

Oral Abstracts

O-1

Acceptance and compliance with waist-worn physical activity monitors in Jamaican adolescents: lessons from the field

S Christie¹, JA Smith¹, B Rockette-Wagner², L Wilson¹, I Govia¹, K Facey¹, MK Tulloch-Reid¹

¹Epidemiology Research Unit, Caribbean Institute for Health Research, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica and ²Department of Epidemiology, University of Pittsburgh, Pittsburgh, Pennsylvania, United States of America
Email: saralou.christie02@uwimona.edu.jm

Objective: Reports of objectively measured physical activity were lacking in Jamaican adolescents. This study examined acceptance and compliance with a validated waist-worn activity monitor in this population.

Methods: A sub-sample of 78 volunteer adolescents from the Global Diet and Activity Research (GDAR) study, recruited from four schools in the parishes of Kingston and St Andrew (two co-educational (n = 41) and two all-female schools (n = 37)), were asked to wear Actigraph wGT3X-BT accelerometers for seven days (24 hours a day), removing the device only when bathing or swimming and logging wake-up time and bedtime in an activity diary. Compliance was based on an accepted protocol for valid accelerometer measurements (four days with ≥ 10 hours monitor wear) and was examined according to adolescent demographic and school characteristics. A qualitative review of the students' feedback on their experiences with the physical activity accelerometers and the activity diaries was conducted.

Results: The mean age of the adolescents was 15.5 ± 0.9 years, with 81% female and 55% attending schools in low-income communities. Accelerometer return rates were $> 97\%$, with 84% providing valid data. There were no differences in the validity of the accelerometer measurements by adolescent gender, age group or school setting. Acceptance was high with many reporting excitement about participating in the accelerometer sub-study. Monitor discomfort during sleep was the most frequently reported challenge to acceptance. Diary completion was also reported as a challenge.

Conclusion: Objective measurement of physical activity using 24-hour waist-worn accelerometers was feasible and acceptable in Jamaican adolescents.

O-2

Major depressive disorder and medication adherence: a study of people living with the human immunodeficiency virus in Barbados

C Catwell

Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Cave Hill, Bridgetown, Barbados
Email: cherianncatwell@hotmail.com

Objective: To determine the prevalence of major depressive disorder (MDD), medication adherence and the interrelationship among MDD, lifestyle, psychosocial factors and medication adherence among people living with the human immunodeficiency virus (PLHIV) in Barbados.

Methods: This cross-sectional, quantitative survey used self-report questionnaires including the Morisky Medication Adherence Scale-8 (MMAS-8), Beck Depression Inventory-II (BDI-II) and a questionnaire on demographics. It was administered to a probability sample of 322 clients who attended a HIV clinic in Barbados. Descriptive statistics, correlation and regression analyses were conducted.

Results: The BDI-II showed that 22.59% of the sample had scores placing them at mild to severe depression. The MMAS-8 showed that 57.48% and 42.41% had medium and low medication adherence respectively. Within this population, BDI-II scores inversely correlated with medication adherence; this correlation was small but significant ($p < 0.005$). BDI-II scores were significantly higher in those out of work but not seeking employment ($p = 0.001$) than those who were retired ($p = 0.014$) and in females ($p = 0.02$). Female participants with higher BDI-II scores had a significantly lower medication adherence (0.02); this was also true for those living alone (0.013). Lower medication adherence scores were seen in respondents with a higher alcohol intake ($p = 0.04$). A significant predictor of medication adherence was the cognitive-affective dimension of BDI-II.

Conclusion: Higher BDI-II scores correlated with lower medication adherence in this sample of PLHIV. Females had higher BDI-II scores while those who drank alcohol had lower medication adherence. Medical professionals who offer care to PLHIV should routinely screen them for MDD and alcohol use in order to predict potential medication adherence behaviour.

O-3

A cross-sectional comparison of point-of-care A1CNow+ machine with laboratory HbA1c in detecting diabetes in urban communities, South Trinidad, 2019–2020

K Dharamraj, J Jogie, C Chang, S Rampaul, D Roopchan, D Ramlal, D Wong

South-West Regional Health Authority, South Trinidad, Trinidad and Tobago

Email: kavita.dharamraj@gmail.com, jeremyjogie@hotmail.com, chrischang8@hotmail.com, sarahrampaul@gmail.com, dylon_roopchan@hotmail.com, daniella.ramlal@gmail.com, darienwong94@gmail.com

Objective: To determine if point-of-care (POC) glycated haemoglobin (HbA1c) is sufficiently accurate in real-world urban settings to predict or exclude the diagnosis of diabetes based on laboratory A1c measurements.

Methods: Design: a cross-sectional study comparing POC capillary results with corresponding venous HbA1c levels measured in a reference laboratory. Settings and study participants: grocery stores in the urban communities, South Trinidad, from November 2019 to December 2020. Eighty participants who met the inclusion criteria were enrolled in the study. Main outcome measures: sensitivity, specificity, and positive-predictive value, concordance and mean differences between POC blood HbA1c measurement and laboratory measurement of venous blood HbA1c level; for diagnosing and screening for diabetes. Statistical methods: concordance was determined by the technique of Lin. Mean difference and limits of agreement were determined using the techniques of Bland and Altman.

Results: Concordance between POC and laboratory results was good ($p < 0.001$). The mean difference was -0.125% (95% limits of agreement, -0.209% to -0.041%). POC HbA1c measurements $> 6.4\%$, 48 mmol/mol had a specificity of 98.6% and a sensitivity of 77.8% for laboratory measurements $> 6.4\%$. The POC equivalence value for screening for diabetes or a high risk of developing diabetes was $= 5.7\%$, 39 mmol/mol (sensitivity, 83.3 %; specificity, 72.6% for laboratory measurements $= 6.0\%$, 42 mmol/mol). Staff were trained in-house to use the POC HbA1c analyser.

Conclusion: POC HbA1c testing was sufficiently accurate to be a useful component in screening for, and diagnosing, diabetes in remote communities.

O-4

Self-reported reasons why Guyanese women perform self-induced abortions: a cross-sectional study at the Georgetown Public Hospital Corporation from June to December 2019

DM London¹, N France¹, OA Perreira², J Pak³

¹Georgetown Public Hospital Corporation, Georgetown, Guyana, ²University of Guyana, Greater Georgetown,

Guyana and ³Southern California Permanente Medical Group, Pasadena, United States of America

Email: darrenlondon_89@yahoo.com

Objective: To determine reasons behind Guyanese women's decisions to self-induce an abortion and explore their knowledge, attitudes and practices regarding contraception.

Methods: Women who were presented to the Georgetown Public Hospital Corporation (GPHC) from June to December 2019 with a diagnosis related to self-induced abortion were consented and interviewed by Obstetrics and Gynaecology residents using a survey tool developed by the principal researcher in this cross-sectional study.

Results: A total of 25 women (average age: 26 years) who presented to the GPHC and diagnosed with self-induced abortion were interviewed. The most common reason given for seeking previous (64%) and current abortion (22%) was unstable finances. Ninety-six percent of women self-induced an abortion using Misoprostol. The most common reason for self-inducing an abortion was lack of awareness (41%) that abortions were a free service at the GPHC. Sixty-eight percent of women were not on contraception at the time of conception for reasons including concern about side-effects (33%), inability to afford (14%) and unawareness of where to access contraception. Eighty-eight percent reported a positive intention to use contraception after the current pregnancy.

Conclusion: Given that the primary reasons for self-induced abortions were lack of knowledge of free family planning services in the public healthcare system and inability to afford safe abortion care privately, there is a need to improve public awareness of availability of services to improve access to safe abortions and effective contraception.

O-5

Quantitative sensory testing in the assessment of neuropathic pain among Jamaicans with sickle cell disease

Z Ramsay¹, R Bartlett¹, G Gordon-Strachan¹, J Grant², A Ali³, M Asnani¹

¹Caribbean Institute for Health Research – Sickle Cell Unit, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Department of Medicine, Kingston Public Hospital, Kingston, Jamaica and ³Avicanna Inc, 480 University Avenue, Suite 1502, Toronto, ON M5G 1V2, Canada

Email: zachary.ramsay@uwimona.edu.jm

Objective: To determine the prevalence and characteristics, including the common pain locations and main modalities of management of neuropathic pain (NP) in sickle cell disease (SCD) in a Jamaican population. Acute pain is the main complication of sickle cell disease. Chronic and neuropathic pain may also be experienced but have not been formally described in Jamaican patients.

Methods: A cross-sectional study was conducted with the consecutive recruitment of all well SCD patients who were 14 years or older, not pregnant and without a history of clinical stroke. Anthropometric measurements, haematology studies, an analgesia checklist and the ASCQ-Me questionnaire were completed. The painDETECT questionnaire was completed to describe NP and pain patterns – from which chronic pain was defined.

Results: A total of 257 subjects with SCD were recruited (mean age: 31.7 ± 12.2 years; 55.7% female; 75% SS). Kappa agreements were fair (0.2–0.4) to good (0.6–0.8) among DN4 (Douleur Neuropathique 4 Questions) individual items of itching, hypoesthesia to touch, hypoesthesia to pinprick and brush allodynia with various quantitative sensory testing (QST) sensitization groups. However, kappa agreements between the NP overall diagnosis on the DN4 with sensitization groups were all poor (< 0.2). Only heat detection (0.75) and heat pain (0.75) at the leg as a pain site showed satisfactory area under the curve (> 0.7).

Conclusion: QST may assist in assessing individual components of NP, but its use should be limited as a tool to augment clinical assessments.

O-6

Understanding the experience of key stakeholders regarding the government’s sugar-sweetened beverages ban in Tobago’s high schools: a qualitative approach

SA Dick¹, S Whiteman^{1,4}, S Hassan^{1,2,3}, M Nunez-Smith¹

¹Yale Transdisciplinary Collaborative Center for Health Disparities Research focused on Precision Medicine, Yale University (Yale-TCC), New Haven, Connecticut, United States of America, ²Emory University School of Medicine, Atlanta, Georgia, United States of America, ³Emory Rollins School of Public Health, Atlanta, Georgia, United States of America and ⁴The University of the West Indies, Cave Hill Campus, Barbados

Email: salihah.dick@aya.yale.edu

Objective: In 2017, the government of Trinidad and Tobago (T&T) implemented a ban on the sale or serving of sugar-sweetened beverages (SSBs) in schools. This policy was developed to address the five-fold increase in obesity, from 2.4% in 1999 to 12.5% in 2009, seen among schoolchildren aged 5–18 years in T&T. In this study, researchers interrogated the policy implementation process from the perspectives of key stakeholders within the school environment.

Methods: A purposive sampling strategy was used to identify key stakeholders at two high schools in Tobago. A total of 21 in-depth interviews were conducted with students, parents, teachers and school principals until thematic saturation was reached. Thematic analysis was used to identify patterns within the diverse experiences of the participants. Interview transcripts (10 in total for this preliminary study)

were coded independently by two researchers. NVivo software was used for organization and analysis.

Results: The data were organized into four key themes: (a) the SSB policy was a good idea; (b) the SSB policy was poorly implemented; (c) ineffective implementation allowed stakeholders to find and capitalize on loopholes; and (d) engagement of local stakeholders is necessary for long-term success.

Conclusion: These data revealed local stakeholder insights into the SSB policy’s implementation process and impact at two high schools in Tobago. While most agreed that the policy was necessary given the prevalence of childhood obesity and lifestyle diseases, inadequate stakeholder engagement and ineffective implementation limited its impact. Creative engagement of these stakeholders throughout implementation is critical to achieving the desired outcomes.

O-7

The association of muscle mass and muscle strength with biomarkers in elderly urban Jamaicans

B Chambers, AV Badaloo, M Reid, D Turner

Tropical Metabolism Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: bentley.chambers@uwimona.edu.jm

Objective: To test the hypothesis that dietary zinc and insulin growth factor-1 (IGF) are positively associated with muscle mass and muscle strength, while interleukin-6 (IL6), C-reactive protein (CRP), creatine kinase (CK) and serum zinc are negatively related to muscle mass and muscle strength in elderly urban Jamaicans.

Methods: The study design was cross-sectional using a convenient sampling with a sample size of 110 participants. Participants were consecutively recruited from a recreational centre for the elderly through the National Council for Senior Citizens. Participants who were aged 60–90 years and in good health were included. Weight and height were measured using calibrated instruments. Whole body dual-energy X-ray absorptiometry (DEXA) scan was done to measure lean mass and appendicular (legs and arms) skeletal mass index (ASMI) calculated by adjusting for height squared (kg/m^2). Muscle strength was measured using a hand dynamometer. Multiple linear regressions were used to assess association of ASMI and handgrip strength with biomarkers.

Results: There were 56 female and 54 male participants. Significant inverse relationship was found between CRP and ASMI. However, dietary zinc, serum zinc, IL6, IGF and CK showed no association with ASMI, and none of the biomarkers were significantly associated with handgrip strength.

Conclusion: The findings showed that CRP had a significant negative association with muscle mass, implying that CRP may be useful as a predictor of sarcopenia in elderly urban Jamaicans.

O-8

Active ageing: WINDREF's Sports for Health programme among the elderly in Grenada, West Indies

*S Bidaisee, C Wilson, CNL Macpherson
St George's University, Grenada, West Indies
Email: sbidaisee@sgu.edu*

Objective: To assess the relationship of the Sports for Health programme of the Windward Islands Research and Education Foundation (WINDREF) with the physical, social and mental well-being of the ageing population in Grenada.

Methods: A total of 23 participants (22 females, 1 male) aged 65 years or older were included in this cross-sectional study. A survey was administered at baseline in July 2017 and again after being enrolled in the Sports for Health programme for a minimum of seven months and at the end of one year, in July 2018. An adapted version of the RAND Health Survey was used.

Results: A statistically significant correlation was found between the following quality of life scales among participants: health *versus* pain ($p = 0.013$), emotion *versus* pain ($p = 0.009$), emotion *versus* health ($p = 0.008$) and emotion *versus* energy ($p = 0.022$).

Conclusion: WINDREF's Sports for Health programme demonstrated that the quality of life characteristics of the ageing population improved after participating. Although the sample size was small, the results showed important outcomes that indicated a benefit in community-based programmes for the ageing population. It also demonstrated the need to encourage more men to participate in such community-based programmes.

O-9

First exploration of burden associated with caring for the aged in The Bahamas

*S Dorsett
The Geriatric Hospital, Sandilands Rehabilitation Center,
The Bahamas
Email: sashadorsett@hotmail.com*

Objective: To characterize the typical caregiver and estimate the severity of caregiver burden in The Bahamas.

Methods: A convenience sample of 121 caregivers of the elderly in the local geriatric hospital and community geriatric health services were surveyed. Socio-demographic information and caregiver burden information were assessed using a new measurement tool: the Caregiver Burden Questionnaire. Whole counts and proportions were calculated.

Pair-wise and multi-way cross-tabulations were used for the socio-demographic information. Weighted linear summation was used to calculate overall burden for domains and overall score. Domains included medical-physical, psychological, financial and social.

Results: Among the caregivers surveyed, 37% were formal, and 63% were informal. Participants were mostly female, over 35 years old and unmarried. The most prevalent medical conditions among caregivers were hypertension (34%) and diabetes (13%). Medical conditions were associated with years of giving to the recipient ($p = 0.009$). Depression was associated with increased years of caregiving ($p = 0.047$). The mean overall burden scores were 40.2 in formal caregivers and 34.9 in informal caregivers ($p = 0.06$). Domains of medical-physical and financial burden scored higher.

Conclusion: The overall caregiver burden of the elderly was mild to moderate but greater in the medical-physical and financial domains. Caregiving was associated with medical morbidity and depression of the caregiver. Assessing caregiver burden should be incorporated into the primary healthcare framework.

O-10

Alcohol consumption among elderly persons in Jamaica: prevalence, patterns and associated factors

*DC Oshi, JE Harrison, KA Campbell-Williams, PA Whitehorne-Smith, WD Abel
Department of Community Health, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: dannyoshi@yahoo.com*

Objective: To assess the prevalence, patterns and factors associated with alcohol consumption among elderly persons in Jamaica aged ≥ 60 years.

Methods: We carried out secondary analysis of data of a representative sample collected in the 2016 national health survey. Pearson's Chi-square was used to examine the association between alcohol consumption and socio-demographic characteristics. Multivariate logistic regression analysis was used to assess for factors associated with alcohol consumption.

Results: Of the 4623 participants, 316 (6.8%) were elderly. Prevalence of lifetime alcohol drinking was high in the elderly (74.4%) and non-elderly groups. Among the elderly, past-year alcohol drinking was significantly associated with gender ($p < 0.001$), marital status ($p < 0.01$) and religious affiliation ($p < 0.01$). Past-month alcohol consumption was significantly associated with religious affiliation ($p < 0.01$). In the multivariable logit models, the odds of past-year drinking among males was 4.34 times as high as among females (adjusted odds ratio (AOR): 4.34; 95% confidence interval (CI) = 2.17, 8.69). Currently, married elderly per-

sons had 62% decreased odds of drinking alcohol in the past year compared to those in other forms of relationship (AOR: 0.38; 95% CI = 0.17, 0.86). Non-Christian elderly persons were less likely to have drunk alcohol in the past month (AOR: 0.08; 95% CI = 0.01, 0.60).

Conclusion: Elderly persons had a high prevalence of alcohol consumption, with the male gender significantly increasing the risk of past-year alcohol drinking, while being currently married was a protective factor. Female partners of elderly men should be integrated into interventions geared towards reducing their alcohol use.

O-11

A preliminary assessment of barbershop readiness for integration into the primary care pathway to promote men's health in Guyana

M Sharma¹, R Gobin¹, S Goberdhan¹, O Perreira¹, M Ramdeen¹, T Thomas¹, E Cummings¹, U Read², L Goff², M Ashworth², P Dazzan², K Cruickshank², S Harding²

¹University of Guyana, Guyana and ²King's College London, United Kingdom

Email: reeta.gobin@uog.edu.gy

Objective: To assess the preparedness of barbershops in Region 4, Guyana, to be integrated into the primary health-care pathway for health promotion among men, and the readiness of health centres for such integration.

Methods: Phase 1 comprised of a cross-sectional telephone survey of 22 randomly selected barbershops, using an 18-item questionnaire. In phase 2, community mapping, researchers visited catchment areas of two public health-care centres (PHCC) with men's health clinics to physically identify the location of barbershops. A 40-item questionnaire was administered to shop owners or barbers. In phase 3, PHCC assessment, a 50-item questionnaire was administered to a doctor, nurse and community health worker in each centre. Frequency analysis of data for all three phases was done in Microsoft Excel.

Results: The telephone survey identified 42 barbershops, 10 of which participated in the survey. They opened at least six days a week, and half of their clientele had evenly distributed ethnicities. Community mapping identified 14 barbershops, and 10 interviews were conducted. Most of these barbers had completed secondary education and were enthusiastic about health promotion. Health topics already discussed with clients included hygiene and quitting smoking. Their preferred method of health promotion was infusing health messages into casual conversations. PHCC interviews identified potential barriers, including lack of time and inadequate staff, but staff believed that such a collaboration would benefit the community.

Conclusion: With strategic application of these findings, there is a high feasibility that barbershops can be successfully implemented into the primary care pathway.

O-12

Socio-economic impacts of COVID-19 on the travel and tourism industry in the Caribbean region

L Indar, O Cyrus, S Kissoondan, F Mohammed, C Lesueur
Caribbean Public Health Agency, Port-of-Spain, Trinidad and Tobago

Email: indarlis@carpha.org; cyrusorn@carpha.org

Objective: The COVID-19 pandemic has demonstrated disastrous impacts on global travel, tourism, and the economies in the Caribbean. The main objective is to investigate the socio-economic implications that have emerged due to COVID-19 and highlight the Regional Tourism and Health Program (THP) as an essential solution in addressing COVID-19 in the tourism sector.

Methods: Using available data and from various tourism stakeholders worldwide, the socio-economic implications of COVID-19 were assessed for the tourism, airline, cruise ship and hospitality sectors across the Caribbean region.

Results: Recent and projected 2020 statistics of different aspects of the tourism industry were compared to 2019. There was a marked reduction in activity across all tourism sectors with substantial losses, both in terms of revenue and workforce. This led to serious consequences, such as unemployment, early retirement, reduced working hours and salaries.

Conclusion: It is clear that the travel and tourism industry will have to adapt its strategies to survive and return to safe travel in the Caribbean. The solution to these challenges lies in a co-ordinated, multi-sectoral and regional response to contain the spread of COVID-19 and restore economic activity while aiming for sustainable practices as promoted by THP. The THP works to address health, safety, and environmental sanitation threats to tourism in the Caribbean through its public health goods. These include the Tourism and Health Information, regional guidelines, policy, partnerships, capacity training, Caribbean Travellers Health Assurance Stamp for Healthier, Safer Tourism and its associated app, and Hospitality Health Safety and Environmental standards.

O-13

Risk factors associated with COVID-19 Intensive Care Unit hospitalization among patients admitted to Georgetown Public Hospital Corporation, Guyana, from March to September 2020

S Seepersaud

Georgetown Public Hospital Corporation, Georgetown, Guyana

Email: stevensseepersaud@gmail.com

Objective: To determine risk factors associated with COVID-19 Intensive Care Unit (ICU) hospitalization

among patients admitted to Georgetown Public Hospital Corporation (GPHC).

Methods: A retrospective observational study was conducted on the patients' records of 135 adult COVID-19 admissions to GPHC from March to September 2020. The predictive factors were socio-demographic characteristics, co-morbidities, symptoms and laboratory findings on admission, and the outcome was ICU hospitalisation. Additionally, multivariate logistic regression analysis was performed.

