



*Official Journal of the  
Malaysian Medical Association*

# *The Medical Journal of Malaysia*

## **The 16th National Conference for Clinical Research (NCCR)**

**in conjunction with the 20th Anniversary of the Clinical Research Centre,  
Sarawak General Hospital & Sarawak State Research Day**

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# MJM

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The *Medical Journal of Malaysia (MJM)* welcomes articles of interest on all aspects of medicine in the form of original papers, review articles, short communications, continuing medical education, case reports, commentaries and letter to Editor. Articles are accepted for publication on condition that they are contributed solely to *The Medical Journal of Malaysia*.

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Manuscripts should be submitted in English (British English). Manuscripts should be submitted online through *MJM Editorial Manager*, <http://www.editorialmanager.com/mjm>.

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2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Original Articles are reports on findings from original unpublished research. Preference

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#### Short Communications:

Shorts communication are short research articles of important preliminary observations, findings that extends previously published research, data that does not warrant publication as a full paper, small-scale clinical studies, and clinical audits. Short communications should not exceed 1,500 words and shall consist of a Summary and the Main Text. The summary should be limited to 100 words and provided immediately after the title page. The number of tables/illustrations/figures/images should be limited to three (3) and the number of references to ten (10).

#### Continuing Medical Education (CME) Articles:

A CME article is a critical analysis of a topic of current medical interest. The article should include the clinical question or issue and its importance for general medical practice, specialty practice, or public health. It shall consist of a Summary and the Main Text. The summary should be limited to 500 words and provided immediately after the title page. Upon acceptance of selected articles, the authors will be requested to provide five multiple-choice questions, each with five true/false responses, based on the article. For guideline, please refer to: Sivalingam N, Rampal L. Writing Articles on Continuing Medical Education for Medical Journals. *Med J Malaysia*. 2021 Mar;76(2):119-124.

#### Case Reports:

Papers on case reports (one to five cases) must follow these rules: Case reports should not exceed 2,000 words; with a maximum of two (2) tables; three (3) photographs; and up to ten (10) references. It shall consist of a Summary and the Main Text. The summary should be limited to 250 words and provided immediately after the title page. Having a unique lesson in the diagnosis, pathology or management of the case is more valuable than mere finding of a rare entity. Being able to report the outcome and length of survival of a rare problem is more valuable than merely describing what treatment was rendered at the time of diagnosis. There should be no more than seven (7) authors.

Please note that all Case Reports will be published in the new MJM Case Reports Journal ([www.mjmcasereports.org](http://www.mjmcasereports.org)).

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Commentaries will usually be invited articles that comment on articles published in the same issue of the *MJM*. However, unsolicited commentaries on issues relevant to medicine in Malaysia are welcomed. They should not exceed 2,000 words. They may be unstructured but should be concise. When presenting a point of view, it should be supported with the relevant references where necessary.

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Letters to Editors are responses to items published in *MJM* or to communicate a very important message that is time sensitive and cannot wait for the full process of peer review. Letters that include statements of statistics, facts, research, or theories should include only up to three (3) references. Letters that are personal attacks on an author will not be considered for publication. Such correspondence must not exceed 1,500 words.

#### Editorials:

These are articles written by the editor or editorial team concerning the *MJM* or about issues relevant to the journal.

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The title page should state the brief title of the paper, full name(s) of the author(s) (with the surname or last name bolded), degrees (limited to one degree or diploma), affiliation(s), and corresponding author's address. All the authors' affiliations shall be provided after the authors' names. Indicate the affiliations with a superscript number at the end of the author's degrees and at the start of the name of the affiliation. If the author is affiliated to more than one (1) institution, a comma should be used to separate the number for the said affiliation.

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Please indicate the corresponding author and provide the affiliation, full postal address and email.

Articles describing Original Research should consist of the following sections (IMRAD format): Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgment and References. Each section should begin on a fresh page. Scientific names, foreign words and Greek symbols should be in italic.

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A structured abstract is required for Original and Review Articles. It should be limited to 500 words and provided immediately after the title page. Below the abstract provide and identify three (3) to 10 key words or short phrases that will assist indexers in cross-indexing your article. Use terms from the medical subject headings (MeSH) list from Index Medicus for the key words where possible. Key words are not required for Short Communications, CME articles, Case Reports, Commentaries and Letter to Editors.

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Clearly state the purpose of the article. Summarise the rationale for the study or observation. Give only strictly pertinent references, and do not review the subject extensively.

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Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly, identify the methods, apparatus (manufacturer's name and address in parenthesis), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well-known; describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

Identify precisely all drugs and chemicals used, including generic name(s), dosage(s) and route(s) of administration. Do not use patients' names, initials or hospital numbers. Include numbers of observation and the statistical significance of the findings when appropriate.

When appropriate, particularly in the case of clinical trials, state clearly that the experimental design has received the approval of the relevant ethical committee.

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Present your results in logical sequence in the text, tables and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both: emphasise or summarise only important observations in the text.

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Emphasise the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies.

#### Conclusion:

Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

#### Acknowledgements:

Acknowledgements of general support, grants, technical assistance, etc., should be indicated. Authors are responsible for obtaining the consent of those being acknowledged.

#### Referencing guide:

The Medical Journal of Malaysia, follows the Vancouver numbered referencing style. Citations to someone else's work in the text, should be indicated by the use of a number. In citing more than one article in the same sentence, you will need to include the citation number for each article. A hyphen should be used to link numbers which are inclusive, and a comma used where numbers are not consecutive. The following is an example where works 1,3,4,5, have been cited in the same place in the text.

Several effective drugs are available at fairly low cost for treating patients with hypertension and reducing the risk of its sequelae.<sup>1,3,5</sup>

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If you are citing the author's name in your text, you must insert the citation number as well. Jewell BL (8) underlined that as focus in the SARS-CoV-2 pandemic shifts to the emergence of new variants of concern (VOC), characterising the differences between new variants and non-VOC lineages will become increasingly important for surveillance and maintaining the effectiveness of both public health and vaccination programme. If you are citing more than one author's name in your text and you want to cite author names in your text, use 'et al.' after the first author. Example: Rampal et al. (9) highlighted that the disregard of the manuscript guidelines and instruction to authors of the journal you submit, is one of the common reasons for 'Rejection' of the article.

#### Example references Journals:

##### Standard Journal Article

Rampal L and Liew BS. Coronavirus disease (COVID-19) pandemic. *Med J Malaysia* 2020; 75(2): 95-7.

Rampal L, Liew BS, Choolani M, Ganasegeran K, Pramanick A, Vallibhakara SA, et al.

Battling COVID-19 pandemic waves in six South-East Asian countries: A real-time consensus review. *Med J Malaysia* 2020; 75(6): 613-25.

NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. *Lancet* 2021; 11; 398(10304): 957-80.

#### Books and Other Monographs:

##### Personal Author(s)

Goodman NW, Edwards MB. 2014. *Medical Writing: A Prescription for Clarity*. 4 th Edition. Cambridge University Press.

##### Chapter in Book

McFarland D, Holland JC. Distress, adjustments, and anxiety disorders. In: Watson M, KISSANE D, Editors. *Management of clinical depression and anxiety*. Oxford University Press; 2017: 1-22.

##### Corporate Author

World Health Organization, Geneva. 2019. WHO Study Group on Tobacco Product Regulation. Report on the scientific basis of tobacco product regulation: seventh report of a WHO study group. WHO Technical Report Series, No. 1015.

NCD Risk Factor Collaboration (NCD-RisC). Rising rural body-mass index is the main driver of the global obesity epidemic in adults. *Nature* 2019; 569: 260-64.

World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report 85, April 14, 2020. [cited April 2020] Accessed from: <https://www.who.int/docs/defaultsource/coronaviruse/situationreports/20200414-sitrep-85-covid-19>.

#### Online articles

**Webpage:** Webpage are referenced with their URL and access date, and as much other information as is available. Cited date is important as webpage can be updated and URLs change. The "cited" should contain the month and year accessed.

Ministry of Health Malaysia. Press Release: Status of preparedness and response by the ministry of health in and event of outbreak of Ebola in Malaysia 2014 [cited Dec 2014]. Available from: [http://www.moh.gov.my/english.php/database\\_stores/store\\_view\\_page/21/437](http://www.moh.gov.my/english.php/database_stores/store_view_page/21/437).

#### Other Articles:

##### Newspaper Article

Panirchellvum V. 'No outdoor activities if weather too hot'. *the Sun*. 2016; March 18: 9(col. 1-3).

##### Magazine Article

Rampal L. World No Tobacco Day 2021 -Tobacco Control in Malaysia. *Berita MMA*. 2021; May: 21-22.

#### Tables:

All tables and figures should have a concise title and should not occupy more than one printed page. The title should concisely and clearly explain the content of the table or figure. They should be numbered consecutively with Roman numerals (e.g Table I) and figures with Arabic numerals (e.g. Figure 1), and placed after the sections of the manuscript which they reflect, particularly the results which they describe on separate pages. Cite tables in the text in consecutive order. Indicate table footnotes with lower-case letters in superscript font. Place the information for the footnote beneath the body of the table. If a table will be submitted as a separate document, the filename should contain the surname of the first author and match its label in the manuscript (e.g., SMITH Table 1). Vertical lines should not be used when constructing the tables. All tables and figures should also be sent in electronic format on submission of the manuscript as supplementary files through the journal management platform. Clinical Photographs should conceal the subject's identity. Tables and flow-charts should be submitted as Microsoft Word documents. Images should be submitted as separate JPEG files (minimum resolution of 300 dpi).

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**The 16th National Conference for Clinical Research (NCCR)  
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# Effect of soursop (*Annona Muricata*) on patients with cancer: A systematic review

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## ABSTRACT

**Introduction:** *Annona muricata* is one of the most popular herbal medicines among cancer patients. It has been widely studied on in-vivo and in-vitro data. However, no systematic review had been done exclusively to pool the studies conducted on humans with cancer. The aim of this review was to explore various effects of *Annona muricata* on cancer by summarising the effects and exploring the possible mechanism of action and safety of *Annona muricata* on patients with cancer. **Methods:** Systematic review was conducted from inception until February 2022 through MEDLINE, Cochrane Library, EMBASE, ClinicalTrials.gov, WHO Trials Portal, Google Scholar, and grey literature reports. The studies were then screened for eligibility of studies based on inclusion and exclusion criteria. **Results:** Out of 475 unique abstracts, 11 were extracted for full review and five were included in the final analysis. All of the studies included have high or critical risk of bias and have different measures of outcomes which warrants caution in interpreting the result. *Annona muricata* demonstrates an inhibitory effect on cancer cells, increase in caspase activity, and anti-inflammatory effect and are found to be safe with minimal side effects in humans with cancer as *Annona muricata* does not affect bone marrow function, liver and kidney function and nutritional status. **Conclusion:** Based on limited studies, *Annona muricata* may have a potential anticancer effect which is safe in humans with cancer. The lack of high-quality studies and incomplete evidence makes it hard to conclude. Further research is needed to confirm the efficacy and safety of *Annona muricata*.

# A clinical audit on the appropriateness of management for infective endocarditis in a tertiary heart centre in Malaysia

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## ABSTRACT

**Introduction:** Infective endocarditis (IE) mostly affects the younger age group population in developing countries. It is a disease associated with a high incidence of mortality and morbidity. Little is known about the true incidence of IE in Malaysia. This clinical audit is aimed to evaluate adherence to IE management by the national guidelines. **Methods:** Data was collected retrospectively using a standardized audit form. Initial investigations, antibiotic therapy and surgical indications for IE were among the data collected. The adherence to IE management was then assessed by referring to the national guideline '2017 Clinical Practice Guideline for the Prevention, Diagnosis & Management of Infective Endocarditis'. **Results:** Thirty-seven patients were recruited. The majority of the parameters audited did not achieve the expected standard of the national guideline. These include parameters such as blood culture taking, incubation period of the blood cultures taken, appropriateness of empirical and culture-guided antibiotics; as well as follow-up blood culture, echocardiogram and patients' education. None of the patients audited had undergone surgery despite clinically indicated in some of the cases. The positive points from this audit include echocardiograms being performed within 24 hours of presentation, repeat trans-oesophageal echocardiograms for indicated patients, and patients with complicated IE being referred to a specialised centre for management. **Conclusion:** The compliance with the national guideline on IE management in our hospital was suboptimal. There is ample room for improvement in the process of blood culture taking, antibiotics and surgical management to provide better care for patients with IE.

# Compliance towards the Malaysian laws on poisons and sale of drugs: A retrospective observational study in the state of Sarawak

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## ABSTRACT

**Introduction:** Compliance with the laws and regulations on the sale and supply of medicine ensures that it is conducted safely and professionally. This study examined the compliance rate of community pharmacists and general practitioners towards the Malaysian Laws on Poisons and Sale of Drugs and reviewed the effectiveness of the enforcement actions taken. **Methods:** This was a retrospective observational study where the data were extracted from the annual inspection reports on community pharmacists and general practitioners conducted by the Sarawak Pharmacy Enforcement Branch from 2016 to 2020. Overall, 50 criteria were examined but 24 more criteria were also examined for community pharmacists. **Results:** The compliance rate of community pharmacists has improved slightly from 58.6% in 2016 to 61.1% in 2020. In the meantime, the rate of compliance among general practitioners went from 35.9% in 2016 to 71.2% in 2020, which is a big jump. The recording provisions on the supply of substances containing codeine, dextromethorphan, ephedrine, and pseudoephedrine (12.3%–24.1%) and the prescription book (7.7%–27.6%) were the most common non-compliance recorded for all the 5 years among community pharmacists and general practitioners, respectively. Enforcement action (issuance of warning letters) induced a major (79.5%) improvement in the compliance rate. **Conclusion:** Community pharmacists and general practitioners' compliance rates have improved throughout the years. The highest non-compliance rate was towards the recording provision on the supply of medicine. Constant assessment of the compliance rate, as well as the effectiveness of enforcement actions, must be done regularly.

# Use of oral Nirmatrelvir and Ritonavir in non-hospitalised patients with COVID-19 during the era of Omicron variants: A cross-sectional study at a primary health clinic in Malaysia

**Tai Chia Woon, Juma'at Juwita Asikhin, Mukunan Anu Priya, Baskaran Nithya Devi, Augustine Amburose Sharon, Lim Shu Min, Lim Chin Wen, Idris Norain, Johari Farah Nabihah, Ithnin Nur Afiqah, Mohd Asri Nur Syafiqah, Khairul Hisham Siti Aishah, Zahid Muhammad Danial, Chong Hui Jing, Zarwi Muhammad Asyraff**

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## ABSTRACT

**Introduction:** Nirmatrelvir-ritonavir is an oral antiviral developed to treat people with mild-to-moderate coronavirus 2019 (COVID-19) to avoid their progression to severe COVID-19 and to reduce hospitalisations. Studies also found nirmatrelvir-ritonavir treatment linked to reduced risk of long COVID regardless of vaccination status. **Methods:** This is a cross-sectional study that involved all COVID-19 patients who were treated with nirmatrelvir-ritonavir from May to December 2022 at KPLJB. All eligible patients were contacted by phone in March 2023 to interview on their medication adherence, side effects (SEs) and experience of any long COVID symptoms after completing the treatment. **Results:** A total of 415 patients were prescribed nirmatrelvir-ritonavir during the study period. Around two-thirds of the patients (63.4%) have one or more comorbidities, while 82% of the patients had their COVID-19 vaccine booster dose. Among all the 223 patients who were contactable by phone, 16 patients (7.2%) were not compliant with nirmatrelvir-ritonavir mainly due to SEs, 159 patients (71.3%) experienced at least one SE, with the 3 most common SEs being dysgeusia (68.6%), muscle pain (15.2%) and nausea-vomiting (15.2%). After completing the 5-day nirmatrelvir-ritonavir treatment for more than 3 months, one-fifth (21.5%) of them still experienced chronic fatigue, a persistent cough (17.9%) and insomnia (9.4%). Neither of these contactable patients progressed to severe COVID-19 nor was hospitalised. **Conclusion:** The use of nirmatrelvir-ritonavir in non-hospitalised vaccinated patients with COVID-19 was safe and associated with a reduced likelihood of hospitalisation.

# Prophylactic intravenous metoclopramide use in patients given intravenous tramadol: A retrospective cross-sectional study [TRAMAX STUDY]

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## ABSTRACT

**Introduction:** The routine use of Intravenous prophylactic antiemetics with Intravenous opioid analgesics is common practice in the Emergency & Trauma Department (ETD) of Hospital Tuanku Ampuan Najihah (HTAN) to prevent opioid-induced nausea and vomiting. However, this practice has dubious clinical benefits, generates additional costs, and might expose patients to potentially adverse effects. Approximately 6000 ampules of IV Metoclopramide are used by ETD HTAN annually. The sum seems ignorable, but in 10 years, this may total over RM100,000. The study aimed to evaluate the benefit of intravenous metoclopramide prophylaxis in patients receiving intravenous tramadol for acute pain relief. **Methods:** A retrospective cross-sectional study was conducted at the ETD of HTAN using convenient sampling. Patient details were extracted from the medical record via a standardized data collection form and analyzed with the Statistical Package for Social Sciences version 25. **Results:** A total of 272 patients were included, half of whom were given intravenous Metoclopramide prophylactically. The overall incidence of nausea in the study population was 12.1%, with most cases rated mild. Only two patients (0.7%) in the metoclopramide group vomited within 2 hours of intravenous tramadol administration, which did not demonstrate a statistically significant association between metoclopramide prophylaxis and reduced emesis episode ( $p=0.498$ , Fisher's exact test). **Conclusion:** Based on the study, intravenous Metoclopramide is no longer recommended as prophylaxis for tramadol-treated patients due to the low incidence of nausea and vomiting. Usage has been greatly reduced, and education will be extended to cluster hospitals to reciprocate appropriate adherence to evidence-based prescribing practices.

# The association between mealtime and metabolic syndrome among primary health care workers: A cross-sectional study

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## **ABSTRACT**

**Introduction:** Metabolic syndromes (MetS) are risk factors for cardiovascular diseases. Meal-related recommendations on how to prevent MetS were well-established, however, information about mealtime was lacking. This study aimed to explore the association between mealtime and MetS among primary health care workers (PHCWs) at Mahmoodiah Health Clinic (KPL). **Methods:** This is a cross-sectional, single-centre study involving PHCWs working at KPL. The eligible subjects were required to complete a questionnaire. Their annual medical checkup records were reviewed to determine the risk of MetS. **Results:** A total of 109 subjects aged 24-58 years were recruited in the study. 88 subjects (80.7%) were female. Most of them (78 subjects, 71.6%) were Malays, followed by Chinese (10.1%) and Indian (10.1%). 22 subjects (20.2%) were found to have MetS based on National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III) criteria. More than half of them (76 subjects, 69.7%) were reported as having early eating habits while the rest of them had late eating habits (having a meal, either dinner or supper, within two hours before bedtime at least three times a week). Although multiple studies had shown a significant association between mealtime and MetS, our study did not yield similar results even after adjusting for relevant confounders (odds ratio (95% confidence interval), 2.706 (0.652-11.237)). **Conclusion:** Our results found that late mealtime was not significantly associated with MetS. Further, well-designed studies are warranted to elucidate the impact of mealtime on metabolic outcomes.



# The impact of COVID-19 fear on anxiety among healthcare workers at the Terengganu tertiary referral hospital

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## ABSTRACT

**Introduction:** The COVID-19 pandemic is hypothesised to increase stress levels and cause anxiety. This study aimed to investigate the effects of COVID-19 fear on anxiety among healthcare workers from Hospital Sultanah Nur Zahirah Terengganu. **Methods:** This study employed an explanatory design and a cross-sectional survey utilising two questionnaires to measure anxiety and fear levels: the General Anxiety Disorder-7 questionnaire and the Fear of COVID-19 Scale. The respondents were selected using a systematic random sampling method. The survey was conducted as an online survey between October and November 2022. The data were subsequently analysed using SPSS 26 with a p-value  $< 0.05$  was considered statistically significant. **Results:** There were a total of 337 responses from 354 selected respondents. The majority of respondents were clinical staff (81.3%; n=274), had a history of Covid-19 infection (64.7%; n=218), and had already received their initial COVID-19 booster dose (78.0%; n=263). The mean (SD) COVID-19 fear and anxiety score were 1.85(0.519) and 3.61(0.776), respectively. The majority of the respondents had moderate levels of COVID-19 fear (70.9%; n=239) and moderate anxiety (57%; n=192). A linear regression analysis revealed a weak relationship between COVID-19 fear and anxiety ( $R=0.154$ ,  $p=0.088$ ). The  $R^2$  regression result demonstrated that COVID-19 fear contributed up to 2.4% to anxiety. **Conclusion:** The findings suggest that while COVID-19 fear is associated with anxiety, the association is weak, and other factors are more likely to contribute significantly to anxiety levels.

# Conservative versus radical treatment of ameloblastoma: A 14-year study in Kedah

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## ABSTRACT

**Introduction:** Ameloblastoma is a locally aggressive benign odontogenic tumour of the jaws. The treatment regimens for ameloblastoma are controversial, and opinions vary as to how radical it should be. The objective was to identify the factors associated with the recurrence following treatment of these lesions. **Methods:** A cohort study was conducted for patients who underwent treatment for ameloblastoma at the Sultan Abdul Halim Hospital and Sultanah Bahiyah Hospital, from 2007 to 2021. **Results:** A review of the records yielded 51 patients with histopathologically proven ameloblastoma. The recurrence rate for conventional ameloblastoma was 7.1% after radical treatment and 21.6% after conservative treatment. There was no significant association between treatment modalities and tumour recurrence ( $p>0.05$ ), although there were trends toward lesser recurrence rates among those undergoing radical treatment. None of the variables, sex, race, and site of tumour were found to lead to the increase in recurrence rates ( $p>0.05$ ). **Conclusion:** A recent systematic review and meta-analysis showed that the pooled recurrence rate for conventional ameloblastoma was 8% after radical treatment and 41% after conservative treatment. Although radical treatment can lower the recurrence rate, it jeopardises the functional and cosmetic outcomes of the jaws. Our data indicated that the conservative treatment could preserve the appearance and function well, at the same time keeping the risk of recurrence lower than currently published figures. Therefore, we would suggest conservative treatment for primary tumour and young patients while radical treatment was reserved for recurrence, very large lesions with substantial cortical perforation and maxillary ameloblastoma.

# Nursing research landscape in Malaysia: A systematic scoping review on published journal articles for ten (10) years

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## ABSTRACT

**Introduction:** Globally, there is increasing emphasis on implementing research findings into daily nursing practice, recognizing the importance of evidence-based practice in improving patient outcomes and advancing the nursing profession. Consequently, conducting nursing research has become a priority. This study aims to examine the local nursing research landscape by reviewing journal articles published between 2010 and 2019. **Methods:** This scoping review was conducted in accordance with Arksey and O'Malley's seminal framework utilising three (3) electronic databases (PubMed/MEDLINE, ScienceDirect, and CINAHL). **Results:** A total of 949 articles were initially identified through systematic searches. After removing duplicates and irrelevant publications, 38 articles were included for final analysis. The majority of the reviewed articles fell under the nursing management category (36.8%), with 23.7% adopting descriptive cross-sectional designs. Furthermore, 92.1% of the articles were authored by individuals affiliated with the Ministry of Education, and 86.8% utilized nursing models or theories as their theoretical framework. The findings revealed a focus on improving nursing services, emphasizing incentives, comfortable work environments, and incorporating education on patients' transitional experiences. Additionally, recommendations included increasing the amount of critically ill patient-related content in nursing curricula. **Conclusion:** The Malaysian nursing research landscape exhibits richness and diversity, as evidenced by the varied research topics and methodologies observed in the reviewed articles. This diversity indicates the potential for significant contributions to the nursing profession and healthcare as a whole in Malaysia.

# Incidence and predictors of early mortality in the emergency department following ST-elevation myocardial infarction thrombolysis in a percutaneous coronary intervention incapable tertiary hospital

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## ABSTRACT

**Introduction:** Data on early mortality in the Emergency Department (ED) following ST-elevation myocardial infarction (STEMI) thrombolysis is unknown. Objectives To assess the incidence and identify the predictors of early mortality in the ED following STEMI thrombolysis. **Methods:** This single-centre retrospective study involved STEMI patients given thrombolytic therapy from 2016 to 2020 in a tertiary hospital. Total population sampling was used in this study. Logistic regression analyses were used to assess independent predictors of early mortality. **Results:** Data from 941 patients was analysed. Their mean age was 53.0±12.2 years and predominantly male (n=846, 89.9%). The in-hospital mortality was 10.3% (n=97), with almost half (n=47, 48.5%) occurring in ED. The final multi-model found seven predictors for early mortality in ED: age ≥75 (aOR 4.474, p=0.001), female gender (aOR 3.059, p=0.003), pre-existing hypertension (aOR 2.105, p=0.030), ischemic heart disease (aOR 0.316, p=0.043), Killip class ≥2 (aOR 2.252, p=0.033), systolic blood pressure <100 mmHg at presentation (aOR 3.365, p=0.003), and COVID-19 pandemic (aOR 2.404, p=0.014). Following thrombolytic therapy, two predictors found to affect early mortality were failed fibrinolysis and ventricular fibrillation/tachycardia. **Conclusion:** Early mortality in ED following STEMI thrombolysis was high. The provision of comprehensive cardiac care can be challenging due to the ED's busy nature. The above-identified predictors of early STEMI mortality in ED allow clinicians to identify and manage high-risk STEMI patients better.

# Single dose, open-label, randomized, two-period, two-treatment, two-sequence crossover bioequivalence study of two montelukast tablets in healthy male volunteers under fasted condition

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## ABSTRACT

**Introduction:** Montelukast (Oxair and Singulair) 5mg, is a selective and orally active leukotriene receptor antagonist which is used for the prophylaxis and treatment of asthma. This study aims to establish bioequivalence and assess the safety and tolerability of two chewable tablets of Montelukast in healthy adults under fasted conditions. **Methods:** An open-label, single-dose, randomized, two-period, two-treatment, two-sequence, crossover study was conducted in healthy adult male subjects with a 7-day washout period. Subjects fasted for a minimum of 8 hours before administration of the tablets. Pharmacokinetic analysis was performed by collecting 5 ml blood samples at various time intervals up to 24.0 hours after drug dosing. Blood samples were centrifuged, and the separated plasma was kept in the freezer at  $-20 \pm 10^{\circ}\text{C}$ . The concentration of montelukast was quantified using a validated liquid chromatography-tandem mass spectrometry method. **Results:** A total of 26 healthy subjects were enrolled, and 25 subjects completed the trial. Statistical analysis revealed no significant differences between  $\text{AUC}_{0-\infty}$ ,  $\text{AUC}_{0-t}$  and  $\text{C}_{\text{max}}$  of two Montelukast tablets for the sequence, period and treatment effects. The 90 % confidence interval for the ratios of  $\text{AUC}_{0-\infty}$ ,  $\text{AUC}_{0-t}$  and  $\text{C}_{\text{max}}$  for the test and reference products were 0.9556-1.0510, 0.9570-1.0539 and 0.9146-1.0660 respectively, which were all within the bioequivalence limit of 0.8000-1.2500 according to the ASEAN guideline acceptance criteria for bioequivalence. Mild adverse events including diarrhoea, headache and upper respiratory tract infections were recorded. **Conclusion:** The test and reference products of Montelukast demonstrated bioequivalence and can be used interchangeably.

# Awareness towards rabies and its management among residents from the origin of rabies outbreak in Sarawak

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## ABSTRACT

**Introduction:** This study explored the awareness of rabies and its management among the residents at the origin of the rabies outbreak, Serian division of Sarawak. **Methods:** This was a cross-sectional survey conducted from April 2022 to June 2022. We invited patients who visited the outpatient pharmacy department during the study to participate. We developed a questionnaire through a literature review and experts' opinions. **Results:** A total of 390 respondents were included in the analysis. The majority were female (55.9%), aged 40-49 years (32.1%), were Bidayuh (56.2%), were dog/cat owners (87.4%), and had at least secondary education (76.4%). Most respondents obtained information related to rabies from the media (60.5%). Most of the respondents (95.6%) had heard of rabies, and 90.3% were aware that rabies can cause death. However, only 22.3% of them knew that human rabies is highly fatal after signs and symptoms appear. Besides, 222 (56.9%) were dog/cat owners. Among these dog/cat owners, most never vaccinated their dog/cat (n=114, 51.4%). Among those who vaccinated their pets (n=108), only 55.6% of them (n=60) had their pets vaccinated within the past 12 months. Regarding local wound management, only 76.2% knew that they had to wash the site of the wound immediately with running water. **Conclusion:** This study highlights the knowledge gap that healthcare authorities and practitioners must promptly address by formulating tailored and efficient health communication strategies.

# Polypharmacy and medication regimen complexity index in transfusion-dependent thalassaemia patients

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## ABSTRACT

**Introduction:** Thalassaemia is one of the most common genetic disorders in Malaysia. Over 50% were transfusion dependent, and the complex nature of thalassaemia management leads to poor clinical outcomes. This study aims to evaluate the polypharmacy and medication-related complexity index (MRCI) and their clinical implications. **Methods:** This was a cross-sectional observational study involving transfusion-dependent thalassaemia (TDT) patients. Patients were interviewed and medical records were reviewed retrospectively. The receiver operating characteristic curve analysis was used to determine the MRCI cut-off value and logistic regression analysis was conducted. **Results:** 200 patients were enrolled at a mean age of 31.0 (SD 9.35) and 44.5% (n= 89) of the patients had good control of their serum ferritin level (less than 2500 µg/ L). The median MRCI score was 20.25 (Interquartile range, IQR 13.25-26.00) with TDT-specific medications accounting for 64.2% of the total MRCI score. At the MRCI cut-off point of 17.5 (Area Under Curve= 0.722; sensitivity of 73.3% and specificity of 62.0%), 64.5% (n=129) of TDT patients had high MRCI and 73% (n=146) had polypharmacy. Only patients with high-level MRCI were associated with drug-related problems (Adjusted Odds Ratio= 4.450; 95% CI 1.63, 12.38). Drug-related problems (DRP) in turn led to increased odds of suboptimal control of serum ferritin level (Adjusted Odds Ratio= 21.24; 95% CI 6.97-64.69). **Conclusion:** Polypharmacy and high MRCI were prevalent in TDT patients. Future interventions that target both the detection and reduction of MRCI and DRP may be useful to improve serum ferritin control.

# Bioequivalence study of YSP Allopurinol tablet 300mg vs. the comparator, Zyloric tablet 300mg in a fasted state

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## ABSTRACT

**Introduction:** Allopurinol is a xanthine-oxidase inhibitor primarily known for the treatment of gout. This study aims to establish the bioequivalence of the test product (YSP Allopurinol tablet) and its comparator (Zyloric Tablet). **Methods:** An open-label, single dose, randomised, two-period, two-treatment, two-sequence, crossover study was conducted under fasted conditions. Subjects were given the investigational product to swallow whole with 240ml of water, with a mouth check performed after dosing. The plasma concentration of allopurinol was measured using a validated liquid chromatography-tandem mass spectrometry (LCMSMS) method over 10 hours. Pharmacokinetic parameters AUC<sub>0-∞</sub>, AUC<sub>0-t</sub> and C<sub>max</sub> were determined using plasma concentration-time profiles for both preparations. Bioequivalence was evaluated based on the ASEAN guideline acceptance criteria for bioequivalence. Data acquisition and analysis were performed using the SAS package (Version 9.3, SAS Institute Inc, USA). **Results:** Thirty healthy Malay males with a mean age of 25 (SD 4.8) years old were enrolled; 27 subjects completed the trial. ANOVA analysis showed no significant differences between the AUC<sub>0-t</sub>, AUC<sub>0-∞</sub> and C<sub>max</sub> for both test and reference preparation in fasted conditions. The 90% confidence intervals (CI) for the ratio of AUC<sub>0-t</sub>, (0.9161-1.0342), AUC<sub>0-∞</sub> (0.9030-1.0267) and C<sub>max</sub> (0.8213-1.0303) for Zyloric tablet over YSP Allopurinol tablet were all fell within the bioequivalence acceptance range (0.8000-1.2500). The adverse events reported, such as fever and runny nose, were unlikely to be related to the study drug. **Conclusion:** In conclusion, YSP Allopurinol tablet is bioequivalent to Zyloric tablet under fasted conditions and can be used interchangeably for the treatment of gout.



