passive wire splint (13 to 23), and repositioning/resplinting was later performed under general anesthesia due to patient non-cooperation. Follow-up showed satisfactory healing, with plans for annual monitoring via radiograph. Although the prognosis of delayed reimplantation (>60 minutes) is generally poor due to non-viable periodontal ligament cells, reimplantation can help maintain alveolar bone, function, and aesthetics in growing children. This case emphasizes the importance of early intervention, proper storage media, and public education on avulsion first aid to improve clinical outcomes. Even in delayed presentations, reimplantation remains a valuable treatment option in pediatric dental trauma. Prompt and informed emergency management is critical in improving prognosis and preserving oral health-related quality of life in children.

Keyword: Tooth Avulsion, Reimplantation, Pediatric Patient, Splint, Prognosis

PP3-05

Evaluation on the Antimicrobial Stewardship (AMS) Programme at Hospital Tengku Anis, Kelantan

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Antimicrobial resistance (AMR), driven by inappropriate antimicrobial use, poses global and national health threats. To address this, Malaysia's Ministry of Health implemented the Antimicrobial Stewardship (AMS) programme to optimize antimicrobial use and improve clinical outcomes. Hospital Tengku Anis (HTA) has adopted the AMS programme since 2018. However, its clinical impact remains a concern among some prescribers. This study is to evaluate the effectiveness of the AMS programme at HTA and its association with patient clinical outcomes, including length of hospital stay, duration of antimicrobial therapy, clinical improvement, discharge alive, and 30-day readmission. A retrospective cross-sectional observational study was conducted at HTA from January to June 2024. Patients aged ≥ 12 years prescribed selected broad-spectrum antimicrobials were included and categorized based on whether AMS activities were performed. Data were analysed using IBM SPSS version 22. Mann-Whitney U test was used for continuous variables, and Fisher's Exact test was applied for categorical outcomes. Out of 119 patients, 96 fulfilled the inclusion criteria. AMS activities were documented in 79.2% of cases. Patients reviewed by AMS had a significantly longer median hospital stay (7 vs. 4 days, $p < 0.05$) and antimicrobial duration (5 vs. 2 days, $p < 0.05$), likely reflecting more severe cases. No significant differences were observed in clinical improvement, discharge alive, or 30-day readmission ($p > 0.95$). The AMS programme at HTA shows no negative impact on outcomes including longer treatment and hospitalization durations which likely reflect clinical complexity. Findings support continued use of AMS and suggest areas for improvement like earlier interventions and IV-to-oral antimicrobial switching.

Keywords: AMS, antimicrobial stewardship, clinical outcomes

PP3-06

Cyclamate in Dried Sour Fruits Sold in Kota Bharu, Kelantan: An Alarming Prevalence

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Dried sour fruits are widely consumed as snacks in Malaysia, owing to their distinctive tangy, sweet or salty flavours. Their production process often involves the addition of sweeteners, which may comprise both natural and synthetic types. Cyclamate is a synthetic, non-nutritive sweetener that is not permitted for use in dried fruits under the Malaysian Food Act and Regulations and the Codex Alimentarius Commission, due to its potential health risks. This study investigated the presence and concentration of cyclamate in 75 commercially available dried sour fruit samples collected from retail outlets in Kota Bharu, Kelantan. The samples were analyzed using high-performance liquid chromatography (HPLC). Cyclamate was detected in 60 samples (80%), with concentrations ranging from 549 mg/kg to 94,170 mg/kg. These findings indicate a considerably high prevalence of cyclamate in dried sour fruits sold in local markets. The results raise concerns about regulatory compliance and highlight the urgent need for enhanced surveillance programmes to investigate the production processes and distribution of these products, in order to protect public health and ensure food safety.

Keywords: Dried sour fruits, Cyclamate, Prevalence

PP3-08

Pain as 5th Vital Sign: An Evaluation of Knowledge Among Healthcare Workers in Hospital Tanah Merah, Kelantan.