Results: A total of 72 (53.4%) patients required non-ICU care, and 63 (46.6%) required ICU care. The average age \pm standard deviation (median) was 51 ± 16 (49) and 56 ± 18 (60) for non-ICU and ICU hospitalizations, respectively. Patients aged 18–39 years and 40–65 years were 0.748 ($p = 0.680$) and 0.144 ($p = 0.005$) times less likely, respectively, to require ICU care compared to those aged > 65 years. Patients with \geq class II obesity were 11.093 ($p = 0.006$) times more likely to require ICU care. Patients with 1, 2 and ≥ 3 co-morbidities were 2.737 ($p = 0.252$), 7.831 ($p = 0.031$) and 132.154 ($p < 0.001$) times more likely, respectively, to require ICU care compared to those with no co-morbidities. Patients with lactate dehydrogenase (LDH) of 228–454 U/L and > 454 U/L on admission were 19.884 ($p = 0.001$) and 23.237 ($p = 0.001$) times more likely, respectively, to require ICU care compared to those with LDH of 103–227 U/L. Patients with albumin of < 3.5 mg/dL on admission were 5.783 ($p = 0.005$) times more likely to require ICU care compared to those with albumin of > 3.5 mg/dL.

Conclusion: Risk factors associated with ICU hospitalization were advanced age (> 65 years), obesity ($>$ class II), multiple co-morbidities, elevated LDH and low albumin on admission. The focus should be on shielding vulnerable persons, prioritization for vaccination, and planning and resource allocation for ICU care.

O-14

Knowledge, attitudes and practices of orthopaedic surgeons in Trinidad and Tobago towards personal protective equipment during the pandemic

R Moonsie, M Mencia, C Quan Soon

Eric Williams Medical Sciences Complex, ChampFleurs, and Port of Spain General Hospital, Port of Spain, Trinidad and Tobago

Email: mmmencia@me.com

Objective: To evaluate the opinions, beliefs and practices of orthopaedic surgeons towards the use of personal protective equipment (PPE) during the pandemic.

Methods: We conducted a 20-item cross-sectional survey of all orthopaedic doctors who were working at the five Regional Health Authorities. Participants must have worked in orthopaedics for a minimum of six months to be included in the study. The survey explored three broad categories:

demographics, level of experience and presence of co-morbidities; availability and quality of PPE; and appropriate use of PPE in the operating theatre. The data were presented using descriptive statistics.

Results: Forty-five questionnaires were returned giving a response rate of 70%. The mean age was 35 years (standard deviation: 8.4), and 76% were male. 80% of doctors expressed concerns about the limited access to PPE while at work. PPE shortages were reported in operating theatres and outpatient clinics by 73% and 60% of surgeons respectively. Pulse lavage was believed to reduce the risk of virus transmission by 36% of surgeons, and 93% supported the use of N95 masks in outpatient clinics.

Conclusion: The majority of orthopaedic surgeons working in the public sector had concerns about the availability of PPE. A significant proportion of surgeons were misinformed about the appropriate use of PPE in the clinical setting, and this may encourage illogical practices that further deplete this scarce resource.

O-15

COVID-19 vaccine acceptance among healthcare professionals of Queen Elizabeth Hospital, Barbados

K Krishnamurthy^{1,2}, A Kumar^{1,2}, N Ojeh¹, A Scott², C Cave^{1,2}, S Gupta¹, J Bradford-King^{1,2}, B Sa³, OP Adams¹, MH Campbell¹, MAA Majumder¹

¹Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados, ²The Queen Elizabeth Hospital, Barbados and ³Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago

Email: kandamaran.krishnamurthy@cavehill.uwi.edu

Objective: To examine the acceptability of COVID-19 vaccines among the healthcare professionals (HCPs) of Queen Elizabeth Hospital, Barbados.

Methods: A cross-sectional survey of HCPs was conducted between February 14 and 27, 2021 using an online questionnaire.

Results: A total of 350 respondents completed the questionnaire. The majority were female (74%) and single (56.3%). Nurses were the largest occupational group (40.9%), and 25–34 years was the largest age group (35.4%). Of the respondents, 47% reported that they had a good level of COVID-19 knowledge; 48% and 56%, respectively, felt that COVID-19 vaccines were at least moderately safe and effective. Of the respondents, 50.9% expressed confidence in the scientific vetting process for a new vaccine. Of the respondents, 34.5% would be willing to pay a fee for vaccination, and 73.4% would recommend vaccines for others. Of the respondents, 77.7% expressed their intention to get vaccinated, and 54.3% indicated willingness to receive the vaccine as soon as possible. Approximately 24% indicated that they would wait to see how vaccines would affect others

before receiving a vaccine themselves, and 15% indicated an intention to take the vaccine sometime in the future.

Conclusion: The study highlighted vaccine hesitancy among HCPs in the public tertiary hospital of Barbados. As HCPs' perceptions may hinder the campaign to promote vaccine uptake in Barbados, vaccine promotion programmes targeting both HCPs and the public are needed to ensure the success of the country's COVID-19 vaccination drive.

O-16

A preliminary hospital-based report of COVID-19 infection in children in the Caribbean

T Evans-Gilbert^{1,2}, A Sealy¹, P Thompson¹, A Bowen¹, M Reid¹

¹Cornwall Regional Hospital, Montego Bay, Jamaica and

²The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: *tracy.evansgilbert02@uwimona.edu.jm, antoinette.e.sealy@gmail.com, pytregay@yahoo.com, amanda.bowen1894@gmail.com, marshaunreid@gmail.com*

Objective: To evaluate the clinical outcomes of children with COVID-19.

Methods: This is a retrospective study of children aged 0–17 years at a tertiary care institution conducted from April 2020 to February 2021. Children managed remotely, seen in the emergency room or admitted with a positive PCR test for SARS-CoV-2 were included. Demographic and clinical data were assessed from chart review. Chi-square analysis assessed factors associated with clinical outcomes.

Results: Among 94 children, 45% were male, predominantly aged 1–4 years (33%) and 5–9 years (35%), 62% were symptomatic, and 20 (21%) had co-morbidities. Among children with co-morbidities, 13 (65%) documented asthma, 3 (15%) allergic rhinitis, 4 (20%) sickle cell disease, 2 (10%) cerebral palsy and 1 diabetes mellitus. Symptoms included fever (60%), cough (42%), runny nose (30%) and headache (17%). Asthma was not associated with an increased risk of admissions but associated with headache ($p = 0.001$). Two asthmatic children presented with wheezing but were not admitted. Rash correlated with < 4 months of age ($p > 0.0001$). Non-asthmatic co-morbidities were associated with admissions ($p = 0.013$). There was one death, one case of multisystem inflammatory syndrome in children (MISC) and one child who was re-infected within 100 days of a negative PCR test.

Conclusion: Children had mild clinical COVID-19 symptoms. Asthma was the most common co-morbidity but was not a predictor of acute asthmatic attacks or admission. Rash manifested in infants, and headaches presented primarily in asthmatic children. Mortality, MISC and reinfection were rare and should be monitored among children.

O-17

Developing indicators of climate change and health linkages in Caribbean and Pacific small island developing states: priority issues and measurement capacities

CF Allen¹, RMD West¹, G Gordon-Strachan², J Beagley³, A McGushin³

¹Blue Sky Development Consulting, Trinidad and Tobago,

²Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica and ³The Lancet Countdown, Institute for Global Health, University College of London, England

Email: *drcarolineallen@gmail.com*

Objective: Indicators of climate-related health outcomes and health-related adaptation and mitigation measures can enable evidence-based policy and initiatives. The Lancet Countdown is a collaboration of research institutions and United Nations agencies that tracks progress on indicators in health and climate change (CC). Research aimed to guide the direction of increased collaboration between The Lancet Countdown and academic and policy experts in small island developing states (SIDSs).

Methods: Semi-structured online interviews were conducted with academic and policy experts from SIDSs, purposively selected based on literature review and snowball sampling. Interviews covered priority health and CC challenges, views on the relevance to SIDSs of the 2020 Lancet Countdown indicators, suggested changes and additions, research and surveillance capacities and collaboration potential. The list of interviewees' priority indicators was refined at a virtual workshop with SIDS experts and *via* analysis of data on capacities and literature.

Results: Twenty-four people were interviewed: 7 worked in the Pacific and 17 in Caribbean SIDSs. Four health and environmental outcomes emerged as priority for measurement: health impact of severe weather events; water, sanitation and hygiene; vector-borne diseases; and non-communicable diseases. Interviewees also emphasized the need to measure intersectoral collaboration, research and surveillance capacities, investment in climate and health research and surveillance, and government engagement.

Conclusion: Addressing the health vulnerabilities of SIDSs to CC requires measurement and investment in institutional capacity-building as well as health and environmental outcomes. Further outreach to stakeholders in Pacific and Atlantic, Indian Ocean, Mediterranean and South China Sea SIDSs is recommended.

O-18

An international health approach to evaluate the feasibility of an Environmental Information System that would link pesticide exposure to adverse human health outcomes in Saint Lucia in 2019

*K Newton-James
Caribbean Public Health Agency, Castries, Saint Lucia
Email: newtonki@carpha.org*

Objective: To conduct a feasibility study on an Environmental Information System (EIS) with the capacity to link pesticide exposure data to adverse human health effects in Saint Lucia in 2019, using an international health approach.

Methods: Key informant interviews and desk reviews were used to propose, then evaluate an EIS. Ten key informants were selected from government, private, non-governmental and regional agencies, based on the subjects' knowledge on the research questions. The feasibility of the EIS was evaluated using feasibility criteria and their indicators.

Results: The main international health forces at play for developing and implementing the EIS were Conflicts and Tensions, and Innovations, Science and Technology. Potential conflicts and tensions among stakeholders were related to data sensitivity, data security, data access/distribution and data transparency, while issues related to technology were cost and human capacity. The Environmental Health Department would have the leading role in resolving conflicts and tensions among stakeholders and achieving consensus on data issues. The knowledge and human capacity to develop and use an online information system were present in all government agencies interviewed. The preliminary findings showed that the proposed EIS was cost-effective and fitted into existing legal obligations.

Conclusion: The EIS is feasible in Saint Lucia. The human capacity for developing and implementing the system already exists in the government agencies, and access to open source database software makes the system cost-effective.

O-19

Rapid development of a biospecimen tracking system for Caribbean environmental and occupational health research

Y Qin¹, S Hwang¹, M Mandal¹, W Zijlmans², AD Hindori-Mohangoo³, J Wickliffe³, H Covert³, C Hamilton¹, M Lichtveld³

*¹Research Triangle Institute, RTP, NC, United States of America, ²Anton de Kom University of Suriname, Paramaribo, Suriname and ³Tulane University, New Orleans, LA, United States of America
Email: yingqin@rti.org*

Objective: To build a biospecimen tracking system for Caribbean environmental and occupational health research under limited time and budget.

Methods: Pregnant women who are exposed to high levels of mercury may have an increased risk of adverse mental health conditions. In order to investigate the association between mercury exposure and birth outcomes, biospeci-

mens were collected from 1000 mother/child dyads. Our biospecimen tracking system was designed to track biospecimen data collected during this sampling. The system was also used to create standard and customized data queries to view data and facilitate reporting and analysing data.

Results: A biospecimen tracking system was implemented using Research Electronic Data Capture (REDCap), a web-based, metadata-driven application developed by Vanderbilt University to capture data for clinical research and create databases and projects. Eight data entry forms were implemented to capture blood, urine, buccal swab and hair samples from both mother and child from Suriname. Data entry forms were specifically geared to support both online and offline data capture for the study. The REDCap Data Exports and Reports tool allows researchers to easily view reports and export the data to Excel, SAS, Stata or R. Customized reports allow researchers to filter the report for specific fields, records or events using a vast array of filtering tools to extract relevant data.

Conclusion: The REDCap-based biospecimen tracking system built for Caribbean environmental and occupational health research is an ideal approach for building and managing biospecimen data efficiently and securely on a fixed budget.

O-20

Enhancing regional health security and tourism resilience in the Caribbean through the novel, multisectoral Tourism and Health Program as a means to address the socio-economic impacts of COVID-19 on the travel and tourism industry

*L Indar, O Cyrus, S Kissoondan, F Mohammed, C Lesueur
Caribbean Public Health Agency, Port-of-Spain, Trinidad and Tobago*

Email: indarlis@carpha.org; cyrusorn@carpha.org

Objective: The global spread of the COVID-19 pandemic is threatening the health security of the region, disrupting tourism and reducing revenues in Caribbean economies. The main objective is to investigate the socio-economic implications that have emerged due to COVID-19 and highlight the Regional Tourism and Health Program (THP) as an essential solution in addressing COVID-19 in the tourism sector.

Methods: Using available data and from various tourism stakeholders worldwide, the socio-economic implications of COVID-19 were assessed for the tourism, airline, cruise ship and hospitality sectors across the Caribbean region. The components of the THP were explored to highlight how they could directly address the socio-economic implications of COVID-19 on the travel and tourism industry.

Results: There was a marked reduction in activity across all tourism sectors with substantial losses, both in terms of revenue and the workforce. This led to serious consequences,

such as unemployment, early retirement, reduced working hours and salaries. The THP components were able to produce numerous COVID-19 technical guidelines, increased uptake of the Tourism and Health Information System and the Caribbean Travellers Health Assurance Stamp.

Conclusion: For new and re-emerging public threats, it is critical to capture and monitor an illness' occurrence in real time and develop informed strategies to tackle infectious diseases. A well-coordinated, multi-sectoral, regional response, such as the THP, is required to support the fight against COVID-19 and other infectious diseases that have negative socio-economic effects on the Caribbean's travel and tourism industry.

O-21

Community voices: understanding the visible and invisible effects of living through two Category Five hurricanes

*N Michael¹, J Valmond², D Brown¹, L Ragster¹, G Callwood¹
¹Caribbean Exploratory Research Center, University of the Virgin Islands, St Thomas, US Virgin Islands and ²US Virgin Islands Department of Health, St Croix, US Virgin Islands
Email: nmichae@uvi.edu, nmichae@uvi.edu*

Objective: To understand how the community, particularly vulnerable children and families, were coping after two major natural disasters.

Methods: A concurrent, mixed-methods design was used. Approximately 60 adults, representing school administrators, nurses, counsellors and other community members, participated in the qualitative portion of the study. Qualitative data collection, using purposive sampling, included town hall meetings, focus group discussions and key informant interviews. Content analysis was used to generate themes from qualitative data collected.

Results: Members of the community shared their experiences with the hurricanes, how they were doing a year or more after the storms, and the extent to which they were able to access needed services. Ten themes emerged from the review of transcripts. Four are presented in this paper. Specific themes included: (a) initial and continuing effects of trauma; (b) counselling, including the need for counselling and the stigma associated with seeking counselling; (c) concern for children, to include challenges with academics and negative responses to weather changes; and (d) need for better planning for future disruptions; specifically, there was a sense that adequate plans were not in place to deal with the disruptions caused by Hurricanes Irma and Maria.

Conclusion: There is a great need for behavioural health providers and for services targeted to children. There is also a need for health education that addresses the issue of stigma associated with seeking counselling. Policymakers also need to address the community's perception regarding readiness for future disruptions, particularly given the realities of climate change.

O-22

Post-hurricane trauma in USVI schools: implications for public health

*D Brown¹, N Michael¹, L Ragster¹, J Valmond², G Callwood¹
¹Caribbean Exploratory Research Center, University of the Virgin Islands, St Thomas, US Virgin Islands and ²US Virgin Islands Department of Health, St Croix, US Virgin Islands
Email: debrownuvi@gmail.com*

Objective: To examine trauma among US Virgin Islands children in grades 4–12 (aged 9–19 years) in the aftermath of Hurricanes Irma and Maria.

Methods: Between spring of SY2017–2018 and fall SY2018–2019, 1344 students attending private and parochial schools and 2606 attending public schools participated in this study. The Child Trauma Screening Questionnaire (CTSQ) (in grades 4–6) and the Child PTSD (post-traumatic stress disorder) Symptom Scale (CPSS) (in grades 7–12) were used to collect behavioural health-related quantitative data from youth. Statistical Package for the Social Sciences (SPSS) version 25 was used to generate descriptive and inferential statistics to address the overarching research question and sub-questions.

Results: Findings from the CTSQ, administered to children between the ages of 9 and 11 years (grades 4–6), showed evidence that elementary aged students may have future issues with PTSD as a result of experiencing Hurricane Irma and/or Hurricane Maria and that girls may have more challenges than boys. For participants ranging in age from 12 to 19 years (grades 7–12) who completed the CPSS, the findings were that approximately 42.5% of the secondary school students (n = 501) may be at risk for PTSD. A Chi-square test for independence indicated a moderate but significant association between grade and possible PTSD risk: Chi-square (df = 5; n = 488) = 12.3; $p = 0.03$; $\phi = 0.158$. The students in grades 7 and 8 were more likely than those in grades 9–12 to be at risk for PTSD.

Conclusion: The residual effects of hurricanes on school-age children are important considerations for the development and implementation of a trauma-informed public health policy agenda in schools.

O-23

Knowledge, attitudes, perceptions and preventative behaviours among short- and long-term visitors to a dengue endemic country: impact of higher education and duration of stay

*S Uddin^{1,3}, P Field³, K Brigman^{1,3}, CNL Macpherson^{1,3}
¹School of Graduate Studies, St George's University, St George, Grenada, ²School of Medicine, St George's University, St George, Grenada and ³Windward Islands Research and Educational Foundation, St George, Grenada
Email: suddin1@sgu.edu*

Objective: To investigate the impact on knowledge, attitudes and perceptions regarding vector borne diseases (VBDs) and preventative behaviours among graduate students who were short- and long-term visitors to a dengue endemic country.

Methods: Following approval by Institutional Review Board, a 37-question Qualtrics survey was shared from July 1 to September 30, 2019 *via* Facebook and student emails.

Results: Mean knowledge scores regarding VBDs were significantly higher ($p < 0.001$) for those in Grenada greater than one year (GT1Y) ($M = 13.3$, $SD = 3.24$, $n = 123$) *versus* those in Grenada less than one year (LT1Y) ($M = 11.4$, $SD = 3.57$, $n = 92$) with a medium effect size ($d = 0.558$). About 75.1% of the participants ($n = 217$) identified that *Aedes* spp mosquitoes would transmit dengue, but only 35.5% knew that *Aedes* spp would bite predominantly during daytime. Multiple regression analysis of knowledge-based questions determined, on average, that males scored 1.19 points higher ($p = 0.024$) and individuals who had heard of dengue prior to coming to Grenada scored 1.68 points higher ($p = 0.001$). Participants' level of concern regarding bites impacted knowledge scores ($p = 0.004$). Average concern of VBDs affected personal protective behaviours (PPBs) as determined by the formula: $PPBs = 0.146$ (Average Concern) + 2.27. Duration in Grenada, GT1Y or LT1Y, was not independent of PPBs, $X^2(2) = 6.53$, $p = 0.038$. Timing and frequency of bites impacted PPBs ($p = 0.046$).

Conclusion: The variables – visiting Grenada more than one year and higher education – significantly improved knowledge of VBDs and increased preventative behaviours.

O-24

A systematized review aimed at understanding resilience and stress in healthcare professional first responders post-cyclonic natural disasters

A Penn, NS Greaves

Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Bridgetown, Barbados

Email: alvoneepenn7@gmail.com

Objective: To provide a summary of evidence on resilience and post-traumatic stress disorder in healthcare professional first responders (HCP-FRs) post-cyclonic disasters in Latin America and the Caribbean by conducting a systematized review.

Methods: An electronic database search was conducted (in PubMed, CINAHL, Academic Search Complete, EBSCO Information Services, PsychArticles, and Medline) for studies on HCP-FRs who were exposed to hurricane-related natural disasters with outcomes of stress or resilience. Studies were retrieved from January 1, 2000 to September 2020 and were not limited to English. Reference lists of retrieved articles were hand-searched, and attempts were made to contact a field expert. One researcher extracted the data, with

two researchers independently assessing quality using pre-established eligibility criteria. A third researcher provided additional independent review serving as an arbitrator for unresolved differences.

Results: Eleven articles mainly of a qualitative nature were included in the final review. The factors contributing to post-traumatic stress and resilience were mainly related to the occupational environment rather than individual characteristics. Stress was associated with workplace communication, lack of organizational structure, and insufficient training. Conversely, improving training conditions, and structural relationships before and after disasters, were associated with resilience. The main individual factor related to exposure of HCP-FRs was television coverage of the disaster which persons had experienced.

Conclusion: This review contributes to the evidence base which can inform regional research on organizational preparedness and policy in disaster management related to hurricanes and other natural events in the Americas and the Caribbean.

O-25

A review of immunization legislation and vaccine coverage in Caribbean countries

T Evans-Gilbert^{1,2}, K Lewis-Bell^{1,3}, B Irons¹, P Duclos^{1,4}, G Gonzalez-Escobar^{1,5}, E Ferdinand^{1,6}, JP Figueroa^{1,7}

¹Caribbean Immunization Technical Advisory Group (CITAG), Kingston, Jamaica, ²Department of Child and Adolescent Health, The University of the West Indies, Mona Campus, Kingston, Jamaica, ³Pan American Health Organization, Kingston, Jamaica, ⁴University of Geneva, Geneva, Switzerland, ⁵Caribbean Planning Health Agency, Port of Spain, Trinidad and Tobago, ⁶Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados and ⁷Department of Community Health and Psychiatry, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: tracy.evansgilbert02@uwimona.edu.jm

Objective: To review the legal frameworks for vaccination in the Caribbean sub-region.