# Occupational stress, job satisfaction and intent to leave: Nurses at the Terengganu tertiary referral hospital

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## ABSTRACT

**Introduction:** Nurses work in high-stress conditions since their primary role is to aid patients who are usually going through a life crisis. This study aimed to investigate the effects of occupational stress and job satisfaction towards intent to leave among nurses in HSNZ. **Methods:** An explanatory design and a cross-sectional survey were used in this study to quantify occupational stress, job satisfaction, and intent to leave. A systematic random sampling procedure was used to choose responders. The survey was conducted from 11 May to 15 June 2023, involving all nurses in the ward. The data was analysed with SPSS 26 and a p-value of 0.05 was considered statistically significant. **Results:** The majority of nurses are between the ages of 26 and 45 (83.9%; n=160), work in shifts (81.6%; n=253), and length of service in the unit between 1 to 9 years (66.8%; n=209). The mean (SD) scores for occupational stress, work satisfaction, and intent to leave were 1.966 (0.425), 3.498 (0.479), and 2.160 (0.873), respectively. A linear regression analysis revealed a moderate relationship between occupational stress, job satisfaction and intent to leave ( $R=0.536$ ,  $p=0.001$ ). The R<sup>2</sup> regression result demonstrated that occupational stress and job satisfaction contributed 0.287 or 28.7% to intent to leave. **Conclusion:** This study revealed that occupational stress and job satisfaction factors were significant predictors of intent to leave. Management can improve nurses' outcomes and quality of life by detecting the risk of leaving and providing customised action and support, particularly in occupational stress and diverse work cultures.

# Modern dressings for complicated methicillin-resistant staphylococcus aureus (MRSA) infected wound post-cesarean section: A case report

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## ABSTRACT

**Introduction:** Post-cesarean wound infection is one of the leading causes of maternal morbidity and mortality with Methicillin Resistant Staphylococcus Aureus (MRSA) being the commonest organism cultured. Management of wounds infected with MRSA is a challenge to medical practitioners as MRSA is associated with worse outcomes than other pathogens. A good understanding of the properties and uses of different modern dressings available is required to facilitate the wound healing process. **Case Description:** A 35-year-old female presented a week after an emergency cesarean section with a wound breakdown. Exploration of the wound noted seropurulent discharge until the layer of the rectus muscle. Swab and tissue culture were reported as MRSA and Staphylococcus aureus. Conventional saline dressing applied in the first two days resulted in increasing slough with moderate exudate and thick biofilm over the wound. A referral to the wound team was made and modern dressings with antimicrobial properties were applied. Silver-containing dressing, AQUACEL Ag+ and Nano Ag+ spray applied on alternate days for one week showed significant improvement in wound healing. Continuation of dressings as an outpatient using collagenase ointment, IRUXOL Mono took two weeks for the wound to clean and ready for secondary suturing. Post-secondary suturing was complicated with stitches abscesses and wound breakdown. Cadexomer iodine powder, IODOSORB was applied daily for two months until the wound healed well. **Conclusion:** This case is a sharing of challenges in wound care for MRSA-infected cesarean wounds using modern dressings. Selection of ideal dressings is easier with adequate knowledge and understanding of different types of modern dressings.

# Perceptions of barriers to research utilization in clinical practice among nurses in Sabah

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## ABSTRACT

**Introduction:** Evidence-based practice (EBP) has been widely introduced in nursing clinical practice, with nursing education and conferences consistently emphasizing its importance in strengthening implementation and improving patient outcomes. However, despite efforts to promote translational research, the level of EBP implementation in clinical nursing practice remains unsatisfactory. This study aimed to explore the barriers to research utilization from the perspective of nurses. **Methods:** A cross-sectional study using questionnaires was conducted in 2019, involving nurses in five main hospitals in Sabah. **Results:** The mean age of the 562 participating nurses was 34.3 years old (SD=7.96) and the mean duration of clinical practice was 10.0 years (SD=7.58). Half of the nurses (53.9%) reported having a moderate understanding of EBP. Online sources of information were perceived as the most important source (39.8%), and searching online was the most common approach (68.3%) used by nurses to seek information or research evidence. Most of the nurses perceived the barrier to research utilization as 'to a moderate extent' on the questionnaire scale for most of the items asked. The top three prominent barriers perceived by nurses were 'research reports/articles are not readily available' (56.4%), 'implications for practice are not made clear' (53.7%), and 'the research has not been replicated' (50.1%). **Conclusion:** Findings from this study highlight the challenges nurses encounter in integrating research into clinical practice and underscore the need for ongoing efforts to promote EBP and address gaps in research utilization.

# The knowledge, practice and barriers of evidence-based medicine among Malaysian Doctors: A nationwide online survey

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## ABSTRACT

**Introduction:** Evidence-based Medicine (EBM) is becoming more essential in clinical practice. We aimed to determine the knowledge, practice, and barriers to EBM among Malaysian doctors. **Methods:** A nationwide online survey among doctors working in government or private healthcare facilities in Malaysia was done from June to August 2022. The level of knowledge (K), practice (P), and barriers (B) were measured using the Evidence-Based Medicine Questionnaire (EBMQ). Higher scores indicate better knowledge, better practice, and fewer barriers. The KPB percentage scores were categorised into good (80%), fair (60–79%), and poor (<59%). The correlation between knowledge, practice, and barrier was measured using Pearson's correlation. **Results:** A total of 409 doctors responded. Their median age and total years of service were 34 (IQR=5) and 9 (6), respectively. The majority of them were female (57.7%), non-specialist (72.1%), working in hospitals (59.9%), government servants (82.2%), having no postgraduate qualification (54%), having never attended an EBM workshop (64.3%), having research experience (59.9%), and having no publications (65%). Most doctors had fair knowledge (53.8%), good practice (67.2%), and a fair level of barriers (67.0%). About 18% and 21% of doctors have poor knowledge and barriers, respectively. Only 0.5% had poor EBM practice. A positive and significant correlation among knowledge, practice, and barrier scores was noted ( $p=0.001$ ). **Conclusion:** Malaysian doctors mostly practise EBM, despite having a fair level of knowledge and barriers. This demonstrated their acceptance of EBM. EBM workshops may help doctors to gain further knowledge. Stakeholders should address the barriers to EBM.

# A qualitative exploration of virtual counselling by pharmacists via mobile devices during the COVID-19 pandemic

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## **ABSTRACT**

**Introduction:** Virtual counselling via mobile devices was introduced during the COVID-19 pandemic as a novel alternative for pharmacists to conduct medication and device counselling. This study aims to explore pharmacists' perceptions of and experiences with this new counselling method. **Methods:** A generic qualitative approach was employed. Semi-structured interviews were conducted with pharmacists purposively sampled from Sarawak General Hospital between February and April 2022, until data saturation was achieved. An interview guide informed by relevant literature was used. The interviews were recorded and transcribed verbatim. The resultant transcripts were then coded and analysed using reflexive thematic analysis. **Results:** Fifteen participants were interviewed, revealing five themes that addressed anticipated and novel issues associated with virtual counselling. They acknowledged the necessity of virtual counselling given the circumstances but expressed that it could not fully replace physical counselling nor suitable for all patients. Demonstrating device usage and assessing patients' understanding proved challenging in virtual settings. The service also posed technical difficulties, requiring additional skills, equipment, facilities, and operating procedure changes. Virtual counselling shifted the patient-provider power dynamic, with patients now in a position to choose whether and when to be counselled. Participants emphasised the importance of post-counselling follow-ups to ensure the effectiveness of counselling and the need for a reliable communication channel for patient support or clarifications. **Conclusion:** Despite the challenges faced, participants adapted quickly to provide virtual counselling via mobile devices. As it is now a recognised option for counselling provision, the identified issues should be actively addressed to improve its effectiveness.

# Illness trajectories contributing to Malaysia's palliative care needs: An 11-year retrospective study

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## ABSTRACT

**Introduction:** Palliative care should be accessible to all patients. This study aims to estimate future palliative care needs in Malaysia according to four illness trajectories associated with life-limiting chronic conditions; cancer, organ failure, frailty, and infectious disease. **Methods:** Secondary data analysis was conducted using national mortality data spanning from 2004 to 2014. Palliative care needs were estimated using the minimum estimation method developed by Murtagh et al. and stratified according to illness trajectories. **Results:** The frailty trajectory contributed the highest proportion of cases relative to total deaths (32–34%), followed by organ failure (24–27%), cancer (9–11%), and infectious disease trajectories (approximately 1%). Similarly, the frailty trajectory accounted for the highest proportion of annual total palliative care needs, averaging 47%. The organ failure trajectory contributed to 38% of total palliative care needs on average annually. Cancer and infectious disease trajectories contributed 14% and 1% of annual total palliative care needs, respectively. Sensitivity analysis using only medically certified deaths altered the average proportion of annual total palliative care needs contributed by illness trajectories, with organ failure contributing the highest proportion (75%), followed by cancer (22%), frailty (2%), and infectious disease (1%). The frailty trajectory proportion drastically fell mainly because vague causes of death (e.g. old age) among non-medically certified deaths inflated frailty trajectory cases. **Conclusion:** Approximately 78% of Malaysia's palliative care needs stem from non-malignant diagnoses. However, palliative care referrals are skewed towards cancer patients, highlighting inequity in access. Palliative care should be integrated with other therapeutic areas to achieve equitable access across all trajectories.

# The performance of SAME-TT2R2 score in predicting the quality of anticoagulation control in a Malaysian population

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## ABSTRACT

**Introduction:** Warfarin is the mainstay oral anticoagulant for stroke prevention in atrial fibrillation (AF). Poor quality of anticoagulation control, with a time in therapeutic range (TTR) <70%, is associated with an increased risk of stroke and bleeding. The Sex, Age, Medical history, Tobacco use, and Race (SAME-TT<sub>2</sub>R<sub>2</sub>) score was proposed as a simple clinical tool to identify AF patients expected to respond poorly to warfarin. The study aimed to investigate the performance of the score in predicting the quality of anticoagulation control in a multiethnic Malaysian population. **Methods:** Data from patients attending the Anticoagulation Clinic in Hospital Tengku Ampuan Rahimah (HTAR) Klang, Malaysia between January to December 2019 was collected retrospectively. The TTR was calculated using the Rosendaal method, and the SAME-TT<sub>2</sub>R<sub>2</sub> score was determined for each patient. **Results:** The 388 patients had a mean TTR ( $\pm$  SD) was 51.2% ( $\pm$  26.3%), with only 103 (26.5%) patients achieving good quality of anticoagulation control (TTR $\geq$ 70%). The median (IQR) SAME-TT<sub>2</sub>R<sub>2</sub> score measured was 3 (2–4), and 287 (74.0%) patients had a SAME-TT<sub>2</sub>R<sub>2</sub> score > 2. The area under the receiver operating characteristic (ROC) curve showed that SAME-TT<sub>2</sub>R<sub>2</sub> score > 2 was not able to discriminate poor anticoagulation control (TTR < 70%) [c-statistic 0.49 (95% CI 0.43–0.56)]. **Conclusion:** The SAME-TT<sub>2</sub>R<sub>2</sub> score did not satisfactorily predict the quality of anticoagulation control of AF patients on warfarin in the clinic. Modifying the score based on culture-specific or socioeconomic factors in Asians may be necessary for the SAME-TT<sub>2</sub>R<sub>2</sub> score to be clinically useful in this region.

# Perception of medical students towards COVID-19 outbreak and Movement Control Order (MCO) in Malaysia and impact on education

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## **ABSTRACT**

**Introduction:** The Movement Control Order (MCO) was implemented in Malaysia as a response to the COVID-19 pandemic leading to the closure of public premises, including educational institutions. **Methods:** A total of 772 clinical undergraduate students from the Faculty of Medicine at the National University of Malaysia participated in the study. **Results:** The study found that the majority of students were aware of the mode of transmission, seriousness, testing methods, and local scenario of COVID-19. While the students generally supported the implementation of MCO and received sufficient information from government authorities, many also experienced significant levels of stress, depression, and anxiety during this period. The study also revealed that students had concerns about the impact of the MCO on their academic performance and the quality of online learning compared to face-to-face classes. The readiness of students for online teaching and learning was assessed, and it was found that a small percentage of students did not own electronic devices or had slow internet connectivity. Despite the availability of online platforms, some students reported dissatisfaction with the quality of online learning. The study further analyzed the factors influencing students' perception of the MCO, learning support, and learning anxiety. Age, gender, ethnicity, information source, and teaching platform were found to have significant effects on students' perceptions. **Conclusion:** The study underscores challenges faced by medical students during the COVID-19 pandemic in Malaysia, emphasizing the importance of addressing their mental well-being and maintaining educational quality. The findings provide valuable insights for policymakers and educational institutions to enhance support systems and improve online learning experiences.



# Biological evaluation of heparin octadecasaccharides as iduronate-2-sulphatase inhibitors with chaperone effect

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## ABSTRACT

**Introduction:** Mucopolysaccharidoses Type II (MPS II) is an X-linked lysosomal storage disorder characterised by IDS mutations leading to iduronate-2-sulphatase (IDS) deficiency and glycosaminoglycan substrate accumulation. Due to the limitations of currently available treatments, pharmacological chaperone (PC) has been suggested as a potential alternative therapy to MPS II. Here, we describe the biological characteristics of heparin octadecasaccharides (HO18) as an IDS inhibitor and the potential of PC in treating the disease. **Methods:** The chaperone effect of HO18 was evaluated using recombinant IDS protein for kinetic, inhibition, thermal stability, dose-dependent, and cell viability studies. **Results:** A kinetic study through the Lineweaver-Burk plot indicated that HO18 may act as a competitive inhibitor attached to the substrate binding site with the Michaelis-Menten constant ( $K_m$ ) of 1703.67  $\mu\text{M}$  with a  $V_{max}$  of 1666.67  $\mu\text{molh}^{-1}$ . The higher affinity of HO18 for IDS was observed at neutral pH (Half maximal inhibitory concentration,  $IC_{50}=29.5 \mu\text{M}$ , pH 7.0) compared to acidic (lysosomal) pH ( $IC_{50}=97.9 \mu\text{M}$ , pH 5.0) which suggests that it is a potent inhibitor. Furthermore, HO18 significantly improved the stability of IDS at 67°C ( $p<0.05$ ) as well as increased IDS activity in a dose-dependent manner. In addition, HO18 at the concentration of 18.82  $\mu\text{M}$  reduces cell viability by 50%. **Conclusion:** These findings strongly suggest that HO18 could be used as a potential PC for MPS II. Further in vitro studies utilising the expression of IDS-mutated enzymes can be carried out for further validation.

# The impact of lockdown on healthy volunteers' participation in early phase trials

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## ABSTRACT

**Introduction:** The coronavirus disease 2019 (COVID-19) pandemic and subsequent lockdowns have globally impacted clinical trial conduct, but their local implications remain poorly understood. This study aims to assess the characteristics of healthy volunteers recruited and dropped out from early-phase clinical trials and the impact of the COVID-19 lockdowns. **Methods:** Data were collected from two studies conducted during the lockdown period (September to December 2021) and two studies conducted after the lockdown (August 2022 to January 2023). Sociodemographic characteristics, screening outcomes, and trial completion rates were analyzed to understand volunteer participation patterns. **Results:** There were 66 and 91 volunteers screened during and after lockdown periods respectively. The majority of volunteers had tertiary education (80.3%), were single (71%), employed (81%), and had prior trial experience (61%). Volunteers who participated after the lockdown were slightly older than those during the lockdown (mean age: 29.9 vs. 27.1 years,  $p=0.006$ ). A higher percentage of volunteers passed the screening during the lockdown compared to those screened after the lockdown (86.4% versus 70.3%,  $p=0.018$ ). Family emergencies (12.1%) were the primary reason for dropout during the lockdown, while adverse events were prominent post-lockdown (7.7%,  $p=0.004$ ). **Conclusion:** The study revealed that volunteers with higher education levels and prior trial experience were more likely to participate in clinical trials during and after the COVID-19 lockdown periods. Although there were differences in age distribution and reasons for dropout between the two periods, trial completion rates remained similar, suggesting effective management of trial logistics and participant engagement during challenging circumstances.

# Prevalence and factors associated with erectile dysfunction among diabetics in Temerloh

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## ABSTRACT

**Introduction:** Erectile dysfunction (ED) is a complication commonly seen among men with diabetes. ED can be assessed based on the International Index of Erectile Function (IIEF-5) questionnaire. This study is to evaluate the association between ED, determined by the IIEF-5 scores with Creatinine, Urine protein, HbA1c and Cholesterol levels in diabetic men attending Temerloh Health Clinic, Pahang, Malaysia. Hence, to identify whether raised Creatinine, HbA1c, Cholesterol levels and the presence of protein in urine among diabetics are related to ED or not and to determine the prevalence of ED. **Methods:** All married diabetics answered the IIEF-5 questionnaire. Creatinine, Urine protein, HbA1c and Cholesterol levels were measured using the standard method. Patients with no sexual partner, refusal, cancer, stroke, heart disease and language barrier were excluded. Data obtained were analyzed by using the Spearman Coefficient Correlation test.  $p < 0.05$  was considered statistically significant. ED was categorized as none, mild, moderate, severe and very severe. **Results:** A total of 385 patients were included with an age range from 29 to 85 years old. 7% had no ED, 27% mild, 30% moderate, 17% severe and 19% very severe. There was a significant negative correlation between IIEF-5 scores with Creatinine ( $r = -0.154$ ,  $p < 0.001$ ) and Urine protein ( $r = -0.115$ ,  $p < 0.05$ ). However, HbA1c ( $r = 0.021$ ,  $p > 0.5$ ) and Cholesterol ( $r = 0.034$ ,  $p > 0.5$ ) had no significant correlation. **Conclusion:** The prevalence of ED was 93%. High levels of creatinine and proteinuria were associated with ED meanwhile HbA1c and cholesterol levels were not associated with ED among diabetics in Temerloh.

# Assessment of patient's willingness to pay (WTP) for drugs for non-communicable diseases in Klinik Kesihatan Senawang

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## ABSTRACT

**Introduction:** Willingness to pay (WTP) is defined, as the amount of money one is willing to spend for medical interventions for a better health outcome of disease conditions. The objectives of this study are to assess patients' willingness to pay (WTP) for drugs for non-communicable diseases in Klinik Kesihatan Senawang and determine its' influencing factors. **Methods:** A cross-sectional study design was used. The study instrument was translated to Malay and distributed to 383 participants fitting the inclusion criteria. **Results:** The majority of the patients (33.3%) were aged 54-59. Two hundred and four (52.3%) respondents were female. The majority of them were Malay (52.6 %) followed by Chinese (26.7%), Indian (17.7 %) and others (3.1%). Mostly (53.3%) answered that introducing health services based on the ability to pay was preferred. There is no association between gender and willingness to pay for drugs, as the p-value obtained is 0.498. No association was found between education level and WTP for drugs as the p-value is 0.522. Similarly, income and willingness showed no association as the p-value obtained is 0.120. A positive association between dependants and WTP was found, as the p-value obtained is 0.010 showing statistical significance. Furthermore, there is a positive association between disease severity and WTP for drugs as the p-value is 0.030. **Conclusion:** It is known that the ability to pay for NCD drugs in Klinik Kesihatan Senawang is in accordance with the type of services provided. Factors such as disease severity and number of dependants are positively associated with WTP.

# Impact of pharmacist-led multimedia counselling on diabetic knowledge and medication adherence among type 2 diabetes mellitus (T2DM) patients at Klinik Kesihatan Ampangan, Seremban

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## ABSTRACT

**Introduction:** In Malaysia, the prevalence of T2DM increased from 11.2% in 2011 to 13.4% in 2015 and 18.3% in 2019. The prevalence of T2DM in Negeri Sembilan state showed the highest rate. The objective of the study is to evaluate the impact of pharmacist-led multimedia counselling on knowledge and medication adherence among T2DM patients. **Methods:** A quasi-experimental study of 84 T2DM patients were allocated into intervention and control group. 42 subjects of the intervention group had received multimedia and verbal conventional counselling from the pharmacist and 42 subjects of the control group had received verbal conventional pharmacist counselling only. A validated questionnaire was used to assess knowledge regarding T2DM and medication adherence both at baseline and at final follow-up. **Results:** The chi-square test showed no significant difference in sociodemographic characteristics that affect medication adherence and knowledge of T2DM patients. In the Wilcoxon Signed Rank Test, there is an increment of mean knowledge scores post-study (8.1) compared to pre-study (5.52) which is statistically significant ( $p < 0.001$ ). The increment in mean MyMAAT scores in post-study is (1.98) ( $p = 0.083$ ) compared to pre-study (1.15) ( $p = 0.180$ ) but not statistically significant. Mann Whitney test showed a mean difference of 2.69 between both groups and is statistically significant ( $p < 0.001$ ) Mean MyMAAT score difference is 1.42 between both groups but not statistically significant ( $p = 0.138$ ). **Conclusion:** It was found that a combination of pharmacists-led multimedia counselling and verbal counselling is more effective compared to conventional counselling alone in improving patient's knowledge and medication adherence.

# Digital health literacy and competency of public healthcare providers in Malaysia

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## ABSTRACT

**Introduction:** A high level of digital health literacy and competency (DHLC) among healthcare staff is essential for healthcare transformation and the adoption of innovations in healthcare services and deliveries. **Objective:** This study aims to assess DHLC among healthcare staff in the Ministry of Health (MOH), Malaysia. **Methods:** A cross-sectional online survey was conducted in July 2022 via the MyGovUC portal applying the Digital Health Literacy Instrument developed and validated by van der Vaart & Drossaert in 2017. The instrument measured general and health-related internet use habits and skillsets, such as operational skills, navigation skills, information searching, evaluating reliability, determining relevance, adding content and protecting privacy. **Results:** About 531 healthcare staff, ranging from nurses (9.8%), assistant officers (32.6%), other officers (20.7%), pharmacy officers (8.3%), dental officers (7.3), medical officers (17.1%), and physician (4.2%) responded to the survey. The Cronbach's alpha ( $\alpha$ ) for internal consistency was found to be satisfying across all skillsets for both respondents with and without experience in posting health-related messages online ( $\alpha$ : 0.645–0.924). Overall, staff with experience posting health-related content presented a significantly higher DHLC (p-value,  $p=0.006$ ) compared to staff without experience, however, the overall DHLC were found to be desirable (61%–80% of total scores) to very desirable (81%–100% of total scores) according to sociodemographic, general and health-related internet use for both groups. **Conclusion:** Overall, younger staff with higher education levels were found to have higher DHLC which may be the powerhouse for transformation in healthcare services and deliveries in future.

# An overview of surgically treated oral squamous cell carcinoma in an Oral and Maxillofacial Surgery Centre, Hospital Sibul, Sarawak, Malaysia

Wong Ling Siew, Tay Zhuo Wei, Cheah E.L.B

Maxillofacial Surgery Centre, Hospital Sibul

## ABSTRACT

**Introduction:** Oral cancer is the 6th most common cancer in the world. The global survival rate for oral cancer is about 55% of the five-year survival rate. This study aims to provide an overview of oral cancer in the central zone of Sarawak. We aim to analyze patients' demographic data and have an overview of treatment outcomes in terms of survival and tumour recurrence. **Methods:** All surgically treated patients with oral squamous cell carcinoma in the department from September 2013 to March 2022 with a follow-up period of at least 1 year were collected. Demographic data, clinical staging and histopathological data are collected and analyzed with descriptive analysis. Patient survival data was analyzed with Kaplan-Meier survival analysis. **Results:** A total of 45 subjects were included in this study. The mean age is 61.3 years. 55.6% of patients were from the Iban ethnic group. There is a slight male predilection with Male to female ratio is 1:0.8. 24 patients presented with T4 tumour, 6 with T3 tumour, 7 with T2 tumour and 8 with T1 tumour. The overall survival rate of 68.9% with a mean survival period of 76.2 months. Prognostic factors that influence survival rates are close or involved surgical margins and the presence of perineural or lymphovascular invasion. **Conclusion:** At this facility, the survival rate is at 68.9% which is slightly higher than the global average. Improvements such as improving early detection could be made to further improve patient treatment outcomes.

# Emotional intelligence and its association with working environmental factors and spiritual intelligence among Ministry of Health government doctors: moderator effects

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## ABSTRACT

**Introduction:** Emotional intelligence has been cited as one of the innovations in this century particularly valuable in testing the low-order personality trait, which is the trait model of emotional intelligence. **Methods:** This study investigates the trait emotional intelligence and its association with working environmental factors, namely organisational culture, cultural competence and cultural awareness; and spiritual intelligence among 704 doctors working in 5 different state hospitals in Malaysia. This study also investigates the role of moderating factors i.e., age, gender, doctor's grade, income, level of education, marital status, race, social support, and personality in moderating the relationship between organisational culture, cultural competence, cultural awareness, spiritual intelligence, and emotional intelligence. The state hospitals chosen were from 5 different regions in Malaysia, namely the Hospital Pulau Pinang, Hospital Raja Perempuan Zainab 2, Hospital Kuala Lumpur, Hospital Sultanah Aminah Johor Bahru, and Hospital Umum Sarawak. **Results:** The results of this study in its Structural Equation Modelling (SEM) analysis showed that there are moderating effects of sociodemographic factors, social support and personality in the relationship between organisational culture, cultural competence, cultural awareness, spiritual intelligence, and emotional intelligence. **Conclusion:** In conclusion, this study has been successful in investigating the moderating effects of the emotional intelligence of doctors in government hospitals in Malaysia and its associated working environmental factors and spiritual intelligence.



# Exploring experiences and perceptions of clinical trial participation: A qualitative study among clinical trial patients

**Mahmud Fatihah<sup>1</sup>, Lim Bee Chiu<sup>1</sup>, Baharum Siti Nor Afni<sup>1</sup>, Hasnuddin Muhammad Aiman Hibatullah<sup>1</sup>, Kamarozaman Nur Liyana<sup>2</sup>, Mohamad Nor Fariz Safhan<sup>1</sup>**

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## ABSTRACT

**Introduction:** Malaysia has recently become one of the active countries running clinical trials (CTs). Efficient and consistent improvement of patient involvement relies on patient expectations and experience in clinical research. This study aims to explore areas of opportunities that could be targeted to improve participation rate in CTs from trial participants' perspective. **Methods:** In-depth semi-structured interviews, covering various sociodemographic backgrounds and therapeutic trials were audio recorded, transcribed and analysed thematically using a phenomenological approach. The participants were recruited until saturation of themes was achieved. **Results:** Five males and five females, aged 29 to 69 years old, participated in the interview. Most participants were aware of the CT process and could associate it with the development of new medicine but the knowledge was limited to the current trial participants. Risk of adverse effects and coordination of care were part of the participants' concern but the majority felt the benefit outweighed the CTs' risk. Individual and relational autonomy has influenced participants' decision-making process related to CTs' participation, while altruism emerge as an important motivation among trial participants. **Conclusion:** The emerging themes provide a foundation for how they perceive participating CTs. The results would be further employed to develop a larger-scale survey study on participants' perceptions of participation in CTs. It is crucial that the public is aware and informed of correct information about CTs. This would lead to increasing participants' retention in CTs and help promote the CTs in the community.

# Patient's fall: Hospital Tuanku Ampuan Najihah's staff perspective

**Sharifudin Abdul Hadi<sup>1</sup>, Yahya Nur Azyyati<sup>1</sup>, Mudin Muhammad Ilman<sup>2</sup>, Khalid Rosmawati<sup>3</sup>, Tukimin Norliza<sup>3</sup>, Abdullah Mazlina<sup>3</sup>, Kumar Gunaseelan<sup>4</sup>, Sidek Sarina<sup>4</sup>**

<sup>1</sup>Clinical Research Centre Hospital Tuanku Ampuan Najihah, <sup>2</sup>Patient Safety Unit Hospital Tuanku Ampuan Najihah, <sup>3</sup>Matron Offices Hospital Tuanku Ampuan Najihah, <sup>4</sup>High Level Committee Hospital Tuanku Ampuan Najihah

## ABSTRACT

**Introduction:** Malaysian Patient Safety Goal 2.0 was initiated in 2021. This refined the topics and standards of patient safety culture. Patient fall is one of the issues that is projected to be an increasing trend at our facility. On top of having limited human resources, this leads to overwork of staff and workloads being out of proportion therefore creating the possibility of increment in fall incidents. This study was then carried out using the KAP framework to understand our staff pertaining to patient falls. **Methods:** Hospital Survey on Patient Safety Culture Questionnaire Version 2.0 adapted from the Agency of Health Research and Quality (AHRQ) was used. This questionnaire originally in English was then translated to Bahasa Malaysia and was validated through the process of pilot study during phase 1. Phase 2 involves the usage of translated and validated questionnaires for data collection. **Results:** A total 159 of subjects have been recruited including clinical and non-clinical staff. The response rate is 43% from the initial intentional questionnaire distribution. The reliability of the questionnaire (Cronbach alpha) is 0.61 for a total of 34 items. The positive responses for our hospital compared to the database show that our hospital percentage of positive response is 11% and 20% less for item Staffing and workplace, and Response to Error respectively. **Conclusion:** In conclusion, even though our study has limitations in terms of sample sizes, making the power of the study drop by less than 80%, responses that were given can provide some insight to supervisors and managers in understanding their staff.

# Impact of National Antibiotic Guidelines (NAG 2019) on antibiotic appropriateness in primary care: An interrupted time series analysis

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## ABSTRACT

**Introduction:** The National Antimicrobial Guidelines in 2019 (NAG 2019) targeted rational and judicious use of antibiotics. In this study, we aimed to evaluate the impact of NAG 2019 on antibiotic appropriateness and utilisation for respiratory tract infections in Malaysia's public primary care. **Methods:** Interrupted time series analyses on rates of antibiotic appropriateness and utilisation were performed using prescription data from the Teleprimary Care (TPC) database from January 2017 to December 2019. Upon matching of diagnosis, antibiotic appropriateness was determined based on drug, dose, frequency, and duration, for the following respiratory tract infections: bronchitis, pharyngitis, pneumonia, and rhinosinusitis. Rates of antibiotic utilisation were reported as DDD per 1000 patients per day (DID) and stratified according to antibiotic classes. **Results:** Of the 8,180,142 prescriptions recorded in TPC, 4.51% (n=369,197) were antibiotic prescriptions. Upon the introduction of NAG2019, there was a substantial immediate increase in antibiotic appropriateness level by 65.58% (p<0.001) for respiratory tract infections. However, there was a subsequent decreasing trend though not significant, in the monthly rate of antibiotic appropriateness by 0.45% (p=0.068). For antibiotic utilisation, we observed significant decreases over the study period in both the level of utilisation by 1.57 DID (p<0.001) and the trend of utilisation by 0.05 (p<0.001). **Conclusion:** Our findings indicate that the introduction of NAG 2019 led to a substantial increase in antibiotic appropriateness for respiratory tract infections. At the same time, antibiotic utilisation decreased. Further research is needed to ascertain the sustainability of these changes and to evaluate the impact of NAG 2019 on other diagnoses.

# Is there equality in the distribution of the MOH healthcare workforce?

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## ABSTRACT

**Introduction:** Inequitable healthcare workforce distribution hinders optimal service operation, with rural areas receiving only 23% of global services due to the scarcity of disaggregated data and information at all levels. The study objective is to evaluate the trend and equality of healthcare workforce (HWF) distribution in MOH. **Methods:** The HWF equality levels were calculated using census data. Non-parametric tests were used to compare the inequality dimensions and the HWF distribution. **Results:** Overall, the healthcare workforce experienced significant increases, especially in medical specialists (31.1%), registered nurses (2.8%), and assistant medical officers, AMO (11.5%), while community nurses experienced a 6.7% decline. The distribution of healthcare workers per population was fair to absolutely equitable in all eight professions, with a Gini coefficient ranging from 0.13-0.25. According to the Hoover Index, the country's dentists must be redistributed by 18.5% to improve resource equity. Other equality dimensions, such as location, revealed that community nurses ( $p=0.019$ ) and paramedics ( $p=0.041$ ) were significantly more common in rural areas than in urban areas. Assistant medical officers were more prevalent in states with lower median household income groups, primarily quintiles one through three ( $p=0.048$ ). This may be due to the 1Malaysia Clinic Programme. In 2018, middle-income states had more pharmacists ( $p=0.046$ ) and registered nurses ( $p=0.008$ ), while high-income states had the fewest paramedics ( $p=0.015$ ) and assistant medical officers ( $p=0.015$ ). **Conclusion:** The HWF is the system's beating heart. Equitable HWF distribution is essential to achieving universal health coverage by making health services easily accessible to all.