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In 2008, Malaysia implemented the “Pain as the 5th Vital Sign” initiative, introducing the Pain Free Hospital concept nationwide. In line with this, Hospital Tanah Merah (HTM) will undergo a certification audit in 2025. The findings of this research can support the development of more effective training programs and inform policy makers about the need for targeted pain management workshops. Ultimately, this will help address knowledge gaps and improve the quality of patient care. This study aims to assess the level of knowledge regarding P5VS among healthcare-workers in HTM and to determine the relationship between their knowledge levels and socio-demographic factors including gender, age, job role, and years of service. A quantitative cross-sectional study was conducted between August 2024 to November 2024 involving 384 full-time healthcare workers at HTM. A validated questionnaire adapted from the Ministry of Health’s *Pain-Free Hospital Manual* (3rd Edition) was distributed online. A knowledge score of $\geq 80\%$ was considered passed. Descriptive statistics and one-way ANOVA were used to explore associations. Results showed that 80.5% of respondents passed, indicating generally good knowledge. Doctors, pharmacists, and nurses scored highest, while allied health and dental staff performed lower. Among socio-demographic variables, only professional role was significantly associated with knowledge scores ($p < 0.001$); gender, age, and years of service showed no significant correlation. While most healthcare workers at HTM demonstrated good knowledge of P5VS, disparities between professional groups indicate a need for targeted, role-specific training. Continued education and structured reinforcement are vital to ensure consistent, effective pain-assessment practices across all departments.

Keywords: Pain, Fifth Vital Sign, Knowledge, Healthcare Workers, Pain-Free Hospital

PP3-09

Management of Iatrogenic Perforation in an Endodontically Treated Mandibular Second Molar: A Case Report

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Furcation perforation is a challenging complication that can arise during endodontic procedures, posing a threat to the overall success of the treatment. It is crucial to address these issues promptly and effectively to ensure the best possible outcome for the affected tooth. A case of a 22-year-old Malay woman who presented at Unit Restorative Kota Bharu with a furcation perforation on tooth 47, which had been previously treated. On examination, the patient was experiencing only mild tenderness, without any signs of a sinus tract. The initial radiograph revealed short-obturation in each canal, along with a radiolucency in the area, indicating the presence of perforation. Pre-endodontic restoration was performed and repaired the perforation using glass ionomer cement (GIC) during the initial visit. Subsequently, a comprehensive retreatment plan was executed. This involved the removal of GuttaPercha (GP) using a GP solvent, followed by the determination of the working-length, cleaning and shaping of the canals with rotary files. Finally, the obturation of the canals with Bio-C sealer and the repair of the perforation site using Biodentine under magnification. During follow-up, the patient remained asymptomatic. Direct composite cuspal coverage performed ensuring structural integrity of the tooth. A post-operative radiograph confirmed the successful obturation of the canals with normal apical tissue. This highlights the importance of early detection and intervention in managing furcation perforations during endodontic treatment. By utilizing biocompatible materials like Biodentine for repair, the long-term prognosis of compromised teeth can be significantly improved, leading to better outcomes for patients in the long run.

Keyword: furcation perforation, endodontic retreatment, obturation, Biodentine, direct composite cuspal coverage

PP3-11

Knowledge, Attitude and Practice of Painkillers among Patients in Jeli District Health Clinics, Kelantan

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Improper use of analgesics is a growing public health issue in Malaysia, yet data from rural primary care settings remain limited. Thus, understanding patients' views on painkiller use can help improve doctor-patient communication and guide public health education. This study aimed to assess patients' knowledge, attitude and practice (KAP) on painkiller use in Jeli District Health Clinics, Kelantan, and to determine their associations with demographic factors and pain severity. A prospective, cross sectional observational study was conducted among 125 adults receiving painkiller prescriptions at six outpatient health clinics in Jeli, Kelantan from October 2024 to June 2025. Proportional sampling was applied. A validated self-administered questionnaire measured KAP; scores were classified using Bloom's cutoffs (Good $\geq 80\%$, Moderate 60-79%, Poor $< 60\%$). Descriptive statistics and Chi-square tests examined associations between KAP domains, demographics and pain severity. Respondents were predominantly female (56%), aged 30-44 years (32%) and Malay (93.6%). Overall, 96 % exhibited poor knowledge, whereas 72 % showed good attitude and 64.8 % good practice toward painkiller use. Knowledge level was not significantly linked to any demographic variable. Education level, however, was significantly associated with attitude ($P = 0.005$). Inter-domain analysis revealed no significant relationships between knowledge and attitude ($P = 0.731$), knowledge and practice ($P = 0.577$), or attitude and practice ($P = 0.116$). Pain severity showed a borderline association with knowledge ($P = 0.054$) but not with attitude or practice. Overall, patients lacked proper knowledge of painkillers despite positive attitudes and practices, likely due to reliance on healthcare instructions. Targeted education and outreach are needed to improve safe painkiller use.