Methods: Legislation concerning the vaccination of children among 22 countries and territories in the Caribbean sub-region was reviewed. Data were collected using a standardized questionnaire on immunization which included information regarding legislation (such as legislation mandating vaccinations, exemptions, policy or regulations re school entry), budgetary allocation as well as the presence of an Electronic Immunization Registry (EIR) in-country. The countries' data were summarized. Trends in vaccination coverage of countries with the year of introduction of legislations were analysed. WHO immunization coverage data from 1980 to 2007 were utilized.

Results: Among 22 countries/territories, 16 (73%) had available legislation with all but one mandating vaccination for school entry by law. Sanctions were recommended in 12 (75%) countries, and 10 (63%) permitted exemptions for medical or religious/philosophical beliefs. The legislative framework varied in detail. Among 11 countries with legislation and available immunization coverage data, 9 demonstrated an upward trend in immunization coverage from 26–60% to > 95% post-legislation. Among countries with a legislative framework, 9 (56%) had a dedicated budget for an expanded programme on immunization (EPI), and 6 (38%) had introduced an EIR. All but one country had written technical guidelines for EPI.

Conclusion: Most countries/territories had a legislative framework for school entry with variability in the framework, sanctions and exemptions. A positive impact of legislation on vaccine coverage was suggested from the data trends. A unified legislative approach and vaccine policies that complement other strategies to increase vaccination rates are recommended in the Caribbean.

O-26

Rapid establishment of real-time quantitative polymerase chain reaction, validation, early results, and personnel training for COVID-19 testing in Grenada at the beginning of the pandemic

MM Abeyá¹, DM Fitzpatrick¹, V Matthew-Belmar¹, B Sharma¹, KR Yearwood¹, CNL Macpherson², A Alhassan¹, S Cheetham¹

¹St George's University, Grenada and ²Windward Islands Research and Education Foundation, Grenada
Email: scheetha@sgu.edu

Objective: To expedite the development of Coronavirus disease 2019 (COVID-19) real-time quantitative polymerase chain reaction (RT-qPCR) testing capabilities in Grenada, develop sample pooling as well as build local capacity by training additional personnel.

Methods: The molecular biology and virology laboratory at School of Veterinary Medicine, St George's University (SGU) provided the infrastructure, equipment and personnel for COVID-19 RT-qPCR testing with reagents provided by the Pan American Health Organization (PAHO) and the Grenada Ministry of Health. Training of additional personnel comprised both online and in-person modules.

Results: Twenty-four patients produced 42 RT-qPCR positive results from tests conducted from April 8 to July 31, 2020. Results were provided within eight hours which was critical to the fast response and adjustment of protocols and the success of managing the occurrence of COVID-19 infections in Grenada to low levels. Fifteen additional technicians completed the COVID-19 testing training and were available as backup in case there was a surge in cases that would require additional testing team members.

Conclusion: The close partnerships forged during this time among the Grenada Ministry of Health, SGU, the Windward Islands Research and Education Foundation, the Caribbean Public Health Agency and PAHO, the experiences with previous disease epidemics (eg chikungunya, Zika) and other pandemic preparedness exercises served the early implementation of a diagnostic service well. Grenada's testing capacities provided the ability for a rapid response to imported cases and their contacts. Recommendations for further actions were made based on the experiences gained to improve the response and prepare for future epidemics.

O-27

RT qPCR for diagnosis and screening of SARS-CoV-2: a comparison of nasopharyngeal or saliva collection methods

CNL Macpherson^{1,4}, TP Noel^{1,3,4}, N Cudjoe^{1,4}, V Matthew-Belmar^{1,2,4}, B Sharma^{1,2,4}, N Noel¹, E Chitan¹, PJ Fields^{1,4}, K Yearwood³, G Mitchell⁵, S Charles⁵, N Steele⁵

¹Windward Islands Research and Education Foundation, Grenada, ²School of Veterinary Medicine, St George's University, Grenada, ³School of Medicine, St George's University, Grenada, ⁴School of Graduate Studies, St George's University, Grenada and ⁵Ministry of Health, Grenada

Email: cmacpherson@sgu.edu

Objective: The characteristics and properties of real-time quantitative polymerase chain reaction (RT qPCR) tests for individual diagnosis of SARS-CoV-2 and as a screening tool were evaluated from a clinical and epidemiological perspective. A secondary study examined the agreement between Cq values for nasopharyngeal (NP) swabs and saliva tests along with a longitudinal analysis of NP Cq values as related to potential infectivity.

Methods: This was a feasibility and prioritization study accompanied by a longitudinal study carried out between April 2020 and January 2021.

Results: The properties of the RT qPCR test examined its cost, speed of producing results, availability of reagents, facilities, trained personnel, and the non-binary interpretation of Cq values. Examining SARS-CoV-2 positive cases with repeated NP and saliva tests spanning up to 36 days, the evidence indicated a moderately strong longitudinal trend in increasing Cq values ($r = 0.402$) of 0.171 units per day. Comparing the Cq values from pairs of NP swabs and saliva samples from 43 patients showed moderately strong positive correlation between the values. In addition, repeated samples from 20 patients indicated that NP Cq values increased over time at a daily rate of 4.3% of a patient's initial Cq value.

Conclusion: The caseload in our setting was just over 8000 tests over 10 months. In practical terms, saliva would be the collection method of choice, since it is non-invasive, does

not require personal protective equipment, is self-administered, and provides a high Cq correlation with NP swabs. The longitudinal Cq values, interpreted in a non-binary way, allowed for greater epidemiological interpretation.

O-28

RT qPCR screening for SARS-CoV-2 in Grenada

N Cudjoe, N Noel, V Belmar-Matthew, B Sharma, E Chitan, N Steele, S Charles, G Mitchell, TP Noel, K Yearwood, CNL Macpherson

Windward Islands Research and Education Foundation, St George's University, Grenada, School of Graduate Studies, St George's University, Grenada, School of Veterinary Medicine, St George's University, Grenada and University Health Services, St George's, Grenada

Email: ncudjoe@sgu.edu

Objective: To investigate the extent of a cluster of SARS-CoV-2 cases with the aim to prevent further transmission through an active test, trace and isolate programme to mitigate outbreaks of COVID-19.

Methods: A cluster of SARS-CoV-2 cases in August 2020 prompted a cross-sectional followed by a longitudinal screening programme for all individuals visiting the True Blue campus of the St George's University (SGU). This point of diagnostic screening served the whole country, as individuals resided in all six parishes, and Carriacou and Petite Martinique. Individuals pre-registered on the Sign-up Genius platform enabled a steady flow of participants who observed all non-pharmaceutical intervention methods during the screening process. Members of the screening team were tested a few days prior to commencement of the programme. Each individual was provided information about the screening procedure; following collection of a nasopharyngeal swab, a barcode was appended to their ID which allowed them access to the campus. Samples were transported on ice to the molecular lab and processed in pools of 10 the same day. Results were shared with the Ministry of Health (MOH), PAHO and the SGU Senior Administration.

Results: A total of 19 (0.4%) out of 4809 persons tested positive for SARS-CoV-2. About 98% of the results were reported back to each individual within eight hours.

Conclusion: The screening programme continues today, providing an insight into the incidence of SARS-CoV-2 throughout the country. Experience revealed the importance of timely feedback, close partnership with the MOH and appropriate isolation of all contacts of infected individuals.

O-29

The impact of COVID-19 pandemic on the burden and the pattern of hospitalization from COVID-19-unrelated illnesses among children in Barbados – a preliminary report from an ongoing study

A Kumar^{1,2}, K Krishnamurthy^{1,2}, J Taitt¹, P Singh²

¹The Queen Elizabeth Hospital, Barbados and ²The University of the West Indies, Cave Hill Campus, Barbados
Email: alokkumar.uwichill@gmail.com

Objective: To describe the impact of the COVID-19 pandemic on the burden and pattern of hospitalization from COVID-19-unrelated illnesses among children in Barbados.

Methods: This was a population-based prospective clinical audit. It included children (aged < 16 years) admitted for COVID-19-unrelated illnesses to the only tertiary care hospital in Barbados during the ongoing COVID-19 pandemic. This audit covered the period from April to July 2020. The audit data corresponding period in 2019 and 2018, which were also collected prospectively, were used as historical control.

Results: There were a total of 178 paediatric medical admissions (PMAs) in Barbados from April to July 2020. This was a decline of 47.2% (95% confidence interval (CI) = 41.6%, 52.5%) compared to the 336 PMAs during the corresponding period in 2019. The decline in the number of admissions from asthma phenotypes, respiratory infections and gastrointestinal infections accounted for 88.0% (95% CI = 78.6%, 94.8%) of the total decline in PMAs during the pandemic-related lockdown period when compared with the corresponding period in 2019. The difference in the proportion of children who required transfer to the paediatric intensive care unit during the pandemic and the corresponding period in 2019 and 2018 was statistically not significant ($p = 0.8234$).

Conclusion: A sharp decline in the admissions from asthma phenotypes and those from respiratory tract and gastrointestinal tract infections resulted in a close to 50% decline in hospitalizations from COVID-19-unrelated illnesses among children in this population.

O-30

The impact of the COVID-19 pandemic on nutrition and health practices in a cohort of obese Barbadian children

KA Rudder, MA St John, S Crichlow

Heart and Stroke Foundation of Barbados, Bridgetown, Barbados

Email: kimberley.rudder@gmail.com

Objective: To assess and report the impact of the COVID-19 lockdown period on the children's nutrition and health practices.

Methods: Data from the HSFB/Yute Gym for 2019 (pre-COVID-19) were compared to the anthropometric measurements of children taken after the lockdown was lifted (post-COVID-19). The data were analysed using Stata for differences.

Results: Mean height (5.42 ± 0.35), weight (183.82 ± 41.04) and body fat percentage (39.54 ± 11.18) increased over the

lockdown period. Of all the variables assessed, only height ($p = 0.009$; 95% confidence interval (CI) = $-0.10, -0.02$; $n = 18$) and weight ($p = 0.002$; 95% CI = $-18.65, -5.12$; $n = 18$) were statistically significantly different. There was no statistically significant difference in the mean body fat of the participants. Dietary components consumed were associated with ill health. Overall diet quality was poor and did not meet the recommendations for adequate fruit and vegetable consumption by adolescents. All children engaged in sedentary living during this period and did not meet daily requirements for physical activity.

Conclusion: The small sample size and limitations in available data reduced the power of the study. However, focussed promotion of home-based physical activities for exercise and healthy dietary practices should be heavily publicized during any future lockdown to minimize possible negative health effects.

O-31

Evaluation of 20% honey with acetic acid as an alternative fixative to formalin using liver tissue

*K Fordyce, M McKenzie, D Semple
College of Medical Sciences (formerly the Faculty of Health Sciences), University of Guyana, Guyana
Email: martina.mckenzie@uog.edu.gy*

Objective: To determine the comparability of 20% honey and acetic acid to formalin in histological fixation by studying their cellular and structural characteristics after tissue processing.

Methods: Liver samples ($n = 40$) from the morgue of Guyana's Georgetown Public Hospital Corporation were obtained. Half of the sample were processed using formalin and the other half processed with 20% honey with acetic acid. The samples were processed using the routine paraffin process employed in Guyana substituting formalin with 20% honey with acetic acid for comparison. Sections were rated 1–4 by pathologists and cytotechnologists in the categories of quality of stain, nuclear details and overall morphology etc. The means were analysed for statistical significance ($p = 0.05$).

Results: The means for nuclear details were 2.8 for honey samples and 2.3 for formalin samples. The means for quality of stain were 3.0 for honey and 2.5 for formalin. An analysis of variance at 95% confidence interval for the fixatives revealed a p -value of < 0.05 . We accept the hypothesis which states that 'The quality of 20% honey and acetic acid fixed tissue sections stained with H&E produces quality sections equal to 10% formalin'.

Conclusion: The results proved that honey was a good substitute for formalin. It is non-toxic, hence increasing occupational safety for laboratory professionals. Liver tissue sections fixed in 20% honey with acetic acid was superior to that fixed in formalin.

O-32

Patients' knowledge and practice regarding medication disposal in Trinidad

*S Jankie, N Barsatee, K Sookdeo, S Hernandez, V Dookhan, AV Stuart
School of Pharmacy, Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad, Trinidad and Tobago
Email: satjankie@gmail.com*

Objective: To determine knowledge and practices of patients in Trinidad with respect to their current method(s) of drug disposal.

Methods: A randomized, cross-sectional, self-administered questionnaire comprising 26 questions based on demographics, knowledge and practices was utilized in this study. The study was conducted over 12 weeks at the outpatient pharmacy sites located in the four Regional Health Authorities (RHAs) in Trinidad. Statistical Package for the Social Sciences (SPSS) version 24 was used for statistical analysis.

Results: Knowledge of the dangers of improper medication disposal was highest in the age group of 18–25 years ($p = 0.007$) and in those with secondary and tertiary levels of education ($p = 0.002$). Participants in the North-West and South-West RHAs were aware that improper disposal of medications could lead to increased antibiotic resistance ($p = 0.015$). Disposal of unused/expired medications *via* household thrash (86.1%) was the most commonly encountered practice, even though 46.2% believed that improper disposal of medications could lead to contamination of surface water and soil. Most (81%) of the respondents were in favour of having a medication 'take-back' programme (82%), with the majority (67.5%) preferring that the service be available at private community pharmacies. The respondents thought that the internet (51.2%) and pharmacists (47.3%) were the main sources of advice for information on medication disposal practices.

Conclusion: There is a need for education programmes to highlight the importance of proper medication disposal and development of sites for collecting unused/expired medications.

O-33

The Repository for Caribbean Cancer Publications (ReCCaP): database development and a systematic review of publication trends 2004–2019

*K Badal, M Moore, M Thomas
Caribbean Cancer Research Initiative, Port of Spain, Trinidad and Tobago
Email: kim.badal@gmail.com*

Objective: To optimally access and utilize present research and identify gaps, we developed the Repository for Carib-

bean Cancer Publications (ReCCaP) to home publications on cancer in the Caribbean population and diaspora and report on publication trends.

Methods: A systematic PubMed literature search for the period 2004–2019 (15 years) was developed using keywords related to ‘cancer’ and ‘Caribbean’. Included publications were verified by three independent investigators. The final database was formatted and hosted in an online database management software.

Results: Of the 4935 publications found, 1194 met the inclusion criteria, with 803 publications (67.25%) being on the Caribbean population, 139 publications (11.64%) including multiple Caribbean countries and 252 publications (21.11%) on the diaspora. Between 2004 and 2019, there was an overall 0.20% increase in publications regionally. Overall, most publications were on breast ($n = 168$; 14.07%), prostate ($n = 156$; 13.07%), cervical ($n = 152$; 12.73%), colorectal ($n = 80$; 6.70%), and lung cancer ($n = 36$; 3.02%). The highest number of papers were published by Puerto Rico (22.80 publications/year), followed by Cuba (8.27 publications/year), Jamaica (6.27 publications/year), Trinidad and Tobago (3.53 publications/year), and Martinique (2.27 publications/year). The high-income countries ($n = 10$) collectively led in publications over the 15-year period.

Conclusion: ReCCaP provides an easily searchable database that highlights published work and gaps in knowledge on cancer in the Caribbean and diaspora.

O-34

Factors affecting marijuana use among cancer patients attending at an oncology specialty centre in Trinidad

Y Clement, AM Ming Hon, A Mitcham, A Mohammed, A Mohammed, I Mohammed, R Mohammed, S Mohammed, S Mohammed

Pharmacology Unit, Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago

Email: yuri.clement@sta.uwi.edu

Objective: To assess knowledge, attitude and practices regarding marijuana among cancer patients in Trinidad.

Methods: This cross-sectional study recruited 194 cancer patients attending the Oncology Unit at the St James Medical Complex in Trinidad from June to July 2019. Following informed consent, a de novo, pilot-tested questionnaire obtained demographic details, and assessed knowledge, attitudes and previous use of marijuana. SPSS (version 24) was used for data input and statistical analysis using .2; $p < 0.05$ was considered statistically significant.

Results: Most patients were female (73.2%) with a mean age of 59.1 ± 11.7 years. Breast cancer (80 of 142 women) and prostate cancer (22 of 52 men) were common, and half (50.2%) were either stage 3 or 4. Knowledge regarding marijuana was low; the average score was 2.9 ± 2.15 (out of 10).

About one-third (34.5%) of patients reported previous marijuana use for recreational, medicinal or religious purposes. Being male ($p = 0.001$), of African descent ($p = 0.015$) and having side effects with conventional treatments ($p = 0.013$) were significantly associated with marijuana use. Marijuana users believed that its benefits outweighed the risks ($p = 0.019$), it was not addictive ($p < 0.001$) and were more likely to use should it become legally available ($p = 0.02$) compared with non-users. Most patients who used marijuana for medical purposes indicated that it was very effective.

Conclusion: In this study, most cancer patients had little knowledge regarding marijuana, even though users were satisfied with the outcome and many were willing to use under the guidance of their physician in the environment of decriminalization.

O-35

A two-year hospital-based study of lung cancer with reference to histological subtypes, demographics, risk factors and presenting stage

H Mentore, AVC Rao, S Manduru, V Maraj, H Matabadal, D Mayers, K McMillian, R Medford, S Mehra
Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago
Email: hermidar.mentore@my.uwi.edu

Objective: To investigate lung cancer in Trinidad and Tobago with a focus on affected ethnic groups, predisposing risk factors, area of the country most affected, histological subtypes and presenting stage; and to identify and compare current lung cancer trends with those identified from previous studies.

Methods: A retrospective cross-sectional study was conducted by obtaining a sample of 174 cases between January 1, 2017 and December 31, 2018. Relevant data from patients’ medical records were retrieved from the Histopathology Unit, Medical Records Department and Lung Cancer & Thoracic Malignancy Unit at the Eric Williams Medical Sciences Complex. The data were transcribed onto data collection sheets, which recorded demography, risk factors, histological subtypes and presenting stage, after which basic descriptive and comparative analyses were carried out using IBM SPSS software.

Results: Lung cancer was most predominant in males (71.3%), persons aged 60–79 years, Afro-Trinbagonians (37.4%) and residents of the North West Peninsula (22.4%). The most prevalent subtype diagnosed was Adenocarcinoma (39.4%), with the majority of cases diagnosed at stage 4 (65.9%). A minority of the cases reported having no exposure to asbestos or other carcinogens in the workplace (4%). A significant number of cases reported no family history of lung cancer (93.7%). About 73.4% of the patients were current smokers while 97.1% reported no exposure to second-hand smoke.

Conclusion: Afro-Trinidadian males aged 60–79 years showed the highest prevalence of the lung cancer subtype Adenocarcinoma within the population. These similar previously reported trends highlight the need for screening of high-risk individuals to facilitate early detection, diagnosis and effective treatment.

O-36

A first look at cancer incidence rates and trends in Bermuda over the 10-year period 2007–2016

S Quesnel-Crooks¹, K Horton-Perinchief², R Hanisch³, G Andall-Brereton¹, B Edwards³, D Martin³, G Forjaz de Lacerda³, B Kohler⁴, M Cabral⁵, L Mery⁶

¹Caribbean Public Health Agency, Port of Spain, Trinidad and Tobago, ²Bermuda National Tumour Registry, Bermuda Hospitals Board, Hamilton, Bermuda, ³National Cancer Institute, National Institutes of Health, Maryland, United States of America, ⁴North American Association of Central Cancer Registries, Illinois, United States of America, ⁵McGill University, Montreal, Quebec, Canada and ⁶International Association for Research on Cancer, Lyon, France

Email: quesnesa@carpha.org

Objective: To review cancer incidence trends in Bermuda over the 10-year period 2007–2016 and compare them to those in Jamaica, Martinique, Puerto Rico and the United States of America (USA).

Methods: Total cases and age-standardized (world) cancer incidence rates per 100 000 (ASRs) were calculated for 2007–2016 for Bermuda. ASRs for Bermuda for 2008–2012 were compared to rates reported by select Caribbean registries and the USA.

Results: Over the 10-year period, the highest ASRs among Bermudian men were for prostate cancer (ASR: 81.3), lung cancer (ASR: 27.5) and colon cancer (ASR: 21.8). Among Bermudian women, the highest ASRs were for breast cancer (ASR: 83.9), colon cancer (ASR: 19.8) and lung cancer (ASR: 11.4). ASRs for all cancers for both men and women for 2008–2012 for Bermuda were higher than rates reported by Jamaica, Martinique and Puerto Rico but similar to rates reported by the USA. ASRs for breast cancer, colon cancer, lung cancer and melanoma of the skin among women in Bermuda, and lung cancer, bladder cancer and melanoma of the skin among men in Bermuda were higher than those reported by Jamaica, Martinique and Puerto Rico.

Conclusion: There were annual variations in cancer incidence rates for frequently reported cancers in Bermuda among males and females over the period 2007–2016. Variations reflect real changes in annual case counts but also suggest incomplete and uneven case registration and changes in the availability and utilization of screening programmes. Reasons underlying disproportionately high incidence rates for some cancers in Bermuda require further investigation.

O-37

Female breast cancer in Suriname – perspectives on breast cancer screening and early detection from primary care physicians

ER Irving¹, DRA Mans¹, E Th Dams², MY Lichtveld³

¹Anton de Kom University of Suriname, Paramaribo, Suriname, ²Diakonessenhuis Hospital, Paramaribo, Suriname and ³Tulane School of Public Health and Tropical Medicine, New Orleans, United States of America
Email: euridice.irving@uvs.edu

Objective: To explore primary care physicians' (PCPs) beliefs, recommendations and practices on breast cancer screening in Suriname.

