

## Poster Abstracts

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(P – 01)

### Choices and limitations to postgraduate education for Jamaican physiotherapists

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**Aim:** To determine the institution of choice for post-graduate education by Jamaican physiotherapists and reasons for pursuing the chosen programmes of study. To identify some of the limitations to pursuit of post graduate studies by Jamaican physiotherapists.

**Methods:** Physiotherapists who were trained and are practicing in Jamaica were included in the study. Physiotherapists were identified from the register of the Jamaica Physiotherapy Association, lists of physiotherapists working in the public sector, the local telephone directory and personal referral. Participants were contacted by telephone, e-mail or in person and asked to complete a questionnaire. Data was analysed using the Statistical Package for the Social Sciences (SPSS) version 20.

**Results:** One hundred and twenty-two physiotherapists completed and returned the questionnaires, 44 (36.1%) pursued postgraduate degrees, 56.8% (n = 25), studied at universities in the United States of America, 31.8% (n = 14) in Jamaica and 11.3% in England (n = 5). Approximately, 70.5% did postgraduate studies to improve their professional skills (n = 31) and 56.8% to improve their professional status (n = 25); 52.3% (n = 23) had chosen masters programmes and 47.7% (n = 21) did the Transitional Doctor of Physical Therapy degree. Seventy-eight (64%) of the physiotherapists had not pursued postgraduate education and 62.8% (n = 49) could not afford the tuition and other related fees for post graduate studies.

**Conclusion:** The majority of physiotherapists prefer overseas postgraduate programmes with equal proportions choosing the masters and the doctor of physiotherapy degrees. Lack of finances was the main limitation to pursuit of post graduate study.

(P – 02)

### Student perception of online classes using blackboard collaborate

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**Aim:** To determine medical students perception of virtual classes using blackboard collaborate and how their experience compared to face-to-face teaching sessions.

**Methods:** Students enrolled in the year-four orthopaedic clinical clerkship were given one online class *via* blackboard collaborate each week of the clerkship in addition to their usual classes. The class was accessed by the students through the OURVLE platform, an e-mail link or by dialling in on a toll free number. At the end of the clerkship students were asked to fill out a questionnaire *via* OURVLE evaluating the clerkship and the virtual class. Data was analysed using Stata v20.

**Results:** Seventy-six students filled out questionnaires of which 73 (96%) had attended the online classes. Ninety-three per cent of students used the OURVLE platform to log into classes. Ninety-six per cent of students rated their experience as good to excellent. The majority of students (30%) cited that the feature they most liked was the ability to join the class from anywhere. Text chat (61%), white board (53%) and polling (64%) were the most popular features. Sixty per cent of students rated the online classes as good as face-to-face while 34% rated it better. Seventy-one per cent of students had no challenges using the platform and those who had challenges cited internet connectivity as the main issue.

**Conclusion:** Online classes *via* blackboard collaborate are well received by students doing clinical courses in the Faculty of Medical Sciences.

### (P – 03)

#### **A retrospective review of the potential warfarin drug interactions among patients of a pharmacist-led anticoagulation clinic**

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**Background:** To analyse the potential warfarin-drug interactions (WDIs) among patients registered at the pharmacist-led Anticoagulation Clinic at the Cornwall Regional Hospital.

**Methods:** Retrospective data was collected of patients on warfarin and concomitant drugs seen at the Cornwall Regional Hospital's anticoagulation clinic during the period January 2014 to December 2016. Potential WDIs were identified and classified as either major, moderate or minor using the online Drug Interactions Checker database of Drugs.com.

**Results:** Forty-nine patients (84%) were on at least one potential WDIs with the frequency across types of 14, 12 and five for moderate, minor and major, respectively. Most patients, 55 (94.8%) were exposed to minor potential WDIs, while 25 (43.1%) patients were exposed to moderate potential WDIs and six (10.3%) patients were exposed to major potential WDIs. The class of drugs with highest frequency of potential interactions was diuretics.

**Conclusion:** This low frequency of patients exposed to major potential WDIs interactions in this pharmacist-led Anticoagulation Clinic is an encouraging outcome.

### (P – 04)

#### **Investigation of the analgesic effect of the extracts from *Smilax ornata* plant using the tail-flick method**

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**Background:** In folkloric medicine, the dried rhizome (1–4 g) of the Jamaican *Sarsaparilla* (*Smilax ornata*) is given as a decoction three times daily to treat chronic rheumatism and rheumatoid arthritis. This particular claim has never been scientifically validated before in this plant species and hence, it forms the reason for this investigation.

**Objective:** To investigate whether the methanol and ethyl acetate extracts of *Smilax ornata* possess analgesic properties using the tail-flick method.

**Method:** Sprague-Dawley rats were divided into seven groups (n = 6). The two control groups were administered saline (0.5 mL/kg) and vegetable oil (0.5 mL/kg) by intraperitoneal injection (ip). Ibuprofen (20 mg/kg ip) was administered to the standard (positive control) group. The

methanol and the ethyl acetate extracts of *Smilax ornata* (200 and 400 mg/kg ip, respectively) were administered to the test groups. The latency period of all animals were measured using an analgesimeter at 30-minute intervals for a duration of three hours.

**Results:** The methanol extract (200 mg/kg) had a percentage change in latency period of  $144.7 \pm 30.4$ , which exhibited significant ( $p < 0.05$ ) analgesic activity, with an onset at 60 minutes and a duration of two hours. Also, the methanol and the ethyl acetate extracts (400 mg/kg) had a percentage change in latency period of  $171.0 \pm 31.4$  and  $42.8 \pm 25.6$ , respectively ( $p < 0.05$ ), when compared to that of their control groups (saline and vegetable oil, respectively), with an onset at 30 minutes and a duration of 2.5 hours.

**Conclusion:** It is concluded from the present study that *Smilax ornata* possesses significant analgesic activity.

### (P – 05)

#### **Evaluating the cardiometabolic adverse effects of androgen deprivation therapy in patients with prostate cancer**

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**Background:** To determine the baseline prevalence of components of the metabolic syndrome in newly diagnosed prostate cancer patients and to investigate the metabolic change in parameters over the six months.

**Methods:** This was a prospective controlled cohort study with a sample of 15 prostate cancer patients recruited from the Urology Clinic; seven treated with androgen deprivation therapy (ADT) and eight not treated with ADT. Baseline history and physical examination were conducted and repeated at three months (anthropometric measurements) and at six months (laboratory tests and electrocardiogram (ECG)).

**Results:** At baseline, five of the recruited patients had metabolic syndrome even before ADT administration. Furthermore, there were no new cases of metabolic syndrome after six months. However, there was an increase in individual risk factors such as waist circumference (WC) [from baseline to six months in the ADT group ( $93.51 \pm 11.17$ ,  $94.30 (15.7)$  cm versus  $94.39 \pm 11.19$ ,  $95.10 (15.0)$  cm;  $p = 0.018$ )]. Three cardiac complications demonstrated on ECG were noted.

**Conclusion:** Six months of ADT was associated with a statistically significant increase in WC. No conclusive cardiac complications related to ADT.

**(P – 06)**

**Non-viral aetiology of conjunctivitis at a tertiary level hospital in Jamaica**

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**Background:** Identification of the aetiological agents of conjunctivitis is important in guiding empirical therapy. The study determined the causes of non-viral conjunctivitis at a tertiary teaching hospital in Jamaica.

**Methods:** Retrospective analysis of all eye swabs and conjunctival scrapings sent to the Microbiology Laboratory at the University of the West Indies between September 2015 and September 2017. All samples were Gram stained and cultured with resulting isolates identified and susceptibility tests done, either manually by biochemical tests and the Kirby Bauer method or using the Vitek®2 automated system (bioMerieux, Durham NC). The data collected were analysed by organism identified with age and wards of origin. All secondary, identical samples from the same patient collected within a month of each other, were excluded from the study.

