

Poster Abstracts

P – 1

Caregiver training benefits care-giving practices in children's homes in Jamaica

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Objective: To implement a caregiver training programme to improve the quality of interactions between caregivers and children and evaluate its impact on caregivers' knowledge and their interactions with the children.

Design and Methods: A two-phased intervention study in which six children's homes were paired by size and randomly assigned to intervention or control in the first phase and in the second, a revised intervention package was implemented in the control homes of phase 1. The intervention comprised ten workshops to encourage enriched interactions between caregivers and children and twice-weekly visits by a Community Health Aide to provide additional training in early stimulation and reinforce the workshop content by modelling activities. This aspect was strengthened in phase 2. Caregivers' knowledge and practices were assessed at the end and their interactions with the children observed before and after intervention.

Results: In phase 1, child development knowledge scores were similar in the two groups while knowledge of age-appropriate activities (11.25 ± 2.62 vs 6.76 ± 1.48 , $p < 0.001$) and reported care-giving practices (50.14 ± 10.07 vs 45.29 ± 7.58 , $p = 0.027$) were significantly higher in the intervention group compared with controls. The only benefit in observed behaviour was increased praise. The phase 2 intervention led to significantly fewer commands ($p < 0.001$) and improved teaching scores ($p < 0.001$). The intervention group also offered significantly more praise ($p = 0.010$), showed more love ($p < 0.001$) and played more ($p < 0.001$) with the children.

Conclusion: A low cost training programme can improve caregivers' interactions with children in care.

P – 2

Parental perceptions of childhood obesity: A Turks and Caicos Islands perspective

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Objective: To evaluate parental perceptions of obesity among elementary school students living in the Turks and Caicos Islands (TCI) by measuring factors associated with these perceptions to be used ultimately to develop long term plans for nutrition education.

Methods: One hundred and forty-seven parents of elementary-aged students participated in the study. Parents completed two questionnaires which focused on socio-demographics and parents' perceptions of their children's weight. A short nutrition education session was conducted to provide the parents with information on portion sizes, food labels and how to make healthy snacks available and accessible to children.

Results: The majority of the participating parents were: female, 40 to 49 years old, of African descent, born in the TCI, married, earned between \$15 000 and \$45 000 per year and had high school or an equivalent level of education. Many parents were overweight (36%) or obese (31%). Most parents thought their children were of normal weight (78%) and were satisfied (58%) with their children's weight. Parents were aware of the problems associated with obesity and the use of measures such as giving the children less fatty and sugary snacks and reduction of portion sizes to control body weight.

Conclusion: The majority of parents were unaware of an overweight/obesity problem in their children. Therefore, there is a need to further investigate the underlying factors associated with obesity and parental perceptions of obesity in the TCI so that the appropriate interventions can be implemented.

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Differences in the prevalence of obesity and obesity-related behaviours among adolescents in Trinidad and Tobago

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Objective: To explore differences in the prevalence of obesity among adolescents in Trinidad and Tobago by race, gender, and weight-related behaviours.

Design and Methods: In 2009, the Youth Trend Research Empowering National Development study, a self-administered study of health-related habits, was administered to students in forms 5 and 6 in 42 schools in Trinidad and Tobago. A total of 4448 (16.5% of the estimated 27 000 eligible students) completed the questionnaires. Sample demographics were representative of the target population.

The survey items addressed demographics, physical activity, and other weight-related behaviours. Height and weight were measured by trained personnel. Body mass index was calculated, and percentiles determined using Centers for Disease Control and Prevention (CDC) growth charts. Analyses were performed to determine obesity prevalence and to explore associations between obesity and race, gender, and weight-related behaviours.

Results: Of the 3618 adolescents in the study, 56.3% were female. Race: 31.9% Black-Trinidadian, 33.7% Indo-Trinidadian, and 33.4% mixed-race. Mean age was 17.6 years. The overall prevalence of obesity was 7%, but this differed by race and gender with Black-Trinidadian girls having the highest prevalence at 28.1% (> 10 times higher than the prevalence for any of the other subgroups). In keeping with this finding, on average, Black-Trinidadian girls reported significantly fewer days with 60 minutes or more of physical activity than their peers.

Conclusions: Black-Trinidadian adolescent girls have a significantly higher prevalence of obesity than their peers. This may be due in part to being less physically active.