Methods: A representative sample of 151 PCPs was surveyed from Oct 2017 to June 2018. Data were anonymously collected online using REDCap. We investigated physician and practice characteristics, views about effectiveness of screening methods and recommendations for screening tests, screening interval and age groups. Physicians received an email invitation with a unique survey link and three email reminders. Data were presented using proportions, mean, median and ranges. Differences were tested for statistical significance using Chi-square and a p -value of < 0.05 .

Results: Fifty-five (36.4%) physicians responded. All were practising physicians, and most of their patients were insured. Most of the physicians considered mammography (XMG) an effective tool for screening, specifically in women aged 50+ years compared to younger women (XMG50–59 80%, XMG30–39 64%, $p = 0.0049$; XMG40–49 35%, $p < 0.0001$). The majority of physicians recommended XMG (90%) and self-breast examination (78%) for women aged 50–59 years (clinical breast examination: 51%, $p < 0.0001$; ultrasound: 26%, $p < 0.0001$). For women aged 30–39 years, recommendations favoured self-breast examination (30–39 years 90% all $p < 0.0001$); for women aged 40+ years, self-breast examination (78%) and XMG (71%) – all statistically significantly different compared to other views ($p < 0.0001$).

Conclusion: In the absence of national guidelines and organized screening, physicians recommended XMG as their first choice for women aged 40+ years. For younger women, self-breast examination and clinical breast examination were considered most effective. These results provide a baseline for monitoring any impact of programmes and/or guidelines implemented in the future.

O-38

Factors associated with breast cancer recurrence and survival at Sangre Grande Hospital, Trinidad

K Badal, R Ali, WA Warner, A Maniam, A Carrington, J Foster, R Haraksingh

Department of Preclinical Sciences, Faculty of Medical Sciences and Department of Life Sciences, Faculty of

*Science and Technology, The University of the West Indies,
St Augustine Campus, Trinidad and Tobago
Email: kim.badal@gmail.com*

Objective: To determine the demographic, pathological and treatment-related factors that predict recurrence and survival in a Trinidadian cohort of patients with breast cancer.

Methods: The inclusion criteria were female, over 18 years of age and a primary breast cancer diagnosis confirmed by a biopsy report occurring between 2010 and 2015 at Sangre Grande Hospital, Trinidad. Univariate associations with five-year recurrence-free survival and five-year overall survival were calculated using the Kaplan-Meier method for categorical variables and Cox Proportional Hazards for continuous variables. A multivariate model for prediction of recurrence and survival was determined using Cox regression.

Results: Records for 2010–2015 ($n = 202$) revealed five-year overall survival and recurrence-free survival rates of 74.3% and 56.4%, respectively. Median times from first suspicious finding to date of biopsy report, date of surgery, and date of chemotherapy were 63, 125 and 189 days, respectively. In the univariate analysis, age ($p = 0.038$), stage ($p < 0.001$), recurrence ($p = 0.035$), surgery ($p = 0.016$), estrogen receptor (ER) status ($p < 0.001$), progesterone receptor (PR) status ($p < 0.001$), and subtype ($p < 0.001$) were significantly associated with survival. Additionally, stage ($p = 0.004$), N score ($p = 0.002$), ER status ($p = 0.028$), PR status ($p = 0.018$), and subtype ($p = 0.025$) were significantly associated with recurrence. In the Cox multivariate model, stage 4 was a significant predictor of survival (hazard ratio (HR): 6.77; 95% confidence interval (CI): 0.09, 2.49; $p = 0.047$), and N3 score was a significant predictor of recurrence (HR: 4.47; 95% CI: 1.29, 15.54; $p = 0.018$).

Conclusion: This study reported a five-year breast cancer survival rate of 74.3% and a recurrence-free survival rate of 56.4% in Trinidad for the period 2010–2015.

O-39

Preferred place of death for breast cancer patients receiving palliative care at the Queen Elizabeth Hospital in Barbados

C Holder, NS Greaves

Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados

Email: natalie.greaves@cavehill.uwi.edu

Objective: To explore the perceptions of persons with a diagnosis of breast cancer receiving adult palliative care at the only tertiary hospital on the island of Barbados regarding their preferred place of death.

Methods: A qualitative study using purposive sampling with maximum variation technique was conducted. Fifteen participants (14 females and 1 male) living with a diagnosis

of breast cancer (< 1–16 years) participated in semi-structured interviews which averaged 30 minutes. Interviews were transcribed verbatim, coded deductively by the interviewer and subject to thematic analysis with constant comparison aided by ATLAS.Ti 8 software.

Results: The interviews identified a lack of exposure to advance care planning (including a preferred place of end-of-life care and death options) information. Patients conceptualized a good death as occurring when surrounded by friends and family in a familiar environment. The dominant preferred place of death was the home, followed by the hospital setting. However, participants doubted the feasibility of achieving a home death given what they perceived to be a lack of psychological, physical and social services for their families. Importantly, participants had little understanding or experience with the concept of hospice and perhaps consequently no innate preference for community-based hospice care as a place of death. However, they were willing to consider this form of care once the classic description and purpose of hospice were shared.

Conclusion: Choice of point of death requires advanced care planning discussions to assist patients with breast cancer. Further work is needed to investigate the barriers and facilitator to advanced care planning.

O-40

The relationship of parental occupation with self-esteem, emotional intelligence and empathy among students from health professional programmes

B Sa¹, MAA Majumder², S Gupta², V Victor¹, F Yussef¹, K Singh², OP Adams², MH Campbell²

¹Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago and

²Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados

Email: bidyadhar.sa@sta.uwi.edu

Objective: To examine the relationship of parental occupation with self-esteem (SE), emotional intelligence (EI) and empathy among health professional students of the Caribbean region.

Methods: Participants ($n = 460$) were first-year undergraduate health professional students (medical, dental, nursing, pharmacy, optometry, and veterinary medicine) from the Faculty of Medical Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago. Students completed the Rosenberg Self-Esteem Scale, the Trait Meta-Mood Scale and the Jefferson Scale of Physician Empathy. Students reported the occupational type and status of each parent. Researchers coded occupations according to the International Standard Classification of Occupations (ICSO).

Results: Maternal occupation had a significant association with SE ($p < 0.01$), EI ($p < 0.01$) and empathy ($p < 0.05$).

However, post-hoc pairwise comparisons of occupation were not significant for empathy scores. Pairwise post-hoc comparisons for SE indicated higher scores for children of mothers who were service and sales workers and unemployed/homemakers *versus* technical and associate professionals. Pairwise comparisons for EI indicated higher scores for children of mothers who were technical and associate professionals *versus* managers and service and sales workers. Children of unemployed/homemaker mothers had higher scores on EI and empathy compared to those whose mothers worked outside the home. Paternal occupation was unrelated to all three outcome variables.

Conclusion: The results demonstrated that maternal occupation was associated with SE, EI and empathy among students, although mechanisms of this association were not addressed by this research design. Nonetheless, knowledge of parental occupation may be useful in developing interventions to improve the interpersonal skills and well-being of students.

O-41

Mortality in paediatric medical services over a two-year period at Georgetown Public Hospital Corporation

R Sanichar, B Alladin

Paediatrics Department, Georgetown Public Hospital Corporation, Georgetown, Guyana

Email: rashma86@yahoo.com

Objective: To identify common causes and patterns of mortality and associated modifiable factors in paediatric medical services, Georgetown Public Hospital Corporation (GPHC), for 2016 and 2017.

Methods: A descriptive, cross-sectional retrospective study of all paediatrics deaths for 2016 and 2017 from the Paediatrics Medical Ward and Intensive Care Unit at GPHC was conducted. Data were analysed using IBM SPSS version 23 for descriptive statistics.

Results: The Paediatrics Medical Ward saw 2419 admissions in 2016 and 2168 in 2017. There were 86 deaths recorded in the death registry during the two years, of which 57 deceased patient charts were reviewed and 29 charts (33.7%) were missing. Of the 57 charts reviewed, 42.1% were males and 57.9% were females. The most common final diagnosis was bronchopneumonia/pneumonia ($n = 13$ or 22.8%), followed by sepsis ($n = 12$ or 21.0%). This pattern was seen in both the general sample population and the patients of ≤ 5 years of age. Some of the modifiable factors which showed clinical significance when compared with the length of hospitalization were: lack of routine reviews on the ward ($p = 0.016$), poor documentation on referral notes ($p = 0.032$) and poor or no pre-hospital treatment before transfer ($p = 0.017$).

Conclusion: Factors associated with mortality were mainly hospital-related and should, therefore, be given urgent atten-

tion for resolution which may reduce childhood mortality. In addition, the common causes of death were preventable and treatable respiratory and infectious diseases.

O-42

Reducing tobacco use through taxation in Trinidad and Tobago: modelling the long-term health and economic impact

P Marquez¹, L Webber², L Retat², A Jaccard³, ALF Theodore⁴, S Gabriel⁴, C Laptiste⁴

¹Health, Nutrition and Population Global Practice, World Bank Group, ²HealthLumen, London, United Kingdom, ³UK Health Forum, London, United Kingdom and ⁴University of West Indies HEU, Centre for Health Economics, The University of the West Indies, St Augustine Campus, Trinidad and Tobago

Email: Lise.retat@healthlumen.com

Objective: Trinidad and Tobago's existing prevention and control interventions are in urgent need of strengthening if the country is to reduce its tobacco use. Tobacco taxation has been shown to be very effective. This study quantifies the impact of increasing tobacco tax in Trinidad and Tobago on the future burden of smoking-related diseases.

Methods: The HealthLumen micro-simulation model (formally UK Health Forum) was used to simulate a virtual 'Trinidad and Tobago' population and quantify the impact of different tobacco taxation scenarios on the future burden of smoking-related diseases.

Results: The results showed that the higher tax increase scenario yielded the most significant results. If tobacco tax was increased by 100% in each of the next three years, it was estimated that 2537 new cases of smoking-related disease would be avoided by 2035, saving the health system TT\$254.7 million.

Conclusion: These findings support the 'go big and go fast' approach outlined in the World Bank report 'Tobacco Tax Reform – A Multisectoral Perspective: At the Crossroads of Health and Development' (World Bank, 2018).

O-43

The knowledge, attitudes and practices of Jamaican parents on the expanded programme of immunization

G Coopsammy, G Gordon-Strachan, C Christie-Samuels, M Thame

The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: gaitri108@gmail.com

Objective: To determine the knowledge, attitudes and practices of Jamaican parents on immunization

Methods: In this cross-sectional study, 125 parents of children from seven schools in the Kingston Metropolitan Area

were interviewed. Descriptive analysis was utilized to generate the findings.

Results: With regard to parents' knowledge of vaccines, 54.4% were able to answer 50% or more of the questions correctly which correlated positively with level of education. The most common side-effect reported was fever. Most respondents reported that vaccinations carried no risks and were beneficial. Significantly, 96.8% thought that vaccines were important while 27.2% thought that vaccines had serious side-effects. Some parents reported long waiting times at their healthcare visits for vaccinations, particularly for parents who accessed Health Centres. Contributing factors were likely inadequate staffing which led to persons becoming frustrated and unlikely to return for visits. Data on attitudes revealed that many believed combination vaccines were harmful and could overwhelm the immune system. Concerns identified were that vaccines could affect their child's learning ability and cause infections through unsterile practices. These beliefs could later lead to vaccine hesitancy. Despite these misconceptions, vaccination rates in Jamaica remained high.

Conclusion: Vaccination rates in Jamaica remained high as childhood immunization was required for school entry. Parents in Jamaica had satisfactory practices towards immunization, but their knowledge was somewhat deficient. Greater public awareness and education is needed.

O-44

Exploring the association between implementation of the World Health Organization's multimodal hand hygiene strategy and hand hygiene compliance rates among healthcare workers of a public hospital in Trinidad and Tobago

S Wallace-Sankarsingh¹, R Nagassar²

¹Master of Public Health (International Public Health) graduate (2020), University of Liverpool, United Kingdom and ²Sangre Grande Hospital, Eastern Regional Health Authority, Trinidad and Tobago
Email: wallacsa@carpha.org

Objective: To explore the association between the implementation of the World Health Organization's multimodal hand hygiene strategy and the hand hygiene compliance rates among healthcare staff of a public hospital in rural Trinidad and Tobago, in order to make practical recommendations for improvement of the hospital's Infection Prevention and Control programme.

Methods: This was a prospective cohort study using secondary data collected for the period August 2018 to August 2019. The Chi-square test was used for comparison of compliance rates by professional category, ward and hand hygiene indication where statistical significance was $p < 0.05$. Multiple regression analyses were then performed to identify which of these factors were significant predic-

tors for the observed hand hygiene basic compliance rates (BCRs).

Results: The overall average BCR was 59.12%, showing an upward trend over the study period. The BCR for registered nurses and patient care assistants were 15–30% higher than the overall BCR, while hand hygiene compliance among doctors was less than adequate (34.94%). There was a slight decrease in the overall BCR from 62% (2015) to 59% (2019) with a greater than 20% drop in overall compliance for five wards including Oncology and Accident & Emergency.

Conclusion: Improvements to the study site's Infection Prevention and Control programme should concentrate on the following factors which showed an association with hand hygiene compliance: category of professional staff; ward (surgical, Accident and Emergency); and specific hand hygiene indications, 'before touching a patient', 'after fluid exposure risk' and 'after touching a patient'.

O-45

Neighbourhood crime and depressive symptoms in Jamaican adults: Jamaica Health and Lifestyle Survey 2016–2017

C Cunningham-Myrie¹, KP Theal², J Wiggan³, N Younger-Coleman⁴, S McFarlane⁴, G Gordon-Strachan⁴, D Francis⁵, I Govia⁴, M Tulloch-Reid⁴, N Bennett⁴, TS Ferguson⁴, N Guthrie-Dixon⁴, W Aiken⁶, A Grant³, T Davidson⁷, K Webster-Kerr³, R Wilks⁴, the Jamaica Health and Lifestyle Survey III Investigators

¹Department of Community Health and Psychiatry, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Department of Global Community Health and Behavioral Sciences, School of Public Health and Tropical Medicine, Tulane University, United States of America, ³Ministry of Health and Wellness, Jamaica, ⁴Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica, ⁵School of Health and Human Performance, Georgia College and State University, Milledgeville, GA, United States of America, ⁶Department of Surgery, Radiology, Anaesthesia and Intensive Care and Emergency Medicine, The University of the West Indies, Mona Campus, Kingston, Jamaica and ⁷Chronic Disease and Injury Department, Surveillance, Disease Prevention and Control Division, Caribbean Public Health Agency, Trinidad and Tobago
Email: colette.cunninghammyrie@uwimona.edu.jm

Objective: To examine the impact of neighbourhood perception of crime and safety problems on depressive symptomatology in a nationally representative sample of Jamaican adults, and the roles of neighbourhood disorder and collective efficacy in this association.

Methods: Secondary analysis was conducted on the Jamaica Health and Lifestyle Survey III (JHLSIII). The JHLSIII, a cross-sectional nationally representative survey, was

administered to 2807 individuals aged 15 years and older in Jamaica and completed in 2017. Regression analyses were performed to identify associations between perceived crime and safety problems and depressive symptomatology. Mediation analysis was used to examine the roles of neighbourhood disorders and collective efficacy in the pathway between perceived crime and safety problems and depressive symptomatology.

Results: The likelihood of depressive symptomatology was 1.77 (95% confidence interval = 1.31, 2.41) times higher among respondents living in neighbourhoods perceived as having high crime and safety problems compared to those living in those perceived to have lower safety problems. We also observed partial mediation by neighbourhood social disorder and collective efficacy in the crime-depressive symptomatology relation, with 12% and 7% of the association between crime and depressive symptomatology explained through the paths of disorder and collective efficacy, respectively.

Conclusion: Depressive symptomatology was more common in neighbourhoods with higher perceived crime and safety problems, and was partially mediated through neighbourhood disorder.

O-46

Evaluating the anti-fungal properties of *Curcuma longa* (turmeric) on dermatophytes

G Anand, R Bhagwandas, A Ganesh, A Khan, M McKenzie, K Moses, K Persaud
College of Medical Sciences (formerly the Faculty of Health Sciences), University of Guyana, Guyana
Email: martina.mckenzie@uog.edu.gy

Objective: To assess the anti-fungal activity of *Curcuma longa* on dermatophytes that cause dandruff and to compare the efficacy of *Curcuma longa* with that of Ketoconazole.

Methods: This research was a prospective experimental study. Dandruff samples were collected from five subjects and cultured on Sabouraud Dextrose agar plates using an aseptic technique for four days or until growth was observed to carry out further culturing. The method of assessing the effects of curcumin on the fungus involved designing Mueller Hinton agar with a specific concentration of dissolved curcumin powder and incubating with the organism inoculated onto it. The method included quality control mechanisms such as comparison with Ketoconazole and blank Agar to effectively determine if the method employed was efficient.

Results: The results from the cultures on Mueller Hilton agar incorporated with Curcumin, Ketoconazole and Ethanol yielded the following results: Curcumin had 0% growth on all plates. Curcumin+ketoconazole had 0% growth on all plates. Ketoconazole alone had growth on all plates covering an average of the agars surface. Curcumin dissolved in ethanol had 0% growth on all plates.

Conclusion: Curcumin displayed anti-fungal properties during the culturing experiment. Its clinical application will be confirmed with research to determine its efficiency as a topically applied drug.

O-47

Low sleep duration in Tobagonian men and women is associated with greater overall and central obesity

AI Acevedo-Fontanez¹, R Cvejkus¹, AL Kuipers¹, V Wheeler², I Miljkovic¹
¹Department of Epidemiology, University of Pittsburgh, Pittsburgh, PA, United States of America and ²Tobago Health Studies Office, Scarborough, Tobago, Trinidad and Tobago
Email: aia35@pitt.edu

Objective: To assess sleep duration and its association with body mass index (BMI) and waist circumference in Tobagonians.

Methods: This was a cross-sectional study using data from the Tobago Health Study in 345 men and 407 women. Objective measurements of sleep duration, sleep quality and physical activity were collected using a SenseWear Pro Armband (BodyMedia, Inc). Participants were instructed to wear the armband at all times, except in water, for four to seven days. Model covariates included age, gender, diabetes, alcohol intake, smoking, and moderate to vigorous physical activity (MVPA). Linear regression was used to assess the relationship of sleep duration on BMI and waist circumference.

Results: Mean sleep duration was 5.6 hours/day. Overall, participants were 60.3 years old, had a BMI of 30.3 kg/m² and spent an average of 42 minutes/day in MVPA. In fully adjusted models, separately for both men and women, longer sleep duration was associated with lower BMI and lower waist circumference (all $p < 0.05$). The relationship persisted when adding sleep efficiency to the models.

Conclusion: The determination that the majority of Tobagonians reported fewer than 6 hours of sleep per night and that this short sleep duration was associated with greater general and central obesity suggests opportunities for promoting sleep health on the island. The nature of these relationships is unknown and requires further longitudinal investigations.

O-48

Driving cessation among older adults in a Caribbean small island developing state

AM Crizzle¹, CR Brown², C Howitt², MM Murphy², IR Hambleton¹
¹School of Public Health, University of Saskatchewan, Saskatoon, Canada and ²George Alleyne Chronic Disease Research Centre, Caribbean Institute of Health Research, The University of the West Indies, St Michael, Barbados
Email: alex.crizzle@usask.ca

Objective: To explore the experiences of older adults living in Barbados, a small island developing state (SIDS), who had ceased driving; their use of alternate transport; and how well their neighbourhoods supported a physically and socially active lifestyle.

Methods: In-depth semi-structured interviews were conducted with 17 older adults. Interviews were transcribed verbatim and analysed using thematic analysis.

Results: Driving cessation was not a major concern for participants. Social support from friends and family contributed greatly to this ease of transition, along with relief and enjoyment of being a passenger (rather than driver) and the enjoyment of hobbies. Rides from friends and family served as the major mode of transport, while public transport and taxis were met with negativity and disinterest. Neighbourhoods played an important role in this transition as they represented a significant source of social capital and close proximity to facilities and stores.

Conclusion: Social and geographical idiosyncrasies of being a SIDS contributed to the more positive experience of driving cessation of this study as compared to larger, more industrialized countries. Efforts to improve the physical and social health of older adults in Barbados should focus on external factors that encourage walking and further social engagement, such as improving neighbourhood infrastructure, improving the acceptability of public transport, and increasing the range of alternative transport options.

O-49

Severity of lower urinary tract symptoms and related quality of life among male urology clinic attendees 50 years and older at a tertiary hospital in Jamaica

D Willie-Tyndale¹, W Aiken², D Eldemire-Shearer¹

¹*Mona Ageing and Wellness Centre, The University of the West Indies, Mona Campus, Kingston, Jamaica and*
²*Department of Surgery, Radiology, Anaesthesia and Intensive Care, The University of the West Indies, Mona Campus, Kingston, Jamaica*

Email: douladel.willie02@uwimona.edu.jm

Objective: To determine the severity and distribution of lower urinary tract symptoms and the effect on quality of life in male urology clinic attendees aged 50 years and older.

Methods: A total of 294 men aged 50 years and older were recruited from an out-patient urology clinic and participated in a cross-sectional study on sexual and genitourinary health. This paper presents data on the severity of lower urinary tract symptoms and the effect on quality of life. The International Prostate Symptom Score was used to measure severity of urinary symptoms and quality of life due to those symptoms.