**Results:** Of 609 samples, 79% originated from paediatric patients under the age of 12 years, 13.5% from ophthalmology services and 7.2% from general adult wards. Coagulase negative Staphylococcus (CoNS) accounted for 63% of the paediatric isolates, 50% of isolates from the adult wards and 44% of those from the ophthalmology services of the hospital. Enteric Gram-negative bacilli (31%) and *Streptococcal* species (17%) were also isolated from the paediatric cohort.

**Conclusion:** Coagulase negative Staphylococcus though often a commensal of the healthy eye cannot be overlooked as a possible cause of serious eye infections.

**(P – 07)**

**A comparative analysis of chest pain decision rules in the Emergency Department at the University Hospital of the West Indies**

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**Background:** The study's aim is to establish whether the thrombolysis in myocardial infarction (TIMI) or HEART score has a better predictive value in differentiating acute coronary syndrome (ACS) chest pain from other non-ACS atraumatic aetiologies in a Jamaican Emergency Department (ED).

**Methods:** This cohort study was done at a single centre (UHWI), prospectively over three months, utilising consecutive sampling. Data was collected from 156 patients

who passed specific inclusion criteria and were followed up six weeks after enrollment. Positive and negative predictive values of TIMI and HEART for MACE were determined, along with the sensitivity and specificity of certain historical features for ACS. The C-statistic or area under the receiver operator characteristic curve was determined and compared for both the TIMI and HEART scores.

**Results:** Forty-four out of 159 patients (27.7%) were found to have MACE, with acute myocardial infarction comprising 39 of these patients (88.6%). The average HEART and TIMI scores were 3.81 ( $\pm$  1.666) and 1.57 ( $\pm$  1.209), respectively. Of those with low-risk (0–1) TIMI scores (57.9%), 16/92 (17.4%) had a MACE, compared to 8/63 (12.7%) of those with a low (0–3) HEART score (39.6%). No patients had high (6–7) TIMI scores but 6/6 (100%) patients with high (7–10) HEART scores (3.8%) had a MACE. The C-statistics were 0.74 for HEART and 0.69 for TIMI.

**Conclusion:** Compared to the TIMI score, the HEART score has a better predictive value in differentiating ACS chest pain from other non-ACS atraumatic aetiologies in this Jamaican population.

**(P – 08)**

**Serotonin induced contraction of human umbilical artery displayed greater sensitivity to quetiapine than risperidone**

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**Background:** To compare the antagonism of risperidone and quetiapine on serotonin induced contractions of *in-vitro* preparation of the human umbilical artery (HUA).

**Methods:** Helical strips of HUA were placed in 10 mL organ bath suspended in Krebs-Hensleit physiological solution at 37 °C attached to a force displacement transducer under 2 g of resting tension and continuously aerated with Carbogen were prepared. Contractions were induced with cumulative addition of serotonin ( $3.19 \times 10^{-5}$  –  $0.319$  M) to determine the half maximal effective concentration (EC<sub>50</sub>) and repeated in the presence of risperidone and quetiapine at three concentrations ( $6.1 \times 10^{-6}$  M,  $1.8 \times 10^{-5}$  M and  $6.1 \times 10^{-5}$  M) to determine the half maximal inhibitory concentration (IC<sub>50</sub>) of antagonists.

**Results:** Effective concentration for serotonin was estimated to be 370  $\mu$ M. Both antagonists decreased the basal tone of the HUA and inhibited the serotonin induced contractions with IC<sub>50</sub> of 23.0  $\mu$ M and 2.6  $\mu$ M for risperidone and quetiapine, respectively.

**Conclusion:** Serotonin induced contraction of the umbilical cord artery was ten times more sensitive to the antagonism by quetiapine than risperidone.

**(P – 09)**

**Does ultrasound-guided transversus abdominis plane (US–TAP) block improve post-operative analgesia following Caesarean section**

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**Background:** Ultrasound-guided transversus abdominis plane (US–TAP) is a safe and simple method of delivering local anaesthetic following abdominal surgery. In some situations, it reduces pain scores and analgesic requirements for up to 24 hours.

**Methods:** This was a randomised controlled trial conducted on patients undergoing elective Caesarean section (CS) at the Victoria Jubilee Hospital and the University Hospital of the West Indies. Patients were randomised to receive either Bupivacaine (intervention group) or Saline delivered into the transversus abdominis plane. Postoperatively patients were assessed for: (i) severity of postoperative pain at 6, 12 and 24 hours, (ii) time to the first request for analgesia; (iii) total opioid consumption and its side effects; (iv) discharged time from hospital and (v) patient satisfaction.

**Results:** A total of 52 patients were enrolled in the Study. The US–TAP block resulted in a delayed first request for analgesia, less consumption of opioid and decrease pain intensity in the 24 hours. No statistically significant differences were found between the control and the experiment group in terms of opioid-related side effects and time to discharge from the hospital.

**Conclusions:** The US–TAP block resulted in a reduction in postoperative pain in the first 24 hours following CS. There was no difference in the side effects between the two groups.

**(P – 10)**

**Acute blood transfusion reactions in the University Hospital of the West Indies**

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**Background:** Transfusion reactions are classified as acute or delayed, immunologic or non-immunologic, and range from mild-to-severe, sometimes fatal. There is no aggregate data on blood transfusion reactions in Jamaica or the Caribbean as a whole. This study sought to document acute transfusion reactions to packed red blood cells (PRBC), a part of haemovigilance, at The University Hospital of the West Indies (UHWI) between March and August 2017.

**Materials and methods:** An audit of transfused. in-patients, 18 years and over, admitted to the UHWI, as ordered by their managing physicians with interval monitoring of vital signs (temperature, heart rate, respiratory rate and blood pressure), was carried out over a 24-hour period to determine if they met criteria for any acute transfusion reaction.

**Results:** Transfusion reactions were reported as-a proportion of PRBC units to which there was a reaction compared to the total number of units (503) under study. Nine per cent of transfused PRBC units met the criteria for febrile non haemolytic transfusion reaction (FNHTR). None of the transfused units met the criteria for acute haemolytic transfusion reaction (AHTR), transfusion associated circulatory overload (TACO) or transfusion related acute lung injury (TRALI). Mild allergic reactions, like itching and-rash were verbally reported thus not captured in this study.

**Conclusion:** Results obtained were similar to those documented in low Human Development Index (HDI) countries, but not in keeping with high HDI countries of which Jamaica is one. Poor documentation of transfusion reactions as well as lack of return of transfusion data sheets to the blood bank were the most striking deficiencies noted in this study.

**(P – 11)**

**Prostate cancer presentation and outcomes in younger Jamaican men (< 60 years) treated at the University Hospital of the West Indies**

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**Background:** Prostate cancer is the most common malignant tumour seen in men in Jamaica. While there have been studies identifying clinicopathological profiles of prostate cancer patients in Jamaica, there is currently a paucity of evidence regarding differences in the presentation and outcomes based on age. To that end, we hypothesise younger prostate cancer patients (< 60 years) have better outcomes.

**Methods:** Medical case notes of Jamaican men who had been diagnosed with prostate cancer and treated at The University of the West Indies were analysed in a retrospective cohort study. The cohort was divided based on age: greater than or lesser than 60 years. Clinicopathological features, such as prostate-specific antigen (PSA), Gleason scores, presence of metastases, age at diagnosis and survival were identified. Quantitative data analysis methods were used to assess the differences in the presentation and outcome of younger and older men with prostate cancer. Time to event analyses will be used to explore differences in survival rates.