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The prevalence of overweight and obesity in Jamaica among children in four selected high schools located in the inner city regions of Kingston

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Objective: To determine the prevalence of overweight and obesity and the associated factors among inner city children aged 12–17 years in Kingston.

Design and Methods: The study was a cross-sectional survey in which a questionnaire was used to assess dietary, economic, and lifestyle variables. Quantitative (anthropometric) data including: height, weight, waist and hip measurements were collected using the appropriate measuring instruments. The data were analyzed using SPSS 16.0 to identify the correlations between the variables.

Results: Data on 220 respondents were used for analysis (M 26.9%, F 73.1%); 13.3% of the children were classified according to body mass index (BMI) as obese, overweight 16.7%, normal weight 67% and underweight 3%. The relationship between lunch money and BMI of students was significant. Approximately 75% ate fast food or snacks and 25% cooked lunch. Approximately 85% of the students participated in an extracurricular activity. Of this percentage, 66.8% were of a normal weight, 16.8% overweight and 13.2% obese. Based on the hip-waist ratio, males were at a lower risk.

Conclusions: There were established relationships between poverty, diet, physical activity and overweight and obesity in children. Effective nutrition policies and programmes are required.

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Relationship between sedentary activities, physical activity and body mass index among Bahamian adolescents in New Providence

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Objective: To examine the relationship between body mass index, sedentary behaviours and physical activity among adolescents in New Providence.

Design and Methods: This is a cross-sectional pilot study looking at students in grades 7 to 12 at two New Providence High Schools. A questionnaire was used to measure media usage and level of physical activity. Height and weight were measured and body mass index percentiles were assigned according to age and gender for analyses.

Results: Four hundred and eleven students were eligible for the study. Questionnaires were administered to 360 adolescents, thereby giving a response rate of 87.6%. Boys and girls were equally represented (50.6% and 49.4%, respectively). Overall, 15.6% of students were at risk of being overweight and 22.6% were overweight. Thirty-one per cent reported participating in moderate physical activity > five days per week, 49% reported

participating in vigorous physical activity > three days per week, 32% reported participating in strength training > three days per week, and 46% reported watching television > four hours per school day. There was no statistically significant relationship between body mass index, sedentary behaviours and physical activity.

Conclusion: The prevalence of at-risk and overweight adolescents was high. Additionally, levels of sedentary activities were also high, while levels of physical activity were low.

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Weight perception and control behaviours among secondary students in Trinidad and Tobago

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Objective: To examine gender differences in perceived weight status and control strategies and the relationship between such perceived status and the weight control strategies of adolescents in Trinidad and Tobago.

Design and Methods: A nationally representative sample of 4448 fifth and sixth formers was selected using two-stage cluster sampling. Data were collected through a self-administered questionnaire. Cross-classification analyses provide gender difference data whereas binary logistic regression assessed the relationship between weight status and control behaviours.

Results: Over half of the adolescents (53.7%) described their body weight as “about right”: males were more likely to do so than females (56.3% vs 51.0%). More males than females considered themselves “little or very underweight”: the opposite was true for “little or very overweight”. More females reported trying to lose weight and more males to exercise. Females were more likely to eat less or fast to lose weight. Compared to females who perceived their weight to be “just right”, underweight females were three times more likely to exercise or eat less; underweight males 2.2 times more likely to exercise, 3.3 times more likely to eat less. Using the same comparison group, overweight females were 3.3 times less likely to exercise, 3.8 times more likely to eat less; males were 5.5 times less likely to exercise and 2.3 times to eat less.

Conclusions: Adolescents with greater weight risks are less likely to use exercise for weight management. Health programmes should be sensitive to both social-psychological and gender influences on weight control behaviours.

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Evaluation of educators’ concerns with regard to the implementation of the nutrition component of the Health and Family Life Education programme at primary schools in Trinidad

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Objective: To identify the concerns, perceptions and attitudes among primary school teachers regarding the implementation of the eating and fitness component of the Health and Family Life Education (HFLE) curriculum in the St George Educational District, Trinidad.

Design and Methods: A three-stage cluster sampling design was utilized and a random sample of 21 primary school teachers was selected from each level of the three schools. A mixed method approach utilizing both qualitative and quantitative data collection was applied. A structured questionnaire and semi-structured interview guide based of the Stages of Concern Model were used to collect the data.