Keywords: Painkillers, Knowledge, Attitude, Practice, Outpatient, Malaysia, Jeli District

PP3-12

The Silent Strain: Invisible Risk Factors for Burnout Among Pasir Mas Healthcare Workers, 2024

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Burnout, often silent and overlooked, is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. Recognizing those at risk is crucial for timely intervention. This study explores its prevalence and invisible risk factors among healthcare workers in Pasir Mas, Kelantan. A cross-sectional study was conducted across all categories in primary healthcare clinics, Pasir Mas. The study was collected from March to October 2024 using a validated Copenhagen Burnout Inventory-Malay version (CBI-M) assessed personal, work-related, and client-related burnout. A total of 309 HCWs enrolled, majority are females. Personal burnout prevalence was 26.9%, work-related burnout 11.7%, and client-related burnout 5.5%. Being a healthcare professional was significantly associated with both personal burnout [OR 3.11, 95% CI: 1.51-6.42, p=0.002] and work-related burnout [OR 11.82, 95% CI: 2.66-52.44, p=0.001]. Additionally, being single was significantly associated with client-related burnout [OR 3.32, 95% CI: 1.00-11.05, p=0.05]. Healthcare professionals are inherently exposed to hidden occupational stressors due to the nature of their roles. These invisible risk factors contribute significantly to burnout. Targeted, role-sensitive interventions are essential to mitigate stress and promote mental well-being among healthcare workers.

Keywords: burnout, workplace stress, healthcare workers, factors

PP3-16

Analysis of the Nutritional Status of Orang Asli Children Aged 6 Months to 6 Years Participating in the Community Feeding Program (PCF) At Pos Sungai Rual, Jeli, Kelantan In 2025

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The Community Feeding Program (PCF) is a health initiative aimed at improving the nutritional status of Orang Asli children living in remote areas. This study was conducted to assess the nutritional status of children aged between 6 months and 6 years who participated in the PCF at Pos Sungai Rual, Jeli, Kelantan, in the year 2025. This study aimed to determine the current nutritional status based on anthropometric indicators and identify the prevalence of underweight, stunting, and wasting among the participating children. This cross-sectional study involved 124 children who attended the PCF in April 2025. Body weight and height/length measurements were taken using SECA equipment. The anthropometric measurements were compared with the WHO Child Growth Charts (2006 for weight-for-age [WFA] and height/length-for-age [HFA], and 2007 for body mass index-for-age [BMI-for-age]). Z-scores were categorized into three nutritional status levels: severe (< -3 standard deviations [SD]), moderate (≥ -3 to < -2 SD), and normal (≥ -2 SD). Descriptive analysis was performed using SPSS software. Of the 124 children assessed, 58 (46.8%) were boys and 66 (53.2%) were girls. For the WFA indicator, 4 children (3.2%) were severely underweight, 35 (28.2%) were moderately underweight, and 85 (68.5%) were in the normal range. For HFA, 19 children (15.3%) were severely stunted, 52 (41.9%) were moderately stunted, and 53 (42.7%) had normal height/length-for-age. For BMI-for-age, only 1 child (0.8%) was severely wasted, 5 (4.0%) were moderately wasted, and the majority—116 children (93.5%)—had normal nutritional status. Findings show that malnutrition remains a significant issue in this community, particularly in terms of underweight (31.4%) and stunting (57.2%), despite improvements compared to 2013 data which reported underweight at 50.4%, stunting at 79.8%, and wasting at 1.7%. This reduction suggests the potential effectiveness of the PCF in addressing malnutrition; however, further studies are needed to identify the contributing factors behind this improvement.