**Results:** A total sample of 317 men were included. Patients' ages at diagnosis ranged from 44–102 years with a mean

(sd) age of 68 (9). Initial analysis did not detect a difference between PSA at diagnosis. Biopsy Gleason scores were higher among patients over 60 years ( $p < 0.001$ ). There was no difference in presentation with metastatic disease between the groups. There was no difference in survival between the two groups.

**Conclusion:** Younger men with prostate cancer present with lower Gleason scores, however, there is no survival difference based on age.

#### (P – 12)

### **Frequency and spectrum of constitutional chromosomal abnormalities in first trimester spontaneous miscarriages at the University Hospital of the West Indies**

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**Background:** To investigate constitutional chromosomal abnormalities in first trimester spontaneous miscarriages at the University Hospital of the West Indies (UHWI) and compare histological features with results of chromosomal analysis.

**Methods:** Informed consent was obtained from women presenting to the UHWI with spontaneous miscarriages in the first trimester of pregnancy and scheduled for routine intra-uterine surgical evacuation. The tissue collected at surgery was submitted for chromosomal analysis and histological assessment.

**Results:** Culture failure was observed in 21 cultures (49 %); in 12 of these, surgical evacuation was performed > 3 days after the estimated date of miscarriage. In a further 14 cases (33%), chromosomal analysis was not possible, due to poor harvesting and/or banding quality in 12 (28%) and improperly constituted fixative in two (5%). The remaining eight cases (19%) revealed six normal and two abnormal (1 structural; 1 numerical) karyotypes. Tissue were analysed for abnormal histological features; abnormalities were observed in five.

**Conclusion:** Chromosome abnormalities were found in (2/8; 25%) of miscarriages with tissue suitable for karyotyping.

#### (P – 13)

### **Glaucoma medication compliance in patients at the University Hospital of the West Indies, Jamaica**

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**Background:** This study assessed patient compliance with anti-glaucoma medication at the University Hospital of the West Indies (UHWI) Glaucoma Clinic and possible factors associated with compliance.

**Methods:** A cross-sectional interview-based study was conducted among consecutive adult patients who attended the UHWI Glaucoma Clinic between April and June 2017 and who met the inclusion criteria for the study ( $n = 117$ ). Ethical approval was obtained from the University Hospital of the West Indies/ University of the West Indies/Faculty of Medical Science, Mona, Ethics Committee. Chi-square test and odds ratios were performed using SPSS Statistics version 25 software. Values of  $p < 0.05$  indicate statistical significance.

**Results:** The majority (53%) of patients reported always taking their anti-glaucoma medication as prescribed. Fully (100%) compliant status was determined for 80% of the patients based on calculations using dosing frequency data. All patients using prostaglandin analogues or muscarinic agonists reported full compliance. The main reasons presented for lack of full compliance included forgetfulness (68%) and cost of medication (23%). Most (73%) patients indicated that they considered their anti-glaucoma medication unaffordable, even though 81% of patients had health insurance. Compliance was associated ( $p < 0.05$ ) with the number of anti-glaucoma agents being taken, as well as the type of therapy (monotherapy or combination).

**Conclusion:** A high-level of compliance was reported by patients on anti-glaucoma therapy. The main reason stated for lack of full compliance was forgetfulness.

#### (P – 14)

### **Ocular conditions reported at the University Hospital of the West Indies, Jamaica**

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**Background:** The study evaluated relative frequencies of ocular conditions reported at the University Hospital of the West Indies (UHWI) Eye Clinic, along with associated factors and the main drug therapies prescribed.

**Methods:** A descriptive cross-sectional study was conducted by extracting data from the docketts of 370 randomly

selected patients who attended the UHWI Eye Clinic from January to March 2017. Data extracted included demographic information and patient medical history. Ethical approval was obtained from the University Hospital of the West Indies/ University of the West Indies/ Faculty of Medical Science, Mona, Ethics Committee. Chi-square and odds ratio analyses were performed. Values of  $p < 0.05$  represent statistical significance.

**Results:** Glaucoma (45%), refractive errors (41%) and cataract (34%) were most frequently reported and were positively correlated with age ( $p < 0.05$ ). The most common co-existing ocular conditions were glaucoma with cataract or refractive errors, with a significant association between glaucoma and cataract ( $p < 0.01$ ). Some patients also had hypertension (41%) or diabetes (28%). Glaucoma was associated with family history of blindness, glaucoma, hypertension and sickle cell disease ( $p < 0.05$ ). Prostaglandin analogues (48%) were most commonly prescribed, followed by carbonic anhydrase inhibitors (30%). Most patients (43%) were prescribed more than one topical anti-glaucoma agent, when compared to patients on single-drug (36%) or fixed combinations (21%).

**Conclusion:** Glaucoma, refractive error and cataract were the most commonly reported ocular conditions at the UHWI Eye Clinic. Prostaglandin analogues were the most popularly prescribed anti-glaucoma agents.

#### (P – 15)

##### **Retinopathy of prematurity at the University Hospital of the West Indies: incidence and risk factors**

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**Background:** Retinopathy of prematurity (ROP) is one of the leading causes of blindness in children. To date, there have been no published studies on ROP from Jamaica.

**Methods:** A retrospective case control study was conducted in which data was collected from 105 infants  $< 1500$  g and  $< 34$  weeks gestational age born between January 2012 and December 2016 at the University Hospital of the West Indies (UHWI). Infants with ROP (case group) were compared with infants without ROP (control group). Continuous and categorical variables were analysed using the student's *t*-test and Chi-squared test, respectively. Risk factors were determined using multiple regression models. Statistical significance was taken at the level  $p < 0.05$ .

**Results:** The incidence of ROP at UHWI was 14.3%. Of the 105 infants in this study, 35 (33.3%) had ROP, 53 (50.5%) did not have ROP and 17 (16.2%) were not screened. Stage 1 ROP was the most common stage. No infant had Stage 4 or 5 ROP. Significant risk factors included anaemia, number of blood transfusions and respiratory distress syndrome [RDS] ( $p < 0.05$ ).

**Conclusion:** The incidence of ROP at the UHWI is less than that seen internationally, however, the risk factors for ROP are similar to those documented in previous studies.

#### (P – 16)

##### **Alcohol and nicotine differentially stimulates growth in both larval and adult Zebrafish**

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Alcohol and nicotine are two of the most widely abused drugs in the world and are often co-abused. Nicotine and alcohol co-abuse is claimed to be less dangerous due to the antagonistic effect that both drugs have on each other. In this study, we have assessed the effect of nicotine and alcohol cross-talk on zebrafish development and caudal fin regeneration (CFR).

For this, three hpf (hours post fertilized) Zebrafish embryos were exposed to different concentrations of alcohol (0–3%) and nicotine (1 to 0.005 mg/mL) separately for a 72-hour period and the larval morphology was assessed after seven days. Similarly, in adults, the fish were exposed to alcohol (0–1.5%) and nicotine (0–0.8 mg/L) individually three times a day for 14 days. The concentration which caused the maximum larval deformities and the lowest effect CFR was identified. This concentration was used with varying concentrations of the opposite drug to monitor if there is a reduction in the selected drug's effect.

Three per cent of alcohol showed the most severe structural defects in larvae, however, in adults, alcohol does not affect caudal fin regeneration. Co-treatment with a constant concentration of alcohol with varying concentrations of nicotine indicated that nicotine at low concentrations can prevent alcohol-induced structural defects in larvae, but not at high concentrations. In contrast, nicotine by itself reduced CFR in adults, while alcohol had little/no effect. Alcohol did not influence the nicotine-dependent reduction in adult Zebrafish CFR. This indicates that both alcohol and nicotine have differential effects on growth in both larval and adult Zebrafish.