# Professionalism as perceived by nurse leaders in Hospital Pakar Sultanah Fatimah

**Dahlan Azlina, Mohd Saman Zaitun**

Hospital Pakar Sultanah Fatimah, Muar, Johor

## ABSTRACT

**Introduction:** Nursing leaders who can positively inspire, engage, and influence nurses at all levels can change nurses' attitudes and behaviours. The study aims to evaluate the nursing leaders' professionalism traits, which are considered to be the most important in leadership. **Methods:** A cross-sectional study was conducted among nurse leaders and purposive sampling was used. Using a self-administered questionnaire adapted from RNAO (Registered Nurses' Association of Ontario) guidelines, to measure the level of professionalism. Data were analysed using IBM SPSS version 26. **Results:** There were 55 nurse leaders in this study who worked in various departments. The age in years was  $57 \pm 37$ , the work years as a registered nurse was  $33 \pm 13$ , and the years as a nurse leader majority 6 to 8 years was 16 (29.1%). Nurse with diploma was 41 (74.5%), 14 (25.5%) had a degree in nursing, and 40 (72.7%) had a certification in leadership. Out of 55 participants, only 2 (3.6%) have a low perceived professionalism, while 53 (96.4%) have a high perceived professionalism. The association between years of experience as a nurse leader and the attributes of professionalism sub-scale is significant for autonomy, advocacy, innovation, vision, collegiality, and collaboration, as well as ethics and values ( $p= 0.05$ ). **Conclusion:** Currently, all nurse leaders in HPSF have a high level of professionalism. Although they do not have a lot of work experience, they still show professionalism despite their knowledge and spirit not being related to it. To help nurses advance their careers, human resources should develop a variety of training programs and encouraging work environments.

# Implementation teamwork of nurses at surgical wards in Hospital Pakar Sultanah Fatimah

**Hamzah Noraishah, Dahlan Azlina**

Hospital Pakar Sultanah Fatimah, Muar, Johor

## **ABSTRACT**

**Introduction:** Teamwork strategies are necessary for nursing teams to deliver the best care to their patients. The purpose of this study is to explore the perception of interprofessional teamwork intervention among nurses in the HPSF surgical ward. **Methods:** A descriptive study was implemented in which 49 registered nurses were selected through purposive sampling. A self-administered Likert scale on the TeamSTEPPS Perceptions questionnaire (T-TPQ), on five components: team structure, leadership, communication, mutual support, and situational monitoring was given to the 49 nurses who worked at surgical wards. Cronbach's Alpha was 0.978. Data were analyzed using IBM SPSS version 26. **Results:** The participants were between the ages of  $56 \pm 24$  years and had worked as a registered nurse for  $32 \pm 1$  years. The indicative of better-perceived team performance was very good teamwork 43 (87.8%), good teamwork was 5 (10.2%) and poor teamwork was 1 (2%). There is no association between demographics and interprofessional teamwork in the surgical ward in HPSF ( $p > 0.05$ ). **Conclusion:** Nursing teamwork in healthcare is essential. The findings of this study indicate that nurse demographics do not have a significant impact on interprofessional teamwork. This has specific implications for nurse managers and hospital administrators in regards to better understanding what specific interprofessional teamwork competencies are perhaps necessary to support both team and patient goals.

# Triple whammy phenomenon among type 2 diabetes patients: A cross-sectional study in Malaysian primary care setting

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## **ABSTRACT**

**Introduction:** Type 2 diabetes (T2D) patients have a higher risk of developing kidney disease. The triple whammy phenomenon refers to the concurrent use of angiotensin-converting enzyme inhibitors (ACE-I) /angiotensin receptor blockers (ARB), diuretics, and nonsteroidal anti-inflammatory drugs (NSAID) that could potentially lead to acute kidney injury. In this study, we investigated the prevalence of this phenomenon among T2D patients in Malaysia. **Methods:** A cross-sectional study using electronic medical records from two public primary care clinics in Klang Valley was conducted. Adult T2D patients with a prescription from 2017 to 2022 and at least one follow-up visit were included. The occurrence of the triple whammy phenomenon was descriptively presented, and its potential association with age was investigated using the ANOVA test with a significance level set at  $p < 0.05$ . **Results:** A total of 45,260 prescriptions from 4,864 T2D patients were analysed. Prescriptions with dual combinations were mainly of ACE-I/ARB plus diuretics (15.9%), followed by ACE-I/ARB plus NSAID (1.4%) and diuretics plus NSAID (0.3%). Only a small proportion of the prescriptions (0.3%) had the triple whammy combination. Mean age was not significantly different among those with and without the triple whammy combination. Notably, there was no triple whammy combination prescribed to T2D patients with existing chronic kidney disease. **Conclusion:** The prevalence of the triple whammy phenomenon is low from our study findings. However, we could not capture if NSAIDs were purchased over-the-counter by the patients. It is thus important to increase awareness about this phenomenon among prescribers and patients.

# Outcomes of non-metastatic triple-negative and non-triple-negative breast cancer: A single centre analysis

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## ABSTRACT

**Introduction:** Triple-negative breast cancer (TNBC) is a distinct breast cancer subtype which exhibits aggressive clinical behaviour and poor prognosis. This study aimed to study the clinic-pathological features and overall survival (OS) between TNBC and non-TNBC and to identify the prognostic factors. **Methods:** This retrospective study included 1294 non-metastatic breast cancer women diagnosed from 2011 until 2015 and followed up until 31st December 2020. The patients were divided into two groups: TNBC when tumours were negative for all hormone receptors (n=205) and non-TNBC (n=1089). Differences in the distribution of clinic-pathological parameters were compared by Chi-square test. Survival functions were calculated using the Kaplan-Meier method. Prognostic factors of OS were analyzed by the Cox proportional hazards model, and the hazard ratios (HRs) were calculated with a 95% confidence interval(CI). **Results:** The TNBC tended to present at diagnosis with moderate/high grade (p<0.001) and tumour size of >2 cm (p=0.01). Decreased OS was observed for patients with TNBC compared with non-TNBC (5-year OS rates: 68% vs 75%; HR= 1.38; 95% CI, 1.03 to 1.84), involvement of positive lymph nodes (HR=1.66; 95% CI, 1.18 to 2.33), larger tumour size (HR=1.82; 95% CI, 1.15 to 2.89) higher grade(HR=1.89; 95% CI, 1.29 to 2.77)and advanced stage (HR=2.44; 95% CI, 1.85 to 3.23). **Conclusion:** Patients with TNBC have worse survival than non-TNBC and exhibit more aggressive behaviour and important clinical features to be considered in the management of these patients.



# Virtual Reality in Generalized Anxiety Disorder: A Preliminary

**Chong Siew Koon<sup>1</sup>, Abdul Rahman Mohd Aizuddin<sup>2</sup>, Abdul Rahman Sabri Marina<sup>3</sup>, Ismail Nadia<sup>4</sup>, Abu Seman Noraisyah<sup>4</sup>, Che Kamarudin Nurul Shahida<sup>4</sup>, Mohamad Nuraminah<sup>4</sup>, Pathmanathan Mohan Dass<sup>2</sup>, Kuan Pei Xuan<sup>2</sup>, Mohd Isa Khairul Anam<sup>2</sup>, Moo Cheng Yuan<sup>3</sup>, Wong Sin Yee<sup>3</sup>, Yahaya Amir Zulhilmi<sup>1</sup>, Law Kian Boon<sup>2</sup>**

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## ABSTRACT

**Introduction:** Virtual reality (VR) in head-mounted displays provides a fully immersive experience for users which can be a valuable therapeutic modality to treat generalized anxiety disorders (GAD). This study aims to investigate the effectiveness of using VR as an adjunct in the treatment of GAD. **Methods:** This study is a randomized controlled, assessor-blinded, parallel-group superiority trial. Participants were recruited from three hospitals in Malaysia. After consenting, participants were enrolled into the study according to eligibility criteria. The primary outcome measure was anxiety severity, measured by the GAD-7 scale at baseline, 2-week and 4-week. Secondary outcome measures included quality of life, measured by the WHO-5 Well-being Index and acceptability, measured by the acceptability questionnaire. The study required 80 patients to be randomly assigned to either control (standard of care, SOC) or treatment (VR+SOC) group in a 1:1 ratio. **Preliminary Results:** As of 01 July 2023, the study had successfully recruited 33 eligible GAD patients (41.3%). Preliminary analysis of demographics showed a marginally significant difference in mean age (p-value,  $p=0.037$ ), and significant differences in GAD-7 scores ( $p<0.001$ ) at baseline between the control arm and treatment arm. Visual inspection of trends showed continuous improvement in anxiety and well-being over time within the control group in the VR+SOC group as compared to the SOC group. However, more data is required to confirm these observations. **Conclusion:** Randomness is upheld in the trial. Preliminary results support the benefit of using VR as an adjunct in the treatment of GAD but do not support premature termination of the study.

# Prior knowledge, acceptance, adaptation, and challenges following stoma formation among colorectal cancer patients in northern peninsular of Malaysia: A qualitative study

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## ABSTRACT

**Introduction:** Stoma formation affects an individual in various ways, including physical, emotional, social, and cognitive functions. Diverse studies report ways of an individual living with new stoma formation, however, the comprehensive understanding of the entire process, which includes knowledge before the surgical procedure, as well as the subsequent acceptance, adaptation, and challenges to living with a stoma is lacking. **Methods:** An in-depth interview session was conducted with 12 colorectal cancer patients who have undergone surgical procedures for intestinal stoma formation. The patterns and themes within the data were identified by thematic analysis, involving data familiarisation and coding followed by themes' generation and refinement. **Results:** Four themes and 9 subthemes were identified, which revealed the sufficiency of stoma-related information and understanding before surgery as well as positive acceptance of self and family members reflected through their reactions and support. Nonetheless, the challenges are anticipated which highlights the complications of the stoma itself, obstacles surrounding social life, and financial burdens. **Conclusion:** This study provides valuable insights into the experiences of individuals living with a stoma following colorectal cancer surgery. The identified themes and subthemes highlight the need to address social stigma as well as financial issues to alleviate the burden of stoma-related expenses. Increasing public awareness and improving financial assistance could be a measure to enhance the overall quality of life for individuals living with a stoma.

# A retrospective multicentre study on the original and generic salmeterol/fluticasone combination (SFC) in the management of asthma

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## ABSTRACT

**Introduction:** According to the Global Initiative of Asthma (GINA) 2020, the salmeterol/fluticasone combination (SFC) is the preferred controller in the management of asthma. The higher cost of the original SFC triggers the generic substitution which is less expensive and claims to have the same efficacy as the original SFC. However, there is a lack of local studies exploring the efficacy of generic SFC. **Methods:** A retrospective study was conducted in the chest clinic of Penang Hospital and Balik Pulau Hospital from January 2020 to May 2021. Patients who were prescribed original SFC in January 2020 or even earlier and then switched to generic SFC in September 2020 for 9 months were recruited. Pulmonary function (spirometry), asthma control symptoms (ACT score), and hospitalisations were measured as treatment outcomes. Data was analysed by using SPSS version 22. **Results:** A total of 33 patients were investigated. The majority were female (63.6%), Malay (48.5%) and aged more than 71 years old (45.5%). Original SFC and generic SFC had comparable FEV1 ( $p=0.518$ ), FVC ( $p=0.838$ ), and FEV1/FVC ( $p=0.298$ ) values. The ACT score increased considerably after switching from the original SFC to the generic SFC ( $p=0.038$ ). There is no significant difference in the number of hospitalisations between the original and generic formulations of SFC. **Conclusion:** The improvement in spirometric function was comparable between the original and generic SFC in asthma patients but the generic SFC exhibited better asthma control symptoms. Thus, the generic SFC can be recommended as a cost-effective and safe alternative to the original SFC.

# Exploring stakeholder perspectives on integrating a stroke caregiver mHealth app in the Malaysian healthcare system: Findings from a qualitative study

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## ABSTRACT

**Introduction:** A stroke mHealth app is designated as a scalable solution in helping caregivers manage home-based stroke patients by providing education, information, and support. The purpose of this study is to identify key points to be considered for the successful implementation and integration of this app into the Malaysian healthcare system. **Methods:** A series of focus group discussions led by experienced moderators were conducted in three separate sessions with the participation of invited parties including stroke stakeholders (Ministry of Health, National Health Department, Legal Advisor, Malaysian Stroke Council, National Stroke Association of Malaysia (NASAM)), representatives of app developer (Doc2Us) and caregivers from the period of August 2022 to February 2023. The first session involved 8 participants; the second session with 16 participants; and the last session of 10 participants. **Results:** Most stakeholders seem to have a supportive attitude towards the integration of mHealth. Four themes emerged from these sessions: (1) App Benefits for Caregivers and providers; (2) App Development Challenges; (3) App Performance and Risk; and (4) App Enhancement and Iteration. **Conclusion:** The stakeholders recognized the advantages of mHealth integration in the Malaysian healthcare system. However, significant obstacles that they perceived could hinder the use of mHealth. This study demonstrates the need for strategies that foster cooperation between various stakeholders to successfully integrate mHealth into the Malaysian healthcare system.

# Exploring reasons for inappropriate accident and emergency department visits in the government healthcare facility in Malaysia: A single centre qualitative study

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## **ABSTRACT**

**Introduction:** The inappropriate utilization of Accident and Emergency (A&E) departments for non-emergency cases poses challenges to healthcare systems worldwide. Understanding the reasons behind these inappropriate visits is crucial for improving healthcare services and resource allocation. This study aims to explore the reasons for inappropriate visits to A&E departments. **Methods:** Qualitative interviews were conducted with 20 patients who sought treatment at A&E departments for non-emergency cases. Semi-structured interviews were conducted, audio-recorded, and transcribed for analysis. **Results:** Thematic analysis revealed several reasons for inappropriate visits to A&E departments. Lack of awareness or understanding about alternative healthcare options was a prominent factor. Many patients were unaware of primary care clinics and believed A&E departments were the only option. Convenience and accessibility were also key factors, with A&E departments perceived as open 24/7 and offering immediate care without appointments. Limited access to primary care and perceived inadequacy, led patients to choose A&E departments. Fear and anxiety played a role, as patients sought reassurance and a higher level of medical attention in A&E. **Conclusion:** Addressing factors of inappropriate visits to A&E departments is crucial for optimizing healthcare resources. Strategies should focus on improving public education about appropriate healthcare options, emphasizing the role of primary care. Patient education and communication campaigns can alleviate fear and anxiety by providing clear information about when A&E care is necessary. By implementing these strategies, healthcare systems can promote appropriate healthcare utilization, enhance patient satisfaction, and alleviate the strain on A&E departments, allowing them to focus on true emergencies.

# Prevalence and factors associated with loss to follow-up among type 2 diabetes patients attending public health clinics in Negeri Sembilan, Malaysia

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## ABSTRACT

**Introduction:** Although diabetes is highly prevalent in Malaysia and public health facilities are the main care providers, information on the loss to follow-up (LTFU) of diabetes patients in routine care is scarce. Understanding LTFU is essential to improve the quality of care and clinic efficiency. We aimed to determine the prevalence and factors associated with LTFU among type 2 diabetes patients attending public health clinics in Negeri Sembilan, Malaysia. **Methods:** A five-year retrospective open cohort study was conducted using National Diabetes Registry data from 2013 to 2017. The study setting was all 47 public health clinics in Negeri Sembilan. LTFU was defined as non-attendance to clinics for  $\geq 1$  year. The diabetes treatment goals were HbA1c $<7.0\%$ , blood pressure $<130/80$  mmHg, and LDL-cholesterol $<2.6$  mmol/L. Multivariate proportional hazard modelling was conducted to determine the factors associated with LTFU. **Results:** Among 18,341 patients, there were more females (55.8%), Malays (64.7%), and older patients  $\geq 60$  years (49.4%). Around 4.6% (95% CI: 4.3-4.9%) of patients were LTFU over a mean follow-up duration of  $2.5 \pm 1.1$  person-years. Older age groups, females, Chinese ethnicity, overweight patients, and those with dyslipidaemia were less likely to LTFU. Patients on more intense diabetic and hypertension treatment regimens and those who achieved more treatment goals were also less likely to LTFU. **Conclusion:** Certain demographics can be targeted for interventions to reduce LTFU in public health clinics. Appropriate use of pharmacological agents and the achievement of diabetes treatment goals are important as they may improve LTFU in diabetes care in Malaysia.

# Case report: Spontaneous bilateral pneumothorax secondary to pulmonary tuberculosis

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## ABSTRACT

**Introduction:** Simultaneous bilateral primary spontaneous pneumothorax is a sporadic presentation found in only one per cent (1%) of all spontaneous pneumothorax. Patients with spontaneous pneumothorax can present as either primary or secondary to another medical illness. **Case Description:** A 64-year-old Chinese lady with a known case of hypertension and non-smoker presented with worsening shortness of breath for one week associated with dry cough and pleuritic chest pain without a history of fever, night sweats, or active tuberculosis contact. She was in severe respiratory distress, drowsy, and hemodynamically unstable on initial presentation. Her lung auscultation was silent chest bilaterally. Her blood investigations were only significant for serum leucocytosis. Chest radiograph demonstrated bilateral large pneumothorax (>2cm). Emergent bilateral chest tubes were placed, and chest radiograph post-chest tube insertion showed good lung re-expansion. High-resolution computed tomography (HRCT) Thorax was reported as bilateral pneumothorax with no CT evidence of bronchopulmonary fistula. Pleural fluid was noted to be exudative with elevated adenosine deaminase (ADA). Thus, the patient was treated as smear-negative pleural tuberculosis (TB). The chest tube tubes were removed on day eleven and day twelve of admission, respectively, with a resolution of the pneumothorax. **Conclusion:** The patient had bilateral spontaneous pneumothorax as a rare initial presentation of TB. Spontaneous pneumothorax secondary to TB is usually associated with empyema, cavitary lung formations, and bronchopleural fistula. The mycobacterium bacteria will invade the pleural lining. The consequent liquefactive necrosis will cause pleural rupture and spontaneous pneumothorax. It is recommended that all patients presenting with spontaneous pneumothorax be screened for TB.

# Human umbilical cord-derived mesenchymal stem cells exhibit anti-tumorigenic effects in cancer cell lines in vitro

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## ABSTRACT

**Introduction:** Human umbilical cord-derived mesenchymal stem cells (hUCMSCs) represent promising therapeutic tools for treating solid cancers. However, accumulating evidence suggests that the effects of hUCMSCs on tumour growth are controversial and the underlying mechanisms are poorly understood. Thus, in the present study, we elucidated the anti-tumour activity of hUCMSCs in H2170 (squamous cell carcinoma), LN18 (glioblastoma) and MCF7 (breast cancer) cells in vitro. **Methods:** The inhibitory effect of hUCMSCs on the growth of cancer cells and apoptosis were evaluated using MTS assay and flow cytometry, respectively. The expression of apoptotic-related genes was measured by the quantitative reverse transcription polymerase chain reaction (qRT-PCR). **Results:** Results from the viability assay showed that significant suppression ( $p < 0.001$ ) of cell proliferation was observed after co-culturing all three cancer cell lines with the hUCMSCs and its conditioned medium. Furthermore, it was revealed that the hUCMSCs and their conditioned medium were able to significantly ( $p < 0.001$ ) induce apoptosis to the H2170 and LN18 cells; however, the anti-cancer effects of MSCs were mildly seen for MCF7. We postulate that the effect of hUCMSCs on tumorigenesis might be through the secretion of paracrine factors. Consistently, gene expression analysis showed that hUCMSCs significantly upregulated the expression level of the apoptosis-related genes (BAX, BAD and APAF1) indicating the ability of hUCMSCs' to induce the intrinsic apoptosis pathway. **Conclusion:** Taken together, our findings demonstrate that hUCMSCs could inhibit both H2170 and LN18 cell tumorigenicity, thereby providing a promising candidate for using hUCMSCs for clinical treatment of patients with cancer.



# Utilizing machine learning to predict hospital admissions for paediatric COVID-19 patients

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## ABSTRACT

**Introduction:** The COVID-19 pandemic has overwhelmed the healthcare systems globally. To cope with the high admission rate, it is crucial to identify COVID-19 patients who truly require hospitalization. Nevertheless, an accurate machine learning (ML) model to predict hospitalization in Asian children is lacking. This study aimed to bridge this gap by developing and validating ML models to predict hospitalization for children with COVID-19. **Methods:** We employed a cross-sectional design and included Malaysian children aged 0 to 12 with COVID-19 diagnosed between 1st February 2020 and 31st March 2022. The cohort was partitioned into training and validation groups. Feature selection was performed using the Recursive Feature Elimination (RFE) algorithm, and 7 classifiers were trained. Hyperparameter optimization was achieved using Grid Search. **Results:** We analyzed 1988 children with 29 study variables. The RFE identified 12 highly predictive variables for COVID-19 hospitalization (age, male sex, fever, cough, rhinorrhea, shortness of breath, vomiting, diarrhoea, seizures, body temperature, respiratory distress, and abnormal breath sounds). With external validation, Adaptive Boosting (AdaBoost) has the highest performance in predicting hospitalization (AUC=0.95, sensitivity=0.81, specificity=0.9, positive predictive value=0.89, negative predictive value=0.81). **Conclusion:** We showed that AdaBoost could classify the medical needs of pediatric COVID-19 (outpatient vs. hospital care) with high discriminative ability. It has the potential to serve as a Clinical Decision Support System, empowering frontline clinicians to make timely decisions using readily available clinical information without the need for expensive and time-consuming investigations. Ultimately, it may aid the hospital in conserving valuable hospital resources for future COVID-19 outbreaks.

# Factors associated with in-hospital mortality among infective endocarditis patients

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## ABSTRACT

**Introduction:** Despite recent advancements in the diagnosis and management of infective endocarditis (IE), it is associated with substantial morbidity and mortality. Our study objective is to determine the factors associated with in-hospital mortality in IE patients among the local population. **Methods:** All IE patients who were diagnosed with definite or possible IE and were treated at Sarawak Heart Centre from 1st January 2020 to 31st December 2020 were recruited. We examined the demographic features of the subjects and the factors that contributed to in-hospital mortality. Multivariate logistic regression was used to analyze the associated factors and in-hospital mortality. **Results:** Our study population comprised a total of 37 patients with a mean age of 46.4 years and male predominance. The in-hospital mortality rate of IE in this study was 44.4%. Haemodynamic instability and anaemia were found to be strong predictors of IE survival outcome, with sizeable odds ratios of 51.5 and 35.7 respectively. Patients with vascular phenomenon and heart failure were at 10.5 and 6.0 times higher risk of dying, however, these 2 associations were found to be not statistically significant. **Conclusion:** The in-hospital mortality due to IE in our study was among the highest in developing countries. Factors of hypotension and optimal response to individual hemodynamic parameters may confer lower mortality. While anaemia is demonstrable as a risk factor for inpatient mortality, a target has yet to be reasonably established.

# A randomized controlled study comparing fenestrated and non-fenestrated peripheral cannulas for contrast-enhanced computed tomography

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## ABSTRACT

**Introduction:** Achieving high-quality computed tomography (CT) images necessitates optimal contrast flow, which requires a large-bore intravenous cannula (18-gauge or 20-gauge). However, a proportion of patients present with fragile and small veins that are unsuitable for accommodating such cannulas. The effectiveness and safety of utilizing small-gauge cannulas for contrast infusion remain uncertain. Our study aimed to compare the image quality, first-time insertion success rate, and safety profile between small and large-gauge cannulas. **Methods:** We conducted a non-inferiority randomized study at the University Malaya Medical Center between September 2019 and March 2021, involving outpatients scheduled for arterial phase CT studies. Participants were randomly assigned to one of 4 cannulation groups: interventional (fenestrated 20-gauge, fenestrated 22-gauge, and non-fenestrated 20-gauge) and an active comparator (non-fenestrated 18-gauge). Image quality was assessed by measuring aortic attenuation (HU) with a non-inferiority margin set at 50 HU. The safety profile encompassed extravasation, cannula integrity break, and maximum infusion pressure. **Results:** Comparative analysis of the 4 groups showed no significant differences in CT image quality ( $p=0.15$ , eta-squared 0.02). The forest plot revealed that all 3 interventional cannulas were non-inferior to the active comparator, with the fenestrated 20-gauge cannula demonstrating superiority. The first-time insertion success rate was comparable. No adverse events were reported throughout the study. **Conclusion:** Our findings demonstrated that image quality, first-time insertion success rate, and safety profile were comparable across all tested cannulas. Notably, image quality was superior with the fenestrated 20-gauge cannula. Consequently, a smaller-bore fenestrated cannula presents a viable alternative for patients with challenging venous access who require a contrast-enhanced CT study.

# Can patients achieve sufficient peak inspiratory flow rate (PIFR) with Turbuhaler® during acute exacerbation of asthma?

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## ABSTRACT

**Introduction:** The single maintenance and reliever therapy (SMART) delivered through Turbuhaler® has been widely used in Malaysia. Patients treated with SMART are not prescribed separate reliever inhalers but are dependent on the Turbuhaler® during acute asthma. The peak inspiratory flow rate (PIFR) is crucial in drug delivery from a DPI, however, there are concerns that during acute exacerbation of asthma, patients are unable to achieve adequate PIFR. The present study aimed to assess PIFR at resistance setting matching Turbuhaler® in patients with acute exacerbation of asthma. **Methods:** A six-month cross-sectional study was conducted at the emergency department (ED) of Hospital Sultanah Bahiyah and Hospital Kulim, Kedah. Adult patients diagnosed with mild to moderate acute exacerbations of asthma were recruited. The PIFRs were measured using the In-Check Dial G16 which was set to simulate the resistance of Turbuhaler® (R3). The PIFRs were assessed before (pre) and after (post) after initial bronchodilator (BD) treatment at the ED. The minimal required PIFR was defined as flow rates  $\geq 30$  L/min. **Results:** In a total of 151 patients, 81 female and 70 male patients were enrolled in the study with a mean age of 38 years old (range 18-71). It was found, that 98% (n=148) of patients can achieve minimal PIFR required pre- and post-BD. The mean PIFR pre-BD was  $60 \pm 18.5$  L/min and post-BD was  $70 \pm 18.5$  L/min. **Conclusion:** The study assured that most asthmatic patients can achieve sufficient PIFR from Turbuhaler® during acute exacerbation of asthma.

# Research landscape of applications of 3D printing technology in healthcare within southeast Asian countries: A systematic scoping review spanning a 10-year period from 2011 to 2021

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## ABSTRACT

**Introduction:** The 3-dimensional printing (3DP) technology is widely deployed in healthcare for various purposes such as generating patient-specific models and facilitating surgical planning. The aim of this scoping review is to explore how 3DP technology is being implemented for healthcare applications within Southeast Asian (SEA) countries. **Methods:** This scoping review was conducted in accordance with Arksey and O'Malley's seminal framework utilising various electronic databases such as PubMed/MEDLINE, CINAHL, Scopus, ProQuest and Web of Science from 2011 to 2021. **Results:** A systematic and comprehensive searching process yielded 7558 articles for preliminary review. Upon the removal of duplicates and other irrelevant publications, 865 articles were included for final analysis and interpretation with 610 of them comprising original research. Regenerative medicine is found to be the most studied medical discipline (28.21%), which is almost double that of orthopaedics (14.68%). Furthermore, implant customization is the most-studied research scope (36.23%), followed by fabrication of prostheses and surgical planning & the use of 3D printed models as teaching materials (11.64% respectively). The research ecosystems in SEA and their influence on the growth of 3DP technology are discussed in conjunction with a detailed description of the review findings. **Conclusion:** The use of 3DP in healthcare in SEA is both versatile and encompassing a broad spectrum of clinical applications. The prospects of 3DP in the healthcare sector in SEA are undeniably promising, due to continued dedication and collaboration among relevant stakeholders and government entities.

# Knowledge of healthy diet among cardiac patients in Queen Elizabeth Hospital II

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## ABSTRACT

**Introduction:** A healthy diet significantly decreases the risks and death rate associated with cardiovascular disease (CVD). Knowledge is essential for patients to comply with and practice a healthy diet. Additionally, educational backgrounds have an impact on the degree of knowledge. The objective is to study the knowledge of healthy diet among cardiac patients in the Cardiology Unit, Queen Elizabeth Hospital (QEH) II, and determine the association between the level of knowledge of a healthy diet and the educational level. **Methods:** This is a quantitative research and cross-sectional study design. Eighty patients were selected for this study using a simple random sampling method. An administered self-questionnaire was used to collect the data. Descriptive statistics such as frequency, percentage, mean, and standard deviation. Inferential statistics used is Chi-Square. **Results:** The majority of the patients had good knowledge (n=31, 38.8%). Hence, there was a statistically significant between the level of knowledge of a healthy diet and educational level as evidenced by p-value=0.000. **Conclusion:** Due to the participation of the Cardiac Rehabilitation Program (CRP), health campaigns, and mobile applications, cardiac patients typically had a strong degree of knowledge about healthy diets. Their educational background significantly influences their understanding since it affects their capacity to adopt a holistically balanced diet.

# Knowledge of orthodontic treatment and awareness of fake braces among young adults in Sibul division: A cross-sectional study

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## ABSTRACT

**Introduction:** Fake braces have become an alarming dental public health issue. To date, no study has been done to assess the knowledge of orthodontic treatment and evaluate the awareness of fake braces among young adults in the Sibul Division. **Methods:** A cross-sectional study using a validated questionnaire was conducted among 100 young adults aged 18-29 years old who visited government dental clinics in Sibul Division. The questionnaires consisted of five sections involving social-demographic, knowledge of orthodontic services in Malaysia, factors influencing young adults' decision to seek orthodontic treatment, utilization and awareness of fake braces. **Results:** Fifty-four (54) females and 46 males participated in this study. The mean orthodontic knowledge score was 5.9 (SD=2.01) out of a total score of 9, indicating a moderate level of knowledge. Forty-four percent of participants had ever thought of wearing braces, mainly due to aesthetic reasons. Twenty-two percent of participants heard about fake braces, mostly from the online platform. Seven percent of the total participants knew someone who received fake braces service. The main reason for the utilisation of fake braces was the cheaper cost. The mean awareness of fake braces score was 4.7 (SD=3.32) out of a total score of 10, which was at a low level. No significant difference was found in awareness of fake braces among gender and ethnicity ( $p > 0.05$ ). **Conclusion:** Oral health education should be emphasized on fake braces to improve the knowledge of orthodontics and awareness of fake braces among young adults.

# Knowledge, acceptance and perceptions towards the use of COVID-19 vaccines among Malaysians: A web-based survey

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## ABSTRACT

**Introduction:** Coronavirus disease 2019 (COVID-19), is a highly contagious viral illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The Malaysian government has planned to procure the COVID-19 vaccine in order to vaccinate at least 70% of the population. This study aimed to determine the knowledge, acceptance and perception of Malaysian adults regarding the COVID-19 vaccine. **Methods:** We conducted an online survey for one month in March 2022. A bilingual, semi-structured questionnaire was set up using Google Forms and the generated link was shared on social media. The questionnaire consisted of questions on knowledge, acceptance and perception of the COVID-19 vaccine. The association between demographic factors with scores on knowledge about the COVID-19 vaccine were analysed using an independent samples t-test for two categorical variables, and the one-way analysis of variance (ANOVA) was used for more than two categorical variables. **Results:** A total of 386 respondents participated, with a mean age of 34.43 years (SD=10.14) years, and among them 210 (54.4%) were male. Thirty-eight percent of respondents had poor knowledge about the COVID-19 vaccine (mean knowledge score 5.56; SD=2.30) and 92% were willing to get a COVID-19 vaccine. High knowledge scores are associated with living with those who are at higher risk of getting severe COVID-19, family members or friends who have a history of COVID-19 infections and those from lower age groups. **Conclusion:** Knowledge about vaccines was good and the acceptability rate was high. This finding can help the Ministry of Health to plan for future efforts to increase the second booster dose vaccine uptake and relevant barriers need to be addressed.