Keywords: WHO Growth Charts, Community Feeding Program, Orang Asli, Undernutrition, Nutritional Status

PP3-17

Fast Track to Better Care: Lean Transformation Using Flow Synchronized Levelling (FSL) at Meranti Health Clinic, Pasir Mas (2024)

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Lean implementation in healthcare aims to create value for both patients and providers by improving efficiency, reducing costs, and enhancing clinical outcomes. Traditional models focused on volume and speed often fail to achieve sustainable improvement. This study applied Flow Synchronized Levelling (FSL) to streamline clinic operations and reduce patient Length of Stay (LOS) at Meranti Health Clinic, Pasir Mas. Baseline data in 2024 revealed prolonged LOS: appointment patients (124 minutes), walk-ins (111 minutes), child health/postnatal/family planning (104 minutes), and antenatal care (149 minutes). The improvement initiative adopted the five-phase model from the Good Services Delivery (GSD) framework of Hospital Tanah Merah. Lean tools including “Five WHYs,” L.A.M.E (Lean As Misguidedly Explained), and Kaizen were applied. Interventions included grouping services by family category, time-levelling appointments, centralized blood-taking, enhanced triage, a fast-track refill system, and the implementation of Advanced Clinical Management (ACM) and the 5S methodology. Post-intervention outcomes showed reduced LOS: appointment patients (92 minutes; -26.4%), walk-ins (79 minutes; -28.8%), antenatal (111 minutes; -25.5%), and child health/postnatal/family planning (70 minutes; -32.7%). Continuous monitoring was maintained via quarterly Gemba walks, monthly KPI reviews, and Lean Boards. FSL, supported by Lean methodology, effectively improved clinic flow and reduced patient LOS. Sustainability was achieved through structured process redesign, staff involvement, visual management, and ongoing quality improvement. Knowledge sharing and field visits reinforced a culture of continuous learning.

Keywords: Flow Synchronized Levelling, Lean Healthcare, Service Redesign, Gemba, Clinic Workflow Optimization

PP3-18

Translation and Validation of the Questionnaire on Knowledge, Attitude and Perception towards Allergic Reactions of Paracetamol into Malay Language

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This study aimed to translate and validate the Knowledge, Attitude, and Perception towards Allergic Reactions of Paracetamol (KAP-ARP) questionnaire into Malay. A cross-sectional study was conducted at Hospital Machang, Kelantan, from May 2024 to May 2025, enrolling adults aged 18 years and above using convenience sampling. Ethical approval obtained through the National Medical Research Register. Translation followed standardized forward-backward procedures. Content validity was assessed by an expert panel while face validity was tested among twenty volunteers. The final questionnaire, comprising 13 Knowledge, 8 Attitude, and 8 Perception items, was distributed to the public attending our hospital for psychometric testing. Factor analysis using principal component analysis with Varimax rotation and Cronbach's alpha was performed. A total of 145 respondents completed the questionnaire. Content Validity Index (CVI) scores were acceptable (≥ 0.78) for most items, with minor revisions applied to K12, K13, A5, and P6. Face validity assessment confirmed clarity and comprehension of the Malay version. Factor analysis supported a three-factor structure for Knowledge (68.4% variance explained), a two-factor structure for Perception (62.1% variance explained), and a less cohesive structure for Attitude. Reliability analysis showed good internal consistency for Knowledge ($\alpha = 0.816$) and Perception ($\alpha = 0.738$), but poor reliability for Attitude ($\alpha = 0.483$). The Malay-translated KAP-ARP questionnaire demonstrated strong content and face validity, with acceptable reliability for Knowledge and Perception domains. The Attitude domain requires refinement before broader application. This validated tool can support future research, health education, and pharmacovigilance initiatives in Malaysia.