#### (P – 17)

##### **Investigation of the effects of different extracts of *guaia-cum officinale* leaves on histamine-induced contractions in guinea pig tracheal smooth muscle**

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**Background:** *Guaiacum officinale* (lignum vitae), a plant native to South America and the Caribbean, is widely used in folkloric practices to treat different pathophysiological conditions including asthma. However, no scientific evidence exists to validate the anti-asthmatic effect of the Jamaican cultivar.

**Objective:** To investigate the inhibitory and relaxant effects of ethyl acetate and ethanol extracts of *Guaiacum officinale* leaves on histamine-induced tracheal contractions in guinea pigs.

**Methods:** Trachea from adult guinea pigs were used for *in vitro* experiments. Inhibitory effects were investigated by the addition of cumulative concentrations of histamine to the tissues in the presence and absence of two doses of both extracts, diphenhydramine (positive control) and dimethyl sulfoxide (drug vehicle). Relaxant effects were investigated by addition of cumulative concentrations of both extracts and dimethyl sulfoxide on histamine pre-contracted tracheal strips. Phytochemical screening was conducted on both extracts.

**Results:** Two doses of ethanol and ethyl acetate extracts produced no inhibition of histamine-induced contraction of the tissue compared to diphenhydramine. Cumulative doses of ethanol and ethyl acetate extracts produced significant relaxation ( $p = 0.000$  and  $p = 0.005$ ), respectively. Phytochemical screening indicated the presence of saponins, alkaloids and flavonoids in the extracts.

**Conclusion:** Ethanol and ethyl acetate extracts shows no inhibitory effect on the response of the tissue to histamine-induced tracheal contractions however, both extracts showed significant relaxant effect on tissue pre-contracted with histamine. These results validate folkloric claims however, further studies need to be done to purify the extract and ascertain the specific receptor causing the relaxant effect.

#### (P – 18)

##### **Characterization of alcohol-nicotine cross-talk through Zebrafish drug fingerprint analysis**

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**Background:** Behavioural drug fingerprinting is a technique used to study light/ dark distribution of model animals under the influence of an evaluating drug using various parameters. Recently, Zebrafish (*Danio rerio*) has been validated as an animal model for drug fingerprinting analysis.

**Objective:** Characterisation of alcohol and nicotine cross-talk is a topic of interest because of the high prevalence of co-abuse. Therefore, under this current investigation, we used Zebrafish to develop drug behaviour fingerprint under the influence of alcohol and nicotine or combination of both.

**Methods:** Healthy adult Zebrafish were treated with increasing concentration of either nicotine or alcohol singly or a combination of both drugs but at a constant ratio of 1:1. Each treated fish was then subjected to a half black/half white evaluating tank and the swimming activity recorded using CCD camera. The frequency of entries, speed of swimming, duration of time spent at seven designated areas of the white compartment and XYZ-axis swimming pattern were assessed from the recorded videos through the use of NIH ImageJ software.

**Results:** Treatment of fish by either drug singly or in combination resulted in an increase swimming speed in the white compartment. However, unlike alcohol, nicotine treated fish showed rapid steering activity thereby avoiding striking at the white wall of the tank. At low concentration, alcohol potentiated nicotine effects whereas at high concentration, alcohol induced slower speeds and resulted in complete loss of swimming co-ordination activity in the co-treated fish that was not present when fish were treated with either drugs alone.

**Conclusion:** At low concentration, alcohol potentiated nicotine effects but at high concentration alcohol resulted in complete loss of swimming co-ordination in co-treated fish.

#### (P – 19)

##### **Evaluating the anti-prostate cancer properties of some commercial natural health products from Jamaica and St Lucia**

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Cancer has emerged as a major cause of death globally, with prostate cancer topping the list of cancers affecting men regionally. Keeping pace with the rise in the incidence of cancer, has been the emergence of a range of manufactured food products, proclaiming to cure this disease, but with no supporting scientific evidence. This study seeks to evaluate the ability of four commercially available health products to inhibit prostate cancer cell growth *in vitro*.

Extracts from two Jamaican and two St Lucian health products were prepared using standard chemical extraction methods; thin-layer chromatography (TLC) analysis provided preliminary structural information about the composition of the extracts. PC-3 androgen independent cancer cells were exposed to increasing concentrations of extracts for 24, 48, 72, 96 and 120 hours and the cytotoxic potential of the extracts evaluated by MTT assay. A normal prostate cell line, (PNT1A) was used as a control. Results were expressed as 50% inhibitory concentration (IC<sub>50</sub>) and

used to calculate the selectivity index (SI). Cell morphological changes were recorded for each extract. Only one extract obtained from one product significantly inhibited the growth and proliferation of PC-3 cells at an acceptably low IC50 (IC50 = 1.9 µg/mL). Importantly, that extract had low toxicity towards normal cells, (SI = 347).

Significantly, also, the extract induced noticeable adverse changes in the morphology of the cancer cells but not the normal cells. TLC analysis suggest that the active extract contained polyphenols and alkaloids. The other three extracts only showed indication of cytotoxic potential at very high concentrations, IC50 > 500.

#### (P – 20)

### **Characterisation of the aetiological agents and their susceptibility patterns in patients with complicated urinary tract infections in the University Hospital of the West Indies, Jamaica**

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**Background:** Patients with complicated urinary tract infections (UTIs) represent a heterogeneous group, combined with numerous co-morbidities. Treatment in these patients requires a multifactorial and individualised approach by an experienced clinician. Moreover, Extended Spectrum Beta-Lactamase (ESBL) producing bacteria may not be detected by routinely, leading to inappropriate use of antibiotics and treatment failure. The aim of this study was to investigate the aetiology and antibiotic susceptibility patterns of uropathogens isolated from patients with complicated UTIs in University Hospital of the West Indies (UHWI), Jamaica; as well as identification the of ESBL producers.

**Methods:** Uropathogens from complicated urinary tract infections (cUTI) cases presented to the University Hospital of the West Indies were identified by conventional methods. Antimicrobial susceptibility testing was performed using the Kirby Bauer's disc diffusion method and processed according to CLSI guidelines. Isolates resistant to third generation cephalosporins were tested for ESBL production by the Modified Double Disc Synergy Test.

**Results:** Of the 47 uropathogens isolated, *Escherichia Coli* (*E coli*) [42.55%] and *Klebsiella Pneumoniae* (17.02%) were the most prevalent species. Gram-negative bacilli were most susceptible to Amikacin and Meropenem, whereas Gram-positive uropathogens were most susceptible to Nitrofurantoin. Extended Spectrum Beta-Lactamase positive uropathogens were present in 37.5% of the isolates, of which, *E coli* (66.67%) was the predominant species.

**Conclusion:** This study revealed that *E coli* was the predominant uropathogen, as well as the main ESBL producing species. Uropathogens demonstrated a high susceptibility to meropenem, amikacin and nitrofurantoin. The data gathered from this study has provided current data on the susceptibility patterns for cUTI cases at the UHWI and maybe useful for clinicians to improve empiric treatment.

#### (P – 21)

### **Kocuria species, a possible emerging foe in Jamaica**

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**Background:** Clinical isolation of *Kocuria* species have not been documented in the Caribbean suggesting the possibility of a regional emerging pathogen.

**Methods:** A retrospective analysis of all blood culture specimen subjected to the Vitek 2 (bioMérieux, Durham NC) automated system at the University of the West Indies Microbiology Laboratory between January 2013 and February 2018 was conducted. The characteristic morphological features, biochemistry and antimicrobial susceptibility of all identified *Kocuria* species was noted.