Results: The sample comprised 21 respondents between the ages of 23 and 59 years. The majority were females and most reported greater than 20 years’ service. The study revealed that task and impact were the two main concerns. The stages of concerns ranged from awareness to refocusing. The emergent themes to respondents’ concerns were training, time, resources, administrative support, collaboration and parental involvement.

Conclusion: Issues such as training, time, resources, administrative support, collaboration and parental involvement need to be addressed if successful implementation must take place.

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Health issues associated with test anxiety in pre-Secondary Entrance Assessment Examination children in Trinidad and Tobago

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Objective: To explore the impact of test anxiety on the physical and psychological health of grade 5 children preparing for the Secondary Entrance Assessment examination.

Methods: The study consisted of a random sample of 77 students (33 boys and 44 girls, age 10–13 years) and three

teachers from Victoria Education District. It involved the administration of four instruments to students and an interview schedule to teachers. The quantitative data analysis used descriptive statistics and the qualitative data used content analysis.

Results: Results indicated that 70% of students experienced high levels of test anxiety. Students reported that (a) they experienced more pressure from parents than from teachers and school administrators, (b) they experienced a number of physical symptoms, including stomach aches, sweaty palms, itchy nose, racing heartbeat, feeling weak and exhausted and headaches. Psychologically they feared: loss of memory, physical punishment from parents, teased at school, not finishing on time and freezing-up. Most teachers reported that a small number of students displayed a high level of test anxiety. Teachers noticed that students, who normally do well in class test, tended to do badly under examination conditions and complained of physical and emotional ailments.

Conclusions: The evidence suggests that students experienced high levels of test anxiety which is manifested negatively. There were no strategies in the educational system to help students cope with test anxiety and its effects. It is recommended that schools teach test-taking coping skills and techniques. Parents, teachers and government must play a more supportive role.

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Dental anxiety/fear among children aged 10 to 16 years in a dental hospital in Trinidad

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Objective: This study aimed to investigate levels of dental anxiety among Trinidad and Tobago children aged 10–16 years.

Design and Methods: The Dental Fear Survey Schedule-short form (DFSS-SF) questionnaire was administered to patients presenting for treatment at the Paediatric Emergency Clinic of the University of the West Indies School of Dentistry. Subjects were asked to rate anxiety levels in relation to eight aspects of dental care using a five-point Likert scale. A score of ≥ 23 indicates high levels of anxiety.

Results: More than a third of the sample was found to exhibit dental anxiety, with 10.7% of the sample characterized as having high levels of dental anxiety (DFSS-SF score ≥ 23). The highest mean scores for various dental procedures were for having a tooth filled

(2.06), an injection (3.26) and an extraction (3.36). The Mann Whitney U test revealed that there was no statistically significant difference in anxiety scores between the group of patients who attended the dental clinic for emergency procedures compared to the patients who attended for routine care.

Conclusion: The prevalence of dental anxiety is high in this population in relation to dental extractions and administration of local anaesthesia. Special consideration needs to be given to the management of dentally anxious children in Trinidad and Tobago.

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Knowledge of gonorrhoea and chlamydial disease in adolescents in Georgetown, Guyana – A pilot study

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Objective: To evaluate whether the conduct of a pilot study would justify the implementation of a large-scale study on adolescents' knowledge of gonorrhoea and chlamydial disease.

Design and Methods: A cross-sectional survey was conducted among 300 students aged 14 to 17 years from two public schools (a junior secondary and a senior secondary) and one private school in Georgetown. Data were collected using a self-administered questionnaire.

Results: Most respondents (81%) used the Internet at least once per day. When asked about where they had heard about chlamydial disease and gonorrhoea, most of them reported that their teacher/s was their main source (40% and 53%, respectively). Students were more likely to know more about gonorrhoea than chlamydial disease (89% vs 70%; $p < 0.05$) and the majority of them also knew that both diseases were sexually transmitted. Few students knew that they are caused by bacteria ($\approx 24\%$). When asked to identify the most common sexually transmitted infections, HIV (69%), herpes (9%) and syphilis (6%) were more popular responses than gonorrhoea (5%) and chlamydial disease (1%).

Conclusions: There is a need for a country-wide study to assess the various misconceptions about these two diseases.