# Reliability and validity of the Malay version of caregiver Quality of Life Index-Cancer (CQOLC) scale in Malaysian cancer caregivers

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## ABSTRACT

**Introduction:** There is no disease-specific instrument to measure the quality of life of cancer caregivers in Malaysia. We aimed to validate the Malay version of the Caregiver Quality of Life Index-Cancer (Malay-CQOLC) scale in Malaysian Cancer Caregivers. **Methods:** This is a cross-sectional study performed from September 2022 to July 2023. A total of 310 cancer caregivers from the cancer centre in Johor participated in the study. The Malay-CQOLC scale has 35 items consisting of 4 domains namely burden, positive adaptation, disruptiveness and financial concern. Internal consistency was determined by Cronbach's alpha. Varimax rotation was used to determine the construct validity. **Results:** The majority of the participants were female (62.8%), married (68.3%), and Malay (70.6%) with a mean age of  $40.0 \pm 12.63$ . Internal consistency (Cronbach's alpha) of the total and domain scores ranged from 0.80 to 0.91 indicating a good reliability of the instrument. EFA using different factor extraction methods yielded 2 models. There are 4 factors in Model 1 and 8 factors in Model 2 with a KMO value of 0.898 and significant Bartlett's test of Sphericity ( $p < 0.001$ ) respectively. The factor loading for Model 1 ranged between 0.350-0.797 with an explained variation of 50.7%. The factor loading for Model 2 ranged between 0.343 and 0.847 with an explained variation of 60.4%. **Conclusion:** The Malay-CQOLC scale was found to be a valid and reliable instrument to be used for Malaysian cancer caregivers.

# Place of death for people with life-limiting illnesses (2005-2030): past trends and projections in Malaysia

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## ABSTRACT

**Introduction:** Place of death (PoD) is considered an important aspect of end-of-life care because it is related to quality of life. It also acts as a proxy indicator of whether care meets the patient's preference during end-of-life since most people prefer to die at home. This study aimed to examine the past trends and future projections of PoD of patients with life-limiting illnesses. **Methods:** We conducted an analysis of decedents aged 15 years and above who died from life-limiting illnesses from 2005-2019 using the national mortality registry. PoD was categorized as home, hospital, care home and elsewhere. Future trends in PoD until 2030 were projected using simple linear modelling. **Results:** Between 2005 and 2019, there were 1,423,942 deaths due to life-limiting illnesses with the highest cause of death being Alzheimer's disease, dementia and senility (37.0%), followed by heart disease (22.9%) and malignant neoplasm (15.4%). The percentage of home deaths declined from 59.9% to 49.2% in 2019. Contrastingly, percentages of hospital and care home deaths increased (35.1-45.2% and 0.6-1.1%). If the current trend continues, home deaths will decline further to 42.2% by 2030. This would correspond to a relative increase of 22.1% in-hospital deaths by 2030. **Conclusion:** The rising trends in hospital deaths could be the result of growing hospital palliative care services in the country. Nevertheless, this trend is heading towards a direction which is against people's preferences. Therefore, more effort to expand and strengthen community palliative care support to enable more people to die in community settings is urgently called for.

# Contact sensitization pattern of patients with eczema at the face and neck region: A retrospective study between 2016 and 2022 at the Department of Dermatology Hospital Kuala Lumpur

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## ABSTRACT

**Introduction:** Allergic contact dermatitis (ACD) involving the face and neck region (FNR) is not uncommon. We aimed to determine the sensitisation pattern among patients with eczema involving FNR who underwent skin patch tests between 2016 and 2022. **Methods:** This is a seven-year retrospective review of contact sensitization patterns in patients with eczema over the FNR who underwent skin patch tests between 2016 and 2022 in the Hospital Kuala Lumpur. **Results:** There were 291 patients (female-to-male ratio of 7.8:1; mean age of 34.1±14.0 years) with eczema at the FNR who underwent a patch test. A majority (n=116,39.9%) were between 20 and 29 years old. About 8% were below 19 years of age. Nearly 50% had eczema over the perioral region, 8.6% in the periorbital area and the rest in other parts of the face and neck region. The clinical diagnoses included contact dermatitis (n=145, 49.8%), cheilitis (n=81, 27.8%), endogenous eczema (n=28, 9.6%) and others. All were tested with European baseline series, with 91.4% and 77.0% tested with extended series, and own products, respectively. About 70.1% were sensitized to at least one allergen. The most common sensitizing allergen was nickel sulfate (34.0%), followed by cobalt chloride (11.7%), fragrance mix (10.7%), methylchlorisothiazolinone/methylisothiazolinone (8.9%), and formaldehyde (8.9%). Clinical relevance was documented in 58.8% of them. **Conclusion:** Contact sensitization was detected in about 70% of patients with eczema at the FNR who were patch-tested. Nickel, cobalt chloride and fragrance mix were the most common sensitizing allergens.

# Hip surveillance practice for children with cerebral palsy in Hospital Rehabilitasi Cheras, Malaysia

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## ABSTRACT

**Introduction:** Hip displacement is a common musculoskeletal complication for children with cerebral palsy (CP) that may lead to pain and disability. Hip surveillance is a routine practice in the management of children with CP to monitor and identify early hip displacement and thus facilitate the provision of early interventions to the patient. **Methods:** Medical records of CP patients aged 18 years and below from January 2018 to December 2021 attending the Pediatric Rehabilitation Clinic, Hospital Rehabilitasi Cheras were reviewed to analyse the data on hip surveillance practice. Hip Migration Percentage (MP) on a pelvis radiograph of more than 30% is considered as having hip displacement whereas MP of more than 90% is classified as a hip dislocation. **Results:** A total of 320 medical records of CP patients who underwent hip surveillance were reviewed. The data consists of 57.5% male and 42.5% female. The age group is 49.7% (below 6 years old), 41.6% (6 to 12 years old) and 8.8% (Above 12 years old) with a mean age of 6.3 years old. About 31.9% (n=102) of subjects have hip displacement meanwhile only 11.6% (n=37) have hip dislocation. Hip displacement is found most in CP patients with GMFCS level 5 (41.7%) and GMFCS level 4 (41.2%) respectively. **Conclusion:** There is a high prevalence of hip displacement among children with CP especially those with higher GMFCS levels. In conclusion, hip surveillance practice is essential in the continuous management of hip displacement in CP patients.

# Translation and validation of the Karolinska Sleepiness Scale (KSS) for subjective measurement of sleepiness

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## ABSTRACT

**Introduction:** The Karolinska Sleepiness Scale (KSS) assesses an individual's subjective level of sleepiness at a specific time of day. It measures situational sleepiness, which increases as wakefulness persists. Kaida et al. (2006) examined the validity of the KSS by establishing a strong correlation between its scores and the EEG and behavioural variables. However, it does not currently have a version available in the Malay language. Consequently, this study aimed to validate a Malay language translation of the KSS among healthy individuals who had been awake for 18-24 hours. **Methods:** The English language KSS underwent forward and backward translations by four experts. The translated Malay language questionnaire (KSS-MAS) was pilot-tested on 15 subjects and revised accordingly. The validation of the revised questionnaire was carried out on 30 healthy individuals following an 18-24-hour wakefulness period. The reliability of the translated questionnaire was checked. **Results:** The KSS-MAS was developed through comprehensive procedures to ensure accurate translation and meaning. The mean (SD) age of respondents was 29.1 (5.3) years with majority female (66.7%), and Malay (63.3%). The baseline mean (SD) score for KSS-MAS was 1.63 (1.0) and increased to 7.80 (1.5) following an 18-24 hours wakefulness period, with  $p < 0.001$ . **Conclusion:** The KSS-MAS scale, a Malay language translation of the Karolinska Sleepiness Scale, demonstrates reliability and validity in assessing the level of subjective sleepiness in individuals who have been awake for 18-24 hours.

# Development and validation of a new questionnaire on knowledge and attitude (KAQ) towards TB treatment among TB/HIV co-infected patients

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## ABSTRACT

**Introduction:** Tuberculosis (TB) remains a significant public health concern. This study aimed to validate a new questionnaire on knowledge and attitude (KAQ) towards TB treatment among TB/HIV co-infected patients. **Methods:** This study involved content and face validation, comprising six steps, respectively. Each item underwent a content validation procedure for the Content Validity Index (CVI) and a face validation procedure for the Face Validity Index (FVI). The CVI was used to assess each item's relevance and representativeness by a panel of experts. FVI was used to assess the clarity and comprehensibility of each item by raters. Ethics approvals were obtained from the Medical Research Ethics Committee (MREC), MOH. **Results:** For CVI, 8 experts were involved. In the knowledge domain, S-CVI/Ave was 0.96. None of these items was removed. 17/24 items obtained Universal Agreement (UA) among experts. In the attitude domain, S-CVI/Ave was 0.96. Two items were removed due to a lack of agreement (<0.83%). 15/20 items achieved UA between experts. For FVI, 10 raters were involved. In the knowledge domain, S-FVI/Ave was 0.91. 11/24 items achieved UA between raters. Five items were removed. In the attitude domain, S-FVI/Ave was 0.94. 9/18 items achieved UA between raters. Two items were removed. The final number of items was 35; 19 in knowledge and 16 in attitudes domain. **Conclusion:** This study successfully validated the content and face validity of the instruments. This KAQ is valid for assessing knowledge and attitude towards TB treatment among TB/HIV co-infected patients. However, additional testing is required to validate its psychometric credentials in various settings.

# Biological and clinical characteristics of COVID-19 cases detected in a private hospital in Kuching, Sarawak

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## ABSTRACT

**Introduction:** Coronavirus Disease 2019 (COVID-19) is a contagious infection caused by highly transmissible severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) through respiratory droplets. Since its first reported case in December 2019, it has spread rapidly across the globe causing a pandemic. The biological and clinical characteristics of COVID-19 provide an important scientific basis for effective epidemic prevention and control in the local community. Therefore, this cross-sectional study was conducted in a private hospital in Sarawak. **Methods:** All the 5621 laboratory-confirmed COVID-19 cases detected from August-December 2021 were recruited into this study. **Results:** The cases were racially diverse with almost equal male-to-female ratio. Most cases were adults (93%), fully or partially vaccinated (88.2%) with a mean age of 37.61 years. Symptomatic cases accounted for 75.1% of the total cases. The three most common presenting symptoms were cough, runny nose and fever. Olfactory and gustatory dysfunction were more common in adults while gastrointestinal symptoms were mainly seen in children. The median duration from onset of symptoms to molecular diagnosis was 3 days. Patients who were unvaccinated, symptomatic and having comorbidities demonstrated significantly lower cycle threshold (Ct) values. Ct values (E and N genes) correlated negatively with age, indicating higher infectivity in older patients. **Conclusion:** This report summarised the baseline biological and clinical characteristics of mild COVID-19 cases in Sarawak. Our findings showed that despite widespread awareness, patients did present late for testing, which might contribute to sustained viral transmission in the community. Hence, this highlights the importance of vaccination to reduce the occurrence of severe cases.

# Private vs. public pharmacist: Patients' experience on medication counselling

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## ABSTRACT

**Introduction:** The provision of standard medication counselling points by pharmacists is crucial in ensuring optimal service delivery. This study aimed to evaluate patients' experience towards medication counselling services provided by public and private pharmacists. **Methods:** This cross-sectional study involving patients aged 18 years and above who have received medication counselling services from both sectors' pharmacists, was conducted at 14 government hospitals and 11 health clinics in Perak, in 2021-2022. Demography and patients' experience with medication counselling by both sectors' pharmacists were collected using a self-administered questionnaire. **Results:** A total of 428 subjects joined this study. Their median age was 46 (IQR: 24) years. The majority were Malay, female, civil servants and had tertiary education as the highest education level. The majority always obtained medications from government hospitals, followed by community pharmacies, health clinics and private clinics. More patients reported that public pharmacists always fulfil medication counselling points, than private pharmacists, across 30 items ( $p < 0.001$ ). More patients (89.5%) reported that public pharmacists always identify the prescription's owner's name, compared to private pharmacists (56.1%). Moreover, more patients reported that public pharmacists always review prescriptions before discussion (75.7% vs. 51.4%), and emphasize medication completion needs (68.4% vs. 44.6%), compared to private pharmacists ( $p < 0.001$ ). Only 40.2% of public pharmacists and 27.3% of private pharmacists always self-introduce before discussion. **Conclusion:** Public pharmacists have higher adherence to the medication counselling points compared to private pharmacists, from patients' experience. The gaps in medication counselling services, provide an opportunity to build a collaborative bridge between public and private pharmacists.



# Common pathogens and their antibiotic resistance pattern among patients with uncomplicated urinary tract infection (UTI) in outpatient settings of two district hospitals - a pilot study

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## ABSTRACT

**Introduction:** Uncomplicated urinary tract infection (UTI) can be treated empirically. The emergence of organisms resistant to first-line empirical antibiotics for uncomplicated UTIs is a concern. This study aimed to determine the uncomplicated UTI-causing pathogens and antibiotic resistance pattern among outpatients in Hospital Seri Manjung (HSM) and Hospital Teluk Intan (HTI). **Methods:** This cross-sectional study involving outpatient department patients aged 18 years and above, with uncomplicated UTI symptoms, was conducted at HSM and HTI from July 2014 to August 2016. Patients with recurrent UTI, antibiotics use, admission within 3 months of symptoms presentation; calculus, structural abnormality or urinary catheter were excluded. Mid-stream urine specimens of consented patients were sent for urine full examination and microscopic examination (UFEME). Patients were “screened fail” if leukocyte esterase and nitrites were undetectable. Culture and sensitivity (C&S) testing was done. Data on isolates and the resistance pattern were collected. **Results:** Among 27 HSM and 58 HTI specimens cultured, 15 (55.6%) and 10 (17.2%) had significant growth respectively. *Escherichia coli* (*E. coli*) was most commonly isolated, followed by *Klebsiella pneumonia*, *Proteus mirabilis* and *Candida albicans*. The resistance rates of *E. coli* alone towards cefuroxime, nitrofurantoin, amoxicillin/clavulanic acid, sulphamethoxazole/trimethoprim, ciprofloxacin and ampicillin were 0%, 0%, 5.9%, 17.6%, 17.6% and 27.3% respectively. **Conclusion:** *E. coli* was the predominant pathogen causing uncomplicated UTI identified. The resistance rates of *E. coli* isolated towards cefuroxime, nitrofurantoin, amoxicillin/clavulanic acid, sulphamethoxazole/trimethoprim, ciprofloxacin and ampicillin were lower than the resistance reported by National Antibiotic Resistance Surveillance Report (NSAR) 2013-2017.

# Myths and facts of COVID-19 among patients and caregivers in Sibu Hospital

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## ABSTRACT

**Introduction:** This study explored the common myths and information sources related to COVID-19. **Methods:** This is a cross-sectional study conducted among the patients/caregivers who visited the pharmacy department at Sibu Hospital from 01DEC2022 to 31JAN2023. The self-administered questionnaire with 6 domains was used. It was developed from the article: "COVID-19 Facts and Myths: A Concise Guide for Malaysian Population 2021" and pre-tested in 13 respondents. **Results:** A total of 112 subjects were recruited. They have a median age of 32 (positively skewed), 59.8% (n=67) are Chinese, and 48.2% (n=54) of them received a degree/higher education. About half of the subjects (47.3%, n=53) agreed that "prolonged use of medical masks will trap carbon dioxide and cause poisoning". Further analysis showed that higher age ( $p<0.001$ ), a lower education level ( $p=0.001$ ) and non-healthcare-related workers ( $p<0.001$ ) agreed to this myth. A high proportion of subjects (75.9%, n=85) agreed with the myth that "there is a high chance of COVID-19 transmission through commercial packages". Further analysis showed that 84.6% (66/78) of higher education level (STPM/higher) agreed that COVID-19 can be transmitted through commercial packages as compared to 55.9% (19/34) with secondary level/below ( $p=0.001$ ). The major sources of information are social media (95.5%), friends (92.9%) and family members (87.5%). **Conclusion:** Common myths that are: prolonged use of medical masks will cause carbon dioxide poisoning and that there is a high chance of COVID-19 transmission through commercial packages. Social media was found to be the main source of COVID-19 information.

# Feasibility, usability and cost of biodegradable single-use meal tray: A pilot study in Hospital Sultanah Bahiyah, Alor Setar

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## ABSTRACT

**Introduction:** As the need for sustainable practices in healthcare settings becomes increasingly recognized, the use of biodegradable meal trays has gained attention as a potential solution to reduce the environmental impact of meal service in hospitals. This study aims to assess the feasibility, usability and cost of single-use biodegradable meal trays made from paddy straw. **Methods:** A workflow was developed and compared between the current practice and the use of single-use meal trays based on investigator observations of the processes and approved after focused-group discussions. Staff handling the meal trays at various work processes were interviewed to capture their feedback and improvement suggestions. The components of direct cost analysis were identified based on previous literature. The resulting costs are compared between reusable and single-use biodegradable meal trays. **Results:** Compared to conventional meal trays, the use of biodegradable meal trays is able to eliminate the dishwashing and drying process and thus streamline the work process. More than 120 minutes can be saved to complete meal-serving activities when using biodegradable trays. It also has an ergonomics advantage and reduces total cost by up to RM 0.59 per patient over four meals in a day. It is estimated that a 12.86% cost reduction can be achieved over a 5-year period if biodegradable meal trays were used in hospital settings. **Conclusion:** Utilization of biodegradable meal trays in a hospital setting is feasible and has numerous advantages to the operating cost and staff involved.

# Navigating clinical trials in resource-limited settings: The EASE trial experience of overcoming obstacles

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## ABSTRACT

**Introduction:** Conducting clinical trials in resource-limited settings poses challenges such as limited infrastructure, inadequate funding, and a scarcity of qualified personnel. Understanding and addressing these obstacles is crucial to improving healthcare outcomes for underserved populations. In view of this, the EASE Trial, a Ministry of Health-owned study, was initiated to specifically focus on finding a cost-effective solution for hepatitis C treatment, with a particular emphasis on vulnerable populations. Additionally, the trial aims to build capacity in healthcare sites that have not previously conducted clinical trials, including Klinik Kesihatan. **Methods:** A comprehensive case study explored challenges faced in the EASE Trial, which aimed to address the specific needs and constraints of a resource-limited setting. Data collection included focused group discussions, document analysis, and on-site observations, providing insights into contextual factors and specific challenges encountered. **Results:** The case study uncovered challenges in the EASE Trial, including limited financial resources, patient selection and recruitment difficulties, inadequate training and capacity in primary healthcare, and insufficient laboratory facilities and logistics. Innovative solutions, such as community engagement, were implemented. Opportunities identified included motivated research teams, the potential for population health impact, and the importance of research leadership in driving successful trials. **Conclusion:** Findings highlighted the importance of addressing limited resources, infrastructure, and trained personnel while adapting to the local context. Strategies to overcome these challenges and leverage opportunities, with a strong emphasis on research leadership, can enhance clinical trial conduct in resource-limited settings, ultimately improving healthcare delivery for underserved populations.

# A rapid review of measuring tools to assess the distribution of hospital-based physicians to ensure an equitable healthcare delivery

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## ABSTRACT

**Introduction:** Equitable healthcare delivery is essential and requires resources to be fairly distributed. However, there is no gold standard for measuring the correct number of physicians to healthcare needs. This study aimed to explore diverse measurement tools used globally to measure the distribution of hospital physicians. **Methods:** A literature search was performed across PubMed, EMBASE, Emerald Insight and grey literature sources. The search used key terms including “distribution”, “method”, and “physician”, focusing on research articles published in English from 2002 to 2022 and describing methods or tools to measure hospital-based physicians’ distribution. Relevant articles were selected through a two-level screening process and critically appraised. The extracted data were synthesised narratively. **Results:** The literature search yielded 7,199 potential studies. However, only 13 studies were eligible and included in the review. Among the included studies, twelve were conducted in Asia, and one was conducted in Africa. The review identified eight measurement tools to guide hospital-based physician distribution: Gini coefficients and Lorenz curve, Robin Hood index, Theil index, concentration index, Workload Indicator of Staffing Need method, spatial autocorrelation analysis, mixed integer linear programming model, and cohort-component model. All measurement tools require similar fundamental data on population and physician numbers to generate output. Five studies used the measurement tools in combination to obtain a more comprehensive understanding of the dynamics of physician distribution within a population. **Conclusion:** Various measurement tools exist to optimize the distribution of hospital physicians and potentially enhance equitable health services. However, each tool has its pros and cons, necessitating further evaluation to accurately assess their effectiveness and feasibility.

# Clinicoepidemiological characteristics of cutaneous malignancy in Sarawak: A 66-month review at the dermatology clinic Sarawak General Hospital, Kuching Malaysia

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## ABSTRACT

**Introduction:** Based on the Malaysia Cancer Registry, the incidence of skin cancer is increasing. We aim to describe the demographic and clinical characteristics of patients diagnosed with cutaneous malignancy in Sarawak. **Methods:** This is a retrospective study on all patients who were diagnosed as having cutaneous malignancy at the Dermatology Clinic, Sarawak General Hospital over 66 months between 2018 and June 2023. Data were obtained from case notes and further analyzed. **Results:** There were 210 patients with a total of 229 lesions being identified. The male-to-female ratio was 2.53:1. The median age at diagnosis was 69 years (range:10-93). More than half of the patients were Chinese. The face was the most frequently reported affected location (37.6%). Of these, 51.2% of the lesions were located at the cheek, followed by the forehead and nose (both 17.4%). Basal cell carcinoma (BCC) was the most common cutaneous malignancy encountered (32.3%), followed by squamous cell carcinoma (SCC, 20.1%), keratoacanthoma 9.2%, melanoma 8.7%, metastatic cutaneous malignancy, SCC in-situ 8.3%, Kaposi sarcoma (KS) 5.2% and primary cutaneous lymphoma 3.5%. Nearly 2/3 of the BCC presented in the age group of 70-89 years. About a third of the SCC developed at the lower limbs. Acral lentiginous melanoma represented 30% of all melanomas. Breast cancer was the most common primary that reported cutaneous metastasis. All except 2 of the KS (83.3%) were associated with HIV infection. **Conclusion:** Our male patients demonstrated a significantly higher risk of primary cutaneous malignancy. BCC was the most encountered cutaneous malignancy.

# Clinical profile and predictors of stroke and major bleeding among non-valvular atrial fibrillation patients on oral anticoagulant therapy: An Asian real-world multicentre study

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## ABSTRACT

**Introduction:** Managing non-valvular atrial fibrillation (NVAF) remains challenging to balance between preventing thromboembolism and bleeding. This study aimed to assess the clinical profile and identify predictors affecting stroke and major bleeding among NVAF patients on oral anticoagulants (OAC). **Methods:** This multicenter retrospective study analyzed data on NVAF patients initiated on OAC from 2013 to 2022 in eight public tertiary hospitals in Malaysia. The primary outcome measures were ischemic stroke and major bleeding. Convenience sampling was used in this study. Logistic regression analyses were used to assess independent predictors of primary outcomes. **Results:** We analyzed 688 patients with a mean age of 70.0±10.4 years and were predominantly male (n=386, 56.1%). Most patients were on warfarin (n=324, 47.1%), followed by dabigatran (n=139, 20.2%), apixaban (n=137, 19.9%), and rivaroxaban (n=88, 12.8%). The incidence of ischemic stroke and major bleeding were 2.8% (n=19) and 2.6% (n=18), respectively. History of ischemic stroke (aOR=5.139, p=0.001) was the only predictor for ischemic stroke occurrence after OAC initiation. Non-vitamin K OAC (NOAC) (aOR=0.198, p=0.011) and concurrent antiplatelet(s) (aOR=3.349, p=0.024) use were the predictors for major bleeding after OAC initiation. **Conclusion:** Identified predictors of stroke and major bleeding allow clinicians to manage NVAF patients better. In stroke prevention among NVAF patients, anticoagulant treatment with NOAC has a similar stroke risk but lower major bleeding risk than warfarin. The concurrent use of antiplatelet(s) among NVAF patients on OAC must be cautious.

# Incidence and predictors of clinically significant renal function decline among non-valvular atrial fibrillation patients on oral anticoagulant therapy: A retrospective, multicenter study

**Koh Hock Peng<sup>1</sup>, R. Nagarajah Jivanraj<sup>1</sup>, Tay Szu Lynn<sup>1</sup>, Tang Jiaa Yinn<sup>1</sup>, Hoo Yee Yin<sup>2</sup>, Mohamed Sahimi<sup>2</sup>, Chua Chelfi Zhi Fei<sup>3</sup>, Tan Sze Ling<sup>3</sup>, Ong Shi Jing<sup>3</sup>, Radhakrishnan Shantini<sup>6</sup>, Zamani Norzahidah<sup>7</sup>, Arumugam Pradeep Kumar Nair<sup>8</sup>**

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## ABSTRACT

**Introduction:** Literature has reported worsening renal function among non-valvular atrial fibrillation (NVAF) patients, while certain oral anticoagulants (OAC) may exert favourable renal outcomes in this population. This study aimed to identify the incidence and predictors of clinically significant renal function decline among NVAF patients on OAC therapy. **Methods:** This multicenter retrospective study analyzed data on NVAF patients newly initiated on OAC from 2013 to 2022 in eight tertiary hospitals in Malaysia. Convenience sampling was used in this study. Clinically significant (>30%) estimated glomerular filtration rate (eGFR) decline after OAC initiation was the primary outcome measure. Logistic regression analyses assessed independent predictors of clinically significant eGFR decline. **Results:** We analyzed 619 patients with a mean age of 70.3±10.3 years and predominantly male (n=347, 56.1%). Most (n=441, 71.2%) patients have underlying chronic kidney disease during warfarin initiation. Clinically significant eGFR decline occurred in 91 (14.7%) patients. Overall, treatment duration (in years) (aOR 1.292, p=0.001), underlying diabetes (aOR 2.740, p<0.001), use of angiotensin-converting enzyme (ACE) inhibitors (aOR 0.557, p=0.019), use of digoxin (in heart failure) (aOR 0.311, p=0.042), and use of statins (aOR 0.573, p=0.040) were the predictors of clinically significant eGFR decline in NVAF patients. **Conclusion:** Clinically significant eGFR decline is common among Malaysian NVAF patients on OAC. Above-identified predictors of renal function decline allow clinicians to manage NVAF patients better.



# Translation, validity and reliability of Chinese Epworth Sleepiness Scale for Children and Adolescents for Malaysian

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## ABSTRACT

**Introduction:** The Epworth Sleepiness Scale for Children and Adolescents (ESS-CHAD) is a valid and reliable self-administered questionnaire for the assessment of excessive daytime sleepiness and screening of sleep-disordered breathing for children and adolescents. This study aimed to translate and cross-culturally adapt ESS-CHAD into a Chinese version (CESS-CHAD) for Malaysians, and to assess its validity and reliability. **Methods:** Forward-backward translation method was used to translate and cross-culturally adapt ESS-CHAD. Content validity for relevancy and clarity was tested using the item-content validity index (I-CVI). Face validity was conducted using semi-structured in-depth interviews with two primary school teachers and 30 native Chinese-speaking children and adolescents followed by thematic analysis. For criterion validity, 156 subjects answered the final CESS-CHAD and Chinese version of the Paediatric Sleep Questionnaire (C-PSQ) concurrently. For formative construct validity, the Variance Inflation Factor (VIF) was analysed using SmartPLS to assess the indicator's multicollinearity. Two weeks later, 32 subjects answered the final CESS-CHAD again for internal consistency and test-retest reliability. **Results:** All eight questionnaire items passed the threshold I-CVI value of 0.79 for relevance and clarity. Spearman Correlation Coefficient value of 0.53 suggested a strong positive correlation between CESS-CHAD and C-PSQ. VIF ranging from 1.25 to 2.45 indicated no collinearity problem. Intraclass Correlation Coefficient ranging from 0.70 to 0.94 and Cronbach's alpha ranging from 0.82 to 0.97 confirmed good to excellent test-retest reliability and internal consistency, respectively. **Conclusion:** ESS-CHAD has been translated and cross-culturally adapted into Chinese for Malaysians, and found to be valid and reliable.

# Association of craniofacial morphology, malocclusion and oropharyngeal soft tissues with obstructive sleep apnea (OSA) among Chinese population

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## ABSTRACT

**Introduction:** Craniofacial morphology, malocclusion, and oropharyngeal soft tissues which are closely related to upper airway obstruction can be the risk factors for OSA. This study aimed to investigate the association of craniofacial morphology, malocclusion and oropharyngeal soft tissues with OSA among the Chinese population. **Methods:** 30 Chinese adult OSA patients with Apnea-Hypopnea Index (AHI) score of 5 and above were recruited in the OSA Group and 30 Chinese adults with STOP-Bang Questionnaires (SBQ) score < 3, Epworth Sleepiness Scale (ESS) < 11, and without any OSA signs or symptoms were recruited in Control Group. Clinical assessments were conducted by one calibrated single operator. **Results:** 83.3% of OSA patients were obese. Among these, 63.3% had severe OSA. Mean body mass index (BMI), neck circumference (NC), and systolic blood pressure (BP) were significantly greater in the OSA Group (38.10 kg/m<sup>2</sup>+8.22; 45.22 cm+5.40; 141.30+16.80) than the Control Group (24.25 kg/m<sup>2</sup>+5.30; 34.22cm+3.81; 120.40+14.70). Bonferroni Post Hoc test revealed a significant association of OSA with Class II skeletal relationship, retrognathic mandible, decreased Frankfort-mandibular plane angle, increased lower anterior face height, macroglossia, tongue scalloping score 2 and 3, Friedman Tongue Position Class 4, tonsillar enlargement, elongated uvula, and narrowing of lateral pharyngeal wall grade 3 and 4. **Conclusion:** Craniofacial morphology, malocclusion, and oropharyngeal soft tissues associated with OSA were identified, which are useful for identifying patients with high risk of OSA for screening and timely referral for diagnosis and management.

# Satisfactory clinical outcome and fracture union of distal femur periprosthetic TKA fracture managed with locking plate - a case series

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## ABSTRACT

**Introduction:** Post-total knee replacement periprosthetic fracture is a relatively rare complication. As devastating as these injuries are, they are also challenging for surgeons due to the ageing population in conjunction with severe osteoporosis. Lewis and Rorabeck classification, which is based on 2 criteria, i.e., presence of displacement and stability of the implant, is most frequently used for distal femur periprosthetic fractures. **Methods:** This case series included 4 patients above 70 years of age who underwent total knee arthroplasty between 2014–2022 and had complications of Type II distal femoral fracture. **Results:** There were 4 patients with distal femur periprosthetic fractures following primary TKA (3 females and 1 male). Low-velocity injury (alleged slip and fall) was the cause of all these peri-prosthetic fractures. The mean age of the 4 patients was 70 years. Postoperatively, all patients were treated with anti-osteoporotic drugs (calcium and calcitriol). All patients were classified as Type II based on Lewis and Rorabeck classification and a distal femoral locking plate was used as the implant of choice. Radiographic union was 100% at a mean of 28 weeks postoperatively. KOOS score was: Mean pain - 89, Symptoms - 83, ADL function - 81, and Knee related quality of life -71. **Conclusion:** Periprosthetic fracture of the distal femur can be treated non-operatively or surgically with a locking plate, intramedullary nail or revision TKA. This case series shows that these fractures when treated with a locking plate can achieve satisfactory clinical and radiographic outcomes.