**Results:** All isolates exhibited fine growth and were catalase positive. Two isolates were identified as *K varians*, one as *K rosea* and one *K kristinae*. Antimicrobial susceptibility testing showed that all isolates were sensitive to vancomycin but resistant to penicillin, ampicillin and Bactrim®. All showed resistance to clindamycin and erythromycin except for *K kristinae*.

**Conclusion:** Clinical isolation of *Kocuria* species have not been documented in the Caribbean suggesting the possibility of a regional emerging pathogen.

#### (P – 22)

### **Zika virus laboratory diagnosis during the 2016 Jamaican epidemic**

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**Background:** The emergence of Zika virus (ZIKV) in the Americas caused an unprecedented epidemic associated with pregnancy complications. Here we show diagnostic laboratory results from the Jamaican epidemic of 2016.

**Methods:** The University Hospital of the West Indies Virology Laboratory was responsible for ZIKV diagnostic laboratory testing of Ministry of Health surveillance samples during the 2016 epidemic. Test selection was determined based on onset of symptoms according to the Pan Ameri-



can Health Organization algorithm. Sera were tested using reverse transcriptase polymerase chain reaction (RT-PCR; Lanciotti method) or by anti-ZIKV Immunoglobulin M (IgM) enzyme immunoassay (Euroimmun). Reverse transcriptase polymerase chain reaction was also used for urine samples, which sometimes shows longer periods of ZIKV detection compared to blood. As Flaviviruses can show serological cross-reactivity, anti-dengue virus (DENV) IgM enzyme immunoassay testing was performed in parallel with ZIKV IgM testing to limit potential false positive ZIKV results.

**Results:** Zika virus RT-PCR testing of 2052 samples resulted in 180 positive samples and ZIKV IgM testing of 537 samples resulted in 31 positive samples, of which 22 were also DENV IgM positive. For pregnant women, 64 samples tested positive by RT-PCR of 326 samples tested. Immunoglobulin M testing was performed for 132 samples from pregnant women, nine testing positive for DENV IgM and ZIKV IgM, two testing positive for ZIKV IgM only.

**Conclusion:** These results provide laboratory confirmation of the 2016 ZIKV epidemic in Jamaica and highlight the limitations of laboratory diagnostic testing.

#### (P – 23)

### **An evaluation of the effect of ginger on post-operative nausea and vomiting (PONV) in patients undergoing elective gynaecological surgery**

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**Background:** Post-operative nausea and vomiting affects many surgical patients. Ginger has been found to decrease the risk of nausea and vomiting in other clinical situations and may be useful in preventing PONV.

**Methods:** This was a double-blind, randomised controlled trial, 110 participants were recruited, 55 in each group. Adult patients scheduled for elective intra-abdominal gynaecological surgery under general anaesthesia were included. The participants were randomly assigned to one of two groups. The intervention group was given 1 g of ginger and the placebo group received 1 g of cornstarch prior to surgery. The participants received standardised anaesthesia and were assessed for nausea and vomiting for 48 hours after surgery.

**Results:** There was no significant difference in nausea or vomiting in the total study population. However, in *post hoc* analysis there was a significant reduction in the incidence of nausea at 12 hours in the group that received Ginger, for patients that received it at least two hours before surgery. There was no significant difference in the incidence of vomiting between the two groups at any time point. There was no difference in satisfaction between the two groups.

**Conclusion:** Ginger may reduce the incidence of nausea post-surgery if given at least two hours before surgery. More research is needed on the pharmacology of ginger in this clinical setting.

#### (P – 24)

### **An assessment of the prevalence and burden of pain in adult patients admitted to St George's General Hospital, Grenada**

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**Background:** Chronic pain affects an estimated 30% of many populations and is associated with significant morbidity and cost. However, there is little data from low and middle-income nations like Grenada.

**Methods:** This cross-sectional study enrolled 300 adult patients admitted to St George's General Hospital in Grenada between January and March 2018. The Brief Pain Inventory (BPI) was used to determine the prevalence of acute and chronic pain, determine the characteristics of pain and evaluate therapy received. A supplemental questionnaire assessed cost and absenteeism.

**Results:** The average age of participants was 41 years and 71% were female. A majority (75 %) reported pain in their presenting medical complaint, 64 % had severe pain within the last week. Acute pain was present in 61% of patients and was only partially treated. The prevalence of chronic pain was 18%, lower levels of education, multiple sites of pain and chronic medical conditions were associated with increased risk of chronic pain ( $p < 0.05$ ). Chronic pain was associated with significant financial burden. Absenteeism and disruption of employment were frequent. Many patients reported associated job loss.

**Conclusion:** Acute pain was common and only partially treated. Chronic pain was less common than in more developed nations but was associated with severe social dysfunction.

#### (P – 25)

### **Assessment of risk factors other than cancer for venous thromboembolism in patients with malignancies at the University Hospital of the West Indies**

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**Objective:** The aim of this study was to identify the cases of venous thromboembolism (VTE) and cancer at the Univer-

sity Hospital of the West Indies (UHWI), Kingston, Jamaica during an 11-year period, determine if there are risk factors, other than cancer, which may predispose these patients to VTE and to identify high-risk groups for VTE and make recommendations for prophylactic anticoagulation.

**Methods:** This was a retrospective, descriptive study done at the UHWI over an 11-year period from January 1, 2005 to December 31, 2015. Patients were selected based on a diagnosis of both VTE and cancer. These patients were then evaluated for additional risk factors for VTE, which included patient, disease or treatment related factors.

**Results:** One hundred and fifty-seven patients were identified with both VTE and cancer during that time period. One hundred and ten patients were included in the study. The risk factors found in this study were similar to risk factors in the literature and included patients within the age of 51–70 years, decreased mobility, either post-operatively or because of co-morbidities and patients who had been exposed to hormonal therapy. In the population studied, patients whose primary cancers were located in the pelvis, cervical for women and prostate for men, accounted for 14.5% and 13.6%, respectively of all the 28 malignancies identified in the study and were therefore, notably more at risk for venous thromboembolism. The most common cancer type in men associated with VTE both in this study and in the literature was prostate cancer. In previous studies; the most common primary sites for women who had a diagnosis of cancer and VTE were breast, lung and ovary. Although not comparable to previous studies, cervical cancer being the most common cancer type in women associated with VTE may be a reflection of the prevalence of cervical cancer in our population.

**Conclusion:** Patients with primary pelvic cancers as well as patients on some hormonal agents are at an increased risk for VTE and therefore, may benefit from VTE prophylaxis in addition to patients usually recommended for prophylaxis.

#### (P – 26)

##### **Use of the daycare ward for management of acute complications of sickle cell disease: a retrospective review**

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**Background:** A specialised daycare facility for managing acute complications in sickle cell disease (SCD) is a useful strategy. This study aims to review the indications for admissions and outcomes of patients attending the daycare facility in Jamaica.

**Methods:** A retrospective chart review of all patients with SCD admitted to the daycare facility from August 1, 2016 to July 31, 2017 was conducted. Data pertinent to each admission were extracted and analysed (Stata 14.0).

**Results:** There were 728 daycare admissions (56.2% females; 69.6% adults aged  $\geq 18$  years; 74.3% homozygous SS disease). The mean time to order a drug from entry to SCU was 25.4 minutes and 12.5 minutes to administer after ordering. Mean patient stay was 177.5 minutes. Diagnoses included bony painful crisis (62.2%), suspected acute chest syndrome (16.4%) and suspected sepsis (12.1%). Of those with painful crises, 97.2% received opioids (59.8% received  $\geq 2$  doses); 29.9% were sent to hospital of whom 41.5% were admitted. Most cases with acute chest syndrome (95.8%), suspected sepsis (89.8%) and fever (73%) were sent to hospital of which at least 38.6%, 49.4% and 56.5%, respectively were known to be admitted, 41.5% of patients returned to SCU within a month with mean days elapsed between visit being 11.8 days for those sent home and 15.8 days for those sent to hospital ( $p$ -value  $< 0.001$ ).