Results: Symptoms were classified as moderate for more than half of the men (52.2%), mild for 31.6% and severe for 15.8%. Symptom severity increased significantly with

age. The odds of asserting that quality of life was impaired by urinary symptoms were approximately two times higher among men with moderate symptoms (odds ratio (OR): 1.94; 95% confidence interval (CI): 1.07, 3.51) and approximately six times higher among men with severe symptoms (OR: 6.34; 95% CI: 2.43, 16.54) than their counterparts with no or mild symptoms.

Conclusion: Lower urinary tract symptoms negatively affect men's quality of life. Strategies to address them must not be limited to medical approaches but should also include social support. Efforts must also be directed towards facilitating early diagnosis and intervention to improve health outcomes.

O-50

Understanding consumer food consumption behaviour in the context of non-communicable diseases

MM Murphy¹, N Greaves², A Foster-Estwick¹, L Dunn³, TA Samuels⁴, N Unwin⁵, H Harewood²

¹*The George Alleyne Chronic Disease Research Center, Caribbean Institute for Health Research, The University of the West Indies, Cave Hill Campus, Barbados,* ²*Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados,* ³*Institute for Gender and Development Studies, The University of the West Indies, Mona Campus, Jamaica,* ⁴*Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Jamaica and* ⁵*MRC-Epidemiology Unit, University of Cambridge, United Kingdom*

Email: madhuvanti.murphy@cavehill.uwi.edu

Objective: Gaps in Caribbean regional research data highlighted a paucity of qualitative exploration into consumer behaviour (purchasing and consumption). Understanding consumer food behaviour as part of the larger food system can help us in developing non-communicable disease (NCD) interventions.

Methods: Seventy individual interviews were conducted between June and August 2018, with stakeholders from the public and private sectors and civil society in Jamaica (n = 41), St Kitts and Nevis (n = 14) and in St Vincent and the Grenadines (n = 15). Fourteen consumer focus groups were conducted from May to July 2019: St Vincent and the Grenadines (n = 4), St Kitts and Nevis (n = 4), Jamaica (n = 6). Data were managed using Dedoose software and analysed following qualitative thematic analysis.

Results: Overall, there tended to be consensus not only between stakeholders and consumers, but also across countries related to four major themes: (a) food consumption had changed over the lifespan; (b) adults were exerting their right to choose; (c) accessibility was important but affordability was the bottom line; and (d) cost and convenience overrode knowledge. Participants confirmed what

we knew in that people had the knowledge about healthy foods, but the demand for unhealthy foods was great due to their cheaper cost and easy availability. Of interest was how childhood experiences and the ‘invincibility’ of youth framed their adult consumption decisions.

Conclusion: Consumer food consumption had many similarities across Caribbean countries, which could allow for regional interventions. The specific indications of how the childhood experience could influence future adult behaviour are important considerations in developing interventions to address NCDs.

O-51

The policy gap: evidence from household food security coping strategies in the COVID-19 pandemic

*T Marshall, A Saint Ville, L Fletcher-Paul, W Isaac
The University of the West Indies, St Augustine Campus,
Trinidad and Tobago
Email: tracy.marshall@my.uwi.edu*

Objective: To investigate household food security coping strategies in response to national non-pharmaceutical interventions (NPIs) in response to COVID-19 in five Caribbean small island developing states and to make policy recommendations to improve food and nutrition security.

Methods: This mixed-methods case study covered the period March to April 2020. Authors used three secondary data sources (an online household food security survey, Google trends for web searches and Google mobility data) and one primary data source that consisted of a documentary review.

Results: The findings showed high severity of NPIs used across all states with variability in household responses. A regional food security survey showed that a third of respondents reported coping strategies of eating less preferred foods, skipping meals or reducing food intake. The latter is a known strategy of moderate food insecurity in households with reduced access to food. Overall, more households in Barbados and Belize experienced food insecurity from lack of market access. While there were minimal changes to mobility related to groceries and pharmacies, which remained open, NPIs resulted in high reductions in household mobility with reduced access to food by households. In all countries, there were notable spikes in internet web searches on how to prepare preferred foods at home, as respondents adjusted to reduced mobility and shut-down of food retail establishments.

Conclusion: Recommendations highlight the importance of understanding local food (preferences, habits and behaviour) to adequately assess the risk of proposed NPIs and improve food and nutrition security outcomes.

O-52

Identifying and assessing the determinants of unhealthy dietary habits among a sample of survey participants in Jamaica

*A La Foucade¹, S Gabriel¹, V Beharry¹, C Laptiste¹, C Metivier¹, K Theodore¹, TA Samuels², P Edwards-Wescott¹
¹HEU, Centre for Health Economics, Faculty of Social Sciences, The University of the West Indies, St Augustine Campus, Trinidad and Tobago and ²Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Jamaica
Email: charmaine.metivier@sta.uwi.edu*

Objective: To identify and assess the determinants of unhealthy dietary habits among a sample of survey participants in Jamaica.

Methods: This was a two-stage sample process. Firstly, three parishes in Jamaica were randomly selected. Secondly, the main commercial areas within the selected parishes were identified, from which a sample of private and public business establishments was selected. Employees and patrons (≥ 18 years) of the selected establishments completed a pre-designed questionnaire. Selected academic/vocational institutions were also surveyed. Data were collected using electronic and paper-based means (face-to-face interviews).

Results: Respondents’ self-assessment of their general consumption revealed that 48% were classified as unhealthy eaters. Of this unhealthy eating group, the top reasons given for generally unhealthy dietary choices were greater accessibility of unhealthy foods (64%) and limited time to prepare healthy meals (61%). Additionally, 19% reported that healthy foods were difficult to find as a reason for their current eating habit, while 52% said that unhealthy foods cost less and 47% identified affordability as the main influential factor in the food choice equation. Findings revealed that eating unhealthily tended to vary in terms of significance across income, age and gender.

Conclusion: Responses to reduce barriers to unhealthy eating included: (a) targeted health promotion messaging and other public health initiatives aimed at specific demographic populations; (b) increased supply of healthy foods that substantially impact price, affordability and accessibility; and (c) policies geared at making healthy eating and preparation of healthy meals more convenient and less time-consuming.

O-53

Suicidal ideation, suicidal behaviour, and depression among USVI public high school students

J Valmond¹, N Michael², C Paul², A Williams²

¹US Virgin Islands Department of Health, Christiansted, St Croix, US Virgin Islands and ²University of the Virgin Islands, Albert Sheen Campus, St Croix, US Virgin Islands
Email: janis.valmond@doh.vi.gov

Objective: To examine suicidal ideation, suicidal behaviour, and depression among adolescents in the US Virgin Islands.

Methods: The US Virgin Islands 2017 Youth Risk Behavior Survey was conducted in public schools, grades 7–12, during the 2017–2018 school year, approved by the Department of Education and the University of the Virgin Islands Institutional Review Board (IRB no. 1223594). Parental consent (passive) and student assent were required. Trained researchers, school administrators and teachers administered the surveys during the school day. For the high school sample ($n = 1782$), 52.8% were female, and mean age was 15.97 years (standard deviation = 1.26, $n = 1765$).

Results: Among high-school students, 35.5% felt sad or hopeless almost every day for two or more weeks in a row that they stopped doing some usual activities, a measure used to assess depression in this population; 17% had seriously considered attempting suicide, 13.6% had made a plan, and 10.3% had actually attempted suicide. Female students were more than twice as likely to consider suicide (23.4%) than male students (9.9%) ($X^2(1, n = 1744) = 55.7, p < 0.000$). Females were also almost twice as likely to report feeling depressed (46.0%) as male students (23.7%) ($X^2(1, n = 1746) = 93.3, p < 0.000$). Students in 11th grade were most likely to report being depressed (40.8%) compared to students from other grades ($X^2(3, n = 1745) = 8.3, p = 0.04$). There was a significant association between depression and thoughts of suicide, which persisted after controlling for gender.

Conclusion: Suicide prevention interventions in high schools may be warranted and should engage assessments of depression with a focus on female students and those in 11th grade.

O-54

It takes two to conceive: attitudes of adolescent males towards sex and adolescent pregnancy

M Julien

*The University of the West Indies, Mona Campus, Jamaica
Email: megueal@live.com*

Objective: To determine the attitudes of adolescent males towards sex and adolescent pregnancy.

Methods: A mixed-methods study of quantitative and qualitative components utilized a cross-sectional study of two secondary schools in Kingston for self-administered questionnaires completed by 318 adolescent males aged 15–19 years and in-depth interviews at the Women's Centre Jamaica Foundation using adolescent fathers.

Results: Adolescent males had conversations around sex mainly with friends (56.3%) and parents (54%). On average, 22% said they would have sex whenever they felt ready regardless of age. Popular considerations for contraceptives were male condoms (90.1%) and pulling out before ejaculating (63.1%). Approximately 52.2% of the respondents disagreed that teenagers should abstain from sex while 10.4% believed that sexually active teens did not need to use contraceptives. Three of every four males said being in love could influence engaging in sex while 93.3% said financial security would be important to them before having a baby. Almost a third of the males (30%) expressed ambivalence towards possibly getting a girl pregnant saying they would deny being the father, with only 22% saying they would 'man up' and offer support. In select in-depth interviews among six adolescent fathers, most were not planning on becoming fathers when they did and had their first sexual experience before the age of 14 years.

Conclusion: Adolescent males appeared to be susceptible to becoming fathers in adolescence due to limited avenues for formal discussions on sexuality. For this reason, targeted sexual health campaigns need to focus on adolescent males through homes, schools and communities.

O-55

Using the Beck Depression Inventory to identify depressive symptoms in Jamaican youths

D Simpson, M Spence, K Barnes

*Psychological Services Unit, Central Region, Citizen Security and Justice Programme, Ministry of National Security, Kingston, Jamaica
Email: dendenson@gmail.com*

Objective: To examine the prevalence of depressive symptoms in youths and find the symptoms that tend to occur most frequently within this sample.

Methods: The assessments were done at a treatment site within the Central Region of the Citizen, Security and Justice Program under the Ministry of National Security. Participants aged 18–30 years completed the Beck Depression Inventory II (BDI-II; Beck, Steer & Brown, 1996) over the period January 2017 to December 2018. Other measures of socio-demographic background were also collected. Data gathered from the 21 categories of the BDI-II instrument were then entered into SPSS version 20 for analysis.

Results: An analysis of the data showed that of the cross section of at-risk youths from four parishes in rural Jamaica who were sampled ($n = 154$; 61% males, 39% females), approximately 7 in every 10 participants (71.4%) reported some symptoms of depression. Results showed that there were significant differences in gender in their prevalence of depressive symptoms where females were more likely to report depressive symptoms than males ($p = 0.004$). Symptoms that were most prevalent in this sample included sad-

ness (73.9%), punishment feelings (70.7%) and guilty feelings (67.5%).

Conclusion: The use of the BDI-II to assess depressive symptoms in youths in Jamaica was an effective way to identify prevalent symptoms that impacted mental health for that population.

O-56

Electrocardiographic findings among competitive Jamaican student athletes 12–19 years: a pilot study

S Anderson-Gabriel, A Garbutt, O Olugbuyi, D Millard, L Hurlock

Department of Child and Adolescent Health, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: andrea.garbutt@uwimona.edu.jm

Objective: To identify electrocardiographic (ECG) changes in competitive athletes using the Seattle and the Refined criteria for interpretation.

Methods: This was a prospective study. The sample size was calculated using the formula $n = [Z^2P(1-P)]/d^2$ where n was the sample size and Z was the statistic corresponding to the level of confidence which was 99%. Descriptive analyses were done.

Results: There were 125 participants enrolled who were involved in a variety of sports. A positive cardiac family history was reported in 32% ($n = 40$) of the participants. Nineteen percent ($n = 24$) had positive physical findings. Sixty percent ($n = 75$) had athlete-related changes; most common were early repolarization, isolated QRS voltage criteria for left ventricular hypertrophy and sinus bradycardia. Sixteen percent ($n = 20$) of the participants had abnormal ECG findings (Refined criteria). The most common abnormalities were right ventricular hypertrophy, T-wave inversion beyond V4 and atrial or ventricular arrhythmias. Using the Seattle Criteria, 24% ($n = 30$) had abnormal ECG findings with the most common abnormality detected being T-wave inversion beyond V4, left atrial enlargement, pathological Q waves and right ventricular hypertrophy. There was no statistically significant difference between the findings using either criterion ($p = 0.06$).

Conclusion: Physiological ECG findings among a cohort of competitive Jamaican student athletes was comparable with that seen in other international studies. The most common abnormality noted was T-wave inversion beyond V4. We recommend that all competitive student athletes undergo ECG evaluation as part of pre-participation screening and that local policies on ECG interpretation be updated regularly.

O-57

Outcome of very low birth weight infants at the University Hospital of the West Indies 2012–2014

C Patterson, H Trotman

Department of Child and Adolescent Health, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: simone_csp@yahoo.com, helen.trotmanedwards@uwimona.edu.jm

Objective: To determine the outcome of very low birth weight (VLBW) infants at the University Hospital of the West Indies (UHWI).

Methods: This was a retrospective, descriptive chart review of all live singleton VLBW infants delivered at the UHWI between January 1, 2012 and December 31, 2014. Data on neonatal demographics, clinical course, outcome and associated factors, along with maternal illnesses and pre-natal steroid administration, were recorded. Descriptive analyses were performed; differences between survivors and non-survivors were determined using the Chi-square test for categorical variables and the student t test for continuous variables. Multiple logistic regression models were used to determine predictors of mortality. Statistical significance was taken at the level of $p < 0.05$.

Results: Very low birth weight neonates accounted for 3.3% of live births at UHWI for the study period. A total of 157 singleton VLBW infants were entered into the study, 84 (53.5%) of whom were female and 73 (46.5%) male. Birth weight ranged from 500 g to 1490 g, with a mean \pm SD weight of 1064.9 ± 278 g. Sixty-five (41%) neonates did not survive. Gender, birth weight, gestational age, five minute Apgar score < 7 , respiratory distress syndrome, hypothermia on admission, pulmonary haemorrhage, pneumothorax, and the need for mechanical ventilation were all associated with mortality ($p < 0.05$). Male gender, birth weight < 1000 g, pulmonary haemorrhage, pneumothorax and the need for mechanical ventilation were found to be independent predictors of mortality ($p < 0.05$).

Conclusion: The high mortality of VLBW infants at the UHWI demands the implementation of evidence-based strategies to improve survival in this vulnerable population.

O-58

Burdens on caregivers of children ages one to sixteen years living with sickle cell disease attending a specialised clinic in urban Jamaica

T Duncan Baker^{1,2}, S Chisholm Ford¹, L Wilson², M Reid², S McFarlane²

¹School of Nursing, The University of the West Indies, Mona Campus, Kingston, Jamaica and ²Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: tameka.duncanbaker@uwimona.edu.jm

Objective: To determine the level of caregiver burden experienced by caregivers of children living with sickle cell disease (SCD) and attending a clinic in urban Jamaica.

Methods: A cross-sectional study was conducted among 180 caregivers of children aged 1 to 16 years living with SCD and attending a specialized sickle cell clinic. Data were collected using the Zarit Burden Interview (ZBI) Version 1.0. Descriptive statistics were utilized to summarize data.

Results: The response rate was 100%. The majority (84.4%) of the respondents were between 20 and 49 years old. Less than half (47.8%) were employed, with 29.4% earning less than J\$20 001; 48% of the caregivers reported that they rarely or never experienced burden with their children. The ZBI overall burden score was $M = 22.12$, which indicated a mild burden. The highest burden was future expectations for the child, with 41% reporting always. About 73% indicated that they often did not have enough money to care for the child.

Conclusion: In this study, caregivers were younger and the burden mild. Factors such as stable income and family support helped reduce the burden.

O-59

Multi-element and metal concentrations in blood samples from pregnant women in the Republic of Suriname

J Wickliffe¹, M Lichtveld², E Harville³, S Drury⁴, J Roosblad⁵, J Codrington⁵, M Shafer⁶, S MacDonald-Ottevanger⁷, A van Sauers-Muller⁸, C Zijlmans⁹

¹Department of Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, Alabama, United States of America, ²Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, Pennsylvania, United States of America, ³Department of Epidemiology, Tulane University, New Orleans, Louisiana, United States of America, ⁴Department of Psychiatry & Behavioral Sciences, Tulane University, New Orleans, Louisiana, United States of America, ⁵Clinical Chemistry Laboratory, Academic Hospital Paramaribo, Paramaribo, Suriname, ⁶Wisconsin State Laboratory of Hygiene, University of Wisconsin-Madison, Madison, Wisconsin, United States of America, ⁷Department of Medical Microbiology, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands, ⁸Retired-Ministry of Agriculture, Animal Husbandry and Fisheries, Paramaribo, Suriname and ⁹Faculty of Medical Sciences, Anton de Kom University of Suriname, Paramaribo, Suriname
Email: jwickliffe@uab.edu

Objective: To examine, in Suriname, concentrations of select essential and non-essential neurotoxic elements in pregnant women from the capital Paramaribo, the major rice

producing region Nickerie, and the rainforest interior where in some areas, mercury is used in artisanal small-scale gold-mining.

Methods: Maternal whole blood, obtained during the second trimester of pregnancy, was analysed ($n = 400$) for cadmium, lead, manganese, mercury, selenium and tin using Magnetic Sector Inductively Coupled Plasma Mass Spectrometry. Data were not normally distributed. Non-parametric testing was conducted.

Results: Women from interior communities, primarily of tribal and indigenous ethnicities, had higher concentrations of lead (median = 7.0 $\mu\text{g/dL}$, interquartile range = 4.5–11.0 $\mu\text{g/dL}$, $p < 0.0001$) and mercury (13.2 $\mu\text{g/L}$, 7.1–23.3 $\mu\text{g/L}$, $p < 0.0001$) than women from Paramaribo and Nickerie (lead: 1.9 $\mu\text{g/dL}$, 1.2–2.8 $\mu\text{g/dL}$; mercury: 2.5 $\mu\text{g/L}$, 1.6–3.9 $\mu\text{g/L}$). Interior women also had the highest concentrations of the essential element selenium (238.9 $\mu\text{g/L}$, 197.4–272.8 $\mu\text{g/L}$, $p < 0.03$). Paramaribo women had lower concentrations of selenium (187.5 $\mu\text{g/L}$, 162.2–210.8 $\mu\text{g/L}$) than Nickerie women (201.3 $\mu\text{g/L}$, 181.6–222.3 $\mu\text{g/L}$, $p < 0.02$). Nickerie women had higher concentrations of manganese (17.5 $\mu\text{g/L}$, 12.9–22.7 $\mu\text{g/L}$, $p < 0.04$) and tin (1.1 $\mu\text{g/L}$, 0.7–2.2 $\mu\text{g/L}$, $p < 0.0001$) than women from other areas (manganese: 14.1 $\mu\text{g/L}$, 10.9–20.8 $\mu\text{g/L}$; tin: 0.6 $\mu\text{g/L}$, 0.4–0.8 $\mu\text{g/L}$).

Conclusion: The high levels of mercury and lead in pregnant women in Suriname, particularly in the interior, raise concerns about the health effects on both the mother and the foetus. It will be important to examine the neuroprotective potential of high selenium levels. The source of higher concentrations of manganese and tin in Nickerie may be exposure to metal-based pesticides used in rice production. Efforts are underway to examine neurodevelopmental consequences for offspring.

O-60

Nutritional status of prostate cancer survivors in Jamaica

GA Williamson¹, MD Jackson^{2,4}, CC Ragin^{3,4}, N Guthrie-Dixon¹, E Walker¹, MK Tulloch-Reid^{1,4}

¹Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Department of Community Health and Psychiatry, The University of the West Indies, Mona Campus, Kingston, Jamaica, ³Fox Chance Cancer Center, Philadelphia, United States of America and ⁴African Caribbean Cancer Consortium, Philadelphia, United States of America

Email: marshall.tullochreid@uwimona.edu.jm

Objective: To examine the effect of prostate cancer (PCa) on nutrition status of Jamaican men recruited from urology clinics in Jamaica and explore the effects of androgen deprivation therapy (ADT) on nutrition markers.

Methods: This was a cross-sectional analysis of participants from the Prostate Cancer Risk Evaluation (PROSCARE) Follow Up Study (2015–2017) and the Validation of Single Nucleotide Polymorphisms (VSNP) Study (2019). Laboratory markers of nutrition status and anthropometric measurements were conducted using standard protocols. The Chi-square and Student t-test were used for group comparisons. Logistic regression models were used to determine the independent effects of PCa and ADT on nutrition outcomes.

Results: The final sample included 143 PCa survivors (54% on ADT) and 85 PCa-free men. Men with PCa were more likely to have a history of cigarette smoking ($p = < 0.01$) and alcohol use ($p = 0.02$), while PCa-free men were more likely to report diabetes or hypertension. The prevalence of obesity was 8% in PCa survivors and 18% in PCa-free men ($p = 0.05$). Waist-hip-ratio was the only other anthropometric marker that was significantly lower in PCa survivors ($p = 0.01$). PCa survivors' ADT was associated with a higher weight-hip-ratio ($p = 0.04$). The prevalence of anaemia was similar in both groups.

Conclusion: While there were few differences in nutrition biomarkers by PCa status, there was a high prevalence of non-communicable diseases and their risk factors in the sample that increased the risk of premature mortality. Interventions for nutrition-related disorders could improve PCa survival in Jamaican men.