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Normal ranges for acute phase reactants (interleukin-6, tumour necrosis factor alpha and C-reactive protein) in umbilical cord blood of healthy term neonates at the Mount Hope Women's Hospital, Trinidad

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Objective: To determine normal ranges for interleukin-6 (IL-6), tumour necrosis factor alpha (TNF- α) and C-reactive protein (CRP) in umbilical cord blood from healthy term neonates at the Mount Hope Women's Hospital (MHWH), Trinidad.

Design and Methods: A prospective cohort study was conducted on healthy pregnant women admitted to the MHWH during the period October 1 to December 31, 2010. Women who were term with no signs of or risk factors for sepsis were recruited into the study after informed consent was obtained. Data were collected including maternal age, antenatal and perinatal history. Umbilical cord blood samples were collected and analysed for IL-6, TNF- α and CRP. Ethics approval was obtained from the Ethics Committee, Faculty of Medical Sciences.

Results: One hundred and sixty-two samples from healthy term neonates were analysed. There were almost equal numbers of males (55%) to females (45%); 90% were > 2500 g at birth and 10% had low birth weight. The mean values for IL-6, TNF- α and CRP were 6.0 pg/mL, 5.4 pg/mL and 6.5 mg/L, respectively. Reference ranges of 0–16.4 pg/mL, 0–29.4 pg/mL and 0–12.4 mg/L were found for IL-6, TNF- α and CRP, respectively (95% CI: 11.6, 21.5 pg/mL, 24.0, 33.14 pg/mL, 8.4, 15.1 mg/L). The upper limit cut-off values for IL6, TNF- α and CRP were 16.4 pg/ml, 29.4 pg/ml and 12.4 mg/L, respectively.

Conclusion: The normal ranges for IL-6, TNF- α and CRP in umbilical cord blood for healthy term Trinidadian neonates are now available.

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Type 2 diabetes, high triglycerides, LDL and low HDL are risk factors for cardiovascular disease in patients 45 years and older in Trinidad

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Objective: To define the extent to which cardiovascular disease (CVD) risk is increased in persons ≥ 45 years old

diagnosed with Type 2 diabetes and abnormal lipid profiles, and fill in the gaps previously unexplored by other epidemiological studies.

Design and Methods: Patient records for a sample of 138 participants, males (51.4%) and females (48.6%), ≥ 45 years old with CVD were examined over a period of one year. The data were analysed to determine the link between CVD, Type 2 diabetes and abnormal lipid profiles in this Trinidadian sample.

Results: East Indian males, mean age = 60 years, had the highest CVD incidence. Triglycerides and total cholesterol levels were normal for both diabetics and non-diabetics. However, low-density lipoprotein (LDL) and very low-density lipoprotein (VLDL) levels were abnormally high and high-density lipoprotein (HDL) level was low, for both categories. There was no significant difference between CVD risk factor such as triglyceride, LDL and HDL for diabetics and non-diabetes ($p > 0.05$). The Pearson correlation of the data showed the relationship between triglycerides and glucose. The majority of participants had two uncontrolled risk factors despite being on medication; many participants possibly had metabolic syndrome.

Conclusion: It was found that 60-year-old East Indian males were at greatest risk for a cardiac event.

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The incidence of Type 1 diabetes, amongst patients registered in a teaching hospital in northern Trinidad between 2003 and 2012

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Objectives: To determine the incidence of Type 1 diabetes in Trinidad and Tobago. This paper quantifies the previously unreported incidence of this lifelong condition that generally begins in childhood.

Design and Methods: A capture-recapture method was used to obtain data both retrospectively and prospectively on the incidence of Type 1 diabetes amongst the children attending the clinic in northern Trinidad.

Results: There has been a general increase in the incidence of Type 1 diabetes over the last decade, 2003–2012. In 2011, the last completed year at the time of writing this paper, the incidence was 2.63 per 100 000. Up to and including the middle of September 2012, the incidence was 3.90 if no new cases were diagnosed and 5.20 if 2012 keeps to pattern. There was an unexplained peak in 2009. The study population displays a higher female to male ratio.

Conclusions: The chronic nature, early age of onset, pattern of increasing rate of diagnosis and serious long term

morbidity suggests that Type 1 diabetes will continue to be a critical health issue in our population. A robust database recording young people diagnosed with Type 1 diabetes should be set up. This will assist in identifying the scope and extent of Type 1 diabetes in the population as well as allow appropriate provisions of services to be provided.