**Conclusions:** The results show the high efficiency and usefulness of this daycare facility in the management of acute complications of SCD.

#### (P – 27)

##### **Physical activity and perceived neighbourhood attributes in the Mona Heights community, Kingston, Jamaica**

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**Background:** Physical activity is a key strategy for combating the global epidemic of chronic diseases. Neighbourhood attributes such as access to facilities, safety and aesthetics, can affect physical activity level.

**Objective:** To determine the relationship between physical activity and perceived neighbourhood walkability in the Mona Heights community, Kingston, Jamaica.

**Methods:** Persons residing in the community who were at least 18 years old completed two questionnaires: The International Physical Activity Questionnaire and the Neighbourhood Environment Walkability Scale - Abbreviated. A one-way ANOVA and  $t$ -test were used to analyse the data.

**Results:** One hundred and forty-four persons (65 males and 79 females) participated. The mean age was 33.06 (15.95) years and almost 42% was physically inactive. Persons perceived places (stores, schools) in their neighbourhood as being within easy walking distance (mean  $2.97 \pm 0.72$ ); their neighbourhood as having adequate infrastructure for walking/cycling (mean  $2.97 \pm 0.65$ ) and as having good

street connectivity ( $3.12 \pm 0.70$ ). Men had a more positive perception of land use mix-diversity and infrastructure for walking/cycling than women ( $p = 0.039$  and  $0.022$ , respectively). Older persons had a more positive perception of infrastructure ( $p = 0.016$ ) and aesthetics ( $p < 0.001$ ) than younger persons.

Persons who were highly active perceived their neighbourhood as having a higher residential density compared to those who were inactive ( $p = 0.052$ ).

**Conclusions:** Residents of Mona Heights were inactive. Though the neighbourhood was perceived as walkable this did not significantly influence physical activity level.

### (P – 28)

#### **Precocious pubertal development in Jamaican metropolitan girls**

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**Background:** Puberty is a transitional period associated with multiple physical, cognitive and psychosocial changes. Onset has been progressively earlier in this century. Recent Jamaican data relating to precocious puberty was lacking.

**Methods:** This cross-sectional descriptive study describes precocious pubertal manifestations in the Jamaican metropolitan population of girls. Six to eight-year-old girls attending three major clinics in Jamaica's largest metropolis were administered questionnaires regarding demographics, age of achieving earlier milestones and maternal menarcheal history, and examined for pubertal manifestations including breasts, pubic hair, acne and axillary hair. We hypothesised that the prevalence of precocious pubertal manifestations in this metropolis was less than that worldwide (that is, less than six to nine per cent).

**Results:** Statistically significantly ( $p \leq 0.05$ ) greater percentages of girls in each age group were found to have pubertal manifestations as age category increased. There was significant association between increasing BMI, lower birthweight and pubertal manifestations. Premature pubertal Tanner staging for breasts and pubic hair was present in sixteen and fifteen per cent of all girls, respectively. Thirty-six per cent of all girls had one or more precocious pubertal manifestation including premature breasts, pubic hair, axillary hair, acne or body odour.

**Conclusion:** Our hypothesis was disproved with significant presence of precocious pubertal manifestations in keeping with worldwide data. Further studies are needed to identify identifiable aetiologies or adverse outcomes to guide management.

### (P – 29)

#### **The SmoCar Study: a Caribbean-based multicentred study on the prevalence and disparities linked to smoking and gingival health**

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**Background:** Aim of the study was to estimate the prevalence of smoking and the disparities in the smoking practices of three regions in Caribbean: Jamaica, the Dominican Republic and Puerto Rico.

**Methods:** The study population comprised 1847 (weighted  $n = 1830$ ) individuals (18 years old and above) who were volunteer participants from the capitals of Jamaica, the Dominican Republic and Puerto Rico. A structured interview was used to assess the participants' smoking behaviours. The participants were classified as current smokers, past smokers, or never-smokers. Oral examinations were conducted to evaluate the status of the participants' gingival health. The gingival index (GI) was used to determine the extent of gingival inflammation.

**Results:** The majority of the participants were never-smokers, with current smokers being found most commonly in Kingston (33.22%), followed by San Juan (12.76%) and Santo Domingo (8.8%). Both current (aOR = 2.22, 95% CI: 1.45–3.40) and past (aOR = 1.87, 95% CI: 1.19–2.93) smoking (*vs* never smoking) was strongly associated with severe gingivitis.

**Conclusion:** Smoking was the most prevalent in Jamaicans. Study population of current smokers were found to have a four-fold higher-risk of severe gingivitis and a two-fold higher-risk of moderate gingivitis.

### (P – 30)

#### **Comparison of maternal and perinatal outcomes in multifetal versus singleton pregnancies, beyond viability at the University Hospital of the West Indies (UHWI), 2006–2016**

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**Objective:** To assess the prevalence of multifetal pregnancies beyond viability: with a view to unearth maternal mor-

bilities and perinatal outcomes in multifetal *versus* singleton pregnancies.

**Method:** A retrospective cohort study in which all twin deliveries ( $\geq 500$  g or  $> 24/40$ ) at the University Hospital of The West Indies (UHWI) between 2006–2016 were identified from hospital delivery records; with two singleton deliveries per multifetal delivery as controls.

**Results:** There were 20 927 deliveries with 408 multifetal, 391 twins. The incidences were 1.9 with 0.08 per 1000 births higher order multiples. There was no statistical significance between mothers of singletons and multiples re age and parity; with no variegation of co-morbidities in both groups. Singletons were less likely to have intrauterine growth restriction and preterm premature rupture of membranes (*p*-values 0.007 and 0.031, respectively) but had higher rates of meconium-stained liquor 11.2% (*p*-value of 0.000). The route of delivery of the neonate bore no statistical significance as it pertains to maternal or perinatal outcomes. The mean gestational age (GA) at delivery was 35.2 ( $\pm 5.1$ ) weeks for singletons *versus* 32.7 ( $\pm 3.6$ ) weeks for multiples. Multifetal gestations delivered, an average 2.5 weeks earlier than singletons with 75% occurring preterm *versus* 14.1% of singletons with corresponding mean birthweights of 2.2 ( $\pm 0.71$ ) kg and 3.0 ( $\pm 0.68$ ) kg, respectively. The median APGARs at one and five minutes were comparable at nine. Admission to the special care nursery (SCN) were 48%, multiples *versus* singletons 18.2%.

**Conclusion:** Multifetal gestations deliver earlier preterm than singletons and have lower mean birthweights and more SCN admissions.

### (P – 31)

#### Psychological impact of emergency hysterectomy and knowledge of fertility options in a Jamaican cohort

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**Objective:** The aims of this study were to establish a positive association between emergency hysterectomy and negative psychological impacts as well as impaired sexual function and to highlight the lack of knowledge of fertility options in a cohort of patients' post emergency hysterectomy.

**Methods:** A cross-sectional study was performed from 2014 to 2017 of all women undergoing an emergency hysterectomy at the time of myomectomy or Caesarean section. The Patient Health Questionnaire which is a self-administered tool was used to screen for depression with the following scores; 5, 10, 15 and 20 which indicated mild, moderate, moderately severe and severe depression respectively, as well as the Sexual Complaints Screener for Women questionnaire was used for female sexual dysfunction. Cross tab-

ulations were used to study the percentages of patients who had a negative outcome post emergency hysterectomy. The association of emergency hysterectomy on psychological effects, quality of life, sexual function and fertility options were analysed in logistic regression models.