# Efficacy and safety of aprepitant vs. olanzapine for chemotherapy-induced nausea and vomiting (CINV) prophylaxis: An open-label randomized controlled trial (RCT)

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## ABSTRACT

**Introduction:** Olanzapine, which is an atypical antipsychotic medication has been shown to be useful in CINV prevention and may be an economical alternative. However, the use of olanzapine in Malaysia is currently not advocated. As such, this RCT aimed to evaluate the efficacy and safety of olanzapine compared to aprepitant, a relatively novel and costly antiemetic, for the prevention of CINV in local healthcare settings. **Methods:** This multicenter, open-label RCT was conducted between August 2022 and March 2023. Fifty-nine chemo-naïve patients between 18 to 69 years old, who planned to receive highly-emetogenic chemotherapy (HEC) in outpatient settings were randomly allocated into olanzapine or aprepitant arm in a 1:1 ratio. All prophylaxis was given for 3 days. The outcome was complete response (CR) of no nausea and vomiting, within 5 days after chemotherapy, as evaluated by the Multinational Association of Supportive Care in Cancer (MASCC) Anti-emesis Tool (MAT). Side effects were analyzed by the Patient-reported Outcome of Common Terminology Criteria for Adverse Effects (PRO-CTCAE). **Results:** Overall, CR rates were 46.7% for the olanzapine and 24.1% for the aprepitant arms ( $p=0.071$ ). However, the olanzapine arm was superior for overall nausea control ( $p=0.037$ ) and acute CINV phase control ( $p=0.006$ ). The olanzapine group demonstrated to be equally as safe and well tolerated as the aprepitant group except for heartburn where patients in the olanzapine arm reported lower than the aprepitant arm ( $p=0.001$ ). **Conclusion:** Equivalent to aprepitant, olanzapine is a safe and effective choice for CINV prevention in patients receiving HEC, especially when the cost is the main limitation.

# Translation and validation of Visual Analogue Scale-Fatigue (VAS-F) to evaluate the severity of fatigue in healthy individuals

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## ABSTRACT

**Introduction:** Visual Analogue Scale-Fatigue (VAS-F) was established to evaluate the degree of fatigue severity. Respondents mark "X" along a visual analogue scale between two extremes for 18 items. Preliminary psychometric evaluations revealed high internal reliability ranging from 0.94 to 0.96. This study was initiated to validate a translated Malay language VAS-F among healthy individuals following an 18-24-hour wakefulness period. **Methods:** The English VAS-F underwent forward and backward translations by four experts. The translated Malay language questionnaire (VAS-F-MAS) was pilot-tested on 15 subjects and revised accordingly. Validation of the revised questionnaire was carried out on 30 healthy individuals following an 18-24-hour wakefulness period. Cronbach alpha value of at least 0.70 suggests adequate internal consistency and reliability. The criterion validity test for VAS-F-MAS was done by completing it before and after at least 18 hours of wakefulness. **Results:** Results from the pilot phase demonstrated that the translation was fully understood by the respondents. For the fieldwork phase, the mean (SD) age of respondents was 29.1 (5.3) years with majority female (66.7%), and Malay (63.3%). The Cronbach's alpha of the translated questionnaire showed excellent reliability with Cronbach Alpha 0.947 and 0.919 for the pre-test and post-test respectively. The baseline mean (SD) score for VAS-F-MAS was 8.9 (11.9) and increased to 79.8 (13.6) following an 18-24 hours wakefulness period, with  $p < 0.001$ . **Conclusion:** The translated VAS-F-MAS scale is reliable and valid to measure the degree of fatigue severity following an 18-24-hour wakefulness period.

# Knowledge towards post-cardiac catheterization care among cardiac nurses in Queen Elizabeth 2

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## ABSTRACT

**Introduction:** Cardiac catheterization procedure is used worldwide to identify heart and coronary diseases. Studies showed that nurses with a lack of knowledge in taking care of patients in post-cardiac catheterization can cause minor or major complications, typically bleeding, hematoma, and pseudoaneurysm. The purpose of this study was to determine the knowledge of post-cardiac catheterization care among cardiac nurses and to determine the association between the level of knowledge and their working experiences in post-cardiac catheterization care. **Methods:** A cross-sectional study was conducted on 56 cardiac nurses in Hospital Queen Elizabeth II and the knowledge was evaluated by using validated questionnaires. **Results:** The studies show 38 (67.9%) cardiac nurses have moderate knowledge regarding post-cardiac catheterization care. However, more than 50% of cardiac nurses are unable to recognize the cause of pseudoaneurysms. There was no association between the level of nurses' knowledge and nurses working experiences in post-cardiac catheterization care ( $p=0.897$ ). **Conclusion:** The current study revealed that more than half of cardiac nurses had a moderate level of knowledge which required educational support in managing post-cardiac catheterization patients. Future research can focus on identifying this moderate group and finding solutions to improve the cardiac nurses' knowledge.

# Hypothetical budget impact analysis of patient access schemes in the management of metastatic breast cancer in Malaysia

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## ABSTRACT

**Introduction:** In Malaysia, cancer is one of the leading causes of death, where breast cancer is the number one cancer in Malaysia. Given the increasing pressure on healthcare budgets, payers are forced to restrict access to drugs. This study aims to evaluate and estimate the costs from a payer's perspective and the benefits of the Patient Access Scheme (PAS) as an alternative to improve access to innovative therapy. **Methods:** A Delphi Panel was used to identify the epidemiological and resource data to estimate the cost inputs of estrogen/progesterone positive, and HER-2 negative metastatic breast cancer (MBC). Three rounds of the Delphi Panel were used to identify, explore and confirm the inputs. A budget impact model estimated the 3-year budget impact analysis of introducing PAS for the Cyclin-dependent kinase (CDK) 4/6 inhibitors in the management of MBC. **Results:** The study estimated 240 new patients per year were treated either with or without the innovator CDK 4/6 inhibitors. Both simple and complex finance-based PAS reduced the overall cost in line with the cost reduction. The outcomes-based schemes with a refund for failed therapy produced limited benefits. An affordability-based patient co-sharing scheme reduced the overall cost with limited benefits. **Conclusion:** The budget impact analysis shows a large increase in cost even with PAS. Among the hypothetical scenarios, a simple scheme with a 70% discount showed an equivalent reduction in budget impact analysis. PAS must be considered on a case-by-case basis and by specific indication to reduce the risk of unexpected budget expansion.

# The knowledge of warfarin therapy among atrial fibrillation patients in Cardiology Clinic, Queen Elizabeth Hospital II, Kota Kinabalu, Sabah

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## ABSTRACT

**Introduction:** Patients with atrial fibrillation (AF) are treated with anticoagulant therapy to reduce the risk of developing a stroke. Studies have shown that inadequate patient knowledge regarding warfarin therapy corresponds to the risk of adverse events, primarily significant bleeding, and difficulties in maintaining treatment within the therapeutic index. The purpose of this study is to assess knowledge of warfarin therapy among patients with atrial fibrillation and to determine the relationship between the patient's demographic data and their knowledge of warfarin therapy. **Methods:** A cross-sectional study was conducted on 156 patients with AF at Sabah Heart Centre. The knowledge was measured using a validated questionnaire. **Results:** The findings showed that 98 (62.8%) of the patients have adequate knowledge regarding warfarin therapy. However, more than 50% of the patients have inadequate knowledge when it comes to taking other medications such as antibiotics. A significant relationship was found between the patients' level of education and their knowledge of warfarin therapy ( $p=0.025$ ). **Conclusion:** The current study revealed that almost 40% of the patients have inadequate knowledge about warfarin therapy. Future research should emphasize identifying this inadequate knowledge group and design more patient-friendly and effective health education tools in order to improve the therapeutic effects of warfarin.



# How did the population's critical pandemic indicators change with COVID-19 vaccinations in Malaysia?

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## ABSTRACT

**Introduction:** This study aims to evaluate space-time correlations between COVID-19 vaccination rates with critical pandemic indicators in Malaysia. **Methods:** Region-wise ecological analysis was conducted between 1 January 2021 and 30 June 2022 within three major phases of pandemic control measures across the country. State-wise population-level data from official government open source was extracted and aggregated to the regional level to visualize distributional choropleths of COVID-19 vaccination rates with ICU admissions and case-fatality rates. Region-wise correlations ( $r$ ) and their associated percentage of shared variance ( $r^2$ ) factors were synthesized to observe the strength of associations. A total of 4,456,066 cases that contributed to 292,897 ICU admissions and 35,378 deaths were computed to yield aggregated phase-based pandemic indices by regions in Malaysia. Vaccination rates were calculated based on the number of people who completed the primary dose (27,275,616 people) and booster shots (16,230,989 people). **Results:** ICU admissions and case fatality rates showed statistically significant reductions with increased vaccination rates over time in the country. **Conclusion:** These findings suggest vaccination is a crucial element for population-level pandemic suppression.

# Point cloud estimations on the effect of vaccination rates with COVID-19 cases and hospital admissions in Malaysia

**Ganasegeran Kurubaran<sup>1</sup>, Jamil Mohd Fadzly Amar<sup>1</sup>, Ch'ng Alan Swee Hock<sup>1,2</sup>, Looi Irene<sup>1,2</sup>, M.Peariasamy Kalaiarasu<sup>3</sup>**

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## ABSTRACT

**Introduction:** This study evaluated the influence of vaccination rates on the propagation effect of COVID-19 cases and hospital admission by states in Malaysia. **Methods:** State-wise ecological analysis was conducted between 1 January 2021 and 30 June 2022 within three major phases of pandemic control measures in the country. Data was obtained from the official government open-source portal and aggregated at the state level. We computed variation metrics that cover vaccination rates attributed directly to COVID-19 incident cases and hospital admissions for each state in Malaysia within the interpretations of the coefficient of determination (R<sup>2</sup>) values. Through mathematical computations, we used linear regression equations  $Y = B + aX$  to deduce the expected rise or decrease of COVID-19 cases or hospital admissions as per increase for a unit change in vaccination rates. **Results:** At a significance level of 5%, the rate at which vaccinations explained the control of COVID-19 cases during Movement Control Order (MCO), Total Lockdown, National Recovery Phases 1, 2, and 3, and during the endemic phases was 35.2%, 12.4%, 3.9%, 11.8%, 27.9%, and 59.5% respectively. Similarly, at a significance level of 5%, the rate at which vaccinations explained the control of COVID-19 hospital admissions during Movement Control Order (MCO), Total Lockdown, National Recovery Phases 1, 2, and 3, and during the endemic phases was 1.5%, 12.4%, 48.2%, 0.06%, 48.2%, and 51.7% respectively. **Conclusion:** At the countrywide level, it was found that vaccinations had significantly suppressed the spread of COVID-19 cases and controlled hospital admissions over time.

# Embracing feline affection with caution: Unveiling the realm of cutaneous sporotrichosis

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## ABSTRACT

**Introduction:** Cutaneous sporotrichosis is a fungal infection of the skin, subcutaneous tissue, and lymphatics caused by *Sporothrix schenckii*. This research aimed to identify the factors affecting treatment outcomes of cutaneous sporotrichosis cases seen in Terengganu. **Methods:** This is a retrospective cohort study, reviewing medical records of cutaneous sporotrichosis cases from a dermatology referral centre in Terengganu over a 4-year span (2016-2019). This study included cases that achieved complete resolution of their lesion, with time to recovery as the outcome measure. **Results:** A total of 128 cutaneous sporotrichosis cases were included in the analysis. The mean age of the study population was 44.1 (SD=18.43) years, with 70.3% being females. A large percentage (73.4%) had contact with cats, while 19.5% of the cases had gardening activities. Oral itraconazole 120 (93.8%) was the primary treatment, with a mean time to recovery of 19.2 (SD=6.25) weeks. The presence of gardening activities (mean time to recovery of 21.73 vs 16.76 weeks ( $p=0.002$ ; 95%CI=1.79,8.14) and contact with cats (mean time to recovery of 21.50 vs 16.99 weeks ( $p=0.004$ ; 95%CI=1.47,7.55) were two significant factors that prolonged the time to recovery. Other investigated factors did not show any significant association towards the recovery time. **Conclusion:** This study identified the presence of gardening activities and contact with cats as the significant factors affecting the time to recovery in cutaneous sporotrichosis cases in Terengganu.

# Hyperkalemia in potential deceased donor do we need a correction? : A case report

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## ABSTRACT

**Introduction:** The organ donation process requires a lot of effort from potential deceased donor detection until successful transplantation. One of the most critical phases is managing the donor itself which requires haemodynamic stability before going to the procurement process. In comparison to other parts of the world which practice global brain death assessment, Malaysia is one of the countries that diagnoses brain death based on brain stem assessment (Consensus of Brain Death 2003). **Methods:** A case of 27-year-old lady diagnosed with arterial-venous malformation with spontaneous intracranial bleeding and obstructive hydrocephalus suspected to cause brain death became an actual donor of kidneys, liver and both corneas. All data from admission till the procurement process was collected and reported. In this case, the main focus was on potassium level management prior to brain death assessment. **Results:** Upon admission to the ICU, the patient developed hyperkalemia with potassium of 5.8mmol/L and unnecessary correction with a lytic cocktail was administered. The patient persistently became hypokalemic for the next 24 hours, hence needing further potassium correction before proceeding with a brain death assessment. Despite a delay in determining brain death, the procurement process was uneventful. **Conclusion:** The action of unnecessary correction of electrolyte effect on maintaining the donor thus prolongs the process of organ procurement. Furthermore, the longer time taken in the maintenance of organ donor will negatively affect the quality of their organs. A new and updated guideline needs to be established for brain death consensus.

# PICKids Power-Up: Did Pfizer and Sinovac vaccination shield hospitalisation in Malaysian children (6 to 11 years old) during the Omicron surge? Analysis using multi-linked national surveillance data

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## ABSTRACT

**Introduction:** Starting February 2022, Malaysia authorised Pfizer and Sinovac vaccines for children aged 5-11 under the national immunisation program (PICKids). This study aimed to assess vaccine effectiveness (VE) against COVID-19 hospitalisation in Malaysian children aged 6-11, considering the unique vaccine profiles, dosing strategies, and dose intervals in the country. **Methods:** A national cohort of public school children aged 6 to 11 was created using the student registry, vaccination records, COVID-19 cases line listing, and hospital discharges. Time to hospital admission was the primary outcome. Data was gathered from various administrative sources under the Ministry of Education and Ministry of Health Malaysia. COVID-19-related hospitalisations were extracted from the Medical Treatment Report System, MyHealthDataWarehouse. Survival analysis was utilised to estimate hazard ratios adjusting for important covariates such as age, sex, regions and history of infection. **Results:** The study included 2,203,846 children, with 119,698 partially vaccinated and 918,638 fully vaccinated with either Pfizer or Sinovac. The estimated VE against hospitalisation was 21% (95% CI: 10-30%) and 84% (95% CI: 82-86%) for one- and two doses of vaccines. The VE for full vaccination was 59% (95% CI: 37-73%) and 85% (95% CI: 83-87%) with Sinovac, and Pfizer, respectively. **Conclusion:** This study is the first to compare Pfizer and Sinovac VE against COVID-19 hospitalisation under Omicron dominance in children in Malaysia. The VE of Pfizer (85%) was higher than previous studies in the US and Italy but similar to Singapore, while the VE of CoronaVac (59%) was consistent with observations in Brazil. This study informs child vaccination strategies during the Omicron pandemic and public health policies.

# Twice boosted, double shielded? Dissecting the real-world marginal effectiveness of the second booster against COVID-19 admission and death using a multi-database linkage approach

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## ABSTRACT

**Introduction:** This study leveraged a multi-database approach to estimate the marginal vaccine effectiveness (VE) of the second COVID-19 booster dose. **Methods:** The Malaysian COVID-19 vaccination registry (MyVas) for COVID-19 vaccinations, Medical Treatment Report System, MyHealthDataWarehouse (MyHDW) for hospital admissions and the Ministry of Health COVID-19 line lists for cases and deaths were deterministically linked. Marginal VE against admission and deaths was modelled using an adjusted Cox regression with a time-varying coefficient to account for the waning of vaccines. Analysis was further stratified by age and healthcare-worker status. **Results:** Marginal VE against hospital admissions was 32% (95% CI: 0.26, 0.37) for the second booster compared to the first booster dose. Stratified findings indicate a higher appreciable of the marginal VE of 42% (95% CI: 0.36, 0.47) against admission in individuals over 60. VE against deaths for the second booster dose compared to the first booster dose was 30% (95% CI: -0.07, 0.54) and 35% (95% CI: -0.02, 0.59) in the general population and individuals above 60, respectively, with both confidence intervals crossing unity. **Conclusion:** This study's findings suggest the benefit of a second booster dose against hospital admission among older age groups. Its corresponding effectiveness against death is less appreciable due mainly to the low numbers of deaths observed across the study period. Leveraging modern observational approaches using multi-database linkage and big-data approaches allows for continuous monitoring of vaccine effectiveness within the population. Such comprehensive and dynamic approaches should be considered crucial in shaping future pandemic control frameworks.

# Sociodemographic profile and prevalence of tuberculosis (TB) treatment outcomes among Malaysian TB/ HIV co-infected patients: 5 Years record review

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## ABSTRACT

**Introduction:** Tuberculosis (TB) is a global public health problem and the leading cause of death. Our objective was to assess the socio-demographic profile and prevalence of TB treatment outcomes among Malaysian TB/HIV co-infected from 2016 to 2020. **Methods:** This cross-sectional study was carried out at TB/Leprosy Sector, MOH by reviewing the secondary data from the MyTB online system. The data were analysed using SPSS version 25.0. Ethics approval was obtained from the Medical Research Ethics Committee (MREC). **Results:** There were 7002 TB/HIV co-infected patients in Malaysia. Of these, 1487 were excluded due to transferring out, a change of diagnosis, ongoing treatment, unknown treatment outcomes, non-citizens and age <18 years old. Therefore, 5515 TB/HIV co-infection was evaluated. Of these, their mean (SD) age was  $39.8 \pm 10.59$  years, and the mean (SD) duration of treatment was  $179.7 \pm 129.01$  days. The majority of cases were male (89.7%), Malays (96.7%), secondary level education (66.3%), had BCG scar (95.8%), new cases (82.8%), non-smoking (51.7%), under DOTS by health care providers (59.6%), had Pulmonary TB (68.3%), minimal Chest X-Ray (47.2%), and from Selangor (24.8%). The prevalence of successful TB treatment was 56.3%, with 24.3% cured and 32.0% completed treatment. While the prevalence of unsuccessful was 43.7%, with 0.7% failure, 10.0% defaulted and 33.0% died. **Conclusion:** This study provides the basic data of patients' socio-demographic profiles, and the prevalence of TB treatment success rate was still under the international target WHO of >90.0%.

# Postpartum females' knowledge retention, injection technique and adherence to therapy after thromboprophylaxis counselling by pharmacists

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## ABSTRACT

**Introduction:** Postpartum females started on Enoxaparin for thromboprophylaxis receive counselling from pharmacists prior to discharge. This research aimed to determine their ability to recall related counselling points, demonstrate injection technique, and eventual adherence to the therapy, which was never assessed. **Methods:** This prospective cross-sectional study was conducted at maternity wards in Sarawak General Hospital between March and June 2023. Conveniently sampled self-injection-naïve postpartum females had their knowledge regarding thromboprophylaxis and injection technique assessed one day after pharmacist's counselling. A telephone interview was conducted at the end of the therapy to determine their adherence and the adverse effects experienced. **Results:** A total of 259 patients were successfully followed up. The majority were Malay (49.4%), had secondary education (51.7%) and the mean age was  $29.4 \pm 5.39$  years old. Eighty-eight percent were adherent, with non-adherence predominantly caused by forgetfulness to inject. Participants answered a median of 5/7 knowledge questions correctly, with those who had read the counselling leaflet provided ( $p=0.02$ ) and tertiary-educated ( $p=0.04$ ) scoring higher. They demonstrated a median of 8/10 injection steps, including 5/6 critical steps correctly. A significantly better technique was shown by those who were more confident ( $p=0.02$ ) and planned to self-inject ( $p<0.01$ ). One-third of participants experienced side effects at the injection site, twelve had systemic side effects. **Conclusion:** Postpartum females have satisfactory adherence to treatment but did not demonstrate perfect knowledge of thromboprophylaxis and Enoxaparin injection technique post pharmacist's counselling. An additional reassessment and consolidation session, and augmenting counselling with visual aids are suggested to enhance information retention.



# A systematic review of digital health models for clinical prediction, surveillance, and management of dengue

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## ABSTRACT

**Introduction:** Digital health models are increasingly applied for the prevention, detection, and prediction of diseases including dengue infection, the leading cause of mosquito-borne viral infections worldwide. This study aimed to systematically review published literature that utilised digital health models for clinical prediction, surveillance, and management of dengue. **Methods:** A systematic review was conducted by using the PubMed, Scopus and Cochrane Library databases for published citations of primary studies evaluating different types of digital health models in surveillance, management and prediction for dengue clinical outcomes. We excluded studies with no original data related to the topic. Two reviewers independently assessed and extracted the data using a standardised template. **Results:** Our review included 24 out of 254 papers. Digital health models were applied for clinical prediction (70.8%), clinical prediction and management (12.5%), clinical prediction and surveillance (8.3%), and management and surveillance of dengue infections (4.2%), respectively. Prognostic models were used in four studies (16.7%) among critically ill patients with severe dengue, profound shock and high risk of recurrent shock and respiratory distress, with two papers reporting platelet counts as an important factor for prognostication. Other digital health models were used for early warning systems in dengue outbreaks, entomological outcomes, dengue hotspots forecast associated with variations in meteorological parameters, and vaccine efficacy prediction for dengue. **Conclusion:** The reporting of the model performance measures was limited in some of the published literature. Hence, future research should evaluate the longer impact and performance validation of the digital health models.

# Demography and clinical characteristics of young-onset type 2 diabetes mellitus in Johor: A 5-year cross-sectional study

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## ABSTRACT

**Introduction:** Young-onset Type 2 Diabetes Mellitus (T2DM) is defined as T2DM diagnosed before age 40. Understanding young diabetics enables stakeholders to make better-informed decisions when planning long-term management. Our objective is to explore the demographic and clinical characteristics of young diabetics in Johor. **Methods:** This is a cross-sectional study of T2DM patients recorded into the National Diabetes Registry (NDR) audit data set between January 2017 to December 2021. Data from 3151 young diabetics were extracted and analysed. **Results:** The mean age for diagnosis was 32 years (s.d. 5.6). Sixty percent of the subjects were female, and a majority of the subjects were Malay (72%). Dyslipidaemia is the most common comorbidity (n=2759, 87.6%), with 1470 subjects (46.7%) having all three comorbidities (dyslipidaemia, hypertension, and obesity). Out of the 847 subjects who developed at least one macro-/microvascular complication, 63.8% of them had nephropathy. Only one-fifth of subjects recorded HbA1c levels below 7%, with the mean value being 9.2% (s.d. 2.38). The largest proportion of diabetes treatment combinations seen is insulin with at least one oral glucose-lowering drug (OGLD) (n=1138, 36.1%), and the most used antihypertensive agent is the angiotensin-converting enzyme (ACE)-inhibitor (n=1240, 39.4%). **Conclusion:** Young T2DM is a rising cause for concern for clinicians, as these patients live longer with T2DM, increasing their chances of developing complications. This study showed that more aggressive approaches should be implemented with the aim of reducing the mean HbA1c of this target group to prevent the development of new and worsening of existing complications.

# Satisfaction of patients and caregivers towards pharmacy value-added services during the COVID-19 pandemic in Hospital Sibul, Sarawak

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Pharmacy Department, Hospital Sibul, Sa

## ABSTRACT

**Introduction:** Pharmacy Value Added Service (VAS) is an initiative by the Ministry of Health to help ease patients in collecting their medication supply. It includes Drive-Through Pharmacy (DT), Local Partial Medication Supply Service, locally known as Pusat Pembekalan Ubat Susulan Setempat (PPUSS), Integrated Drug Dispensing System, locally known as Sistem Pendispensan Ubat Bersepadu (SPUB), Medicine by Post, locally known as Ubat Melalui Pos (UMP) and Call-and-Collect Service, locally known as Telefon & Ambil (T&A). During the COVID-19 pandemic, the number of patients subscribing to VAS more than doubled. Our objective is to determine the satisfaction towards VAS received. **Methods:** This was a single-centre, cross-sectional study in the outpatient pharmacy of Hospital Sibul, involving patients and caregivers who received at least one prescription refill using VAS between February to May 2022. Data was collected using a validated self-administered questionnaire adapted from a previous study. **Results:** A total of 356 responded. The majority were male (186, 52.2%), Chinese (184, 51.7%), with tertiary education (144, 40.4%) and self-employed (122, 34.3%). The overall mean satisfaction score was 4.56 (SD:0.57) out of 5. Respondents viewed time-saving as the most significant benefit with a mean score of 4.63 (SD: 0.55) followed closely by cost-saving with a mean score of 4.61 (SD 0.57). Factors influencing the choice of VAS include age ( $p<0.001$ ) and education level ( $p<0.001$ ), with younger and more educated respondents opting for UMP instead of DT. Suggestions to improve include longer operating hours (12, 3%) and more service counters (5, 1%). **Conclusion:** The majority of respondents recorded high satisfaction towards VAS. The pharmacy department may consider increasing the types of VAS to cater to the needs of a wider population.

# In-hospital antimicrobial usage in COVID-19 patients and multidrug-resistant organisms incidence (COVAM): A multi-centre study

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## ABSTRACT

**Introduction:** Increased antimicrobial prescriptions among COVID-19 patients raised concerns about multidrug-resistant organisms (MDRO). We aimed to investigate the in-hospital antimicrobial usage among COVID-19 patients, the incidence of MDRO, and factors associated with antimicrobial prescriptions. **Methods:** This two-year cross-sectional study extracted medical records of COVID-19 patients admitted to the 10 government-funded hospitals in Perak State, Malaysia. Cases were proportionately sampled from each facility using simple random sampling. The need for antimicrobials, oxygen support, immunomodulator, and antiviral therapy was collected. The COVID-19 severity upon admission with the worst stage during hospitalisation, laboratory findings, culture and sensitivity results, and COVID-19-related complications were included. A sample size of 480, including 20% dropout was estimated. Binary logistic regression analysis was used. **Results:** Of 476 COVID-19 cases, 167 (35.1%) and 13 (2.7%) patients prescribed antibiotics and antifungals, respectively. There were 396 prescriptions; antibiotics accounted for 381, and antifungals 15. Beta-lactam inhibitor combination (n=206) and echinocandins (n=9) were the most prescribed antimicrobials. Antibiotics were mostly prescribed in non-intensive care settings (n=275), whereas antifungals were mostly prescribed in intensive care settings (n=10). Of 119 cases prescribed with antimicrobials with cultures taken, 10 detected MDRO, with *Stenotrophomonas maltophilia* being the commonest. Higher odds of antimicrobial prescription were seen in cases with immunomodulator use (p-value <0.001) and COVID-19-related complications (p-value <0.001). **Conclusion:** Antimicrobial usage was at a lower limit than in previous studies (34.2%-71.0%). Similarly, the incidence of MDRO was also at a relatively lower range compared with existing literature. Antimicrobial prescriptions were significantly associated with immunomodulator use and COVID-19-related complications.

# Efficacy and safety of parenteral iron dextran among pregnant women with iron deficiency anaemia and their newborns in a tertiary hospital in Malaysia

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## ABSTRACT

**Introduction:** Maternal iron deficiency anaemia (IDA) is associated with a risk of adverse maternal and perinatal outcomes. Administration of low molecular weight iron dextran (LMWID) suggests a good safety and efficacy profile in the treatment of IDA. However, the outcomes of parenteral iron dextran among pregnant women and their newborns are unknown despite the risk of adverse effects in Malaysia. This study aimed to evaluate the efficacy and safety of iron dextran use among pregnant women and their newborns. **Methods:** This single-centre retrospective study analysed data on pregnant women who were diagnosed with IDA and received parenteral iron dextran and delivered at Hospital Tengku Ampuan Rahimah (HTAR) Klang from 2020 to 2021. The main outcome measure was a haematological improvement of anaemia post-therapy pre-delivery. The impact of maternal anaemia on maternal outcomes and perinatal was studied. To assess the safety, adverse drug effects during treatment were recorded. **Results:** Among 106 patients, of which the subjects' mean age was  $28.8 \pm 0.55$  years, predominantly Malay ethnic ( $n=78, 73.6$ ). Following LMWID treatment, there was a significant increase in mean Hb of  $1.53 \pm 0.12$  g/dL ( $p$ -value=0.007). Other parameters including mean corpuscular volume (MCV) ( $p$ -value<0.05) and hematocrit ( $p$ -value=0.003) also improved significantly. There was no significant association of maternal anaemia with maternal outcomes. Significance associations were seen in the severity of maternal anaemia pre-delivery with preterm birth ( $p$ -value=0.007) and NICU admission ( $p$ -value=0.044). No serious adverse event was observed for the treatment of parenteral LMWID. **Conclusion:** Maternal anaemia is associated with preterm birth and NICU admission. Parenteral LMWID provides a safe and effective iron supplementation in pregnancy-related IDA.

# Perceived effectiveness of domiciliary care services at Hospital Seberang Jaya: A qualitative study on the healthcare professionals' views

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## ABSTRACT

**Introduction:** The domiciliary (domi) service comprises, medical and rehabilitation services done at the home of patients to ensure uninterrupted care upon early discharge from the hospital. It renders support to family members in training the caregiver and reduces readmission by providing quality medical care at home and in the community. The objective of the study is to explore the perceived effectiveness of domiciliary services at Hospital Seberang Jaya (HSJ), Penang. **Methods:** A total of 53 respondents (34 trained nurses, 5 matrons, 8 sisters, 4 occupational therapists and 2 physiotherapists) involved in domiciliary care from the medical, surgical, orthopaedic and paediatric wards of HSJ were interviewed using a semi-structured questionnaire as a guide. The interviews were done in homogenous focus groups or as individual interviews, which were audio recorded, transcribed and thematically analysed using NVivo 12 Plus. **Results:** The perceived effectiveness in 3 domains are categorised into current and future. Current; Health System Factors (Lesser readmissions and smooth inter-departmental referrals), Health Professional Factors (positive outlook for domic continuation), Patient and Caregiver factors (hasten wound healing and continual home rehabilitation). Future effectiveness; Health System Factors (Improvise technical support, dedicated ward, a mobile, stronger team, create public awareness, equipment guidance and bilateral communication with Health Centres), Health Professional Factors (pre-plan discharges, tasks continual reminders), Patient and Caregiver Factors (active participation and family support). Encompassing all are continual monitoring and knowledge update measures. **Conclusion:** The health system, health professional and Patient and Caregiver factors are optimal for a more feasible, conceivable and effective delivery of domiciliary services at HSJ.

# Assessment of adverse drug reactions in shorter and longer treatment regimens for drug-resistant tuberculosis in a tertiary care respiratory centre

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## ABSTRACT

**Introduction:** Drug-resistant tuberculosis (DR-TB) managed with shorter (STR) or longer (LTR) treatment regimens reported a high occurrence of adverse drug reactions (ADR), with a scarcity of local data. This study characterised the ADR in the STR and LTR DR-TB patients at a tertiary care respiratory centre. **Methods:** A cross-sectional study was conducted among adult DR-TB patients at the National Respiratory Centre from January 2017 to January 2021. A validated and piloted data collection form was used to extract ADR data from medical records and ADR report forms of STR and LTR patients. Data was analysed descriptively using SPSS version 24. **Results:** Eighty-one patients (mean age 41.1±14.1) were included, with 55.6% (n=45) on LTR. Sixty-four (79%) patients experienced at least one ADR resulting in 77 ADR cases. Most ADRs (61.4%, n=43) were reported among LTR patients. The suspected drugs mostly were Kanamycin (29.9%, n=23), Cycloserine (18.2%, n=14) and Ethionamide (14.3%, n=11). Causality was certain in 18.1% and 32.5% of STR and LTR, respectively. Majority of serious ADR (n=5, 14.7%) were observed in STR. The ADR caused or prolonged hospitalisation in 15.1% and 23.3% of STR and LTR patients, respectively. Most reported ADR in STR and LTR were gastrointestinal disorders, each with 14.3% (n=11) cases. About 20.8% (n=16) STR and 28.6% (n=22) LTR patients fully recovered from the ADR. **Conclusion:** Occurrences of ADR were comparable among STR and LTR DR-TB patients with a preponderance of serious ADR in STR. Future efforts could focus on the identification of ADR risk factors in order to optimise DR-TB treatment.