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The Penal Health Centre, Trinidad, diabetes patient self-care study

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Objective: To test the feasibility of implementing a patient self-care risk assessment (PSCRA) in routine care and to use the PSCRA to identify modifiable behavioural risk factors, barriers, and educational and resource needs with regard to diabetes patient self-care, for evidence-based intervention and policy planning.

Design and Methods: A sample of 523 patients, representing 98% of registered patients with diabetes at the Penal Health Centre, consented to participation and had the PSCRA orally administered to them during their routine clinic visit. Clinical data were extracted from medical records.

Results: Diabetes and hypertension were familial diseases: 89% and 83% of patients reported family members with diabetes and high blood pressure, respectively. Behavioural risks for poor diabetes self-care were clinical depression (18% prevalence rate), high levels of medication non-adherence for diabetes, blood pressure and cholesterol medications (27%–35%) and low rates of physical and dietary behaviours. Heavy smokers and heavy alcohol users were high-risk subgroups that emerged. Familial, financial and emotional factors were reported as specific impediments to carrying out diabetes self-care. Participants rated themselves as confident in their ability to take action and to remain activated in caring for their diabetes. However, knowledge of diabetes clinical targets and behaviours was insufficient to perform self-care optimally.

Conclusion: The PSCRA yielded data needed to identify the behavioural needs of the patient population. Findings informed design of a patient self-management education and counselling programme and a targeted case management approach to addressing depression, heavy smoker, and alcohol abuse subgroups.

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An assessment of the level of knowledge about Type 2 diabetes self-care among diabetic patients and how it influences the development of diabetes-related complications

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Objective: To assess the level of knowledge about self-care among Type 2 diabetes patients and to use this information to determine whether the frequency of complications can be influenced by it.

Design and Methods: This prospective study was conducted at the West Demerara Regional Hospital. Questionnaires containing structured examination-type questions were used as the primary data collection tool for the control (patients without complications) and experiment group (patients with complications).

Results: The overall mean knowledge score of all subjects was 57.3% against the proposed pass mark of $\geq 70\%$. However, respondents of the control group demonstrated a higher level of knowledge (69.3%) about Type 2 diabetes self-care than those in the experimental group (44.2%). On average, males scored higher (59.4%) than females (55.3%). The age range scoring the highest was 35–45 years (65.4%). Persons who belonged to the “other” ethnic group scored highest (62.7%) compared to other groups. Persons with a tertiary education also scored higher than persons with lower levels of education (74.8%).

Conclusion: Respondents’ knowledge about Type 2 diabetes self-care was poor overall. However, it can be concluded that the higher the level of knowledge about Type 2 diabetes self-care, the less likely the development of diabetes-related complications as noted by the control group scoring higher. Therefore, effective health promotion and education programmes should be developed to target Type 2 diabetes persons as well as pre-diabetic and non-diabetic persons.

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Exploring patients’ and professionals’ barriers to diabetic foot care in Barbados: A qualitative interview study

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Objective: To understand barriers to diabetic foot care in Barbados in clinical and home settings relative to other concerns and priorities.

Design and Methods: We conducted 30–60 minute long semi-structured interviews with 11 health professionals and nine diabetes patients from May to August 2012. Interview participants were asked to describe how diabetic foot care was experienced and practised, the particular priority given to foot care, and knowledge and attitudes relevant to diabetic foot care. Health professionals were also asked how they negotiated issues of institutional priority setting and available resources.

Results: Three sets of barriers to diabetic foot care were identified. First, subsumed under the theme of the *priority of the 'big picture'*, health professionals reported a prioritizing of glycaemic control that tended to eclipse foot care. Also, patients' more general socio-economic concerns outside diabetes hindered self-management. Second, health professionals experienced a *priority of the 'status quo'* of professional roles that impeded changes in foot screening and care duties, and increased referrals to overstretched podiatrists. Moreover, patients' preference for private care and reluctance to pay out-of-pocket costs in the public system was experienced as a barrier. Third, patients reported a *priority of 'self-care'*, which included the need to be expert at negotiating the healthcare system in accessing scarce professional foot care appointments.