**Results:** There were a total of 26 emergency hysterectomies performed at the UHWI with 76.9% accounting for Caesarean hysterectomies ( $n = 20$ ) and 23.1% accounting for hysterectomies done within 72 hours of performing a myomectomy ( $n = 6$ ). It was found that 12 patients had no symptoms of depression (46.2%), seven patients had mild depression (26.9%), four patients had moderate depression (15.4%), three patients had moderately severe depression (11.5%) and no patients had severe depression. With regards to sexual function, 61.5% of patients reported having a satisfying sexual life with 3.8% reported it to be very unsatisfying.

**Conclusion:** In recent prospective studies there is no evidence to conclude that hysterectomy is associated with depression and our study was in keeping with same. Overall, most patients did not have impairment in sexual function post emergency hysterectomy. It has clearly demonstrated the lack of fertility options available to these patients, as most patients did not receive counselling about it.

### (P – 32)

#### Maternal outcomes after transfer to a Type A Hospital (The University Hospital of the West Indies)

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**Objective:** The aim of this study was to determine the maternal outcomes following transport to a facility capable of multi-organ intensive care. Other outcomes were to determine the burden of obstetric transfers to the University Hospital of the West Indies (UHWI) and maternal outcomes as well as perinatal outcomes.

**Methods:** A retrospective study was performed and records of the 54 women transferred to the UHWI between January 2015 and December 2016 was analysed. The clinical assessment was to evaluate maternal near misses, morbidity and mortality, whether or not delivery was warranted, as well as perinatal outcomes associated with *in utero* transport. All tests will be two sided and considered significant at *p*-value  $< 0.05$ . The data was also interpreted using one-way ANOVA (analysis of variance).

**Results:** A total of 21 patients (38.9%) were transferred to the UHWI for severe preeclampsia. For the antenatal patients transferred to UHWI, 88.9% of patients were delivered at our institution. The perinatal outcomes of these deliveries include 24 live births (60%), four stillbirths (10%) and 12 neonatal deaths (30%). Combining all the transfers

there were 26 maternal near misses (48.1%), eight maternal morbidity cases (14.8%), one maternal death (1.9%) and 19 patients were well (35.2%), which correlated well with conditions such as HbSS related complications and severe preeclampsia.

**Conclusion:** Variables that influence maternal outcomes included maternal age group, sickle cell status, source of antenatal care, parity and gestational age prior to transfer. Regarding patient disposal the pre transfer diastolic blood pressure, and the arrival systolic blood pressure, were found to be significant. There is a relationship between perinatal outcomes and gestational age at transfer as well as source of antenatal care.

### (P – 33)

#### **Abortion attitudes, training and experience among medical students in Jamaica, West Indies**

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**Objective:** To define abortion attitudes, training and experience among medical students in Jamaica.

**Method:** From September to November 2017 we conducted an anonymous online cross-sectional survey among medical students enrolled at The University of West Indies in Jamaica. A previously validated abortion attitudes sum score was used for analysis. Multivariate regression was applied to evaluate the impact of characteristics and experiences on abortion attitudes.

**Results:** One thousand four hundred and four students completed the survey for a response rate of 88%. Sixty-four per cent had a positive attitude towards abortion. In multivariate analysis, medical students' attitudes towards abortion were favourably impacted by a personal or family experience with abortion, identifying as non-religious, being older in age and mixed raced. One thousand three hundred and twenty-one (94%) agreed that abortion training should be included in the medical school curriculum. Whilst 78.8% reported no abortion training and only 17.9% reported miscarriage management training.

**Conclusion:** Medical students at The University of the West Indies had favourable attitudes towards abortion, despite their limited training in a restrictive environment. Prior personal experience with abortion was the strongest predictor of favourable attitudes. Increased training and clinical exposure may prove to be crucial in raising awareness towards the importance of safe abortion access.

### (P – 34)

#### **The prevalence of depression among persons attending the antenatal and postnatal clinics at the University Hospital of the West Indies**

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**Objective:** This study aims to demonstrate the prevalence of depression in the antenatal and postpartum patients at the University Hospital of the West Indies.

**Methods:** The study was of longitudinal design wherein, all patients recruited completed The Brief Patient Health Questionnaire, one per trimester and six-weeks postpartum. Patients were considered to have major depressive syndrome, panic disorder or other depressive syndrome based on responses given in The Brief Patient Health Questionnaire. A total of 108 patients were recruited.

**Results:** Of the patients included, 35.2 per cent were less than 28 weeks, while 64.8 per cent were 28 weeks and above (range 11 weeks and 3 days - 40 weeks). The majority of patient (n = 66, 61.1 per cent) were less than 30 years of age. Seven patients (6.5 per cent) had major depressive syndrome based on the Brief Patient Health Questionnaire. An additional eight patients (7.4 per cent) had other depressive Syndromes, while 30 patients (27.8 per cent) had panic disorder. Patients 28 weeks and above were found to be approximately six times more likely to be diagnosed with panic disorder (OR 6.175, 95% CI: 1.97 – 19.36). Panic disorder was diagnosed in 100 per cent and 30.8 per cent of the participants with primary and secondary level of education, respectively, while only being present in 6.3 per cent of those individuals with tertiary level education.

**Conclusion:** Depression and panic disorders are prevalent in the population of pregnant patients attending the Antenatal Clinic at the University Hospital of the West Indies and are closely related to gestational age and level of education.

### (P – 35)

#### **Patterns of violence-related injuries across Jamaica's four health regions**

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**Background:** Throughout Jamaica, violence-related injuries represent a tremendous burden to health services. Interpersonal violence varies across the various health regions in Jamaica, posing a specific challenge for regional health authorities.

**Methods:** The Jamaica Injury Surveillance System was used to identify and collect data on patients presenting with violence-related injuries (VRIs) to nine major public accident and Emergency Departments across the Island. The study collected the regional profile of VRIs from 2014 to mid-2017 and analysed this data using the Statistical Package for the Social Sciences.

**Results:** The Western Region had the highest rate of VRIs approximately triple that of the South East Region. There were 11 sexual assault cases per 100 000 in the North East region compared to 41 per 100 000 in the Western region. Similarly, the North East region accounted for the lowest rates of gunshot wounds (5 per 100 000) while the highest rates were found in the Western region (65 per 100 000).

**Conclusion:** The burden and profile of interpersonal violence in Jamaica varies by health region and therefore, requires region-specific violence prevention programming.

### (P – 36)

#### **An evaluation of patients with injuries from road traffic crashes presenting to the University Hospital of the West Indies**

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**Background:** Injuries associated with RTCs (road traffic crashes) place strain on many aspects of Jamaican society. The development of pre-hospital care and appropriately placed trauma centres can potentially improve the outcomes of these patients.

**Methods:** Data was collected from the University Hospital of the West Indies (UHWI) trauma registry between 2008 and 2013. All patients presenting with injuries from RTCs were included. A total of 1184 patients were identified and included in the analysis.

**Results:** The mean age of patients was 35, 74% of were male, 45% were in a motor car, 24% on a motorcycle, 6% a bicycle and 19% were pedestrians. Admission was required for 95% of patients, the mean length of stay was 14 days, the average injury severity score was nine and 61 (5.2%) died. While most accidents occurred in Kingston or St Andrew (69%) a significant number (31%) occurred further away. Even when the severity of injuries (ISS) was considered patients involved in crashes outside of Kingston or St Andrew were more than twice as likely to die (OR 2.22, *p* 0.009).

**Conclusion:** Injuries associated with RTCs are often severe. The development of pre-hospital care and trauma centres can reduce associated mortality by reducing the time taken to access definitive care.