# The pattern of fasting among pregnant women with diabetes mellitus during Ramadan

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## ABSTRACT

**Introduction:** The risk of Ramadan fasting in pregnant women with diabetes mellitus (DM) is either moderate or high, based on the IDF-DAR (International Diabetes Federation - Diabetes and Ramadan Alliance) risk stratification tool. This study was conducted to describe the pattern of Ramadan fasting among pregnant women with DM and to calculate their risk score for fasting. **Methods:** A cross-sectional survey post Ramadan whereby Muslim pregnant women with DM attending antenatal clinic in Hospital Putrajaya and Klinik Kesihatan Putrajaya were interviewed for fasting days, episode of hypoglycemia (blood glucose  $<3.9\text{mmol/l}$ ), hyperglycemia (blood glucose  $>16.0\text{mmol/l}$ ) and hospital admission during Ramadan. Using IDF-DAR risk calculation, scores were calculated retrospectively and medical notes were reviewed for demographic and diabetes information. **Results:** There were fifty-nine patients with a mean age of 35 years and the majority were multigravida. More than half of them had gestational diabetes mellitus (57.6%). There were 41 patients (69.5%) who had moderate risk with more than half having GDM. Eighteen patients (30.5%) had high risk with most of them having Type 1 and Type 2 DM. Mean fasting days were 15 days in moderate-risk and 7.8 days in high-risk group ( $p=0.041$ ). There were 12.2% (moderate-risk) and 22.0% (high-risk) episodes of hypoglycemia reported. Hyperglycemia was 5.6% in high-risk groups and none in moderate-risk. Only two patients in the high-risk group required admission during Ramadan. **Conclusion:** All pregnant women with DM who fasted during Ramadan were in a moderate and high-risk group. The mean fasting days were less in a high-risk group due to the high risk of complications.



# Prescribing pattern of human normal globulin in Hospital Sultanah Nur Zahirah: A 3-year retrospective study

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## ABSTRACT

**Introduction:** Human Normal Globulin, commonly known as Intravenous Immunoglobulin (IVIG), is an effective anti-inflammatory and immunomodulatory treatment for a range of disorders. The list of IVIG indications has grown rapidly, requiring appropriate prescribing guidelines to optimize IVIG utilization. **Methods:** This study aimed to describe the IVIG prescribing patterns in terms of indications using the Ministry of Health Medicines Formulary (MOHMF) as a guideline. A retrospective observational study was conducted which included the data collection of all patients prescribed with IVIG from 1st January 2019 to 31st December 2021. **Results:** Collectively, there were 550 patients being prescribed with IVIG. A total of 294 (53.5%) cases complied with the MOHMF indication, with immune thrombocytopenia being the highest indicated case (n=79, 14.4%), followed by neonatal jaundice (n=67, 12.2%) and Kawasaki disease (n=54, 9.8%). Of 256 cases that did not comply with MOHMF, 137 cases were found to have an indication, either per U.S. Food and Drug Administration or European Medicines Agency guidelines. A sum of 126 (22.9%) patients were prescribed IVIG for off-labeled indications, in which the highest indication was for Multisystem Inflammatory Syndrome in Children (MISC). The paediatric department had the highest number of IVIG usage (n=353, 64.2%) followed by medical (n=81, 14.7%), haematology (n=39, 7.1%) and neurology (n=38, 6.9%), respectively. **Conclusion:** This study found a significant proportion of IVIG off-label indications, echoing earlier local publications. There is an urgent need to revise clinical practice and MOHMF recommendations to improve standardization in the use of IVIG in Malaysia.

# Challenges in conducting a 10-year cohort: Prediction for cardiovascular events, diabetes and hypertension from a Sarawak cohort (PreCEDES)

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## ABSTRACT

**Introduction:** PreCEDES is an extension study from LIFECourse Study in CARDiovascular disease Epidemiology (LIFECARE), a cohort study to identify biological, lifestyle and psychosocial factors associated with individual trajectories of cardiovascular risk factors and cardiovascular diseases. The primary objective was to describe the challenges of continuing a large cohort study in a developing country. **Methods:** PreCEDES is a 10-year-old cohort that recruited subjects from LIFECARE. At baseline, a total of 2541 subjects aged 18-50 years old from Southern Sarawak were recruited. During each visit, consent and anthropometric measurements were taken, along with a 12-lead ECG. Blood samples for blood sugar and cholesterol were obtained, and a survey questionnaire was completed. **Results:** In PreCEDES, of 2454 subjects contacted, a total of 1275 subjects were followed up with a retention rate of 51.96% as of June 2023. 13.41% of the subjects recruited have been referred for newly diagnosed high cholesterol, hypertension or diabetes. A total of 46.37% were lost to follow-up. Reasons for loss to follow-up were unable to contact the subjects (72.41%), subjects unable to commit to follow-up (4.57%), relocation (16.26%), decision to continue follow-up at primary care clinic (4.39%) and failure to attend the research clinic appointment (2.37%). To date, 42 subjects had died, and 41 subjects withdrew from the study, out of 2541 subjects from the baseline cohort. **Conclusion:** In this long-term investigator-initiated cohort study, the 10-year retention rate of 51.96% reflects the challenges but also the importance and relevance of PreCEDES, following LIFECARE. The main reason for the loss of follow-up was a failure to contact the subjects despite multiple efforts.

# A prospective, randomized, double-blind, parallel-group, multicenter study to assess the efficacy and safety of intravenous dextrose 5% solution compared with normal saline (standard care) in rinsing during haemodialysis in subjects with end-stage renal failure (ESRF) with respect to systolic blood pressure control over 3 months period

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## ABSTRACT

**Introduction:** Use of normal saline (NS) containing 0.9% sodium chloride for rinsing during haemodialysis treatment may cause sodium loading leading to hypertension. Switching to a non-sodium fluid may improve blood pressure (BP) control. **Methods:** Fifty-four non-diabetic ESRF patients on maintenance three times per week haemodialysis were randomized to either continue receiving the standard NS or switch to Dextrose 5% (D5) as a rinsing solution for three months. BP was measured at baseline, pre and post each dialysis session and at the end of the study. **Results:** There were no differences in age, duration on HD, gender, ethnicity, and BP at baseline between the two groups. Post-dialysis BP was significantly reduced at the end of the study compared to baseline for the D5 group. The reduction in BP was significantly higher in the D5 group compared to the NS group (systolic: -24.0mmHg vs -2.1mmHg,  $p=0.002$ ; diastolic: -10.2mmHg vs -2.5mmHg,  $p=0.032$ ). The reduction in mean arterial pressure (MAP) was larger in the D5 group by 12.4mmHg ( $p=0.011$ ). **Conclusion:** Well-controlled BP and MAP are essential for hemodialysis patients as they reduce the risk of comorbidities such as cardiovascular and cerebrovascular events and determine their prognosis. One of the main contributing factors to inadequate BP control has been sodium loading from the NS solution used in priming and rinsing. Our study results showed that replacing NS with dextrose 5% during the rinsing phase was able to reduce their BP significantly.

# Audit on consent form completion of paediatric dental patients who have undergone procedures under general anaesthesia

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## ABSTRACT

**Introduction:** Obtaining consent is vital for invasive procedures as it ensures patient rights and prevents potential medico-legal violations. This clinical audit aims to improve consent form completion in the Paediatric Dentistry Department, HRPB. **Methods:** This 2-cycle audit encompasses paediatric dental patients who underwent elective procedures under GA from April to June 2022 and January to March 2023. The form used in the Malaysian Ministry of Health, the 'Consent Forms for Operations/Procedure' contains 33 or 38 items, depending on interpreter involvement. The standard for all these items was set at '100% complete', according to the MMC Guideline and expert opinions. The Achievement Rate [(Number of forms fully filled) / (Total number of forms) x 100%] was set at 80% for the interim standard and 100% as the final standard. After the first cycle, an action plan was implemented, including a slideshow presentation and verbal reminders during monthly meetings. A printed reminder and sample consent form were displayed on the department notice board. **Results:** In the first cycle, the Achievement Rate was 44.1% (30/68 forms). It rose to 92.2% (59/64 forms) in the second cycle. The item with the lowest completion rate in the first cycle, 'Witness IC' (35/68) achieved 100% completion in the second cycle (64/64). The item 'date consent was taken, second page' had the lowest completion in the second cycle, left blank only twice, while nearly all other items were fully filled. **Conclusion:** The completion rate of consent forms significantly improved after implementing the action plan, meeting the interim standard of 80%. Regular audits must be performed to maintain quality.

# Advanced management of sacral pressure injury in primary healthcare

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## ABSTRACT

**Introduction:** A pressure injury can present as intact skin or an open wound and some may be painful. The tissue damage is due to intense and prolonged exposure to continuously deformed compressions, tension, shear, friction, or a combination of these causes. The extent of the soft tissue injury also depends on the tissue type, perfusion, circulation, age of the individual, health status, comorbidities, nutritional status, psychosocial support, and microclimate. (National Pressure Ulcer Advisory Panel, 2019). The incidence of pressure injuries is increasing due to our ageing population and those living with disabilities. Preventing pressure injuries should be a priority. **Methods:** This research is a retrospective case series of a patient who underwent wound care treatment at Klinik Kesihatan Bandar Mentakab from April 2021 to September 2021. **Results:** The study shows the various advanced management used for sacral pressure injury, especially in primary healthcare clinic settings. A sacral pressure injury can be treated with advanced modalities and not only confined to conventional dressings. The main treatment of a pressure ulcer is offloading the pressure source, proper debridement of the devitalized tissue, eliminating infection, and regular wound care to aid the healing process. **Conclusion:** A multidisciplinary team approach and comprehensive wound care management using advanced modalities, is more effective in reducing pressure injuries and their complications, the patient's quality of life is preserved with fewer dressing changes and fewer painful dressing changes, therefore, reducing the patient's visits to the clinic and overall producing a good outcome of wound healing with minimal scar.

# Autologous serum therapy in recalcitrant chronic spontaneous urticaria: Experience from 3 dermatology clinics in Malaysia

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## ABSTRACT

**Introduction:** Autohemotherapy is a commonly used treatment of recalcitrant chronic urticaria in some countries. Herein we report our experience in using autohemotherapy-autologous serum therapy in 8 patients with recalcitrant chronic spontaneous urticaria. **Case series:** Eight patients (age range: 25-76 years old; 4 females and 4 males) had one to ten years duration of recalcitrant chronic spontaneous urticaria. All failed to respond to high doses of second-generation antihistamines and five to immune-modulating agents. Three did not respond to omalizumab. Autologous serum therapy was initiated weekly for 9 weeks followed by every fortnightly. Urticaria Activity Score (UAS) 7, Dermatology Life Quality Index (DLQI), and reduction of antihistamine usage were used to assess the treatment response. At week 9, the reduction of UAS7 ranged from 76.2% to 100%. There was more than an 80% improvement in DLQI in all patients. The number of wheals seemed to be reduced first followed by pruritus. Three patients stopped antihistamines by week 8 of treatment. No adverse events were reported in all 8 patients. **Conclusion:** Autologous serum therapy may serve as an alternative treatment for recalcitrant chronic spontaneous urticaria. Apart from the practicality which requires frequent clinic visits, venipuncture and centrifugation, it is cheap and effective with minimal adverse events.

# Impact of accelerated access to molecular diagnostics on empirical use of acyclovir in suspected encephalitis: A case-control study

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## ABSTRACT

**Introduction:** Lacking of herpes simplex virus (HSV) Polymerase Chain Reaction (PCR) diagnostic testing in Sarawak government facilities often leads to unnecessary prolonged empirical acyclovir treatment duration in patients with suspected encephalitis. In 2017, Clinical Research Centre (CRC) Sibu Hospital set up a PCR laboratory for on-site and accelerated access collaboration. Our study aimed to compare treatment duration, cost of acyclovir, length of stay, and adverse drug reactions related to acyclovir usage before and after the availability of the HSV PCR diagnostic test. **Methods:** This was a case-control study. HSV results and case notes of patients started with empirical acyclovir for suspected HSV encephalitis admitted to five specialist hospitals in the central and northern zones of Sarawak during the pre-intervention period (January 2017-October 2018) were traced (control). During the post-intervention period (November 2019 - December 2020) patients with suspected encephalitis who started empirical acyclovir were recruited prospectively (case) and cerebral spinal fluid samples were tested with real-time PCR at CRC Laboratory. **Results:** A total of 195 control patients (pre-intervention period) and 124 case patients (post-intervention period) were included. Patients in the post-intervention group had significantly shorter mean acyclovir treatment duration (5.3 days vs. 4.1 days,  $p=0.02$ ), length of stay (22.3 days vs. 11.6 days,  $p=0.026$ ), and lower cost of innovator acyclovir (RM2076.80 vs RM1606.40,  $p=0.022$ ). There was lesser adverse drug reaction in the post-intervention period (4.1% vs. 0.8%,  $p=0.083$ ). **Conclusion:** Accelerated access to HSV PCR testing helps with safer, more cost-effective patient care and clinical practices as well as less burden on patients.

# Survival analysis of endometrium cancer patients from three main cancer referral centres in Malaysia

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## ABSTRACT

**Introduction:** Endometrium cancer is the second-highest gynecologic cancer reported globally and the third most common cancer with a lifetime risk of 1 among 144 women in Malaysia. This study aimed to describe the survival rates of endometrium cancer patients in a wider population of Malaysia, particularly from Peninsular Malaysia. **Methods:** Medical records of histopathologically confirmed endometrium cancer patients diagnosed between 1st January 2014 and 31st December 2016 from Hospital Kuala Lumpur, Institut Kanser Negara and University of Malaya Medical Centre were retrospectively reviewed and their mortality status as of 31st December 2019 was matched for survival analysis. **Results:** The overall survival analysis was based on 103 deaths from a total of 337 cancer patients (30.6%) as of December 2019. The overall survival time at 75% was 2.9 years (did not reach a median survival) and demonstrated a plateau at 65.4% beginning at approximately 5 years. The three- and five-year survival rates were recorded at 75% and 65% respectively. Univariate analysis showed that tumour grade, staging, ECOG status, treatment methods, lymphovascular invasion, and lymph node status were found to be associated with the patient's prognosis. **Conclusion:** Results from this study provided better insight into the survival rates of endometrium cancer patients in Malaysia due to the wide referral received by each hospital. More data particularly from East Malaysia is needed where limited access to medical care experienced in certain areas could hinder early diagnosis of the disease, despite the slow growth and significant symptoms presented by the patients.



# Demographics and causes of premature deaths in the Sarawak LIFECARE cohort

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## ABSTRACT

**Introduction:** Premature death is a measure of unfulfilled life expectancy. The average life expectancy in Malaysia is 75.94 years. Death occurring prior to 60 years of age (retirement age in Malaysia) imposes an economic loss on the country. The leading cause of premature death in adults aged 18 and above is non-communicable diseases followed by communicable diseases and injury. This study aimed to examine the demographics and main causes of premature death for subjects in the LIFECARE cohort. **Methods:** Participants of this study are healthy individuals of 18-50 years from Southern Sarawak, Malaysia. A total of 2543 subjects were recruited at baseline and were followed up between the years 2013 to December 2022, subjects that expired were identified. The causes of death used are based on the final cause of death on the death certificate issued by the National Registration Department (NRD), Malaysia. **Results:** The total number of deaths recorded was 42 of which 28 were males (66.7%). The mean(SD) age at death was 45.9(8.8) years. Underlying causes of premature death in LIFECARE Sarawak cohorts were unspecified reasons (n=17,40.5%), cancer (n=10,23.8%), infections (n=5,11.9%), cardiovascular disease (n=5,11.9%) and injuries caused by road accidents, fire-related accidents, fall and drowning (n=5,11.9%). **Conclusion:** Most premature deaths are for unspecified reasons. Aside from unspecified reasons, cancer is the main cause of death. Further verification of the unspecified deaths is needed and initiatives to improve the registration of causes of death by all stakeholders should be considered.

# A descriptive study of HIV-related death and its risk factors among HIV patients admitted to Sarawak General Hospital in 2022

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## ABSTRACT

**Introduction:** Despite significant progress in prevention, diagnosis and treatment, Human Immunodeficiency Virus (HIV) infection remains a major global public health issue. In 2020, Malaysia recorded an HIV mortality rate of 6 per 100,000 population. Data related to HIV death from Sarawak is scarce. This study was done to describe the risk factors and cause of death, among HIV-infected patients admitted to Sarawak General Hospital. **Methods:** Using a retrospective approach, data from January to December 2022 were collected. Relevant information collected includes the patient's age, gender, CD4 count, antiretroviral therapy (ART), haemoglobin (Hb) and albumin level, creatinine clearance and cause of death. **Results:** There were a total of 24 HIV-related deaths, of which 19 were analysed. The risk factors commonly associated with mortality were male gender (90%), age between 30 to 45 years (47%), CD4 <200 cells/ $\mu$ L (82%), Hb <10g/dL (74%), albumin <35 mmol/L (90%) and late diagnosis (63%). 5(42%) and 7 (58%) of patients with late diagnosis died prior to and despite commencement of ART respectively. Pneumocystis jirovecii pneumonia (PJP) infection was the most common cause of death. **Conclusion:** Late diagnosis was common, and the optimal benefit of ART was not achieved among HIV patients who died in our centre. More effort is needed to identify them early for HIV treatment to improve survival.

# Overall survival among patients receiving methadone maintenance therapy for opioid dependence. A mortality analysis from a hospital-based cohort study with a 14-year follow-up

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## ABSTRACT

**Introduction:** Opioid use disorder is associated with greater mortality, but methadone maintenance therapy (MMT) has been shown to confer survival advantages. However, the causes of mortality have not been thoroughly studied. **Methods:** A retrospective longitudinal cohort study was conducted among MMT programme patients between January 2008 and December 2017 at Hospital Seri Manjung, Perak. All MMT patients were included, while those with less than 6 months of therapy were excluded. The data were abstracted from a hospital-based registry. The duration from MMT enrollment until December 2022 was analysed as a survival function. The mortality status was obtained from national death records, and multivariate Cox proportional hazard regression was used to adjust the death hazard risk (AHR) among the variables. **Results:** 282 patients were included in the analysis. By the end of 2022, 72 patients had died, and 210 were alive, providing an overall 5-year survival rate of 74.5%. Patients aged 41–50 and 51–70 years old had AHR 3.05 times ( $p=0.008$ ) and AHR 3.65 times ( $p=.005$ ) higher than patients aged 18–30 years old, while defaulted patients had AHR 15 times ( $p=0.008$ ) than those on active treatment. Among the 72 events observed, Human immunodeficiency virus, Tuberculosis, and Hepatitis (HTH) contributed to 22.2% of the deaths. The HTH-related Infection had AHR 2.69 times ( $p=0.023$ ) higher than the non-HTH-related Infection. **Conclusion:** Increasing age and HTH-related infections were associated with a higher hazard risk, indicating the importance of addressing these co-occurring health conditions in individuals undergoing MMT.

# An audit of empirical aminoglycosides use among hepatobiliary cases in Sarawak General Hospital

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## ABSTRACT

**Introduction:** Biliary sepsis causes high mortality. Timely relief of biliary obstruction with appropriate empirical antimicrobial use is crucial. The choices of empirical antimicrobials varied among centres. The aim of this audit was to assess the appropriateness of empirical aminoglycosides in biliary sepsis cases based on local antimicrobial patterns. **Methods:** A retrospective audit on the use of amikacin in surgical wards was carried out from January to June 2023 in Sarawak General Hospital (SGH). The data was extracted from satellite pharmacy and medical records. Thirty-one patient records were reviewed. **Results:** Thirty-one cases were included, where 61.3% were males. The median age was 57-years-old (IQR 29.75). The causes of biliary sepsis include obstruction secondary to a tumour (39%), post-instrumentation cholangitis or pancreatitis (26%), choledocholithiasis (16%) and post-operative cholangitis (19%). Seventy-four percent had recent hospitalisation. The empirical antibiotics used in conjunction with amikacin were amoxicillin-clavulanic acid (16%), piperacillin-tazobactam (32%), ceftriaxone (26%), cefuroxime (13%) and meropenem (10%). Bile cultures and blood cultures had a positive rate of 29% respectively. The top 3 pathogens isolated from the bile culture were *Escherichia coli* (non-ESBL strain), *Klebsiella pneumoniae* (non-ESBL strain), and *Proteus mirabilis*. Most pathogens isolated were susceptible to amoxicillin/clavulanic acid with or without amikacin. **Conclusion:** We recommend the use of amikacin (1 to 3 doses) in synergism with amoxicillin/clavulanic acid in cases of biliary sepsis with shock and cases with technical challenges. The definitive antimicrobial selection is based on bile and blood culture results. Local antibiogram data need to be monitored and communicated to the treating clinicians timely for informed decisions.

# Use of biological agents in patients with chronic dermatoses at Hospital Umum Sarawak: A 13-year review

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## ABSTRACT

**Introduction:** There has been a paradigm shift in the treatment of various chronic dermatoses using biological agents. We aim to describe the characteristics of patients with chronic dermatoses who receive biological treatment at Hospital Umum Sarawak (HUS). **Methods:** This was a retrospective study on the patients who received any form of biological treatment at Dermatology Clinic HUS between 2010 and July 2023. Medical records were retrieved and analyzed. **Results:** A total of 93 biological agents were prescribed to 78 patients. The mean age of the patients when first received the biological agent was 39.6 years (range: 3-82). The biologics funding resources include hospital medication fund (45.1%), public servant fund (37.6%), self-purchase (9.7%), patient familiarization program (7.5%) and clinical trial (1%). Psoriasis was the most common indication (80%), followed by atopic dermatitis (n = 8, 10.3%), chronic spontaneous urticaria (n=4, 5.1%), autoimmune blistering diseases (n=2, 2.3%), hidradenitis suppurativa and Netherton syndrome (1 each, 1.3% each). The most frequent agents used in psoriasis were IL17 inhibitors and anti-IL12/23. There were 33 (42.3%) patients who achieved meaningful with sustainable clinical response and were continued with the biological agents longer than 12 months (range: 14-114 months). Thirteen patients switched to another biological agent mainly due to loss of efficacy. Twelve patients stopped completely mainly due to primary failure and adverse events. The most severe adverse events reported were tuberculosis and hepatitis B reactivation. **Conclusion:** About 40% of patients had sustainable responses with the first biologics prescribed for more than a year.

# Lupus profundus masquerading as facial cellulitis: A case report at Hospital Umum Sarawak

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## ABSTRACT

**Introduction:** Lupus profundus is a rare form of chronic cutaneous lupus erythematosus which may result in disfigurement. Here we report a female with lupus profundus who was initially treated as recurrent facial cellulitis. **Case Description:** A 33-year-old female presented with a 3-month history of persistent painful swelling on the right face and ear. She was treated for recurrent right-sided facial cellulitis at a primary care clinic, without improvement but progression. Clinically, there were erythematous to hyperpigmented, firm and tender subcutaneous plaques over the right cheek and ear, with areas of depression and dimpling and right lower eyelid oedema. A painless erythematous subcutaneous nodule was also noted on the right upper chest. The ear and oropharyngeal examination showed no abnormality. Laboratory investigations revealed leukocytosis of  $14.3 \times 10^9/L$ ; raised ESR at 66mm/hr and c-reactive protein at 192.9 mmol/L. The antinuclear antibody was negative. Histopathological examination of the skin sample revealed a thin epidermis, the presence of follicular plugging and basal vacuolation. Lobular panniculitis was observed with lymphocytes, plasma cells and macrophage infiltration, together with thickened septae and lymphocytic nuclear dust. There was the presence of mucin deposition in the dermis. Direct immunofluorescent studies were negative. Skin tissue for bacterial and mycobacterium culture was negative. Computed tomography demonstrated right facial skin thickening without collection, bilateral parotitis and cervical lymphadenitis. She was treated with intravenous ceftriaxone and oral itraconazole in the ward. Hydroxychloroquine at 200mg/day was initiated subsequently. At the latest review, the swelling of the right cheek and ear resolved leaving facial asymmetry and an area of hyperpigmented depressed scars. **Discussion:** LP usually occurs in adults, with a median age of onset of 30 – 40 years and predominance among women. Lesions are common on the face. Management of LP is difficult. **Conclusion:** It is important to recognize LP and consider it as a differential diagnosis when cellulitis fails to respond to a proper course of antibiotics. A skin biopsy is essential to ascertain the diagnosis. Early treatment is vital to prevent disfigurement.

# Variations of socio-demographic, risk factors and severity of ischemic stroke subtype in patients admitted to Seberang Jaya Hospital

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## ABSTRACT

**Introduction:** Stroke is Malaysia's third leading cause of death. The objective of this study is to compare the socio-demographic characteristics, risk factors and the severity of ischemic stroke subtype in patients admitted to Seberang Jaya Hospital. A comprehensive analysis of these variables is crucial for optimum utilization of our limited resources. **Methods:** This is an observational cross-sectional study. A total of 466 ischemic stroke patients data was extracted from the Seberang Jaya Hospital stroke registry from January to December 2022 to analyze the ischemic stroke subtype based on the Oxfordshire Community Stroke Project (OCSP) classification, the socio-demographic characteristics, the risk factors and the stroke severity based on the National Institutes of Health Stroke Scale (NIHSS). **Results:** Lacunar infarct (LACI) was the most common ischemic stroke subtype (n=280, 60.1%), followed by partial anterior circulation infarcts (PACI) (n=95, 20.4%), total anterior circulation infarcts (TACI) (n=50, 10.7%) and posterior circulation infarcts (POCI) (n=41, 8.8%). TACI patients were the eldest (mean age 67.88±12.904, p<0.001) and had the most severe stroke (median NIHSS score 22, IQR 6, p<0.001). In comparison to non-TACI, TACI was significantly associated with age (adjusted OR 1.04, 95% CI 1.01-1.07, p 0.003) and atrial fibrillation (adjusted OR 3.21, 95% CI 1.37-7.50, p 0.007). **Conclusion:** The significant risk factors for TACI were age and atrial fibrillation. Age is not modifiable. Hence, managing atrial fibrillation has to be prioritized with our limited resources to reduce severe stroke.

# Latent tuberculosis infection and tuberculosis in psoriasis patients: a 10-year retrospective study at the dermatology clinic Sarawak General Hospital, Malaysia

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## ABSTRACT

**Introduction:** The incidence of tuberculosis (TB) in Malaysia was 97/100,000 in 2021. We aim to describe the rate of latent TB infection (LBTI) in patients with psoriasis who were screened with tuberculin skin test (TST) and/or interferon-gamma releasing assay (IGRA) and the rate of TB while receiving systemic/biological agents. **Methods:** We retrospectively studied all Malaysians with psoriasis who had TST and/or IGRA at the dermatology clinic at Sarawak General Hospital between February 2013 and January 2023. TST was considered positive if the longest diameter of the induration was larger than 5mm and 10mm in immunosuppressed and immunocompetent patients respectively at 72-hour, following intradermal injection of 0.1ml purified-protein derivatives. **Results:** A total of 208 patients with BCG scars underwent TST/IGRA. The mean age was 42 years (range:11-86). Thirty-eight(18.3%) patients had positive TST and/or IGRA. Of these, 13(34.2%) received treatment for LTBI. Following TST screening, 121(58.2%) patients eventually received methotrexate, 30(14.4%) biological agents, 16(7.7%) cyclosporin, 12(5.8%) acitretin, 4(1.9%) combine biologics and systemic treatment. Two patients developed pulmonary TB while receiving adalimumab. The rate of TB developed in those who received systemic/biologics was 4.2% in those with untreated LTBI, 0.6% in those with no LTBI and zero in treated LTBI. **Conclusion:** The rate of LBTI was 18.3% in our psoriasis patients. The rate of TB development was the highest in untreated LBTI and those who received TNF- $\alpha$  inhibitors.



# Livedoid vasculopathy: A report of two cases in the dermatology clinic Hospital Umum Sarawak

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## ABSTRACT

**Introduction:** Livedoid vasculopathy is a challenging disease in terms of diagnosis and treatment. We aim to describe two cases of LV presented to the Dermatology Clinic Hospital Umum Sarawak. **Case Series:** Case 1: 34-year-old, female, presented with recurrent painful ulcers spontaneously erupted over both lower shins and dorsum of the feet for the past 2 years. Physical examination shows erythematous to violaceous patches & multiple punched-out ulcers with crusts, intermingled with white atrophic stellate scars. Investigation: ENA and anti Jo-1 were positive. Histopathology examination (HPE) of the lesion showed deep dermis and subcutaneous fat capillaries thrombosis, with no direct immunofluorescence (DIF) deposition. She required multiple courses of antibiotics, systemic corticosteroids, aspirin, pentoxifylline, danazol and dabigatran with inadequate clinical responses. Case 2: A 57-year-old, female, presented with a 6-month history of recurrent multiple painful ulcers over both shins and dorsum of both feet. Physical examination: there were multiple tender erythematous satellite ulcers over the shin and ankle region with an area of white atrophic scars. Investigation shows low Protein S titre at 19% inhibition (normal range: 63-137). Other autoimmune and thrombophilia screening tests were negative. She received antibiotics, systemic corticosteroids, aspirin and pentoxifylline in addition to topical treatment with partial response. **Conclusion:** Livedoid vasculopathy (LV) is a rare chronic, recurrent, painful ulcerative disorder that normally involves the lower extremities. The pathogenesis of the disease is not well understood, it is believed that the primary pathology is hypercoagulability and inflammation plays a secondary role. LV is important to differentiate from other leg ulcer disorders. Treatment of LV is challenging as there are no proper guidelines due to the rare disease's lack of proper trial studies.

# Plasma PCSK9 concentrations among acute myocardial infarction patients

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## ABSTRACT

**Introduction:** Proprotein convertase subtilisin/kexin type 9 (PCSK9) promotes LDL receptor (LDLR) degradation in the liver leading to increased levels of low-density lipoprotein cholesterol (LDL-C). We aim to determine the PCSK9 concentrations in Malaysian Acute Myocardial Infarction (AMI) patients. **Methods:** This study involved AMI patients admitted to Sarawak Heart Centre from August 2018 until March 2019. Blood samples collected during admission and 3 months after discharge were stored at -80°C freezer. Plasma PCSK9 concentrations were determined by quantitative sandwich enzyme immunoassay technique (R&D Systems, USA). **Results:** We recruited 249 AMI patients who had PCSK9 levels taken at baseline, and 81.5% of them had repeat PCSK9 levels measured 3 months after discharge. Mean age was 56.2(10.83) years and 89.6% were male. Patients with prior statin therapy were found to have significantly higher baseline PCSK9 concentrations as compared to statin-naïve patients [478.9(171.63)ng/ml vs 434.4(138.22)ng/ml; p=0.025]. STEMI and NSTEMI cohorts had similar PCSK9 baseline concentrations [445.7(148.60)ng/ml vs 455.3(156.40)ng/ml; p=0.638]. AMI patients demonstrated significantly increased PCSK9 concentrations at 3 months as compared to baseline [509.3(184.74)ng/ml vs 455.1(147.17)ng/ml; p=0.005]. Patients with hyperlipidemia (OR=2.21,95%CI=1.27,3.84; p=0.005) and those who had subsequent LDL-C $\geq$ 1.8mmol/L post 3 months (OR=2.05,95%CI=1.03,4.09; p=0.041) tended to have higher baseline plasma PCSK9 concentrations of  $\geq$ 500ng/ml. AMI patients with MACE at 1 year had significantly higher PCSK9 levels at 3 months compared to those who did not suffer a MACE[626.0(313.15)ng/ml vs 461.0(216.33)ng/ml; p=0.007]. **Conclusion:** Our study demonstrated higher plasma PCSK9 concentrations among AMI patients compared to reports from other published studies. PCSK9 concentrations at 3 months may predict clinical outcomes among AMI patients.