Keywords: Paracetamol: allergic reactions: questionnaire: knowledge: attitude: perception

PP3-19

Factors Associated with Inappropriate Antibiotic Prescribing in Public Primary Health Clinics in Selangor, Malaysia: A Cross-Sectional Study

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Inappropriate antibiotic prescribing remains a pressing public health challenge in Malaysia, with reported prevalence ranging from 18.4% to 39.7%, contributing significantly to the growing threat of antimicrobial resistance (AMR). Despite the introduction of national initiatives such as the Antimicrobial Stewardship (AMS) program, inappropriate prescribing continues, particularly in public primary health clinics. This study aimed to determine the prevalence and identify factors associated with inappropriate antibiotic prescribing in public primary health clinics in Selangor, Malaysia. A retrospective cross-sectional study was conducted between November 2022 and August 2023, involving 414 clinical audit samples from prescribers across 18 primary health clinics in Selangor. Prescribing practices were assessed using the Ministry of Health Malaysia's AMS Clinical Audit Tool, which is utilized for national audits of antibiotic prescribing. Simple and multiple logistic regression analyses were performed to identify predictors of inappropriate prescribing. The overall prevalence of inappropriate prescribing was 22.5%. Significant associations were observed among prescribers with service times of 5-9 years (aOR=2.68, p=0.004) and more than 12 years (aOR=2.58, p=0.017), those without AMS training (aOR=9.25, p<0.001), and diagnoses such as skin and subcutaneous tissue infections (aOR=3.10, p=0.017), acute upper respiratory tract infections (aOR=4.40, p=0.002), and other non-specific diagnoses (aOR=6.47, p=0.001). Clinics located more than 15 km from the nearest hospital were also significantly associated with inappropriate prescribing (aOR=2.19, p=0.005). These findings highlight the urgent need for targeted AMS training, clearer clinical pathways, public education, improved healthcare access, and routine monitoring to curb inappropriate prescribing, reduce healthcare costs, and mitigate AMR.

Keywords: Antibiotic prescribing, antimicrobial stewardship, antimicrobial resistance, primary health clinics, Malaysia

PP3-21

Patterns of Discordance in Chest X-ray Interpretation in Primary Care Settings, Kelantan (2024): Implications for Epidemiological Surveillance

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Accurate interpretation of chest radiographs is crucial for effective surveillance, and clinical decision-making. In high-volume primary care settings, rapid diagnoses increase the risk of interpretive errors, potentially compromising patients' outcomes and surveillance accuracy. This study aimed to determine the proportion of chest X-ray interpretation discordance among medical officers in Kelantan, evaluate their diagnostic accuracy, and identify common interpretation errors. A cross-sectional study was conducted between December 2024 and March 2025 in selected primary care clinics in Kelantan. A total of 194 chest radiographs were interpreted independently by medical officers. These interpretations were subsequently reviewed by a panel of radiologists, whose readings served as the reference standard. The proportion of discordance, sensitivity, and specificity of medical officers' interpretations were calculated. Chi-square tests were used to assess statistical significance. Of the 194 chest radiographs reviewed, 49 were misinterpreted by medical officers, yielding a discordance rate of 25.3%. The sensitivity of interpretation by medical officers was 75.8% (95% CI: 0.65-0.86), while specificity was 74.2% (95% CI: 0.67-0.82). There was a statistically significant difference between the radiologists' and medical officers' interpretations ($p < 0.05$). Common interpretation errors included misidentification of opacities, fibrotic changes, and areas of haziness. In conclusion, a notable level of diagnostic discordance was found in chest X-ray interpretations by medical officers in Kelantan's primary care settings. Although the overall diagnostic performance remains within acceptable limits, targeted interventions such as training and protocol standardization are necessary to enhance diagnostic accuracy and strengthen public health surveillance systems.

Keywords: Chest X-ray, Diagnostic Discordance, Primary Care, Surveillance

PP3-22

Silent Threats at Work: Battling Skin Disease from Bat Infestation, Pasir Mas, 2024

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Occupational skin diseases are among the most underreported work-related conditions, yet they can significantly impact employee health, service delivery, and productivity. This report highlights a suspected case of allergic skin reaction linked to repeated exposure to bat droppings in a healthcare facility. The objectives were to document the case, assess occupational health interventions, and evaluate their outcomes. An occupational health investigation was initiated on 15 August 2024, following case notification on 11 August 2024. Activities included medical record review, worker interview, and environmental assessment using a standard occupational risk checklist. A 46-year-old female healthcare worker presented with recurrent skin rashes, suspected to be triggered by environmental exposure to bat droppings at her workplace. After multiple outpatient visits and eventual referral to dermatology, the condition was formally notified and verified as work-related. The worker was referred to the occupational health clinic. Risk assessment led to her reassignment to a new workplace. Her symptoms improved following relocation, and the heavily infested facility was closed immediately. Timely case notification is vital to trigger occupational health actions. In this case, early reporting enabled work reassignment, treatment, and health education, preventing further complications. Delayed action could have resulted in prolonged illness and reduced productivity. Strengthening occupational disease notification systems and ensuring regular workplace risk assessments are essential to protecting healthcare workers and preventing avoidable occupational illnesses.