### (P – 37)

#### **The effects of violence related injuries due to gunshot wounds in patients presenting to Jamaican hospitals (2014–2017)**

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**Background:** Guns play a role in over 70% of Jamaica's homicides. Associated injuries represent a significant burden to Jamaica's healthcare system. There have been calls to develop effective preventative strategies.

**Methods:** Data from the Jamaica Injury Surveillance System (JISS) on patients presenting to one of nine different Jamaican public hospitals with gunshot wounds (GSWs) between 2014 and 2017 were reviewed. Data from the 2014 Cost of Care study was also reviewed. A total of 3511 patients were identified, representing 10% of the total violence related injuries (VRIs).

**Results:** The average age was 31 years, 86% were male. Over 50% of patients (1914) required admission, the mean length of stay was 11 days and 128 (4%) of these died. These injuries accounted for 41% of all patients with VRIs requiring admission. Surgery was required in 32% of patients, 8% of patients were left with long-lasting disability and 4% died. There was significant regional variation in prevalence of GSWs, they accounted for 1.4% of total VRIs in the North East region, 5% in the Western region, 7% in the Southern region and 16% in the South East Region.

**Conclusion:** Gunshot wounds are small proportion the number of VRIs but are the most common cause of severe injury and resource use. Gunshot wounds are essential targets for reducing the effects of VRIs.

### (P – 38)

#### **An evaluation of injuries sustained in road traffic crashes by children under the age of 11 in Jamaica**

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**Background:** The burden associated with road traffic crashes (RTCs) and associated injuries is borne largely by low and middle-income countries (LMICs). Without intervention, this is likely to continue to grow.

**Methods:** Data were collected prospectively over a three-month period in 2014 from seven major hospitals across Jamaica. Data from all children under the age of 11 that presented to study hospitals were included. A total of 77 children were identified included in data analysis.

**Results:** More than half (57%) of these children were male, the mean age was six years, 35 (45%) were passengers in a motor vehicle, 33 (43%) were pedestrians and seven (9%) were riding a bicycle and 21% (16) required admission. The average length of stay in hospital was 3.75 days. The most common sites of injury were head, face and lower limbs. Only one of the 44 children evaluated was utilizing the appropriate safety gear at the time of injury (Seatbelt, child seat or helmet).

**Conclusion:** Children presenting injuries from RTCs are often vulnerable road users. Small size, immaturity and the lack of safety gear result in increased risk of severe, life-threatening injuries or long-term disability.

#### (P – 39)

##### **Investigation of motor vehicle batteries in producing the same elements as gunshot residue when discharged from a firearm**

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**Background:** Gunshot residue (GSR) is an important trace evidence which aids in determination of firing distance estimation, the time since the weapon has been discharged and relating cartridges fired from a weapon to a victim's injuries. However, external sources may have particles with similar elements bringing rise to the issue of false GSR identification. This study seeks to decipher the similarities and differences between 9 mm glock pistol GSR particles and lead-acid battery particles and aims to determine if particles found in lead-acid batteries from motor vehicles can cause contamination and result in 'false positive' GSR identification.

**Method:** Four GSR swab samples discharged from a 9 mm glock pistol and four lead-acid battery swab samples were analysed using the Modified-Griess Test and Sodium Rhodizonate Test. Physical analysis of four 9 mm glock GSR stub samples and four lead-acid battery stub samples using a stereomicroscope was conducted. The *t*-test statistic was performed to compare all samples particle sizes to GSR control particle sizes.

**Results:** It was determined that lead and nitrites are found in GSR but only lead is found in the lead-acid battery particles. In addition, there was a general small, spheroidal shape for GSR particles compared to the varying, irregular shaped battery particles.

**Conclusion:** We concluded the difference in size, morphology and presence of lead and nitrite, in GSR particles are

significantly different than lead-acid battery particles and thus, false positive GSR identification is not possible.

#### (P – 40)

##### **An analysis of trends in violence related injuries in children seen at Jamaican hospitals between 2014 and 2017**

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Over one billion children are affected by violence annually. Many die or suffer long lasting physical or psychological damage. These injuries present a barrier to development. Jamaica has had increasing violence against children over recent years. Jamaica's designation as a pathfinder country in UNICEF's partnership to end violence against children mandates the use of local in developing appropriate and effective prevention strategies.

Data from the Jamaica Injury Surveillance System (JISS) from nine public hospital between 2014 and 2017 was reviewed. Persons under the age of 18 years with violence related injuries were included.

A total of 6550 patients were included. Female patients accounted for 50% of the injured children. The percentage of children aged < 10 increased from 28% in 2014 to 36% in 2017. The percentage of infants increased from 1% to almost 3% in 2017. The most common circumstance leading to injury was a fight/argument. In 2017 there was a sharp increase in violence related injuries (VRIs) due to gang and drug related activity. Sexual assault was the most common type of VRI in females, peaking at 48% of injuries in 2016. Violence related injuries affect a significant number of Jamaica children. Over the period examined there was an increase in the proportion of younger children injured. The circumstances leading to the injury of male and female children remain very different. The JISS is an effective mechanism to monitor trends in VRIs in Jamaica.

#### (P – 41)

##### **Resilience building intervention: a case of a response to community violence**

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**Background:** The August Town Primary School Resilience Building Intervention was developed in response to the traumatization of the school community in the wake of

an upsurge in violence in Greater August Town, specifically the February 19 murder of a correctional officer close to the school. There were concerns about the negative impact that this traumatic experience could have on the children, especially those who were to sit GSAT in the following month. Traumatic experiences are damaging and for children the consequences may include an increased risk of developing psychological and behavioural disorders (O'Donnell, Schwab-Stone, and Muyeed, 2002); and aggressive tendencies (Steele and Kuban, 2011).

**Method:** The intervention, which adopted a quasi-experimental pre-test post-test design, was conducted with 91 grade six students; 54 males and 37 females. The activities included the practice of the 5-4-3-2-1 grounding technique; written check-ins; and group activities promoting pro-social behaviours, emotional regulation and conflict resolution. The sessions were conducted for one to two hours once per week for two months.

**Results:** Of all the intervention activities the 5-4-3-2-1 grounding technique was found to be most useful for the students. The majority of the students rated high on pro-social behaviours and displayed an awareness of how their emotional state can be affected by factors around them. However, at least half the group demonstrated unhealthy conflict resolution practices.

**Conclusion:** In spite of the wide range of negative consequences that can result for children who are exposed to traumatic experiences, interventions can mitigate against these as experienced with students.

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**Investigating the effects of fingerprint powder on varied substrates when examined under the microscope using different magnifications for ridge detail analysis**

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**Background/Objectives:** The process used for analysing fingerprints is the analysis, comparison, evaluation and verification (ACE-V) method, which is an acronym for analyse, compare, evaluate and verify (Ulery *et al*, 2011). However, the method was deliberated as subjective and can be based on the examiner's bias (Champod, 2015). The objectives of this research include: to investigate the use of the stereo microscope as an analysing tool for fingerprint evidence and to determine the size of the ridge details.

**Method:** Two latent prints were placed on ten different surfaces. They were dusted using the black powder. This was repeated using the Magnetic black powder, fluorescent orange, white, electric silver/gray and tree powder for each surface. The size of each print was recorded. Each print was examined under the stereo microscope at four different magnifications which include x1 to x4. The size of 4/5 minutiae were measured and recorded under the different magnifications.

**Results:** The microscope aid in providing additional criterion for the prestigious ACE-V method, such as the location and position of pore voids on ridges. The structure of the ridges at the highest magnification could be determined for analysis.

**Conclusion:** The stereo microscope can be used to enhance the image of the ridge details in a fingerprint. It provides additional information for the ACE-V method in the form of qualitative data which produces objectivity.