# The effectiveness of SANUBARI optimal health program as a wellness-based self-management intervention to improve mental health & well-being among house officers in Kedah: A quasi-experimental study (SANUBARI-HO)

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## ABSTRACT

**Introduction:** The prevalence of stress, burnout, anxiety, and depression is a significant concern among house officers in Malaysia. Optimal Health Program (OHP) was developed as a self-management intervention that supports self-efficacy in achieving optimal well-being. This study used the adapted Malay OHP named SANUBARI done in five weekly online sessions to determine the effectiveness in six domains of health: Physical, Emotional, Social, Intellectual, Occupational, and Spiritual, as measured by the Optimal Health Wheel (OHWL). **Methods:** Using a non-clinical, quasi-experimental design, the study selected intervention hospitals (HSAH and HK) with trained OHP facilitators, while control hospitals (HSB) matched the same locality and burden criteria. This study includes house officers who have been working for more than 6 weeks in their 1st to 4th postings. Assessments were conducted at baseline, at the third and fifth sessions, and at the 9th week post-intervention. **Results:** A total of 67 house officers participated, comprising 38 males and 29 females, with a median age of 26. All participants completed the five assessment sessions. The analysis using repeated measure ANOVA demonstrated significant differences ( $p < 0.05$ ) between the intervention and control groups for all domains except occupational. **Conclusion:** The intervention group displayed improvements across all domains, while the control group's scores showed a downward trend in all domains. Participants who underwent SANUBARI (OHP) were more satisfied with their general well-being compared to the control group, and this continued until the 9th week post-intervention. In conclusion, the SANUBARI program appears to be a valuable tool for supporting self-efficacy among junior doctors.

# A rare case of quadruple limb amputation in electrical burn injury with successful prosthetic restoration

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## ABSTRACT

**Introduction:** Quadruple limb amputation resulting from electrical burn injury is a rare and devastating event. We present a rare case of quadruple limb amputation secondary to electrical burn injury with successful prosthetic restoration. **Case Description:** A 24-year-old man sustained a high-voltage industrial electrical burn, affecting 24% of his total body surface area with circumferential mid to full-thickness burns on all limbs. Immediate fasciotomy and debridement were performed, but after two days of monitoring, all four limbs were non-viable, requiring amputations. Upper limb amputations included left trans-radial and right trans-humeral, while lower limb amputations involved left trans-femoral and right trans-tibial. After amputation, given his poor socio-economic background and limited resources, he received customized mechanical functional prostheses and underwent rehabilitation. Psychological support was given to promote a healthy body image and maintain motivation. Despite challenges, successful prosthetic restoration enabled him to grasp objects for daily activities and transition from being wheelchair-bound to walking short distances unaided. **Conclusion:** Electrical burn injuries can lead to rare cases of quadruple amputation due to severe unsalvageable limb tissue damage caused by high-voltage electricity passing through the limbs. Prosthetic restoration in quadruple amputation presents challenges, including customizing prosthetics for varying limb stump shapes and lengths, addressing weight-bearing and balance issues and addressing body image issues. Overcoming these challenges involves customized prosthetic fitting, individualized progressive prosthetic training, and providing psychological support. Despite the challenges of rarity and complexity of quadruple limb amputation from electrical burn injury, successful prosthetic restoration can improve the functional outcome of the affected individual.

# Clinical audit on time to admission and surgery for geriatric hip fracture patients

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## ABSTRACT

**Introduction:** Surgical delays in elderly hip fracture patients are associated with poorer outcomes for morbidity, mortality, length of hospital stay and return to mobility. Therefore, it is important to audit the time to admission and surgery so that shortfalls in quality can be identified and measures taken to improve the process to avoid unnecessary delays. **Methods:** This clinical audit was conducted based on data from the geriatric department's hip fracture registry. A total of 34 cases were audited for time to ward admission and time to surgery from an initial presentation at the emergency department. Criteria against which the cases were audited were based on British Geriatric Association guidelines: 1) Proportion of elderly hip fracture patients ( $\geq 60$  years old) admitted to the ward within 6 hours; 2) Proportion of elderly hip fracture patients having surgical intervention within 48 hours. The standard set by the geriatric department was  $\geq 50\%$  for both criteria. Potential factors for delay were identified. **Results:** Only 20.5% of patients achieved admission to the ward within 6 hours and 5.9% had surgical intervention within 48 hours. Identified key factors for delay include the need for medical optimisation before surgery (33.3%), lack of inpatient or ICU bed (16.7%), insufficient operating theatre time (13.3%) and pending further investigations (10.0%). Other factors (26.7%) were not documented. **Conclusion:** Planned improvements for expediting admission and surgery include having clear standard operating procedures for admissions and better multidisciplinary communication and agreement on emergency surgery for elderly hip fracture patients. Staff education on the importance of achieving standards to improve patient outcomes is also important.

# Frozen buffy coat samples from long-term storage (12 years) under the LIFECARE Cohort are still viable for whole exome sequencing

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## ABSTRACT

**Introduction:** Rapid advancements in molecular biology through genomic analysis have led to the generation of big data and drastically improved our understanding of disease risk and pathogenesis. When sample collection and handling are fulfilled properly, DNA from frozen buffy coats stored for a long period still produces a good yield of DNA. The fundamental objective of this study is to evaluate the quality and quantity of isolated DNA from frozen buffy coat samples from the LIFECARE Cohort for downstream analysis like the Whole Exome Sequence (WES). **Methods:** 35 frozen buffy coat samples from the LIFECARE Cohort were analyzed. 50 to 100uL of buffy coats were extracted using the QIAamp-UCP-DNA-Micro Kit. DNA quantification and quality assessment were performed using ImplenNanoPhot\_16nanophotometer and Denovix double-stranded-DNA broad-range assay to test the quantity, purity and integrity of the extracted DNA. **Results:** The median duration of storage for 35 frozen buffy coat samples was 12.23 years (range: 11.08 - 13.17 years). Based on nanophotometer results, the median yield and concentration of DNA obtained was 0.59 ng and 35.0 ng/μl, with a mean A260/A280 ratio of 1.82±0.05 and A260/A230 ratio of 2.21±0.31, all within the acceptable standard ratio range. Denovix Fluorescence Assays which measure intact dsDNA indicated a median yield and concentration of 0.34 ng and 38.0 ng/μl. **Conclusion:** DNA extracted from the 35 samples collected under the LIFECARE cohort with long-term storage was of good quality and concentration. Hence, the isolated DNA samples can be used for WES analysis or any downstream studies.

# The effects of SGLT-2 inhibitors on cardiac remodelling in T2DM patients with coronary artery disease

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## ABSTRACT

**Introduction:** Sodium-glucose cotransporter-2 (SGLT-2) inhibitors make up an antidiabetic medication that promotes glycosuria. They are known to have an indirect reduction in cardiovascular complications, based on a series of in-depth studies. However, the cardiac remodelling impact of SGLT-2 inhibitors in type 2 diabetes mellitus (T2DM) with coronary artery disease (CAD) patients in Malaysia has not yet been fully explored. Therefore, this study aims to determine the cardiac remodelling effects in T2DM patients with CAD after the initiation of SGLT-2 inhibitors. **Methods:** A quasi-experimental cohort study was carried out by recruiting 360 patients in a single centre (half initiated with SGLT-2 inhibitors, and half not) across a six-month period. Ejection fraction (EF), Left Ventricular End Diastolic Volume (LVEDV), as well as Left Ventricular Mass (LVM) were gauged using echocardiography. **Results:** Currently, a total of 25 patients (19 patients with SGLT-2 inhibitors, and six controls) have successfully completed the study. SGLT-2 inhibitor demonstrated an increment in EF ( $58.0 \pm 5.81\%$  vs  $56.0 \pm 3.45\%$ ,  $p=0.03$ ), although the reduction of LVEDV ( $124.7 \pm 23.74\text{ml}$  vs  $131.9 \pm 16.78\text{ml}$ ) and LVM ( $227.4 \pm 51.43\text{g}$  vs  $195.8 \pm 36.37\text{g}$ ) were reported to be statistically insignificant. **Conclusion:** SGLT-2 inhibitors have a valuable impact on EF for T2DM patients with CAD independently on LVEDV and LVM, indicating a series of benefits in combating cardiovascular complications, particularly congestive cardiac failures.

# Advancing clinical trials of herbal medicine for obesity: A scoping review of methodologies

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## ABSTRACT

**Introduction:** Global prevalence of obesity is high, estimated at 14% in 2019. Obesity clinical trials are often met with challenges in integrating lifestyle modifications and assessing long-term health outcomes. Conventional medicine-centric guidelines for clinical trials may overlook specific details essential for herbal interventions. This scoping review aimed to collate literature regarding anti-obesity clinical trials with herbal medicines (HM), map the methodology landscape and identify research gaps specifically for these trials. **Methods:** Systematic searches with predetermined keywords were conducted on MEDLINE, CENTRAL, and Embase databases. Eligible randomized controlled trials (RCTs) targeting all age groups with obesity, using HM interventions were included. **Results:** This review included 99 RCTs (participants aged 18-75). The most common HM interventions were single herbs (n=55) and herbal mixtures (n=40). These interventions were often combined with lifestyle modifications (n=58) and among those, few studies were conducted for more than 6 months (n=4) and included dietitian counselling as an integral component of the program. Three reported good treatment compliance rates of >85%, while about two-thirds had a dropout rate of <20%. Dropout rates were found to be not consistent across studies. Key outcomes assessed were a mix of biomedical and behavioural measurements. Short-term study designs were favoured, incorporating lifestyle advice without strict enforcement. Investigational product quality is an essential factor that must be considered for HM trials. **Conclusion:** This review highlights the multidimensional nature of herbal RCTs for obesity, emphasizing the importance of a multidisciplinary approach that integrates treatment interventions, lifestyle modifications, and expert guidance for effective management. **Keywords:** Scoping review, obesity, overweight, methodology, herbal medicine.



# Factors related to successful discontinuation of insulin after diabetic ketoacidosis (DKA) in patients with type 2 diabetes mellitus (T2DM)

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## ABSTRACT

**Introduction:** Ketosis-prone Type 2 diabetes mellitus (KPDM) has been described as a population with features of Type 2 diabetes mellitus (T2DM) having a propensity to present with diabetic ketoacidosis (DKA). Some of these patients can safely discontinue insulin shortly after DKA. This study was aimed at determining the proportion of patients who can safely discontinue insulin after DKA and the characteristics of these patients. **Methods:** All adult patients admitted with DKA at Hospital Putrajaya from Jan 2020 to April 2022 and who were still under follow-up at one year post-discharge were included. Patients with Type 1 diabetes mellitus were excluded. Demographic and clinical data from admission and subsequent clinic visits up until one year after admission were retrieved from the clinical notes and analysed. **Results:** Twenty-seven patients with a mean age of 47 (SD: 15.1) were included in this analysis. Fifteen were men (55.6%) and five (18.5%) were not known to have diabetes at the time of admission. Only four patients (14.8) had their insulin successfully discontinued by one year. Median HbA1c in these patients compared to patients still on insulin at one year was 6.0 and 9.0, respectively ( $p=0.023$ ). **Conclusion:** A small proportion of patients can safely discontinue insulin after DKA. Patients still on insulin at one year post-DKA have a significantly higher HbA1c, reflecting relatively poor glycaemic control.

# Optimising gentamicin single-daily dosing and conventional dosing regimens in adults orthopaedic patients: A retrospective study

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## ABSTRACT

**Introduction:** Gentamicin is routinely prescribed as a single-daily dosing (SDD) or conventional dosing (CD). However, in our setting, the target concentrations are sometimes not attained. This study aimed to evaluate the adherence to gentamicin dosing recommendation, the serum concentrations achieved in various initial dosing regimens and to assess target attainment in the subsequent samples. **Methods:** In this retrospective study, all adult orthopaedic patients treated with gentamicin and performed therapeutic drug monitoring (TDM) from April 2018 to April 2022 at Miri Hospital were retrieved from the TDM Registry. Demographic data and steady-state gentamicin concentrations were extracted from the TDM request form, electronic laboratory database and Pharmacy Information System. Data were analysed using descriptive statistics and Pearson's chi-square. **Results:** Our study revealed that 47.1% and 77.5% of patients received initial SDD doses of less than 3mg/kg and MDD doses of lower than 1.5mg/kg/dose. About 47.1% and 75.8% achieved suboptimal gentamicin concentration in the respective initial samples. In patients with normal renal function, 12-hourly dosing provided the best probability of attaining targets, compared to 8-hourly dosing ( $\chi^2=27.35(1)$ ,  $P<0.001$ ). Analysis showed that 80.0% of the subsequent samples achieved targeted concentrations. **Conclusion:** This work revealed opportunities for improvement in gentamicin dose initiation practice to optimise target attainment in adult orthopaedic patients. The study highlighted that 12-hourly dosing is favourable in conventional regimens and the need to initiate doses of at least 1.5mg/kg/dose to aid rapid target achievement. Factors influencing the failure to achieve target concentrations in the subsequent samples warrant further evaluation.

# Factors influencing resilience in patients with terminal illnesses

Ng Wan Jun, Shamsuddin Ameer Aizat

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## ABSTRACT

**Introduction:** A holistic approach is crucial in the care of patients with terminal illnesses. However, assessment of psychospiritual coping in these patients is often subjective and variable across institutions. This study aimed to explore the psychospiritual coping of patients under palliative care using validated tools. **Methods:** This was an observational study on patients admitted to the palliative care unit of Queen Elizabeth Hospital from May to July 2023. Factors influencing resilience and psychological well-being of patients analyzed using SPSS. **Results:** A total of 41 patients were included in this study. The majority of them had advanced cancer (87.8%) while 12.2% had chronic organ failures. Functionally 82.9% of patients had an ECOG Performance Status of 3/4. About half had an estimated prognosis of weeks to short months. The three most commonest reported distressing symptoms were poor mobility (53.6%), weakness (43.9%) and pain (12.2%). Only 61% of patients were able to complete psychospiritual assessment. The median Brief Resilience Scale was 15 (IQR 2.75), with a quarter reporting low resilience (score<14). The commonest coping strategies included emotional coping, acceptance, religion and instrumental support. Conscientiousness (65.2%) and agreeableness (60.9%) were the most prevalent personalities reported using the Big Five Personality Inventory. Instrumental coping, agreeable personality, and greater spiritual well-being were significantly associated with higher resilience among patients ( $p<0.05$ ). Resilience was significantly lower in those who were anxious or depressed using the Hospital Anxiety and Depression Scale ( $p<0.05$ ). **Conclusion:** Brief validated tools were useful in identifying care gaps in improving coping among patients with terminal illnesses.

# Characteristics of patients admitted due to COVID-19 infection at the peak of the pandemic in a secondary hospital in Perak

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## ABSTRACT

**Introduction:** Clinical presentations of patients with COVID-19 can range from asymptomatic to severe and critical infections. The objective of this study was to identify demographic and comorbidities associated with the infection, as well as presenting signs and symptoms at admission. **Methods:** This retrospective study involves clinical data from medical records. Subjects were randomly selected from confirmed adult COVID-19 cases admitted from 1 – 20 June 2021. Descriptive analysis and paired t-tests were used to show and compare the parameters. **Results:** A total of 89 cases matched the inclusion and exclusion criteria. The majority were female (47, 52.8%), below 60 years old (61, 68.5%) and presented as CAT 4 (39, 43.8%). Over 30% had comorbidities. Sixty-three (70.1%) presented with a history of fever; 58 (65.2%) with a cough; and 23 (25.8%) with a runny nose. Only 11 (12.4%) had a sore throat. There were 53 (59.6%) whose chest X-rays showed lung infiltrates. Twenty-eight (31.5%) required oxygen therapy and 60 (67.4%) were initiated with corticosteroids. Significant improvements were seen in Hb ( $p < 0.001$ ) and WBC ( $p = 0.021$ ) in patients on steroids. The mean length of stay was  $5.26 \pm 3.82$  days. Eighteen (20.2%) deaths were recorded, i.e. CAT 3 (1), CAT 4 (12) and CAT 5 (5). **Conclusion:** The fatality rate in this study was high, especially among patients presenting with CAT 4 and 5. The use of steroids resulted in a marked improvement in symptoms.

# Caregivers' burden and coping for patients with terminal illnesses

Ng Wan Jun, Shamsuddin Ameer Aizat

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## ABSTRACT

**Introduction:** Patients with terminal illnesses often have complex physical, psychosocial and spiritual needs. Caregivers are frequently expected to bear the caregiving burden with little known about how they cope with their duties. This study aimed to explore caregiver coping and the burden of looking after patients with terminal illnesses. **Methods:** This was an observational study on 35 caregivers of patients admitted to the palliative care unit, Queen Elizabeth Hospital from May to July 2023. Factors influencing resilience and the burden of primary caregivers were analyzed using SPSS. **Results:** The median age was 45 years old (IQR 22), with female predominance (63.2%). The majority of them were informal caregivers, including spouses (28.9%), children (55.3%) and siblings (2.6%). The commonest coping strategies of caregivers were emotional coping, acceptance and religion. Conscientiousness (50%) and agreeableness (47.2%) were the most prevalent personalities reported using the Big Five Personality Inventory. The median Brief Resilience Scale was 15 (IQR 3), where 27% fell under the low resilience category. The median Zarit Caregiver Burden Scale was 24 (IQR 20), where 17.1% reported moderate to severe caregiver burden. Caregiver resilience was significantly lower among patients who were less resilient ( $p=0.040$ ) and more anxious ( $p=0.031$ ). Caregiver burden was significantly higher among informal caregivers compared to formal caregivers ( $p=0.039$ ), and for families with lower household incomes ( $p=0.030$ ). **Conclusion:** Resilience and mental well-being of patients could impact their respective caregivers. Social factors appeared to be the main determining factor of caregiver burden.

# Alpha and beta brain wave alterations and their association with attention and cognitive flexibility among healthy individuals following 18 to 24 hours of wakefulness period

**Khoo Sing Yee<sup>1</sup>, Yeo John Jui Ping<sup>1</sup>, Zakirah Amirah<sup>1</sup>, Guan Catherina<sup>1</sup>, Tan Shirin Hui<sup>1</sup>, Tiong Lee Len<sup>1</sup>, Said Asri<sup>2</sup>, Jorin Michael Standy<sup>2</sup>, Bujang Mohamad Adam<sup>1</sup>, Tiong Xun Ting<sup>1</sup>, Fong Alan Yean Yip<sup>1</sup>, Law Wan Chung<sup>2</sup>, Kuan Jew Win<sup>3</sup>, Su Anselm Ting<sup>3</sup>, Lai Wei Hong<sup>1</sup>**

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## ABSTRACT

**Introduction:** The working environment today often demands prolonged periods of wakefulness. The recommended maximum duration of wakefulness daily is 17 hours. The impact of prolonged wakefulness on brain physiology can be observed through alpha and theta wave alterations on electroencephalography (EEG). However, the impact of these changes on cognitive flexibility and attention crucial for optimal functioning is still uncertain. **Methods:** We recruited 24 clinically-validated healthy subjects aged 18 to 60 years and subjected them to 18 to 24 hours of waking period. Stroop test and EEG were performed within 7 hours and after 18 to 24 hours of wakefulness. Results were compared and analysed. **Results:** At baseline, EEG reveals alpha wave predominance in 18 subjects (75%), theta predominance in 3 subjects (12.50%), and 3 subjects (12.50%) had no predominance in either wave. This illustrates that during EEG recording, 13 subjects (54.17%) were 'alert' and the rest (45.83%) displayed a combination of 'alertness and drowsiness'. After prolonged wakefulness, all subjects (100%) displayed theta predominance, which indicated a 'drowsy' state. At baseline, no significant difference was found in Stroop score between subjects who were 'alert' and those who displayed a combination of 'alertness and drowsiness' on EEG, with mean scores 53.10 (SD=104.20) and 81.10 (SD=79.50) respectively,  $p=0.473$ . No significant decline was found in Stroop performance at baseline and after prolonged wakefulness, with mean scores of 65.92 (SD=92.78) and 79.33 (SD=82.27) respectively,  $p=0.530$ . **Conclusion:** Present findings show that despite drowsiness on EEG after 18 to 24 hours of wakefulness, cognitive flexibility and attention remain intact.

# Evaluation of mental health status among healthcare workers in a fully COVID-19 hospital towards post-COVID era

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## ABSTRACT

**Introduction:** Albeit transiting towards COVID-19 endemicity, mental health issues remain a concern, as some healthcare workers continue to experience ongoing stress, anxiety, and depression. We aimed to evaluate the mental health status among COVID-19 front liners in a fully COVID-19 hospital towards the post-COVID-19 era. **Methods:** We retrieved the Depression Anxiety Stress Scale with 21 items (DASS-21) data from periodical mental health surveillance among healthcare workers under the Mental Health and Psychosocial Support Program in Kepala Batas Hospital towards the end of Omicron wave in Malaysia between August to September 2022. The surveillance questionnaire comprised four sections, which covered sociodemographic profiles, occupational details, work-related stressors, and DASS-21. We extracted the related data from the database and performed analysis using IBM SPSS Statistics version 26. **Results:** Among 157 respondents, 87.3% were females with a mean age of 37.5±8.57 years. About 28% were doctors, 46.5% were nurses and the remaining as allied health workers from eight departments. Up to 13.4% experienced stress followed by 11.5% anxiety and 7% depression of varying degrees. All subjects with positive DASS-21 were offered psychological aid. There were no significant relationships between mental burden with their job position, age, gender, and duration of service (all  $p>0.05$ ). Long working hours (66.9%), heavy workload (66.9%), working environment (51%), lack of manpower (1.9%) and patient factors such as complaints (1.3%) were the perceived contributors to mental health challenges. **Conclusion:** The mental health burden remains significant among frontliners in the transition period. Mitigation measures are made available to halt the progression among our valuable healthcare workers.

# A descriptive study of laboratory-confirmed adult human rabies death cases admitted to Sarawak General Hospital from 1st June 2017 to 30th June 2023

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## **ABSTRACT**

**Introduction:** Rabies has been a major public health issue in Sarawak since June 2017. It is a highly preventable disease through proper wound washing and post-exposure prophylaxis (PEP) after an animal bite. Despite the wide availability of rabies PEP in government clinics and hospitals, human rabies death is still increasing in Sarawak. We aim to understand the characteristics of laboratory-confirmed adult human rabies death cases admitted to Sarawak General Hospital. **Methods:** Data on patient demographics and clinical characteristics of adult human rabies death cases were collected retrospectively from 1st June 2017 to 30th June 2023. **Results:** A total of 29 adult human rabies death cases were analysed. Most patients were male gender (86%), a median age of 49 years old, from Kuching (45%) and presented between 4 to 12 weeks from time bitten (67%). 18 (62%) had a history of dog bites; the majority were provoked bites (50%) by free-roaming domestic dogs (67%), on the upper body (50%), with category 3 wounds (83%). 26 (90%) did not seek medical attention post-bite, therefore no PEP was given. **Conclusion:** Our study highlighted that the majority who died of rabies did not seek PEP despite its availability. There is an urgent need to address the gap in community awareness of rabies and treatment-seeking behaviour, in order to achieve zero rabies death by 2030.



# Outcomes of ischemic stroke and associated factors among elderly patients in Hospital Seberang Jaya

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## ABSTRACT

**Introduction:** Malaysia is currently facing the challenge of an ageing population, with a higher prevalence rate of stroke in the elderly. Elderly stroke patients experience higher mortality, morbidity, and worse functional recovery than younger patients. However, little is known about the factors contributing to adverse outcomes after a stroke. A better understanding of the risk factors and outcomes of stroke in the elderly could have significant practical implications for an ageing society in the future. **Methods:** This study identified elderly patients ( $\geq 60$  years old) with acute ischemic stroke (AIS) between January 2022 and December 2022 and retrieved their data from the National Neurology Registry at Hospital Seberang Jaya. Subjects with missing data were excluded from the analysis. Univariate and logistic regression analyses were performed to identify predictors of clinical outcomes. An unfavourable outcome was defined as a Modified Rankin Scale (mRS) score  $> 2$  at 90 days, while 90-day mortality was defined as an mRS score of 6. **Results:** The study included 111 patients. Upon discharge, 89 survived, and 22 died. At the 90-day follow-up post-AIS, a favourable outcome was observed in 46 (53.9%) patients, while 13 (14.6%) patients had died within 90 days post-stroke. Post-discharge recovery was noted in 37% of patients, while mRS scores worsened in 26% of patients. In the multivariate analysis, factors associated with an unfavourable outcome and 90-day mortality post-AIS were female gender (Odds ratio [OR], 3.10; 95% confidence interval [CI], [1.29-7.45]), (OR, 3.86; 95% CI, [1.09-13.69]). **Conclusion:** Our results underscore the growing need for stroke survivor care and the importance of a more coordinated transition of post-stroke care from tertiary to primary care for long-term post-stroke management at the community level.

# Diabetes app's impact on glycemetic control in a tertiary centre

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## ABSTRACT

**Introduction:** There is growing evidence that digital technology interventions can improve the effectiveness of self-care management for diabetes patients. However, the clinical impact in the local setting is unsure. The study aimed to describe the use of the Health2Sync app in glycemetic control among diabetes patients in our centre. **Methods:** All adult diabetes patients under the endocrine clinic Hospital Putrajaya follow-up who used the Health2Sync app for at least 6 months from January 2022 till January 2023 were included. They were then stratified into 2 groups (active and non-active user) based on their level of use of Health2Sync in the first 3 months and 6 months. As the baseline blood glucose level of each patient was different, we calculated the percentage rate of change in HbA1c level, generated using formula  $(\text{HbA1c value} - \text{baseline HbA1c}) / \text{baseline HbA1c}$ , to assess the improvement in glycemetic status. **Results:** There were 102 users with a mean age of 45 (SD: 14.65). About half were men (51%), 83 (81.4%) had type 2 diabetes mellitus and the majority (71.6%) were on both oral hypoglycaemic agents and insulin. The mean baseline HbA1c was 9.9 (SD: 2.69). After 3 months of use, the mean percentage reduction of HbA1c from baseline in active and non-active users was 9.8% and 4.1%, respectively. After 6 months of use, the mean percentage reduction of HbA1c from baseline in active and non-active users was 18.6% and 6.2%, respectively. **Conclusion:** The percentage reduction of HbA1c among active users is greater than among non-active users. Active user of the diabetes management app has better glycemetic control.

# The effect of intensive lifestyle intervention on glycaemia, body mass index and lipid profile in overweight and obese women with prediabetes with history of gestational diabetes mellitus: A randomized controlled trial

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## ABSTRACT

**Introduction:** Intensive lifestyle intervention (ILI) with physical activity and dietary intervention have proven to reduce or prevent the development of type 2 diabetes mellitus in the future. To date, there is a lack of studies to assess the feasibility of intensive lifestyle intervention in high-risk women with prediabetes in Malaysia. Therefore, we aimed to determine the efficacy of 6 months of ILI in prediabetes overweight and obese women with a history of GDM **Methods:** Subjects were randomized into intensive lifestyle intervention (ILI) or standard medical care (SMC) group. The intervention included dietary counselling and exercise intervention at baseline, 3 months and 6 months with monthly phone consultations and regular weekly contact sessions via WhatsApp and emails. Subjects in SMC groups received standard consultations at a similar duration. The primary and secondary outcomes were a return to euglycemia, and changes in Body Mass Index (BMI) and lipid parameters. **Results:** There were 37 subjects where 22 subjects were randomized to the ILI group and 15 subjects were in the SMC group. Half of the subjects had Impaired Glucose Tolerance (IGT) and a majority (89.2%) were Class II Obesity. Ten subjects (45.5%) in the ILI group returned to euglycaemia compared to only two subjects (13.3%) in the SMC group (p-value = 0.040). However, there were no significant differences in BMI and lipid parameters within and between groups. **Conclusion:** A higher percentage of subjects returned to euglycaemia in the ILI group compared to the SMC group. However, further study with a larger sample size is needed to see any difference in BMI and lipid parameters between the two groups.

# Effect of tocotrienol on waist circumference in healthy subjects: A pilot study

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## ABSTRACT

**Introduction:** Tocotrienols have been shown to possess antioxidant, anti-inflammatory, and neuroprotective properties in preclinical and clinical studies. This study aimed to investigate the effects of tocotrienol-rich vitamin E (Tocovid Suprabio™) on visceral fat levels. Anthropometry measurements were measured during the study. **Methods:** This was a parallel, double-blinded, randomized, placebo-controlled pilot study that involved 60 healthy subjects in Penang. Subjects (n=50 males and n=10 females) were sampled from the adult population with age 18 years old and above in Seberang Jaya Hospital, Penang, Malaysia. Two interventions involved in this trial were treatment and placebo. Subjects were randomized to receive 200mg of Tocovid twice daily, or a matching placebo for 6 months. Data was analyzed by using SPSS version 22.0. **Results:** A total of 45 participants were followed up after 6 months. The majority were males (82.2%, n=37) and 17.8% were females. Mean waist circumference for the treatment group for pre- and post-6 months treatment were 97.13 and 95.81 respectively. For the placebo group pre- and post-6 months were 97.43 and 98.09 respectively. There seems to be a reduction (mean difference 1.32, 95% CI (-0.03, 2.67)) in the treatment group post 6 months as compared to the placebo group (mean difference -0.65, 95% CI (-1.98, 0.67)) in waist circumference in the treatment group after 6 months. **Conclusion:** There seems to be a reduction in waist circumference however larger sample size is required to confirm the statistical significance.

# Clinical audit on post-operative defaulter rate following comprehensive dental treatment under general anaesthesia at 6 months in Hospital Taiping

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## ABSTRACT

**Introduction:** Patients with Early Childhood Caries (ECC) who receive Comprehensive Dental Treatment (CDT) performed under general anaesthesia must be recalled for a follow-up visit to minimize the risk of relapse. The post-operative out-patient appointment defaulter rate poses substantial adverse clinical implications to the patients as well as financial consequences for the Malaysia Ministry of Health (MOH). The aim of this audit was to quantify the percentage of defaulters at a paediatric dental clinic in a tertiary hospital and to implement appropriate interventions to reduce the defaulter rate. **Methods:** The study was carried out in 2 cycles. In cycle 1, the number of patients who defaulted the 6-month plus 1-week post-operative recall visit was established for all appointments scheduled from March to May. The study was then repeated in Cycle 2 following telephone reminders to a total of 26 patients due to attend the clinic in the week preceding their appointment date. The defaulter rates in the two limbs of the completed audit cycle were then compared. **Results:** The Cycle 1 result revealed a defaulter rate of 45.8%, with more males than females failing to attend. In Cycle 2, the non-attendance rate fell to 26.9% although this was not a significant reduction. The defaulter rate in the post-intervention limb improved but did not achieve the state standard key-performance index of  $\leq 20\%$ . **Conclusion:** Telephoning patients before their appointments is labour-intensive and did not significantly improve the defaulter rate. Future work is necessary to establish the causes of non-attendance to deliver more effective and applicable solutions.

# First locally owned and produced non-polyvinyl chloride (PVC) packed peritoneal dialysis (PD) solution in Malaysia, Soft Flow SC®: Evaluation of clinical performance and safety in peritoneal dialysis patients

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## ABSTRACT

**Introduction:** Locally manufactured Fresenius and Baxter peritoneal dialysis (PD) systems contain PVC despite known environmental and health hazards. Peritone Health uses a safer alternative called polypropylene, to manufacture Soft Flow SC® PD bags and tubes. **Methods:** This was a prospective, multicenter observational study involving 13 centres. The primary endpoint was the peritonitis rate. Secondary endpoints were clinical effectiveness and device deficiencies. The duration of the evaluation was a minimum of 1843.2 patient months. **Results:** Among 212 patients, mean age was 50.0 (14.9) years and 52.8% were male. The main renal pathology was diabetic nephropathy (60%), hypertensive nephropathy (20%) and glomerulonephritis (9%). Existing patients (35.3%) and new patients (63.7%) were recruited. Two-thirds were on continuous ambulatory PD (72.9%) while the remaining were on automated PD (27.1%). Peritonitis rate was 1 episode in 31.9 patient-months or 0.037 episode/patient-month. Peritonitis risk factors were diabetes mellitus, modality of PD and centre effect. Peritonitis rate varied between centres. Centre factors associated with peritonitis were the patient-to-staff ratio and culture-negative rate. Peritonitis rates of existing and de-novo patients were comparable. Average Kt/V and creatinine clearance were 2.0, 1.9 and 58.6, 63.4L/week at baseline and month 6, respectively. The rigidity of polypropylene contributed to 58 device deficiencies in the initial phase. The drop-out rate was 29.2%. **Conclusion:** Soft Flow SC® is comparable to existing multinational PD Systems in Malaysia based on clinical performance and safety. Peritonitis rate of 0.037 per episode/patient-month is above the target peritonitis rate as per ISPD recommendation.