Keywords: Occupational skin disease, notification, workplace risk assessment, healthcare workers, workplace safety.

PP3-23

Full Time vs Part Time Essix Retainer Wear For 6- Month Period - A Randomized Controlled Trial

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Essix retainer, also known as a thermoplastic or vacuum-formed retainer, is a popular choice for maintaining teeth position post treatment. It is favored by both clinicians and patients due to several advantages. In Malaysia, most orthodontists prescribe full-time wear of more than 20 hours per day for 3–9 months. Limited studies indicate no statistical difference in tooth position stability between full time and part time wear regimens, however there is inconsistency in daily wear time regimens between the studies. This study aims to compare tooth position stability between full-time (24 hours daily) and part-time (8 hours daily) wear regimens of Essix retainers. It is a preliminary prospective 2-arm parallel randomized controlled trial with simple random sampling involving 15 patients with 6 in the full time group, 9 in the part time group. Little's irregularity index was measured at the debond and 6 months post debond. Data were analyzed through SPSS software, using independent t-test, and Mann-Whitney U test. Results showed no statistically significant difference in Little's irregularity index for the upper arch between full-time and part-time wear ($p=0.28$). Similarly, no significant difference was found for the lower arch between full-time and part-time wear ($p=0.41$). The study's results can contribute to formulating effective essix retainer wear guidelines. Part-time wear regime is adequate to hold the tooth stability in the first 6 months after debond.

Keywords: Essix retainer, Tooth position stability, Relapse, Thermoplastic retainer

PP3-24

When a Routine Extraction Becomes a Medical Emergency: Ludwig's Angina from Residual Subgingival Calculus after Third Molar Removal

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Ludwig's angina is a potentially life-threatening cellulitis of the submandibular, sublingual, and submental spaces, often stemming from odontogenic infections. While most cases arise from active dental caries or periapical pathology, post-extraction complications due to overlooked residual calculus are exceptionally rare. A 31-year-old woman presented with rapidly progressing submandibular swelling three days after the extraction of the right mandibular third molar tooth (48). The swelling extended across the midline and was associated with dysphagia, trismus, hoarseness, and reduced oral intake, raising concerns of airway compromise. Clinical examination revealed bilateral submandibular swelling with poor oral hygiene. Flexible nasoendoscopy showed medialisation of the lateral pharyngeal wall with a patent airway. Imaging with non-contrast cone-beam computed tomography (CBCT) revealed residual subgingival calculus within the healing extraction socket and a restored distal surface of the right mandibular second molar tooth (47). The patient was managed conservatively with intravenous antibiotics and dental scaling and debridement. Her symptoms resolved without surgical drainage, and she was discharged after clinical improvement. This case underscores the importance of comprehensive dental assessment post-extraction, including inspection of the socket and surrounding teeth, particularly in primary care settings. A multidisciplinary and holistic approach is essential to prevent deep neck infections and ensure optimal patient outcomes.

Keywords: Ludwig's angina, Odontogenic infection, Residual calculus, Submandibular lymphadenitis, Dental hygiene

PP3-25

Small Steps, Big Gains: Improvement in Nutritional Status among Indigenous Children through Program Community Feeding (PCF) in Gua Musang, Kelantan, 2025