O-61

Regulatory compliance with the use of the preservative sodium benzoate in foods locally manufactured and those imported into Guyana

MK Cole¹, M Reid², MA Harris³

¹Food and Drug Analyst Department, Ministry of Public Health, Guyana, ²Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica and ³Pan American Health Organization, Jamaica Office

Email: marcolie37@hotmail.com, marvin.reid@uwimona.edu.jm, harrismic@paho.org

Objective: To determine if locally manufactured and imported foods were in compliance with the legal limit of sodium benzoate (SB) use.

Methods: A total of 183 food samples (92 imported and 91 locally manufactured) were analysed using High-Performance Liquid Chromatography to determine SB levels. A Knowledge, Attitude and Practice survey was administered among 31 local manufacturers, and five in-depth interviews were conducted.

Results: Of the 183 samples submitted, 22 (12%) exceeded the legal limit. The median values of SB in samples analysed were significantly higher among imported products as compared to local products ($p < 0.05$). No locally manufactured product exceeded the legal limit. If stringent European

regulations (150 mg/kg) were applied, all of the imported beverages and 92% of those locally manufactured would have exceeded the legal limit. There was a significant association ($p < 0.05$) between formal training and knowledge of the correct application of SB, and this was complemented by in-depth interview findings.

Conclusion: Not all beverages imported into Guyana were in compliance with the limit of SB use. The food safety authority in Guyana should conduct routine analysis of imported beverages to determine SB levels. The Guyana National Bureau of Standard and the CARICOM Regional Organization for Standard and Quality should review existing local and regional standards for SB use to align them with the standards of the Codex Committee on Food Additives.

O-62

Birth weight and socio-economic status influence body mass index in a cohort of Caribbean children

JA Smith¹, SP Walker¹, S Anderson², MK Tulloch-Reid¹

¹Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica and ²George Alleyne Chronic Disease Center, Caribbean Institute for Health Research, The University of the West Indies, Cave Hill, Barbados
Email: joanne.smith02@uwimona.edu.jm

Objective: We investigated parental and environmental factors that may influence body mass index (BMI) in participants in a three-island (Jamaica, St Lucia and Antigua) parenting intervention study.

Methods: Parental characteristics were obtained by questionnaire at enrolment (age 6–10 weeks) and 18 months (82.9%) for all islands. At six years, a subset of the cohort from Jamaica had the questionnaires re-administered. Weight and length/height were measured at each visit using standardized methods and BMI z-scores calculated (WHO, 2006). Mixed-effects multi-level regression analyses taking individual-level effects into account were used to identify characteristics associated with BMI z-scores. Two analyses were conducted: one restricted to the first two visits (using data for all three sites) and a second of Jamaican participants only that included the six-year visit.

Results: Of the 604 infants enrolled, 501 (82.9%) were assessed at 18 months in all islands. Approximately two thirds (2/3) of the Jamaica cohort (262 children) were reassessed at six years. In the two-visit model, birth weight ($\beta - 0.67$ per kg, $p = < 0.000$) and socio-economic status (0.1 per standard deviation, $p = 0.019$) were significant predictors of weight status. There was no significant change in these findings in the analysis restricted to the Jamaican participants. Parental characteristics were not significantly associated with BMI z-scores in any model.

Conclusion: Biological and socio-economic factors had the strongest influence on Caribbean children's BMI z-scores.

Maternal and early child health interventions could potentially moderate some of these effects.

O-63

The reliability of nutrition fact labels on sugar-sweetened beverages in Suriname

GC Cheuk A Lam

Faculty of Engineering, Anton de Kom University of Suriname, Paramaribo, Suriname

Email: gc_cheuk@hotmail.com/g.cheukalam@docent.ptc.edu.sr

Introduction: As global mortality rates from diet-related non-communicable diseases keep rising, nutrition labelling is gaining more and more attention in many countries as it is seen as a low-cost policy tool for promoting healthy diets and preventing chronic diseases. Nutrition labelling and monitoring are public health interventions which, if well designed and conducted, can positively influence the diet and health of consumers. Therefore, it is of eminent importance that nutrition information is accurately and adequately present on nutrition fact labels. Unfortunately, regulations for the standardization and monitoring of nutrition labelling are lacking in Suriname.

Objective: To conduct nutritional analyses with regards to the total sugar content of sugar-sweetened beverages (SSBs) in Suriname, and to determine how many brands under- or over-declared nutrition label values, how accurate the declared total sugar values on the nutrition fact labels of the most consumed SSB brands were in Suriname, and what percentage of the manufacturers under- or over-reported the total sugar content on the nutrition fact labels of SSBs.

Methods: Based on a consumer survey, the total sugar content values of the six most consumed soda and juice brands were subtracted from nutrition fact labels ($n = 36$). The SSBs were subjected to nutritional analyses ($n = 72$) through refractometry. To determine the accuracy of the declared values, the average measured and declared values were compared ($\text{g}/100 \text{ g}$) via two-sided tests ($\alpha = 5\%$) in SPSS.

Results: Four out of the six soda brands (67%) reported significantly lower total sugar contents compared to the declared contents on the nutrition fact labels ($p < 0.05$). Four juice brands (67%) had significantly lower, while two brands (33%) containing a Light claim had significantly higher, sugar contents than those declared on the nutrition fact labels ($p < 0.05$).

Conclusion: An investigation of nutrition labelling on SSBs in Paramaribo showed that the accuracy of total sugar content declarations varied in both sodas and juices. When compared with the study's analysis values, four soda and four juice brands (67%) over-declared their total sugar content (*ie* the nutrition fact labels stated higher total sugar contents than the average measured value). However, we

must be mindful of the chances of instrumental and observational errors. Noteworthy were the two juice brands (33%) that under-declared the total sugar contents on their nutrition fact labels contained a 'Light' claim on their package. Hence, food producers should ensure reliable declarations of nutritional values, especially when concerning the reporting of ingredients known to have adverse implications for health. Thus, a policy plan for the development, control and monitoring of nutrition labelling is of paramount importance in Suriname.

O-64

The use and understanding of nutrition labels on sugar-sweetened beverages: a study of consumers in Kingston and Saint Andrew, Jamaica

V Nurse

Department of Community Health and Psychiatry, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: vonetta.alexis@gmail.com

Objective: To determine the use, understanding and perception of nutrition labels on sugar-sweetened beverages and related socio-demographic factors among adult consumers.

Methods: This was a mixed-method cross-sectional study of 350 adult consumers aged 18–75 years who purchased sugar-sweetened beverages at supermarkets. Supermarkets were selected by single stage cluster sampling. Binary logistic regression was used to obtain the odds of use and competence in understanding the label and to identify significant predictors of nutrition label use and understanding. Qualitative data were recorded, transcribed, collated, organized into themes and interpreted.

Results: The mean age of the participants (144 males and 205 females) was 34.44 years (standard deviation = 11.63). About 65% read the nutrition label when purchasing sugar-sweetened beverages. Females, employed persons and persons with more than three children under 18 years were three times more likely to read the nutrition label (odds ratio (OR): 2.53, 95% confidence interval (CI): 1.56, 4.09; OR: 2.75, 95% CI: 1.46, 5.18 and OR: 2.65, 95% CI: 1.03, 6.83 respectively). Nutrition qualification doubled the likelihood of reading the nutrition label (OR: 1.98, 95% CI: 1.08, 3.61). About 24.6% were competent in understanding the nutrition labels. Females and persons with tertiary education were twice as likely to be competent (OR: 1.79, 95% CI: 1.03, 3.10 and OR: 1.94, 95% CI: 1.11, 3.41 respectively), and persons 30 years and younger were three times more likely (OR: 2.45, 95% CI: 1.23, 4.88) to be competent.

Conclusion: Respondents read nutrition labels but did not necessarily understand them. Targeted health education cognizant of socio-demographic factors, policy change and further research are needed to ensure that the nutrition label provides its intended benefits as a public health tool to

address the prevalence of obesity by providing consumers with information to make healthier food choices.

O-65

Health-related quality of life in adolescents with chronic illness in Jamaica: adolescent and parent reports

I Singh¹, M Asnani², A Harrison¹

¹Department of Child and Adolescent Health, The University of the West Indies, Mona Campus, Kingston, Jamaica and
²Sickle Cell Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: abigail.harrison@uwimona.edu.jm, indirasingh_09@yahoo.com, monika.parshadasnani@uwimona.edu.jm

Objective: To assess the level of agreement between adolescents' self-assessment and parent-proxy reports on the health-related quality of life (HRQOL) in Jamaican adolescents with chronic illness.

Methods: A case-control study was conducted, recruiting adolescents who were 10–19 years old with chronic illness (asthma, human immunodeficiency virus (HIV), insulin-dependent diabetes mellitus (IDDM) or sickle cell disease (SCD)) and age- and gender-matched healthy controls. Data were collected on HRQOL from adolescents and parents using the PedsQL's (Paediatric Quality of Life Scale) generic core and general well-being modules, along with socio-demographic data. Levels of parent-adolescent agreement were determined at group level by Wilcoxon Signed-Rank test and at individual level by intraclass correlation coefficient.

Results: A total of 226 parent-adolescent pairs participated: 130 cases (SCD (n = 52, 40%), HIV (n = 32, 24.6%), asthma (n = 25, 19.2%), IDDM (n = 21, 16.2%)) and 96 controls. Adolescents' mean age was 14.9 ± 2.8 years; there were 131 females (58%). Parent-proxy reports were higher among controls than cases for all scales (all $p < 0.01$), except general health. Parent-adolescent agreement was higher for cases on all scales, including total core health (cases: 0.11, 95% confidence interval (CI): -0.05, -0.27; controls: 0.04, 95% CI: -0.10, -0.20). Linear regression modelling revealed higher agreement for females (total core score ($\beta = 7.63$; CI = 0.23, 15.07; $p < 0.05$)), lower agreement for cases (total core score ($\beta = -10.24$; CI = -17.61, -2.86; $p < 0.01$)).

Conclusion: There was discrepancy between parent-proxy and adolescent self-reports of HRQOL. Healthcare providers should obtain self-reports for all adolescents but especially those with chronic illness and male adolescents, as parents may not adequately represent them.

O-66

Knowledge of pre-service and in-service teachers in identifying children with specific learning disorders and their attitudes and beliefs towards inclusive education

K Binns, A Garbutt, H Trotman, A Daley
Department of Child and Adolescent Health, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: andrea.garbutt@uwimona.edu.jm

Objective: To describe the knowledge of pre-service and in-service primary level teachers on specific learning disorders and their attitudes and beliefs towards inclusive education.

Methods: A cross-sectional descriptive study was conducted. Quantitative data were collected through structured questionnaires completed by pre-service and in-service teachers at the primary level in the Kingston Metropolitan Area. Descriptive analyses were performed, and comparisons between in-service and pre-service teachers were done.

Results: There were 350 participants: 187 pre-service teachers and 163 in-service teachers. Pre-service teachers' mean knowledge scores were 61% (year 1 pre-exposure) and 67% (years 3 and 4 post-exposure). This represented average knowledge (50–75%). The difference in their mean scores was statistically significant ($p = 0.0001$). In-service teachers' mean knowledge scores were 67% (public school) and 65% (private school). This represented average knowledge. The difference in their mean scores was not statistically significant ($p = 0.378$). Pre-service teachers' mean total knowledge score was 64% while that of in-service teachers was 66%. The difference in the mean scores was statistically significant ($p = 0.041$). Pre-service teachers held positive sentiments towards students with disabilities, especially noted in years 3 and 4 teachers, but negative attitudes towards inclusivity. In-service teachers held positive sentiments towards inclusivity. Despite this, public school teachers were more likely to segregate students with special needs.

Conclusion: Teachers had average knowledge about specific learning disabilities. Pre-service teachers had positive sentiments towards inclusivity; their attitudes towards inclusion were negative. In-service teachers held positive sentiments towards inclusivity; however, public school teachers were more likely to segregate a child with special needs.

O-67

The quality of life and social outcome of children with cerebral palsy at the Bustamante Hospital for Children in Jamaica

R Melbourne Chambers, J Tapper, O Olugbuyi, L Christian
Department of Child and Adolescent Health, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: shorniec83@yahoo.com

Objective: To assess the quality of life and social outcomes of children with cerebral palsy at the Bustamante Hospital for Children (BHC) in Jamaica and provide evidence-based results to improve social outcome.

Methods: A descriptive cross-sectional study was done at the BHC's Paediatric outpatient departments. It included children with cerebral palsy aged 2–12 years during April to August 2018. Two questionnaires were administered to caregivers, and a data extraction sheet providing demographics was completed by reviewing the medical files of the children. The information was analysed using STATA version 15. Measures of central tendencies were compared using analysis of variance.

Results: Of the 44 children enrolled in the study, 27 (61.4%) were males. Most had mixed cerebral palsy (n = 16; 36.4%) and spastic quadriplegia (n = 13; 29.5%). The average Transformed Median Likert Score for the PedsQL TM 3.0 Cerebral Palsy module declined with increasing age and in children with severe forms of cerebral palsy. Those with spastic diplegia had better quality of life in the domains of speech and communication, eating and daily activities. Educational, social and health services were not widely available to our study participants.

Conclusion: The quality of life in children with cerebral palsy at the BHC worsened with increasing age, especially in the domains of speech and communication, eating, school and daily activities. Those with spastic diplegia and lower GMFCS (Gross Motor Function Classification System) had better quality of life. Social, educational and health services were limited for these children.

O-68

The association of mode of feeding with risk of developing obesity in three-month-old Jamaican children

C Taylor-Bryan, A Wilson, N Guthrie-Dixon, L Wilson, AV Badaloo
Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: carolyn.taylorbryan@uwimona.edu.jm

Objective: To examine the association of the mode of feeding and the risk of developing obesity in a group of three-month-old Jamaican children.

Methods: Date of birth, birth weight, birth length, gender, weight, length and mode of feeding at the age of three months were recorded from the docketts of 138 children attending The University of the West Indies' Community Health and Psychiatry Clinic in 2016 and 2018 for their routine well child care visits. Mode of feeding was categorized as either 'exclusively breastfed' or 'not exclusively breastfed'. Z-scores for weight-for-length (WFL-z) and length-for-age (LFA-z) were calculated and used to assess nutritional outcomes of participants. Percentages for categorical variables and means with standard deviations for continuous variables were generated. Multinomial logistic regression analyses were used to model the relationships among the mode of feeding, WFL-z and LFA-z.

Results: Exclusive breastfeeding was recorded as the mode of feeding in 29% of the participants. About 71% of the infants were not exclusively breastfed. About 15.2% of the participants were shown to have WFL-z above 2, and 23% had LFA-z below -2. The relative risk of having WFL-z above 2 was 1.44 times higher (95% confidence interval: 0.49, 4.23) in infants not exclusively breastfed compared to those exclusively breastfed at the age of three months. The relative risk of having LFA-z below -2 was 1.54 times higher in infants not exclusively breastfed compared to those exclusively breastfed at the age of three months.

Conclusion: At the age of three months, exclusive breastfeeding contributed to a lower risk of developing childhood obesity using WFL-z and LFA-z to assess nutritional outcomes.

O-69

Associations of violent childhood experiences and psychosocial well-being with endorsement of corporal punishment among pregnant women in Jamaica

CV Lindsay, SP Walker, NG Guthrie-Dixon
Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: carene.lindsay@uwimona.edu.jm

Objective: To identify characteristics and experiences associated with the endorsement of spanking to discipline children by pregnant Jamaican women.

Methods: A convenience sample of 152 pregnant women aged 18–39 years attending antenatal clinics in Kingston were interviewed. Exposure to violent childhood experiences and intimate partner violence (IPV) was obtained by computer-assisted self-interviewing; all other measures were obtained by computer-aided personal interviews. Views on spanking were measured with five items rated one to five, and high endorsement was defined as a mean score at or above 2.5. Multivariate logistic regression analyses were used to generate adjusted odds ratios (OR).

Results: A total of 80% of the pregnant women endorsed spanking as a discipline method. Univariate logistic regressions showed that women who were moderately exposed to IPV during pregnancy were 2.75 times more likely to report a high endorsement of corporal punishment compared to those with low exposure (unOR = 2.75; 95% confidence interval (CI): 1.02, 7.43). Women who did not complete secondary education were 1.64 times more likely to show a high endorsement of corporal punishment compared to women who completed secondary education (unOR = 1.64; 95% CI: 0.77, 3.47). A multivariate model controlling for completion of secondary education showed marginal change in estimates for moderate exposure to IPV during pregnancy (aOR = 2.65; 95% CI: 0.98, 7.19). Childhood exposure to violence, women's depressive symptoms and

aggressive behaviour were not associated with endorsement of spanking.

Conclusion: Women who experienced IPV during pregnancy showed a higher endorsement of corporal punishment. Evidence-based parenting programmes with an emphasis on non-violent discipline methods are necessary.

O-70

An investigation of the prevalence of computer vision syndrome in selected high school students (ages 13–15 years) in Georgetown, Guyana

A Mohammed, T Rampersuad, M Persaud, V Ramdeholl, S Viera, G Ang, E Cummings

School of Medicine, College of Medical Sciences, University of Guyana

Email: emanuel.cummings@uog.edu.gy

Objective: To investigate the presence of computer vision syndrome (CVS) in high school children and to determine their level of awareness of the condition. As digital devices are becoming a more significant part of daily life, a variety of eye complaints may be experienced. These include eye strains, headaches, dry eyes and double vision. Computer Vision Syndrome is a combination of eye- and vision-related issues associated with prolonged use of computers and other digital devices.

Methods: A cross-sectional study was conducted to assess the prevalence of CVS among 495 randomly selected high school students aged 13–15 years from selected high schools in Georgetown through the use of an administered validated questionnaire and an eye examination within Georgetown. Statistical analysis was performed using the SPSS software.

Results: About 99.4% of the students had an electronic device. More than half were on their device for a minimum of five hours per day. A third wore spectacles. About 58% of the students experienced neck, shoulder and back pain after using their electronic device. Other symptoms manifested included eye strain, headache, light/glare sensitivity and blurred vision.

Conclusion: It is evident that CVS was indeed prevalent among the study population. At least 50% of the students experienced at least one of the symptoms associated with CVS.

O-71

Anxiolytic and sedative/hypnotic effects of an aqueous extract of *Arachis hypogaea* testa

S Francis, A Patterson, T Clarke, M Mckoy

Department of Basic Medical Sciences, Pharmacology Section, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: shamoniafrancis@yahoo.com

Objective: To investigate the anxiolytic and sedative/hypnotic effects of an aqueous extract of *Arachis hypogaea* testa in mice.

Methods: The anxiolytic and sedative/hypnotic effects of an aqueous extract of *Arachis hypogaea* testa were evaluated using the following animal models: the Hippocratic screen test and pentobarbital-induced sleep time test for sedation/hypnosis, and the light/dark box model for anxiety. Male Swiss albino mice (20–25 g) were randomly placed into groups ($n = 6$). Groups of mice were administered saline (10 ml/kg) as the normal control, diazepam (1.5–2.5 mg/kg) as the positive control and the aqueous extract of *Arachis hypogaea* testa (30–360 mg/kg). Test agents were administered intraperitoneally. Flumazenil, a benzodiazepine site antagonist at the gamma-aminobutyric acid (GABA) receptor, was administered 15 minutes prior to the administration of diazepam or the aqueous plant extract in order to investigate the possible involvement of the GABAergic system in the mechanism.

Results: An aqueous extract of *Arachis hypogaea* testa (60 mg/kg) significantly ($p < 0.05$) increased the time spent by mice in the light compartment of the light/dark box. In the Hippocratic screen test, the aqueous extract (120 and 240 mg/kg) significantly decreased motor activity, motor coordination and overall level of consciousness of the mice. Additionally, the aqueous extract (300 and 360 mg/kg) significantly decreased the onset and increased the duration of pentobarbital-induced sleep. Flumazenil (2 mg/kg) inhibited the effects of the aqueous extract of *Arachis hypogaea* testa.

Conclusion: An aqueous extract of *Arachis hypogaea* testa produced dose-dependent anxiolytic and sedative/hypnotic effects mediated *via* the GABAergic pathway.

O-72

An investigation of the anti-diabetic effect of a cocktail of oleic acid and succinic acid in a high fructose streptozotocin induced type 2 diabetic rat model

K Lattibeaudiere, RL Alexander-Lindo

Department of Basic Medical Sciences, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica

Email: kem_latty@yahoo.com

Objective: To investigate the anti-diabetic effect of a cocktail of oleic acid (OA) and succinic acid (SA) in type 2 diabetic Sprague-Dawley (S-D) rats.

Methods: Eighteen rats were made diabetic through a high-fructose diet and streptozotocin injection. They were divided into three groups: diabetic control (DC) treated with the carrier solvent, diabetic glibenclamide (DGLIB) treated with 10 mg/kg body weight (BW) glibenclamide, and diabetic treatment (DT) treated with OA + SA, 1:1, 800 mg/kg BW. An additional 12 rats were obtained and served as normal groups: normal control (NC) treated with the carrier

solvent and normal treatment (NT) treated with OA + SA, 1:1, 800 mg/kg BW. After 28 days of treatment, the animals were sacrificed, and blood and the liver removed for further analysis.

Results: The DT group showed significantly lower blood glucose levels than the DC group (25.56 ± 1.38 versus 14.48 ± 1.92 mM; $p = 0.012$). This was achieved through significant attenuation of insulin resistance, down regulation of the hepatic enzyme glucose-6-phosphatase and upregulation of glucose 6 phosphate dehydrogenase. This was reflected in a significant reduction in serum glucagon level when compared with the DC group (25.16 ± 6.82 versus 55.50 ± 10.93 pg/ml; $p < 0.05$ pg/ml). The cocktail also showed high potency in reducing oxidative stress associated with diabetes. However, the NT group showed no significant difference when compared with its control.