# Telemedicine for early detection of oral potentially malignant disorders and oral cancer in Sarawak: EPIS framework to guide pre-implementation planning

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## ABSTRACT

**Introduction:** Oral cancer (OC) is amenable to early detection through visual examination. The Ministry of Health (MOH) has programs for opportunistic screening in dental clinics and the community, aiming to double the detection of early-stage tumours by 2030. MeMoSA® is a telemedicine App that captures oral images and medical information and allows remote communication between healthcare providers and their patients. As digital health is a strategy outlined in the national oral health policy, we aim to utilize MeMoSA® in the community for early detection of oral cancer. **Methods:** The EPIS implementation science framework was used to guide stakeholder engagement, contextual assessment and selection of implementation strategies in the pre-implementation phase of the study. Key stakeholders were identified, and the processes and gaps of screening programs were discussed and identified. Strategies to close the gap were identified, and the implementation strategy was agreed unanimously through iterative stakeholder meetings. Additional stakeholders were invited to join the team based on the chosen implementation strategy. **Results:** Fifteen meetings with 11 stakeholders, including dental specialists, administrators, researchers and healthcare volunteers (HCVs), were held. It was agreed that HCVs would be equipped with MeMoSA® to enable them to conduct screening in the communities to help identify individuals at risk of oral cancer. The outcome measures agreed upon for the implementation study are feasibility, acceptability and appropriateness. **Conclusion:** Translation of research to practice requires key stakeholders' support, and implementation science provides an avenue for co-creation with stakeholders.

# Impact and readiness of Malaysian Ministry of Health pain clinics during the COVID-19 pandemic

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## ABSTRACT

**Introduction:** Chronic pain significantly impacts the patient's quality of life. The COVID-19 pandemic diverted healthcare resources toward infection control, potentially disrupting pain management. This study investigates the impact and preparedness of Malaysian Ministry of Health (MOH) pain clinics towards the pandemic. **Methods:** A retrospective cross-sectional mixed-method approach was employed, using an adapted questionnaire to gather data from 15 MOH pain clinics via the REDCap platform. **Results:** The response rate was 93.33%. Results revealed that pain clinic services were disrupted during the pandemic (years 2020-2021), with a significant median reduction of 18.25% ( $p=0.004$ ) in the number of clinic cases compared to pre-pandemic years (2018-2019). 85.7% of clinics reported their patients experienced increased pain or reduced functionality due to pain. Eight out of ten clinics had to discontinue interventional procedures during the pandemic, leading to a significant drop in procedure numbers ( $p=0.010$ ). Urgent procedures were only conducted for severe cancer pain or uncontrollable cases. To adapt to the pandemic, 92.85% of clinics offered telehealth consultation, but challenges such as poor internet and telephone service hindered effective virtual care. Despite this, most clinics (92.85%) consider remote consultation as an acceptable alternative to in-person consultation, emphasizing the need for improvements in IT support and general infrastructure. **Conclusion:** This study highlights the sidelining of pain medicine services during the pandemic, posing challenges in ensuring continuity of care for patients. Remote consultation is a viable alternative. However, to ensure consistent service, there is a pressing need to enhance basic infrastructure.



# Adaptation and content validation of the palliative care knowledge test (PCKT)

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## ABSTRACT

**Introduction:** The Palliative Care Knowledge Test (PCKT) was developed to assess palliative care (PC) knowledge among healthcare professionals. Although PCKT has been validated and used in many countries, it has not been validated in Malaysia. Therefore, the aim of our study was to adapt and perform content validation of PCKT in local settings. **Methods:** Permission to use and adapt PCKT was obtained from the authors. The original questionnaire had five domains with a total of 20 items. After discussion with a PC specialist, a few items were adapted to suit local practice and guidelines. Content validation by a panel of six subject matter experts (SME) consisting of PC specialists and PC healthcare workers was conducted. SMEs were requested to rate the relevance of items to the domains on a 4-point Likert scale. Content Validation Index (CVI) was calculated in two forms: item-level CVI (I-CVI) and scale-level CVI (S-CVI/Ave). **Results:** Most items in the adapted PCKT (15/20) obtained acceptable I-CVI scores of  $\geq 0.83$ . Three items (questions 3,14,20) obtained I-CVI scores of 0.67; while I-CVI scores of 0.50 and 0.33 were obtained by one item each (questions 4 and 13 respectively). The S-CVI/Ave was 0.85. When all five items with I-CVI of  $\leq 0.70$  were removed, S-CVI/Ave improved to 0.94. **Conclusion:** This adapted PCKT may be used in local settings as overall content validity was acceptable. However, we recommend using the adapted version with the removal of five items (questions 3,4,13,14,20) as S-CVI/Ave after removal indicates excellent content validity.

# A study of pembrolizumab (MK-3475) plus platinum and gemcitabine as first-line treatment of recurrent/ metastatic head and neck squamous cell carcinoma (PIPER)

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## ABSTRACT

**Introduction:** A treatment combination of pembrolizumab plus platinum and 5-FU (PF) has increased the survival of recurrent or metastatic head and neck squamous cell carcinoma (R/M HNSCC). Although the combination of platinum and gemcitabine (PG) is commonly used for the treatment of R/M HNSCC, its use with pembrolizumab has not been tested. We hypothesize that the combination of pembrolizumab with PG would be comparable to pembrolizumab with PF, as first-line treatment in R/M HNSCC. **Methods:** In this open-label, phase 2 single-arm study of pembrolizumab plus PG as first-line treatment in subjects with R/M HNSCC, 63 evaluable subjects with no prior treatment in metastatic setting will be enrolled and given pembrolizumab 200 mg 3 weekly in combination with chemotherapy for up to 6 cycles of platinum (either cisplatin at 35 mg/m<sup>2</sup> IV on Day 1 and Day 8 or carboplatin at AUC 5 IV on Day 1 of each 3-week cycle) and gemcitabine at 1000 - 1250 mg/m<sup>2</sup> IV on Day 1 and 8 of 3-week cycle. The primary study endpoint will be the Objective Response Rate (ORR) using RECIST 1.1. The study applies a Simon two-stage design, where if at least 7 out of 26 evaluable patients achieved CR/PR in stage I, the study will proceed to stage II. **Current Status:** The study was initiated in September 2022 and actively recruiting to achieve the stage I interim analysis. To date, 9 patients have been enrolled.

# Snakebite: Evaluation of knowledge among farmers in the state of Perlis, Malaysia

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## ABSTRACT

**Introduction:** Snakebite is a neglected occupational hazard for farmers. Snakes prefer seeking shelter in fields or farms, especially during human lockdowns. Most incidents occur in the northern states of Peninsular Malaysia, carrying high morbidity and mortality. This study aims to evaluate the knowledge level of snakebite among farmers in Perlis. **Methods:** A validated questionnaire, adapted from a previous study and translated into Malay, underwent content validation by Remote Envenomation Consultancy Services. **Results:** Farmers participated in face and construct validation, yielding a Cronbach's alpha of 0.765. The knowledge section consisted of two true-false and six multi-select multiple-choice questions. Dissemination was from January to June 2023, utilizing both paper and online formats through social media, the Department of Agriculture, and its agencies. A total of 106 farmers responded, with a mean experience of 15 years. Most were Malays, males, rice farmers, married, secondary school graduates, had a B40 household income, agriculture as their main income source, and had no prior snakebite experience. Self-rated and actual knowledge levels showed no significant agreement. The mean knowledge score was 15 (out of 35). No respondent answered all questions correctly. Misconceptions included placing sulphur around the house or bed (53.8%) and applying tourniquets to snakebite (70.8%), while only a few were aware of rinsing snakebite wounds (25.5%). Fruit farmers ( $p=0.042$ ) and having B40[B3-B4] income ( $p=0.034$ ) had higher odds of good knowledge level. **Conclusion:** There is a significant gap in knowledge among farmers. Collaborative efforts between agricultural and healthcare authorities are necessary to develop comprehensive snakebite prevention and management strategies.

# Factors associated with late-stage presentation of breast cancer in a multi-center patient navigation network in Malaysia

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## ABSTRACT

**Introduction:** Late presentation remains one of the major contributors to poor survival in low- and middle-income countries (LMICs). Here, we describe the factors associated with the late-stage presentation at a network of patient navigation centres in Ministry of Health hospitals in Malaysia. **Methods:** We determined factors associated with a late-stage presentation using adjusted multivariable analysis amongst patients enrolled in the patient navigation program in 4 hospitals (n=1,737). **Results:** Breast cancer patients reported facing various barriers to timely breast cancer care, including poor understanding of symptoms or diagnosis (60%), financial status (50%), and logistics (34%). Lack of support to inform about symptoms or diagnosis and reliance on public transport for mobility were independent predictors of late-stage presentation (p-value<0.05). Notably, these factors were also associated with treatment default, and the provision of navigation services (financial and logistic support, counselling and emotional support) improved adherence to treatment, suggesting that the provision of navigation could similarly address barriers to late presentation. **Conclusion:** Our findings show that factors associated with late presentation are similar to those associated with treatment default and that they are similar across different regions in Malaysia.

# Evaluation of adult obesity management in a tertiary centre

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## ABSTRACT

**Introduction:** Obesity is a chronic disorder and there is a need for long-term follow-up. Previous studies reported weight loss of 5-10% reduces obesity complications. We aimed to evaluate the pattern of weight changes and management in patients monitored at an obesity clinic in a tertiary centre. **Methods:** This is a retrospective study on obese adult patients (BMI >27.5 kg/m<sup>2</sup>) who had their first visit to an obesity clinic between 2018 to 2020. A thyroid disorder, pregnancy, or long-term steroid therapy during follow-up were excluded. Data on demographic, anthropometric, and obesity management until their last follow-up were gathered. **Results:** We studied 148 patients (56.1% female) with a mean age of 39.5 years and the majority were obese class III (88.5%). More than half of the patients (58.1%) had dyslipidemia and 39.9% had diabetes. The mean follow-up was 1.8 ± 1.4 years. Median weight changes throughout the follow-up was -3 ± 9.2 kg. Only 31 patients (20.9%) achieved more than 5% weight loss at one-year follow-up, 32 patients (22.2%) at two years and 24 patients (16.2%) at three years follow-up. Most of them (78.4%) attended dietary counselling with a mean of three sessions throughout the follow-up while 72.3% joined the exercise session with a median of two sessions. Only four patients had bariatric surgery. **Conclusion:** Only a quarter of patients achieved 5% weight loss with half of them receiving at least three dietary counseling and two exercise sessions.

# Improving precision medicine through the identification of epigenetic biomarkers for colorectal cancer cases in a local setting- a study protocol

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## ABSTRACT

**Introduction:** Colorectal cancer (CRC) is the second most common cancer in Malaysia, often diagnosed at late stages, leading to a substantial economic burden and reduced survival rates. Blood-based epigenetic markers, particularly circulating tumour DNA (ctDNA), hold promise for early CRC detection. However, data from local patients are limited, and marker effectiveness in diverse populations is uncertain. To address these gaps, we propose a study to identify and validate robust methylation markers that could effectively distinguish between CRC patients and those with colorectal polyps or adenomas. **Methods:** The study will include 120 histologically confirmed CRC, polyps or adenoma patients, with a total of 80 blood samples and 160 FFPE tissue samples collected. Patients receiving chemotherapy or radiotherapy treatment at recruitment will be excluded. Samples will be obtained through the MOH Biobank. Methylome profiling will be performed using Infinium Human MethylationEPIC v2.0 BeadChip arrays. Data analysis will include differential methylation analysis, gene set enrichment analysis, and logistic regression for CRC classification. **Results:** The study aims to identify and validate novel and known methylation markers for CRC detection, potentially contributing to the development of liquid biopsy and companion diagnostic tests for precision medicine in the local setting. **Conclusion:** This study addresses the scarcity of local methylation analysis data and the need for effective CRC screening methods. Validating blood-based methylation markers will enhance early detection efforts, reducing the burden of CRC in Malaysia, with advancing precision medicine and liquid biopsy tests for early CRC detection and treatment in the local population.

# Statin use and lipid control in patients developing first ST-segment elevation myocardial infarction

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## ABSTRACT

**Introduction:** Cardiovascular disease (CVD) continues to be a leading cause of mortality and morbidity worldwide, including in Malaysia. This study aimed to investigate the association between statin therapy use for primary prevention of CVD in patients prior to their first ST-segment elevation myocardial infarction (STEMI), as well as lipid control post-first STEMI. **Methods:** A single-centre retrospective cohort study was conducted at a Malaysian secondary hospital. The study screened all patients admitted for their first episode of STEMI in the year 2020. Information data of patients meeting the inclusion and exclusion criteria were extracted from an electronic health information system (eHIS) and compiled into a pre-prepared data collection form for analysis. **Results:** A total of 177 study subjects were enrolled. Despite the study subjects presented with high CV risk (mean 10-year CVD risk: 27.5% with a standard deviation of 18.6), only a mere 15.8% of the patients received statin therapy for primary prevention of CVD prior to the first STEMI. The study did not find any significant association between statin therapy for primary prevention of CVD and CV risk categories before the first STEMI. Furthermore, three months after the STEMI event, the mean low-density lipoprotein-cholesterol (LDL-C) level remained above the recommended target, measuring 2.11 (0.89) mmol/L. **Conclusion:** The utilization of statin therapy for primary prevention of CVD in study subjects prior to their first STEMI remains surprisingly low, despite well-established guidelines and strong evidence supporting its efficacy. This study highlights the need for increased awareness and adherence to guidelines to improve the management of CVD risk factors.

# Factors associated with tuberculosis (TB) treatment success among Malaysian TB/ HIV co-infected patients

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## ABSTRACT

**Introduction:** Tuberculosis (TB) and Human Immunodeficiency Virus (HIV) co-infection is a global public health issue among people living with HIV (PLHIV). The objective was to assess the factors associated with TB treatment success among Malaysia TB/HIV co-infected patients for five years (2016 – 2020). **Methods:** This cross-sectional study was carried out at TB/Leprosy Sector, MOH by reviewing the secondary data from the MyTB online system. The data were analyzed using SPSS version 25.0. Ethics approvals were obtained from the Medical Research Ethics Committee (MREC). **Results:** Malaysia had 5515 TB/HIV co-infected patients from January 2016 to December 2020. Their ages ranged from 18 to 93, with a mean (SD) of 39.8 (10.60) years. The range of TB treatment duration was 0 to 859 days, with a mean (SD) of 179.7 (129.01) days. The prevalence of TB treatment success was 56.3% and unsuccessful was 43.7%. The duration of treatments, race, education status, smoking status, anatomy of TB location and category case were significantly associated with TB treatment success. **Conclusion:** This study's findings showed that the prevalence of TB treatment success rate was 56.3% and still under the international target WHO of > 90.0%. The duration of treatments, race, education status, smoking status, anatomy of TB location and category case were significantly associated with TB treatment success. Therefore, the government should strengthen the TB/HIV collaborative efforts to achieve good treatment outcomes among these vulnerable patients.



# Descriptive analysis of registered COVID-19 research and the approval timeline in the National Medical Research Register (NMRR) from 2020-2023

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## ABSTRACT

**Introduction:** To address the immediate public health crisis during COVID-19, the Institutional Review Board (IRB) and Independent Ethics Committee (IEC) are giving priority to expediting and reviewing COVID-19-related research. **Methods:** This is an observational, cross-sectional study on COVID-19-related research from January 2020 to June 2023 registered in the National Medical Research Register (NMRR). **Results:** Over that period, NMRR has registered 1416 COVID-19-related research with 97% being Investigator-Initiated Research (IIR) and 3% being Industrial Sponsored Research (ISR). It started in 2020 with 422 research registered and peaked in 2021 with 510 research. In 2022, the numbers decreased, reaching 389 research and only 95 research up to June 2023. The majority of registered studies were observational (84.6%), followed by Interventional (3.8%) with clinical audit (0.4%) being the least. In terms of the submission's purposes, 90.5% were seeking registration and MREC approval, while 9.5% were for registration only. Out of 1282, 1015 research have received final decisions whereby 66% have been approved via Expedited Review by Chairperson, 24.6% via Primary Reviewers, and 3.7% via MREC full board. Meanwhile, 4.4% of the research was exempted and 1.3% of the research was disapproved. The average approval review timeline per number of research in 2020 (6 days/276), 2021 (13 days /357), 2022 (11 days / 286) and 2023 (15 days /95) respectively. **Conclusion:** In a nutshell, with the increased number of research, the approval review timeline has been expedited for the benefit of all in managing and understanding COVID-19.

# From terrible to terrifying: Malignant pertussis in Sandakan

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Hospital Duchess of Kent, Sandakan

## ABSTRACT

**Introduction:** Pertussis is a vaccine-preventable disease with an infant mortality rate of 7.2%. In 2023, Sabah reported the highest case of mortality frequently attributed to malignant pertussis, a subset of pertussis that is terribly fatal. We reviewed 6 cases of malignant pertussis with an infant mortality rate of 75%. **Case Description:** Six patients meeting the inclusion criteria for malignant pertussis were identified; four infants <5 months old, and two 1-year-olds. They are either unimmunized or under-vaccinated for their age. Four of them presented with neurological symptoms associated with cough. Hyperleukocytosis >50 G/L were reported in all of them. Two infants died within three days while the third infant succumbed on Day 10 after developing pulmonary hypertension & ARDS. The only living infant in the group underwent leukoreduction therapy on Day 3 and survived. The remaining two pediatric patients had an uncomplicated admission and were discharged on Day 10. **Conclusion:** Malignant pertussis (MP) typically affects infants <5 months of age and is characterized by acute respiratory distress with tachycardia & hyperleukocytosis that is predominantly lymphocytes. Complications include pulmonary hypertension, ARDS & multiorgan failure leading to death. A high white blood cell (WBC) count is attributed to the high fatality rate hence early leukoreduction therapy is advocated. The antimicrobial role is limited. The outcome remains poor despite an aggressive ventilation strategy. Malignant Pertussis should be considered in infants presenting with cough, neurologic symptoms and hyperleukocytosis >50 G/L, especially in an endemic region with low vaccination coverage such as Sabah. Early leukoreduction therapy may improve prognosis.

# Tuberculous pre-auricular sinus: A case series of rare clinical presentation and management

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## ABSTRACT

**Introduction:** Pre-auricular sinus TB (PAS TB) is an uncommon disease. we present our experience with PAS TB, focusing on its clinical presentation, investigation, and treatment outcome. **Methods:** We conducted a retrospective observational study by analyzing the clinical data of patients diagnosed with PAS TB at our centre between 2021 and 2022. **Results:** Pre-auricular sinuses are among the most common congenital auricular abnormalities affecting 1–2% of individuals worldwide. There is limited reported literature on infected tuberculous pre-auricular sinus which may result in misdiagnosis as a common infected pre-auricular sinus. 3 cases of TB PAS were reported at our center which comprises 2 females and one male with ages ranging from 9 years old to 21 years old. Common presenting complaints are pre-auricular swelling, recurrent ear pain, recurrent ear discharge and pain. All 3 patients with infected pre-auricular sinus underwent incision and drainage of pus under local anaesthesia. Pus sent for acid-fast bacilli was positive. All the patients recovered well with anti-tuberculous medication and 2 patients subsequently had excision done. **Conclusion:** Diagnosis of tuberculous pre-auricular sinus poses a challenge due to its non-specific clinical presentation. Thus, a high index of suspicion should arise in cases of infected pre-auricular sinus not responding to conventional antibiotics and treatment to prevent delay in treatment and complications.

# Uncommon leiomyoma of the left inferior turbinate: A rare tumour in the nasopharynx

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## ABSTRACT

**Introduction:** Leiomyomas are rare, benign smooth muscle tumours infrequently diagnosed in the nasal cavity and paranasal sinuses. These unique growths present a clinical challenge due to their uncommon occurrence in the nasopharynx and their distinct nature. This case report aims to shed light on the atypical presentation of leiomyomas in the nasal cavity and the appropriate management. **Case Description:** A 55-year-old gentleman presented with recurrent epistaxis for 2 weeks. He had a history of intermittent episodes of epistaxis for the past 5 years. Physical examination of the nose via rigid direct nasal endoscopy revealed an irregular mass with contact bleeding arising from the left nasal inferior turbinate. The patient underwent left inferior turbinectomy via endoscopic endonasal surgery. Histopathologic examination of the left nasal inferior turbinate showed a spindle cell tumour with smooth muscle differentiation suggestive of leiomyoma. The spindle cells are immunoreactive with Caldesmon and Smooth Muscle Actin (SMA) which suggests smooth muscle differentiation. The patient recovered well and had no evidence of recurrence during the 2 months follow-up. **Conclusion:** Sinonasal leiomyomas are uncommon. Diagnosis is achieved through histological and immunohistochemistry examinations. The main management is total resection with clear margins to prevent the risk of local recurrence and ensure optimal patient outcomes.

# Is second admission more severe than first admission? A comparative study among chronic kidney disease (CKD) with COVID-19 patients

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## ABSTRACT

**Introduction:** CKD patients have a higher risk of having a poor prognosis for COVID-19 compared to non-CKD patients. Previous studies showed that readmission tends to be more severe. This study aimed to compare parameters in the first and second admissions among CKD patients with COVID-19. **Methods:** This is a retrospective cohort study involving CKD patients with COVID-19 infection who were admitted to two main tertiary hospitals in Kelantan from December 2020 to August 2021. Patients with age over 18 years old, with eGFR of 60mL/min/1.72m<sup>2</sup> and below, and with a confirmed COVID-19 infection were included. Readmission status within 12 weeks after the first hospitalization was confirmed for every patient. **Results:** A total of 140 patients were analyzed and 34 of them were readmitted. The mean age was 50 years. The median difference between the first and second admissions was 13 days. The majority of patients (79.4%) were readmitted for causes other than COVID-19 with the most common being pneumonia 17(50%). The median duration of hospitalization for first and second admission were 11(8) and 7(8) days, respectively (p-value=0.001). There were no significant differences between first and second admission in terms of ventilation requirement (17.6% vs. 23.5%, p-value=0.687) and intensive care unit (ICU) admission (29.4% vs. 35.3%, p-value=0.754). **Conclusion:** Although other studies found that second admission parameters were more severe, we found that most of our patients were readmitted due to causes other than COVID-19. A longer duration of study with a specific selection of readmissions due to COVID-19 is needed to verify findings from previous studies.

# Immunization stress-related response (ISRR) following Pfizer-BioNtech mRNA COVID-19 vaccination among healthcare workers: A single-centre, retrospective, observational study

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## ABSTRACT

**Introduction:** Immunization Stress-Related Reaction (ISRR) describes a range of symptoms and signs that arise around immunization related to “anxiety”. ISRR can occur immediately before, during or after immunization. ISRR has implications during COVID-19 vaccination campaigns resulting in refusal and delayed uptake. We aimed to evaluate the prevalence of ISRR among healthcare workers who received the Pfizer-BioNtech mRNA COVID-19 vaccine. **Methods:** We conducted this retrospective observational study among all healthcare workers who received two doses of vaccines in 2021 in Kepala Batas Hospital. Relevant clinical history and vital signs (pre-vaccination and 15 minutes after vaccination) data were extracted from the COVID-19 vaccine database. **Results:** Among 851 healthcare workers, 63.9% were females with a mean age of 39.6±9.81 years, with 16.1% self-reported personal history of atopy and 10.5% hypertension. Among ISRR identified, 3.9% developed transient tachycardia, 2.1% had raised blood pressure, 0.2% had transient weakness/numbness and 0.5% with nausea and vomiting. During the first dose of vaccination, a higher heart rate was observed pre-vaccination compared to 15 minutes post-vaccination (89.7±12.56 vs 86.2±12.75bpm, p<0.001). Higher heart rate (89.7±12.56 vs 87.8±12.35bpm, p<0.001) and systolic blood pressure (135.5±16.20 vs 130.9±16.80mmHg, p<0.001) were observed during pre-vaccination for dose 1 comparing to dose 2, reflecting anxiety encountered by vaccinees. **Conclusion:** ISRR was evident but remained low for the COVID-19 mRNA vaccine based on objective measurements from close monitoring of recipients’ vital signs.

# Retinopathy of prematurity in urban district hospital: A single-centered retrospective cohort study from 2016 to 2022

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## ABSTRACT

**Introduction:** The most common cause of visual impairment among premature infants is Retinopathy of Prematurity (ROP). With the advancements in neonatal care, survival rates of premature infants improved leading to the increment of ROP incidence, making it a significant public health concern. This study aims to provide a baseline account of the disease burden to an urban minor specialist hospital by describing the incidence and the trend of the disease. **Methods:** This is a single-centred, 7-year retrospective cohort review of the records of premature infants screened for ROP between 2016 and 2022 in Hospital Shah Alam. Data pertaining to the premature infants screened for ROP in the neonatal unit were extracted from the Ophthalmology database and Hospital Information System (HIS). **Results:** 361 neonates who fulfilled the inclusion and exclusion criteria were screened for ROP during the study period. Their mean birth weight was  $1290 \pm 343$  g and their mean gestation was  $30.3 \pm 2.5$  weeks. Out of 722 eyes that were analyzed, 144 eyes have ROP making the overall incidence of ROP detection in these neonates 19.9% with an evolving trend across the specified years. **Conclusion:** As the incidence varies from year to year, it is important to analyze the factors contributing to these changes to understand the progression of the disease. The findings also indicate the effectiveness of neonatal management in the urban minor specialist hospital as the ROP incidence is relatively lower compared to the other previous study. However, it is worth noting that discrepancies in the demographic characteristics of patients, such as birth weight and gestational age, between our study and prior investigations may contribute to the observed variations in the incidence of retinopathy of prematurity (ROP).

# Characteristics of 12-week readmission after COVID-19 hospitalization among patients with chronic kidney disease

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## ABSTRACT

**Introduction:** Evidence on characteristics of 12-week readmission after initial COVID-19 hospitalization among chronic kidney disease (CKD) patients is limited. This study aimed to describe the demographics and readmission characteristics in this specific population. **Methods:** This retrospective cohort study included CKD patients admitted to Hospital Raja Perempuan Zainab II and Hospital Universiti Sains Malaysia from December 2020 to August 2021 with a primary diagnosis of COVID-19. Patients with age over 18 years old, eGFR of equal and below 60mL/min/1.72m<sup>2</sup>, and confirmed COVID-19 infection were included in this study. Readmission status within 12 weeks after the first (index) hospitalization was checked for every patient. **Results:** Thirty-four patients (24%) out of a total of 140 patients analyzed were readmitted. The mean age of those who were readmitted was 59 years with 59% of them being men. Comorbidities included diabetes 29(85%), hypertension 28(82%), cardiac disease 13(38%), and chronic lung disease 3(9%). Only 3(8.8%) patients received a complete vaccination while 28(82.4%) patients had never been vaccinated. CKD Stage 4 (32.4%) and end-stage renal disease (ESRD) (23.5%) were more common compared to other CKD stages. The median duration of hospitalization was 7 days (IQR 8). Only 7(20.6%) patients were readmitted due to COVID-19. Among 7(20.6%) patients who passed away, three of them were due to COVID-19. **Conclusion:** People aged 50 years old and older and those with ESRD were more likely to be readmitted. However, the majority (79.4%) of CKD patients were readmitted for causes other than COVID-19. Its long-term effects, especially on the extrapulmonary system still need to be elucidated.



# Murine Typhus: a treatable yet often forgotten cause of acute febrile illness- a case report

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## ABSTRACT

**Introduction:** The seroprevalence of murine typhus (MT) in Malaysia is around 2-30%. We reported a case of MT, co-infected with pulmonary tuberculosis (PTB). **Case Description:** A 30-year-old native male, a construction worker, presented with fever, productive cough, vomiting and diarrhoea for 2 days. He lived in a crowded house with 15 occupants. He was treated for severe community-acquired pneumonia in shock and needed intubation on admission. He was extubated 3 days later. His tracheal aspirate unexpectedly stained positive for acid-fast bacilli. He had generalized limb weakness associated with lower limb tenderness, suggesting myositis. Four days later, he was re-intubated for respiratory distress. Brain and spine imaging showed pons infarction despite normal cerebrospinal fluid findings and negative cultures. He was started on TB medications and oral doxycycline. His Rickettsia indirect immune-peroxidase test came back later, showing positive Ig G for endemic typhus with a titer of >1:100 on day 8 and 1:1600 on day 44 of illness respectively. He was discharged well. **Conclusion:** The clinical presentation of this case was acute and atypical of PTB. MT was diagnosed based on clinical presentation and a 16-fold rise in Rickettsia IgG for endemic typhus convalescence plasma. MT typically presents as mild illness but our case likely represents the 2-4% case that presented with severe pneumonia in shock. His risk factors were his occupation and crowded living conditions. He responded to oral doxycycline. MT should be considered in patients with risk factors who presented with acute febrile illness. Early initiation of empirical oral doxycycline for favourable outcomes is recommended, whereby rapid diagnostic test is not available.

# A novice experience with AI-powered point-of-care ultrasound in screening primary care diabetic patients for systolic and diastolic dysfunction

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## ABSTRACT

**Introduction:** Diabetes is highly prevalent among Malaysians, and is associated with heart failure (HF). Early detection of subclinical HF before patients decompensate and hospitalized is important. However, lack of access to echocardiography and trained sonographers limit primary prevention echocardiography screening at primary care. We hypothesized that AI-powered point-of-care (POC) ultrasound enables novices to perform echocardiography screening. **Methods:** This pilot study enrolled primary care outpatient diabetic patients aged  $\geq 40$  years without known cardiovascular disease. A novice layperson with no prior echocardiography experience underwent a 3-day training program to acquire echocardiography images using AI-guided handheld POC ultrasound with AI-automated analysis and interpretation (AI-POCUS). All patients had AI-POCUS examination by the novice, and conventional cart-based manual transthoracic echocardiography (TTE) by trained sonographers validated by board-certified experts. The primary outcome was AI-POCUS accuracy in detecting left ventricular (LV) systolic dysfunction [LV ejection fraction (LVEF)  $< 50\%$ ] or diastolic dysfunction [left atrial volume index (LAVI)  $> 34$  mL/m<sup>2</sup>], using TTE as the reference standard. **Results:** We studied a total of 10 patients [60% male, mean age 63.5(9.8) years]. AI-POCUS yielded interpretable LVEF in 6 patients and LAVI in 5 patients. LVEF classification on AI-POCUS was concordant with TTE in 5 (83.3%) cases and discordant in 1 (16.7%) case. LAVI classification on AI-POCUS was concordant with TTE in all cases. The mean image acquisition time for AI-POCUS was 4.4(2.0) minutes. **Conclusion:** AI-POCUS enables a novice layperson with 3-day training to perform echocardiography screening for LV systolic and diastolic dysfunction in primary care outpatient diabetic patients with good yield, well-correlated LV function classification, and short acquisition time.

# CRM's role in making smooth conduct of Investigator Initiated Research in Malaysia

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Clinical Research Malaysia

## **ABSTRACT**

**Introduction:** In Investigator-Initiated Research (IIR), the investigator conceives the research, develops the study protocol, and is responsible as the sponsor and investigator of the study. This abstract looks into Clinical Research Malaysia's (CRM) role in facilitating the IIR hybrid studies, which were IIR funded by non-government organizations. **Methods:** This retrospective pilot study is based on CRM's IIR hybrid data that our legal team reviewed and endorsed from 2020 to July 2023. During study start-up, CRM facilitates the review of Clinical Trial Agreements (CTAs), ensuring the terms and provisions of the agreement are clear, fair, and reasonable. The legal department reviews CTAs within 14 calendar days, as per its Standard Operating Procedures. **Results:** Out of 383 CTAs that were reviewed and endorsed by CRM during the period, 46 were IIR hybrid, in which the majority were observational studies funded by international organizations. Essential clauses that were reviewed in CTA include contracting parties' obligations and rights, indemnification, protection of confidential information, intellectual property and clinical trial governance in respect of the applicable laws and regulations in the country. CRM Study Coordinators (SCs) support in IIR hybrid is limited to the study budget allocation. CRM SCs have supported 7 IIR hybrid studies, responsible for compiling documents for ethics submission, facilitating data entry and coordination of trial-related activities at the site, all as delegated and in accordance with the Good Clinical Practice guidelines. **Conclusion:** CRM's support via legal review and clinical operations aims to ensure IIR hybrid studies are delivered with speed, quality and reliability.