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The disproportionate burden of malnutrition among Malaysia's indigenous children, with stunting and underweight prevalence reaching up to 75%, represents a critical public health issue. The government's Program Community Feeding (PCF) was established to mitigate this disparity by providing supplementary nutrition (a glass of milk, a multivitamin, and both carbohydrate and protein-based foods) five times weekly. This study aimed to determine the impact of the PCF on anthropometric changes among participating indigenous children under seven years old in Gua Musang. A retrospective cohort study analyzed data from 120 indigenous children across five PCF centers (Kg Pasik, Sugi, Langsat, Jias, and Kuala Koh) who maintained at least 80% attendance from January to June 2025. Paired t-tests were conducted through SPSS Version 27 comparing the baseline and six-month follow-up measurements of height and weight that were originally collected using calibrated Tanita scales and Seca stadiometers. The cohort was predominantly of Senoi ethnicity (80.8%), female (53.3%) with mean age of 3 years old (24.2%). Most caregivers (74.2%) had completed secondary education, and 65.8% of households reported a monthly income over RM400. Paired t-test analysis comparing baseline and six-month follow-up data revealed statistically significant improvements. Children achieved a mean weight gain of 0.63 kg (95% CI 0.47,0.77; p-value <0.001) and a mean height increase of 2.0 cm (95% CI 0.01,0.03; p-value = 0.01). The PCF significantly improved growth in this vulnerable cohort, providing robust evidence to justify its continuation and expansion as a vital strategy against indigenous child malnutrition.

Keywords: Malnutrition, Program Community Feeding, Indigenous Children, Gua Musang, Public Health Nutrition

PP3-31

Relationship Between Negative Work-Related Outcomes and Resilience with Support Systems: A Cross- Sectional Study of Second Victims Among Nurses in Primary Health Clinics in Kelantan

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Nurses assume a critical role in the contemporary healthcare landscape, particularly in managing patient safety incidents. These incidents can engender significant second victim distress among nurses, leading to self-doubt and diminished professional efficacy. This may result in decreased work engagement and suboptimal performance. However, by cultivating resilience and developing effective coping mechanisms, nurses can mitigate these adverse outcomes. This study aimed to investigate how the predictors; sociodemographic variables and organizational support (composed of colleague, supervisor, and institutional support) affect negative work-related outcomes and resilience. This cross-sectional study employed systematic random sampling to recruit 527 nurses from primary health clinics in Kelantan, Malaysia. The study focused on nurses who had encountered patient safety incidents within the preceding five years. Data collection utilised the Malay-translated Second Victim Experience and Support Tool questionnaire. Analysis encompassed descriptive analysis and two separate multiple linear regression models, with respective dependent outcomes of negative work-related outcomes and resilience. Organisational support demonstrated a significant relationship with resilience. In addition, for negative work-related outcomes, colleague support, second victim related distress, younger nurses and reduced professional efficacy contribute to the relationship. This study concurred that organisational support was paramount in fostering resilience and mitigating negative work-related outcomes.

Keywords: second victims; patient safety incidents, negative work-related outcomes, resilience, support

PP3-33

Lean Healthcare Initiative: Enhancing NCD Patient Referrals to MyStep Dietitian at Klinik Kesihatan Gunong

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Klinik Kesihatan Gunong (KKG) faced a growing burden of Non-Communicable Disease (NCD) patients, with 2,728 cases in 2024 (15% of total clinic population). This burden has been increasing annually. All NCD patients are required to receive diet consultations to improve disease control and prevent complications. Since 2019 till 2024, KKG has not achieved diabetic (17-27%) and dyslipidaemia (50-60%) control targets compared with KPIs in NCD Management (DM>30% and Dyslipidaemia>75%). KK Gunong has offered the MyStep Dietitian service since 2020 with the referral rate of only 40 per month despite 120 monthly available slots. The current process required diabetic educators and medical officers to write referral letters before giving them to patients, who must then walk nearly 130 steps to receive advice from the MyStep dietitian at the Bilik Guanasama. Referral forms need to be kept on a shelf and require space in the clinic. Value analyses revealed 11 processes with 1 Value added, 2 value enabler and 5 non value added. A fishbone diagram identified the root causes of the issue, which were related to materials, systems, and the environment. Two Kaizen bursts were implemented: digitizing the referral letter and moving the MyStep consultation to the NCD room. These changes have significantly improved the efficiency of referrals to the MyStep dietitian, increasing referrals to 93 per month, reducing costs by RM1,800 per year. In conclusion, the implementation of lean principles and digital workflows has proven to be an effective approach for improving NCD service.

Keyword: Non-Communicable Disease (NCD), Mystep Dietitian Service, Healthcare Digitalization