Conclusion: A cocktail of OA and SA offered a significant anti-diabetic effect in type 2 diabetic rats. This may potentially be a potent supplement in reducing the progressive state of diabetic patients within the Caribbean.

O-73

Patterns and distribution of dyslipidaemia and its association with other risk factors for cardiovascular disease among a sample of young and middle-aged adults in the Kingston metropolitan region of Jamaica

*O Brown, C McKenzie, M Reid, S McFarlane
Caribbean Institute for Health Research, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: orgen.brown@uwimona.edu.jm*

Objective: Dyslipidaemia is a significant health problem, and its association with cardiovascular disease (CVD) is well documented. The Jamaica Health and Lifestyle Survey II showed that the burden of dyslipidaemia in a nationally representative sample of Jamaicans aged 15–74 years was 11%. We examined the burden of dyslipidaemia and associated risk factors for CVD among a sample of 25- to 55-year-old adults in the Kingston and metropolitan region in Jamaica.

Methods: Data from the Gene and Environment study (GxE) were analysed using a cross-sectional design. An interviewer-administered questionnaire was completed, and anthropometric and blood pressure measurements taken. Fasting venous blood samples were collected for glucose and lipid analysis. Univariate analyses were conducted on 991 participants, and odds ratios (OR) for association of dyslipidaemia with other risk factors were obtained using logistical regression.

Results: The mean age of the participants was 38.7 ± 7.8 years. The prevalence of at least one type of dyslipidaemia was 76.7% (male 81.6%, female 75%, $p = 0.03$). The majority of the participants were obese (65%); 9% had diabetes

and 7.8% hypertension. There was a statistically significant association between obesity and all abnormal lipids. Participants with high triglycerides were twice likely (OR: 2.4; confidence interval (CI): 1.6, 3.5) to be obese and four times likely to have diabetes (OR: 3.8; CI: 2.1, 6.9). Dyslipidaemia was also associated with diabetes and hypertension.

Conclusion: There was a high prevalence of dyslipidaemia among urban middle-aged Jamaicans. The risk factors for CVD found were consistent with that found in the published literature. Increased screening should be a priority in this population.

O-74

The association between maternal anaemia and adverse birth outcomes in Suriname: findings from the CCREOH cohort study

F Abdoel Wahid^{1,2}, S Cheuk-Alam³, AD Hindori-Mohangoo^{1,4}, W Zijlmans^{1,5}, M Lichtveld¹

*¹Tulane University, New Orleans, United States of America, ²Scientific Research Center Suriname/Academic Hospital, Paramaribo, Suriname, ³Bureau of Public Health in Suriname, Paramaribo, Suriname, ⁴Perisur (Perinatal Interventions Suriname) Foundation, Paramaribo, Suriname and ⁵Faculty of Medical Sciences, Anton de Kom University of Suriname, Paramaribo, Suriname
Email: fabdoelw@tulane.edu*

Objective: To evaluate the association between maternal anaemia and adverse birth outcomes in pregnant Surinamese women enrolled in the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) study.

Methods: The study population ($n = 526$) was a sub-cohort of the CCREOH prospective longitudinal cohort study of mother/child dyads. Anaemia was explored using both the World Health Organization (WHO) definition (< 6.8 mmol/L) and the 25th percentile (< 5.7 mmol/L) haemoglobin level as cut-off points. The association between first trimester anaemia in CCREOH women and adverse birth outcomes was assessed using frequency analyses and bivariate and multivariate logistic regression analyses.

Results: The prevalence of first trimester maternal anaemia, based on the WHO and the 25th percentile cut-off points, was 65.8% and 22.6% respectively. The prevalence of adverse birth outcomes was 23.1%; stillbirth 2.4%, pre-term birth 18.1%, low birth weight 12.4%, and low Apgar score (LAS, < 7 at five minutes) 3.6%. Infants from participants with haemoglobin levels of < 6.8 mmol/L had a significantly higher risk of LAS. Anaemia (< 5.7 mmol/L) was significantly associated with low birth weight ($p = 0.014$). Living in an urban district (odds ratio (OR): 1.78; 95% confidence interval (CI): 1.00, 3.17; $p = 0.051$) and being of African descent (OR: 1.74; 95% CI: 1.10, 2.75; $p = 0.019$) were

independently associated with maternal anaemia (< 5.7 mmol/L).

Conclusion: The prevalence of anaemia in CCREOH pregnant women was considerably higher than regional and global figures, and this is of public health concern. The ongoing data analysis of the complete CCREOH cohort will further assess the association between anaemia and adverse birth outcomes and may call for targeted intervention programmes.

O-75

An assessment of linear catch-up growth in Jamaican children who were severely malnourished at one-year post-rehabilitation

*R Dwyer, C Taylor-Bryan, L Wilson, M Reid, A Badaloo
Tropical Metabolism Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica
Email: d_rayonaj@yahoo.com*

Objective: To assess linear catch-up growth up to one year post-discharge from hospital in children who recovered in weight but remained severely stunted after treatment for primary severe acute malnutrition. Stunting is impaired linear growth and is the most prevalent form of childhood undernutrition. It impedes intellectual function, physical performance and earning capacity and increases the risk of obesity.

Methods: A retrospective longitudinal study using anthropometry, age and gender obtained from the docketts of 198 children admitted to hospital, at the age of 3 to 36 months, for treatment of severe oedematous and non-oedematous malnutrition from 1976 to 1992 and followed up at 6 and 12 months post-discharge. Length/height for age Z-scores (HAZ) were derived. The children were classified as stunted where < -2 HAZ > -3 , and as severely stunted where HAZ < -3 . Data were analysed in STATA 12 using the Conditional Growth Model with a repeated measures mixed model approach.

Results: The non-oedematous patients being significantly more stunted at discharge exhibited greater gain in HAZ (0.43 SD) compared to the oedematous group (0.05 SD), but all remained stunted at one year post-discharge with HAZ < -2 . Conditional length at six months post-discharge ($\beta = 1.22$; $p = 0.01$) positively influenced length/height gain at one year post-discharge. There was no interaction of oedema group and gender with length/height gain at one year.

Conclusion: While HAZ improved, the children remained stunted. Given the negative effects of stunting in later life, interventions must therefore be focussed on achieving catch-up in length at the earliest age following post-natal stunting.

O-76

Who moves in vulnerable neighbourhoods? Positive deviance for physical activity: findings from the Jamaica Health and Lifestyle Survey 2017

*CA Cunningham-Myrie¹, KP Theall², N Younger-Coleman³, M Tulloch-Reid³, J Wiggan⁴, S McFarlane³, N Bennett³, T Ferguson³, I Govia³, A Grant⁴, K Webster-Kerr⁴, R Wilks³
¹Department of Community Health and Psychiatry, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Department of Global Community Health and Behavioral Sciences, School of Public Health and Tropical Medicine, Tulane University, United States of America, ³Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica and ⁴Ministry of Health and Wellness, Jamaica
Email: colette.cunninghammyrie@uwimona.edu.jm*

Objective: To examine the factors associated with being a positive or non-positive deviant for physical activity (PA) in a nationally representative sample of Jamaicans, who lived in vulnerable neighbourhoods perceived as having high crime and safety problems and that were also physically and socially disordered.

Methods: Secondary analysis was conducted on the Jamaica Health and Lifestyle Survey (JHLSIII), a cross-sectional nationally representative survey completed in 2017. The JHLSIII was administered to 2807 individuals aged 15 years or older in Jamaica. Regression analyses were performed to identify associations with positive deviance (defined using PA engagement of moderate to vigorous intensity) among persons living in vulnerable neighbourhoods ($n = 1478$).

Results: There was significant interaction by gender ($p < 0.2$) among education level, employment, alcohol use, depression, satisfaction with life and their association with positive deviance. Stratified models revealed that unemployed men were 63% less likely to engage in moderate to vigorous PA compared to those employed (odds ratio (OR) a: 0.37 (0.16, 0.85)) and men who were depressed were 58% less likely (ORa: 0.42 (0.17, 0.99)) to be a positive deviant compared to non-depressed men. There were no statistically significant associations found among women.

Conclusion: There were gender differences in factors associated with positive deviance for PA in vulnerable neighbourhoods in Jamaica with unemployed and depressed men being less likely to engage in moderate to vigorous intensity PA. Future studies should be done to further explore how engagement in PA is associated with these psychosocial factors, especially from a gendered perspective.

O-77

Aortic area is a novel predictor of cardiovascular disease in African-Caribbean men

AL Kuipers¹, VW Wheeler², I Miljkovic¹

¹Department of Epidemiology, University of Pittsburgh, Pittsburgh, PA, United States of America and ²Tobago Health Studies Office, Scarborough, Tobago, Trinidad and Tobago

Email: kuipers@pitt.edu

Objective: We measured aortic area at the ascending thoracic aorta (ASC), the descending thoracic aorta (DSC) and the abdominal aorta (ABD) and tested for associations with risk factors and subclinical cardiovascular disease (CVD).

Methods: This study included 279 African ancestry men from the Tobago Health Study (mean age: 64 years; range: 53–89 years). Aortic areas were measured from computed tomography (CT) of the chest and abdomen. CVD was assessed *via* carotid ultrasound, arterial calcification and pulse-wave velocity (PWV). Aortic area was tested for correlation with age, body size and blood pressures, and significant covariates were included in partial correlation models for each CVD measure.

Results: Greater age, weight, body mass index and blood pressures were correlated with greater aortic area at all locations ($p < 0.01$ for all). After full adjustment, greater ASC, DSC and ABD areas were each associated with greater carotid interadventitial diameter (all $p = 0.001$). Greater ASC was also associated with greater carotid intima-media thickness ($p = 0.009$). While ABD was associated with abdominal aortic calcification ($p = 0.001$ for presence and severity), no area was correlated with coronary artery calcification measures. Lastly, greater ABD and DSC were associated with greater PWV ($p < 0.005$ for both).

Conclusion: This is the first study to test the association of aortic size at multiple locations with established measures of CVD. DSC, which can be measured from clinical chest CTs, may be a novel indicator of arterial stiffness independent of age and blood pressures in African ancestry men.

O-78

Use of a simplified clinical audit tool to evaluate hypertension and diabetes management in primary care clinics in Jamaica

JP Duncan¹, MK Tulloch-Reid², H Reid-Jones³, JP Figueroa¹

¹Department of Community Health and Psychiatry, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Epidemiology Research Unit, The University of the West Indies, Mona Campus, Kingston, Jamaica and ³Kingston and St Andrew Health Department, Kingston, Jamaica

Email: jacqueline.duncan@uwimona.edu.jm

Objective: To assess the use of a simplified clinical audit tool to evaluate quality of care and blood pressure control among persons with hypertension (HTN) in primary care clinics.

Methods: Systematic random sampling of persons with diabetes mellitus (DM) and HTN attending five health centres in Kingston, Jamaica, was conducted. A modified Ministry of Health (MOH) paper-based audit tool, consisting of a line listing for each patient with columns for specific MOH recommended treatment guidelines, was used to capture quality of care and outcome indicators (blood pressure and glycaemic control).

Results: A total of 149 charts from five health centres were audited between January and September 2017. One hundred and thirty-eight persons (92.6%) had HTN (27 men and 111 women), and 77 persons (51.7%) had DM (14 men and 63 women). The median age was 64 years. Approximately two-thirds of persons with HTN and DM had electrolytes, lipid profile and electrocardiogram done within the last year. Few persons had height (< 5%) or fundoscopy/referral to ophthalmology (21% men and 26% women with DM) recorded. One-fifth of persons with HTN (18.5% men and 19.8% women, $p = 1.000$) had adequate blood pressure control, and 69% of persons with DM (57% men and 71% women, $p = 0.297$) had poor glycaemic control.

Conclusion: Hypertension and glycaemic control were inadequate among persons attending primary care clinics in Jamaica's capital city. Simplified clinical audits could provide important quality of care and outcome indicators without losing the meaningfulness of the data collected.

O-79

Changes in weight and glucose status reported in the Barbados Diabetes Remission Study – 2

KR Quimby¹, C George², TA Samuels³, F Browman-Jones⁴, N Unwin⁵

¹George Alleyne Chronic Disease Research Centre, Caribbean Institute for Health Research, The University of the West Indies, Cave Hill Campus, Barbados, ²Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados, ³Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica, ⁴Ministry of Health, Barbados and ⁵Global Diet and Activity Research Group, MRC Epidemiology Unit, University of Cambridge School of Clinical Medicine, United Kingdom
Email: kim.quimby@cavehill.uwi.edu

Objective: The Barbados Diabetes Remission Study – 1 (BDRS1), a clinic-based, low-calorie dietary intervention (LCD), reported significant mean weight loss (10.1 kg) with accompanying diabetes remission in 60% of the participants. Here we investigated the effectiveness of a community-based variant of the LCD.

Methods: Three faith-based organizations (FBOs) were purposively selected as community sites, and volunteer congregants were trained as community health advocates (CHAs). Congregants and other community members were

then screened for eligibility as study participants, based on age (20–70 years), glucose status (pre-diabetes or type 2 diabetes mellitus (T2DM) for < 6 years) and body mass index (= 27 kg/m²). Those enrolled participated in the 12-week LCD (840 kcal/day). Anti-diabetic medication was discontinued on day 1 of the intervention, and participants had weekly weight, glucometer and blood pressure (BP) measurements taken by the CHAs at the FBOs. HbA1C was performed at week 1 and week 12. Data were entered in the online RedCap database and analyses performed by Stata.

Results: Of the 156 persons screened, 31 participated (11 T2DM, 20 pre-diabetes; 28 females, 3 males). Mean (95% confidence interval) weight loss was 6.8 kg (5.4, 8.2), $p < 0.00001$; 7.9 kg in males *versus* 6.6 kg in females. A1C decreased from 6.6% to 6.2%, $p = 0.003$, and FBG from 6.4 to 6.0, $p = 0.004$. T2DM remission rates were 60% and 90% by A1C < 6.5% and FBG < 7 mmol/L respectively. Pre-diabetes remission was 18% and 40% by A1C < 5.7% and FBG < 5.6 respectively. Systolic BP and diastolic BP decreased by 10 mmHg ($p = 0.003$) and 8 mmHg ($p = 0.005$) respectively.

Conclusion: A community-based approach to a diabetes remission protocol is both feasible and clinically effective. Follow-up measurements are needed to determine sustainability. Adaptability to other disorders or other settings should be investigated.

O-80

The HIV epidemic in Jamaica: a need to strengthen the response

JP Figueroa¹, JP Duncan¹, A Bailey¹, N Skyers²

¹Department of Community Health and Psychiatry, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica and ²Ministry of Health and Wellness, Kingston, Jamaica

Email: peter.figueroa10@gmail.com

Objective: To review the HIV epidemic in Jamaica and explore the challenges facing the programme.

Methods: The national HIV surveillance database, the anti-retroviral treatment information system, HIV programmatic data and reports, surveys, consultant reports and published papers were reviewed, and consultations held with officials and stakeholders.

Results: HIV prevalence among adults in Jamaica was 1.5% in 2018 with an estimated 32 617 persons living with HIV (PLHIV). A total of 27 324 persons (83.8%) had been diagnosed with HIV; 12 711 (39% of all PLHIV or 46.5% of those aware of their status) were on anti-retroviral treatment in the public health sector. An estimated 61.8% of these persons were virally suppressed. In 2017, HIV prevalence among men who had sex with men was 29.6% and among female sex workers 2%. HIV prevalence among public

STI clinic attendees, prison inmates and the homeless has increased in recent years. During 2018, approximately 235 000 HIV tests were done in Jamaica, resulting in 3802 positive tests and 1165 newly diagnosed PLHIV, indicating that a quarter (27.2%) of the estimated 1600 newly infected persons in 2018 were unaware of their status.

Conclusion: The National HIV Program has slowed the spread of HIV in Jamaica but needs to strengthen the response to control the epidemic. Critical policy initiatives are needed to reduce the barriers to HIV services, ensure young persons have access to condoms and contraceptives, affirm the rights of the marginalized, and reduce stigma and discrimination. HIV treatment must be integrated into primary healthcare and pre-exposure prophylaxis introduced.

O-81

Demographic and clinical risk factors for transmission of HIV to HIV-exposed infants in Suriname

L Hoepel¹, D Stijnberg^{1,2}

¹National AIDS Program, Ministry of Health, Suriname and ²Hasselt University, Belgium

Email: gwendeluc@hotmail.com

Objective: To identify demographic and clinical factors associated with the transmission of HIV from mother to child.

Methods: A case-control study was done using routinely collected data from HIV-infected mothers and their children during pregnancy and delivery for the period January 2011 to December 2018. Cases were defined as HIV-exposed infants with at least one positive polymerase chain reaction (PCR) test. Controls were defined as HIV-exposed infants with a negative PCR test. Multivariate logistic regression analysis was conducted to examine associations between identified risk factors and HIV status of the newborns.

Results: Excluding unknown and missing outcomes, 785 HIV-exposed infants were included for 2011 to 2018. Of those, 27 (2.8%) were HIV-positive. We found that mothers using assisted reproductive technology during pregnancy had significantly reduced odds (odds ratio (OR): 0.061; confidence interval (CI): 0.026, 0.145) of mother-to-child transmission (MTCT) compared to mothers who did not. HIV-exposed infants born to HIV-infected women in the interior (OR: 3.42; CI: 1.075, 10.874) were three times more likely to be HIV-positive than those born to HIV-infected mothers from urban settings.

Conclusion: This study reiterates the importance of getting pregnant women early for prenatal care, testing for HIV and starting HIV treatment as soon as possible where necessary. Further research is needed to explain the disparity between mothers from interior and urban regions and to develop innovative strategies to address the difference in MTCT prevalence.

O-82

Pre-exposure prophylaxis use among gay bisexual men who have sex with men in Barbados

EH Augustus¹, C George², KD Rocke¹

¹George Alleyne Chronic Disease Research Centre, Caribbean Institute for Health Research, Bridgetown, Barbados and ²Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados

Email: eden.augustus@mycavehill.uwi.edu

Objective: To determine the awareness of pre-exposure prophylaxis (PrEP) of gay, bisexual and other men who have sex with men (gbMSM), and transgender males in Barbados, and barriers and facilitators to PrEP use.

Methods: A cross-sectional online survey was conducted among gbMSM and transgender men in Barbados between July and September 2019. Most men were recruited based on membership in a LGBTIQ+ community listserv in Barbados. The survey asked questions on demographics, knowledge and awareness of PrEP, HIV stigma and sexual risks. Data were mainly described using univariate and bivariate analysis.

Results: Current PrEP use was 26.6% (50/188), although 37.2% (70/188) reported a history of PrEP use. Three-quarters of the sample (141/188) were aware of PrEP. Main PrEP facilitators included confidentiality (38.8%), non-judgemental service (26.5%) and ease of access to PrEP (30.6%). Main PrEP barriers included felt stigma (45.7%), perceived side-effects (41.4%), being unaware of the PrEP programme (53.5%), perceived cost of PrEP (35.7%) and accessibility (12.7%).

Conclusion: Lack of visibility of the PrEP programme may lead to myths and misconceptions about PrEP and the PrEP programme. Barriers such as stigma attached to PrEP use should be addressed to dispel concerns related to sexual morality linked to PrEP use. These can be addressed by increasing awareness of the PrEP and the PrEP programme through public talks, and stigma may be addressed by sensitizing healthcare workers.

O-83

Prevalence and potential risk factors for peripheral neuropathy in type 2 diabetics in St Vincent and the Grenadines: a cross-sectional study

J Ibrahim, R Shanoada, B Shresthra, M Sotto, A Morris-Patterson

Trinity Medical Sciences University, Ratho Mill, Kingstown, St Vincent and the Grenadines

Email: roshanoa@gmail.com, jibrahim@trinityschoolofmedicine.org

Objective: To assess the prevalence and associated risk factors for peripheral neuropathy among type 2 diabetics in the Vincentian population.

Methods: A retrospective cross-sectional study of type 2 diabetic patients in the Calliaqua Health District was conducted. Anthropomorphic, demographic and past medical history was collected *via* physician questioning. The Michigan Neuropathic Diabetic Scoring tool was used to determine whether peripheral neuropathy was present. The diagnosis of peripheral neuropathy was confirmed by nerve conduction studies (nerve conduction velocity). Multivariate logistic regression was used to analyse the data.

Results: Data on 86 type 2 diabetic patients (32 males and 54 females) were used for analysis; 57% of the patients were determined to have peripheral neuropathy. Men were approximately twice more likely to develop peripheral neuropathy. Age, duration of disease, waist-to-hip ratio, and microprotein levels in the urine yielded statistically significant results (*p* values of 0.005, 0.031, 0.011 and 0.05, respectively).

Conclusion: Learning more about the control and progression of the diabetic population in St Vincent and the Grenadines will allow physicians and public health officials to better control common complications, reduce the incidence of diabetes-related amputations and decrease the burden of the disease.

O-84

Alpha-amylase inhibitory potential of aqueous and ethanolic extracts of *Bidens pilosa* (Spanish Needle) and *Cassia occidentalis* (Wild Dandelion)

R Simmonds, M Wellington, JE Vigilance

College of Natural and Applied Sciences, Allied Health and Nursing Office of Graduate Studies and Research, Northern Caribbean University, Mandeville, Jamaica

Email: jacqueline.vigilance@ncu.edu.jm

Objective: To determine the alpha-amylase (α -amylase) inhibitory potential of aqueous and ethanolic extracts of *Bidens pilosa* and *Cassia occidentalis*.

Methods: Leaf extracts (10–100 μ l/ml) were prepared by standard methods. Equivalent amounts of plant and α -amylase solution were added to a test tube and incubated for 10 minutes at 37°C; 0.5% starch solution was added to the mixture and further incubated for 20 minutes at 37°C. The reaction was stopped with 100 μ L of 3, 5-dinitro salicylic acid reagent, boiled for 15 minutes and cooled at ambient temperature. Then, 900 μ L distilled water was added to the reaction mixture. Absorbance of the resulting supernatant was measured at 540 nm. Maltose released was estimated using the maltose standard curve. Total flavonoid and phenolic content of the plants was estimated by the Folin-Ciocalteu and Aluminium-chloride colourimetric method.

Results: At 100 mg/ml, significant inhibition was observed in all plants extracts. The aqueous extracts of *Cassia occidentalis* had the highest inhibitory effect of 98%. Aqueous extracts of *Bidens pilosa* and ethanolic extracts of *Cassia*

occidentalis both had an inhibitory effect of 97%. Ethanolic extracts of *Bidens pilosa* had an inhibitory effect of 96%. Paired t-tests indicated that the difference in percentage inhibition among the various extracts was statistically significant ($p < 0.001$). Ethanolic extract of *Cassia occidentalis* had the highest levels of both flavonoids and phenols.

Conclusion: Aqueous and ethanolic extracts of *Bidens pilosa* and *Cassia occidentalis* showed high α -amylase inhibitory activity and therefore could affect post-prandial glucose levels.

O-85

The face of hypertension and diabetes in the Turks and Caicos Islands: a look at the socio-demographic characteristics of hospital outpatients

SD Harvey, DM Chin, KS Garland, KO Malcolm, SD Malcolm

National Epidemiology and Research Unit, Ministry of Health, Agriculture, Sports and Human Services, Turks and Caicos Islands

Email: sdmalcolm@gov.tc

Objective: To compare the socio-demographic characteristics of persons with and without type 2 diabetes (T2D) and persons with and without essential hypertension (EH) among outpatients at the Turks and Caicos Islands (TCI) Hospital.

Methods: Age, gender, island of service delivery, insurance status, and diagnosis were extracted from the 2017 TCI Hospital outpatient records. Socio-demographic characteristics were then compared among persons with *versus* without EH and with *versus* without T2D using Chi-square testing. Logistic regression was then utilized to test the associations while controlling for all other factors.

Results: A total of 914 persons with EH and 568 persons with T2D made a total of 3078 visits to the outpatient department of the TCI Hospital during the study period. A significantly higher proportion of both EH and T2D was observed among older females (EH: $.2 = 12.42$, $p = 0.001$; T2D: $.2 = 12.54$, $p = 0.001$), persons seeking care in Providenciales (EH: $.2 = 16.9$, $p = 0.001$; T2D: $.2 = 8.26$, $p = 0.001$), and persons with co-payments waived (EH: $.2 = 1292.4$, $p = 0.001$; T2D: $.2 = 1292.4$, $p = 0.004$). Age was also significantly related to EH and T2D (EH: $.2 = 1292.4$, $p = 0.001$; T2D: $.2 = 653.94$, $p = 0.001$). When controlling for all other factors, island of service delivery remained significant in both the EH (odds ratio (OR) = 0.50; 95% confidence interval (CI): 0.42, 0.60) and T2D (OR = 0.59; 95% CI: 0.47, 0.73) models. An interaction term between gender and age in both the EH (OR = 0.98; $p = 0.001$) and T2D (OR = 0.98; $p = 0.001$) models was also significant, suggesting a higher odds of disease among older women.

Conclusion: Island, age and gender (at older ages) were significant predictors for both EH and T2D, highlighting the need for policies and prevention/control interventions that are tailored to those identified at greater risk.

O-86

The profile of patients with undiagnosed type 2 diabetes mellitus in urban communities, South Trinidad, 2019–2020

K Dharamraj, J Jogie, C Chang, S Rampaul, D Roopchan, D Ramlal, D Wong

South-West Regional Health Authority, South Trinidad, Trinidad and Tobago

Email: kavita.dharamraj@gmail.com, jeremyjogie@hotmail.com, chrischang8@hotmail.com, sarahrampaul@gmail.com, dylon_roopchan@hotmail.com, daniella.ramlal@gmail.com, darienwong94@gmail.com

Objective: To profile patients with undiagnosed type 2 diabetes mellitus (T2DM) in urban communities in South Trinidad, 2019–2020.

Methods: Design: cross-sectional. Participants: 86 persons who were between 40 and 60 years old, with a body mass index of 23 kg/m², who were undiagnosed with T2DM and gave informed consent were enrolled in the study *via* consecutive convenient sampling. Settings: grocery stores and malls in urban communities, South Trinidad, from November 2019 to January 2020. Main outcome measures: glycaemic states would be assessed using HbA1c clinical cut points of $< 5.7\%$, $5.7\text{--}6.4\%$ and $\geq 6.5\%$. Statistical methods: differences in demographic, socio-economic, risk factors and clinical measurements among glycaemic states were compared using χ^2 test for categorical data and one-way analysis of variance (ANOVA) for continuous non-parametric data.

Results: A total of 86 participants were included in the analysis: 54.7% were normoglycaemic, 33.7% pre-diabetic and 11.6% newly diagnosed diabetics. The mean (standard deviation) age was 50.36 (6.36) years, with more females (77.91%) and East Indians (56.98%). Hypertension was the most common co-morbidity seen (29.07%). About 60.47% of persons had a first degree family history of T2DM. At a high risk for developing a chronic non-communicable disease were 67.44% of females with a waist:hip ratio of > 0.85 and 19.77% males with a waist:hip ratio of > 0.9 . Alcohol consumption was linked to higher glycaemic states ($p = 0.045$). However, no statistically significant correlations were found among all other risk factors assessed and glycaemic states.

Conclusion: Preliminary analysis showed no statistically significant associations for risk factors (except for alcohol consumption) among glycaemic states. However, on completion of the study, risk factors would be re-assessed with a larger sample size.

O-87

Chronic kidney disease in Jamaica: national prevalence and associated risk factors from the Jamaica Health and Lifestyle Survey 2016–2017

L Fisher¹, TS Ferguson², K Rocke³, N Guthrie-Dixon², N Younger-Coleman², MK Tulloch-Reid², SR McFarlane⁴, DK Francis⁵, NR Bennett², I Govia², C Cunningham-Myrie⁶, W Aiken⁷, J Wiggan⁸, A Grant⁸, T Davidson⁹, K Webster-Kerr⁸, RJ Wilks², the Jamaica Health and Lifestyle Survey III Investigators*

¹Department of Medicine, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica, ²Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica, ³George Alleyne Chronic Disease Research Centre, Caribbean Institute for Health Research, The University of the West Indies, Cave Hill Campus, Barbados, ⁴Tropical Metabolism Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Kingston, Jamaica, ⁵School of Health and Human Performance, Georgia College and State University, Milledgeville, GA, United States of America, ⁶Department of Community Health and Psychiatry, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica, ⁷Department of Surgery, Faculty of Medical Sciences, The University of the West Indies, Mona Campus, Kingston, Jamaica, ⁸Ministry of Health and Wellness, Jamaica and ⁹Chronic Disease and Injury Department, Surveillance, Disease Prevention & Control Division, Caribbean Public Health Agency
Email: trevor.ferguson02@uwimona.edu.jm

Objective: To estimate the prevalence of chronic kidney disease (CKD) and its association with demographic, clinical and socio-economic factors in Jamaica.

Methods: A cross-sectional analysis of 1189 Jamaican residents aged ≥ 15 years from the nationally representative Jamaica Health and Lifestyle Survey 2016–2017 was performed. Chronic kidney disease was defined as an estimated glomerular filtration rate (eGFR) of < 60 ml/minute/1.73m², using the CKD-EPI and Schwartz-Lyon equations. Exposure variables included age, gender, socio-economic status, smoking habits, body mass index, hypertension, diabetes mellitus, and self-reported sickle cell trait. Weighted prevalence estimates were determined, and logistic regression models were used to evaluate associations.

Results: The sample included 446 males and 743 females (mean \pm SD) age: 49.1 ± 18.3 years). Prevalence of CKD was 4.7% (95% confidence interval (CI): 3.5%, 6.4%), with no significant male:female difference (4.6% versus 4.8%). Compared to participants with normal eGFR, persons with CKD were older (mean ages: 60.4 versus 42.0 years; $p < 0.001$) and had higher mean systolic blood pressure (137.0 versus 127.4 mmHg; $p = 0.005$). In a multivariable logistic

regression model, higher education level (odds ratio (OR): 0.11; 95% CI: 0.02, 0.70) and current smoking (OR: 0.12; 95% CI: 0.02, 0.70) were inversely associated with CKD. Higher odds for CKD were seen for diabetes mellitus (OR: 1.75; 95% CI: 0.83, 3.68), sickle cell trait (OR: 2.38; 95% CI: 0.41, 13.77) and male gender (OR: 2.01; 95% CI: 0.79, 5.14), but these were not statistically significant. Hypertension was not associated with CKD in the final model (OR: 0.81; 95% CI: 0.39, 1.71).

Conclusion: Based on reduced eGFR, national CKD prevalence was approximately 5%. Given its association with increased morbidity and mortality, CKD was likely to place a heavy burden on the Jamaican public health system.

O-88

Vertical transmission of the Zika virus in Grenada

N Cudjoe, A Krystosik, M Fernandes, R Waechter, K Blackmon, E Grossi-Soyster, R Evans, B Pinsky, P Suresh, B Punch, G Mitchell, T Noel, C Macpherson, AD LaBeaud
Windward Islands Research and Education Foundation (WINDREF), Grenada, Stanford University, School of Medicine, Department of Pediatrics, Division of Infectious Disease, California, United States of America, Faculty of Medicine, Department of Paediatrics, University of Southampton, Southampton, United Kingdom and Nuffield Department of Women's and Reproductive Health, John Radcliffe Hospital, University of Oxford, Oxford, United Kingdom, Stanford University, School of Medicine, Department of Pathology and of Medicine, California, United States of America, Ministry of Health, Government of Grenada
Email: ncudjoe@sgu.edu

Objective: To investigate the incidence of vertical transmission of the Zika virus (ZIKV) during the initial outbreak in Grenada, West Indies.

Methods: A total of 23 Medical Stations and 6 Health Centers were visited during the ZIKV outbreak in Grenada from April 2016 to February 2017. Following informed consent, 153 pregnant women who had requested a ZIKV diagnostic test were enrolled in the study. Postpartum women ($n = 231$) who gave birth or were pregnant during the outbreak were also enrolled. Serum samples were tested for immunoglobulin G (IgG) antibodies against ZIKV via plasmonic gold (pGOLD), which has a sensitivity of 96% and specificity of 86%, and reverse transcription polymerase chain reaction (RT-PCR).

Results: A total of 113 (73.8%) of the 153 participants who were pregnant during the ZIKV outbreak and 141 (60.0%) of the 231 participants who were screened postpartum after the ZIKV outbreak were positive for ZIKV exposure. Of the 113 children born to ZIKV-exposed mothers, 2 (1.7%) infants were found to be positive for ZIKV IgG by pGOLD. Of the 123 (37.1%) children born to 122 ZIKV-unexposed

mothers (one set of twins), none were confirmed to be ZIKV-infected by pGOLD.

Conclusion: Vertical transmission of ZIKV was very low during the initial outbreak in Grenada; however, reliance on postnatal serum testing of infants raised caution due to the possibility of false negatives. Of the three ZIKV-positive children, one was clinically diagnosed with microcephaly. The incidence of vertical transmission of ZIKV compared to other arboviruses and the long-term implications for Grenadian children are discussed.

O-89

The importance of zoonotic transmission of SARS-CoV-2

V Matthew-Belmar¹, B Sharma¹, C Macpherson², T Noel², K Yearwood³, W Sylvester⁴, N Noel², E Chitan², N Cudjoe², V Alexander¹, A Alhassan¹

¹Pathobiology Department, School of Veterinary Medicine, St George's University, True Blue, St George's, Grenada,

²Windward Island Research Institute, WINDREF, St George's University, True Blue, St George's, Grenada,

³University Health Services, St George University, True Blue, St George's, Grenada and ⁴Small Animal Clinic, School of Veterinary Medicine, St George's University, True Blue, St George's, Grenada

Email: vmatthew@sgu.edu

Objective: SARS-CoV-2 has a zoonotic origin, most likely in horseshoe-nosed bats in southeast Asia. Numerous reports have shown that the virus infects dogs, cats, tigers, lions and minks. Potential zoonotic variances of the virus have shown to occur and may have significant implications for the global pandemic. The aim of this study was to screen dogs brought into Grenada along with their owners who had to quarantine in close proximity for up to two weeks.

Methods: This was a convenience study conducted from August 2020 to February 2021. Nasopharyngeal swabs were taken from the owners and their pets on arrival into Grenada and at one and two weeks after arrival. Samples were stored on ice and transported to the laboratory and processed within a few hours using qRT-PCR, targeting the E and RdRP genes respectively. Aliquots of samples were stored at -80 and shipped to the appropriate laboratory for sequence identification of the virus: the E gene sensitive for CoV and RdRP gene specific for SARS-CoV-2.

Results: Of the individuals screened, only one positive owner had a dog that was positive on the E gene but negative on the RdRP gene. The owner was positive on both the E gene and RdRP gene.

Conclusion: The single dog found infected had coronavirus which could be zoonotic with implications for human health. All cases of SARS-CoV-2 infection in companion animals had COVID-19-positive owners, and thus far there had been no evidence of transmission of SARS-CoV-2 from domestic pets to humans.

O-90

Knowledge, perceptions and prevention behaviour among visitors to a dengue endemic country: impact of participating in a longitudinal dengue study

K Brigman^{1,2}, S Uddin^{1,2}, S Bidaiasee^{1,2}, CNL Macpherson^{1,2}

¹School of Graduate Studies, St George's University, St George's, Grenada and ²Windward Islands Research and Educational Foundation, St Georges', Grenada

Email: cmacpherson@sgu.edu

Objective: To investigate the impact on knowledge, perceived risk of dengue, and prevention behaviour among graduate students who were visitors to a dengue endemic country who participated or did not participate in a longitudinal dengue study.

Methods: Data were collected by Qualtrics survey from July 1 to September 30, 2019. Following IRB approval, an 11-question questionnaire was designed and sent to over 1000 graduate students via Facebook and student email.

Results: Dengue study participants (n = 103) had a significantly higher ($p < 0.05$) knowledge score (mean = 13.02; standard deviation (SD) = +/-3.27) than non-participants (n = 67; mean = 11.01; SD = +/-3.61). The effect size of the difference in mean knowledge scores was medium (Cohen's $d = 0.584$). Multiple regression analysis revealed that males scored 1.47 points higher than females and that individuals who had 'heard about dengue' scored 2.8 points higher than those who had never heard of dengue ($R^2 = 0.096$; $F(2, 170) = 5.84$; $p < 0.05$). A Friedman Test analysis found no statistically significant difference ($p > 0.05$) between participants and non-participants regarding worry of vector borne diseases (VBDs). Each VBD's mean rank was significantly different ($p < 0.00001$). The mean rank for dengue was the highest at 5.9235. A Chi-square test of independence determined that the relationship between participants and protective behaviour was not significant: $X^2(2, n = 170) = 3.07$; $p > 0.05$.

Conclusion: Participation in the longitudinal dengue study significantly improved knowledge of the disease but did not impact behaviour to prevent infection.

O-91

Chikungunya virus infection and infant neurodevelopment

R Waechter^{1,2}, E Ingraham², R Evans², N Cudjoe², A Krytosik³, R Isaac², A Watts², TP Noël^{2,4}, B Landon^{2,5}, M Fernandes^{6,7}, V Mapp-Alexander^{2,8}, P Suresh³, G Mitchell⁹, CNL Macpherson^{2,4}, P Gérardin¹⁰, AD LaBeaud³

¹Department of Neuroscience and Physiology and Behavioral Sciences, School of Medicine, St George's University, St George's, Grenada, ²Windward Islands Research and Education Foundation, St George's, Grenada, ³Stanford University, School of Medicine, Department of Pediatrics, Division of Infectious Disease, California,

United States of America, ⁴Office of Research, St George's University, St George's, Grenada, ⁵Psychological Services Center, St George's University, St George's, Grenada, ⁶Faculty of Medicine, Department of Paediatrics, University Hospitals Southampton, University of Southampton, Southampton, United Kingdom, ⁷Nuffield Department of Women's & Reproductive Health, John Radcliffe Hospital, University of Oxford, Oxford, United Kingdom, ⁸School of Veterinary Medicine, St George's University, St George's, Grenada, ⁹Office of Chief Medical Officer, Ministry of Health, St George's, Grenada and ¹⁰INSERM CIC1410, Centre Hospitalier Universitaire de la Réunion, Saint Pierre, Réunion / Unité Mixte 134 PIMIT (Université de La Réunion, CNRS 9192, INSERM U1187, IRD 249), Sainte Clotilde, Réunion, France
Email: rwaechte@sgu.edu

Objective: To compare the neurodevelopmental outcomes between two-year-old children born to mothers who were infected (n = 485) or not infected (n = 161) with the Chikungunya virus (CHIKV) during the 2014 outbreak in Grenada.

Methods: Mother-and-child infection status was determined by serological testing (IgG and IgM) for CHIKV on average 22 months after birth. We used the Intergrowth-21st Neurodevelopment Assessment to measure child cognition, fine motor, gross motor, language and behavioural skills. We hypothesized that neurodevelopmental scores would be lower in children exposed to and/or infected with CHIKV.

Results: Only one mother in the study was infected with CHIKV during the intrapartum period. We observed no differences in neurodevelopmental outcomes between children exposed to maternal viremia *versus* children unexposed to maternal viremia while in utero. We observed no differences between exposed children whose mothers reported long *versus* short symptoms

Conclusion: Children infected with CHIKV outside of the intrapartum period experienced no significant neurodevelopmental delay at two years of age compared to their unexposed peers. These results complement those of previous studies which showed a neurodevelopmental risk only for children infected during the intrapartum period while the mother was highly viremic.

O-92

Antibacterial activity of processed and unprocessed honeys of Guyana against *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*

T Gordon, K Gordon, D Austin
Department of Biology, Faculty of Natural Sciences, University of Guyana, Turkeyen Greater Georgetown, Guyana
Email: tameka_gordon22@yahoo.com, keisha_gordon18@yahoo.com, derton12@yahoo.com

Objective: To investigate the antibacterial properties of local honey samples on *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*.

Methods: Processed and unprocessed (raw) honey were obtained from Region 4 and Region 10 in Guyana. Honey was subjected to biochemical analysis for pH, % reducing sugars and % of sucrose. Tests for the bioactive compound Saponins, Alkaloids, Phenols and Flavonoids were conducted on the honey samples. The antibacterial activity of honey at 100%, 75% and 25% concentration was assessed using the disk diffusion suspecting tests.

Results: Local honey contained Saponins and Flavonoids. Processed 100% honey from Region 10 showed the largest mean inhibition zone (5.03 ± 1.66) mm when compared to honey concentrations from Region 4. Likewise, processed and unprocessed honey from both regions possessed antibacterial activity against *Klebsiella pneumoniae* at the three concentrations tested. Inhibition zones were only observed on *Pseudomonas aeruginosa* at 100% unprocessed and 75% processed honey from Region 10.

Conclusion: Locally produced processed and unprocessed honey had antibacterial activity at 100%, 75% and 25% concentrations. *Klebsiella pneumoniae* was found to be more susceptible to the honey than *Pseudomonas aeruginosa*, and there was a statistically significant difference between the inhibition zone and the bacteria tested. These results seem to indicate that honey can be commercialized for use in treating conditions associated with bacterial pathogens.

O-93

Gay, bisexual and other men who have sex with men understanding of sexual risk in the age of PrEP and treatment as prevention: a qualitative study in Barbados

FA Best, MM Murphy
Faculty of Medical Sciences, The University of the West Indies, Cave Hill Campus, Barbados
Email: faithe.a.best@gmail.com

Objective: To explore the perception of sexual risk among gay, bisexual and other men who have sex with men (gbMSM) in Barbados in the age of biomedical prevention options.

Methods: This qualitative research study was conducted using semi-structured interviews during the period August 20 to September 23, 2020. Eleven gbMSM participants and four key informants were recruited through purposive sampling. Thematic analysis with grounded theory was used for the constant comparison of and emerging themes from the data to develop a hypothesis.

Results: The basic themes which emerged were: (a) awareness of gbMSM sexual issues; (b) precautionary actions to prevent new sexually transmitted infections (STIs)/sexually transmitted diseases or the complications to existing ones; (c) environments that encourage honest, open sexual

discussions; and (d) taking chances during sexual activity. These were further narrowed to organizing themes based on whether behaviour aligned or contradicted awareness. Age and social factors also influenced persons' behaviour.

Conclusion: gbMSM in Barbados perceived their sexual risk for HIV and STIs as low. This was exhibited through their behaviours such as engaging in protected sex and other

low-risk practices. However, these practices were not consistent and showed a misconception of perceived risk. A comprehensive understanding of sexual health is necessary for accurate perceptions of sexual risks and also for supporting behaviours. Comprehensive understanding may be achieved through improvements in messaging content and delivery.

CARIBBEAN PUBLIC HEALTH AGENCY

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