Conclusions: The findings provide a structural perspective on barriers to diabetic foot care beyond behavioural and educational concerns, and can inform local and regional initiatives to improve foot care provision.

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The epidemiology and quality of life of patients with end-stage renal disease in The Bahamas

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Objective: To determine the epidemiological features – specifically prevalence, risk factors, mortality and morbidity rates, and effectiveness of treatment for chronic kidney disease in The Bahamas. The effects on quality of life of patients with end-stage renal disease (ESRD) were also examined.

Design and Methods: A cross-sectional study was conducted in one public and two private dialysis centres out of four. Patients with ESRD on haemodialysis were interviewed by trained personnel at the bedside. Self-administered surveys were distributed to a random sample of persons without ESRD to obtain a control group. The questionnaire assessed effects on aspects of the participants' physical, emotional and mental well-being, personal

care and routine needs, social life and their overall satisfaction with the treatment.

Results: Leading causes of ESRD in The Bahamas are hypertension (HTN) 40%, diabetes mellitus (DM) 27%, polycystic kidney disease (PCKD) 7% and systemic lupus erythematosus (SLE) 3%. End-stage renal disease showed no apparent gender disparity with ages 41–50 years having the highest prevalence. There was a five-fold increase in case fatalities between the years 2004 and 2006 with another four-fold increase between the years 2010 and 2012. Morbidity rates were steadily decreasing at a rate of approximately 3.7% between 2005 and 2011, with a marked increase in 2012. Overall, patients (97%) were satisfied with treatment.

Conclusion: Emphasis is needed on primary prevention and management of chronic non-communicable diseases. Expanding current facilities, haemodialysis units and skilled workforce will assist in addressing the present problem of ESRD.

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Quality of life in chronic venous disease: A look at patients in the Cardiothoracic and Vascular Clinic, outpatient dressing room and Agape Family Medicine Clinic of the Public Hospital Authority, New Providence, The Bahamas

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Objective: To evaluate the impact of chronic venous disease (CVD) on patient-perceived quality of life (QoL) in New Providence, The Bahamas, and also to examine the risk factors associated with the disease.

Methods: A case-control study consisting of 408 patients, classified according to the clinical, aetiological, anatomical, pathophysiological (CEAP) clinical classification of CVD was conducted in three public clinics of the Public Hospital Authority in Nassau, The Bahamas. Quality of life was assessed by the generic Short-Form (SF)-36 questionnaire. An additional questionnaire developed by the principal investigator was used to gather demographic information and past medical history, and to assess possible risk factors associated with CVD. Participants' charts were reviewed to gather information on height, weight and diagnoses. A clinical examination of the lower limbs was also conducted.

Results: Participants comprised 22.5% males and 77.5% females. History of leg injury ($B_1 = -2.67, p < 0.001$) and age injury ($B_2 = 0.14, p < 0.001$) predicted the mental component QoL score and CVD status ($B_1 = -3.14, p < 0.001$); history of leg injury ($B_2 = -3.72, p = 0.004$) and age

injury ($B_3 = -0.10, p = 0.03$) predicted the physical component QoL score.

Conclusions: The debilitating disease CVD has a negative impact, reducing QoL in patients studied.

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The epidemiology of valvular heart disease in Trinidad – 2012

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Objective: The aim of this study is to describe the occurrence of valvular heart disease (VHD) in patients attending tertiary cardiac facilities in North Trinidad.

Design and Methods: We used a retrospective cohort design. Patients with VHD attending the cardiology units of the Eric Williams Medical Sciences Complex, a teaching hospital of the University of the West Indies were identified using systematic sampling. Data were collected from medical records and included age, gender, occupation, type of VHD, ejection fraction and co-morbidities.

Results: Three hundred and fifty-one patients satisfied the criteria for entry into the study. The two commonest valvular defects were mitral regurgitation (267, 76%) and tricuspid regurgitation (146, 42%). The age group ≥ 61 years had the largest proportion of cases (200, 57%). Among the co-morbidities investigated, 59.8% of patients were hypertensive, 30% had diabetes and 32% had ischaemic heart disease.

Conclusion: Valvular heart disease in Trinidad is a degenerative disease, seen in patients of increasing age mainly after the 4th decade of life. It is usually asymptomatic and the diagnosis is often made as an incidental finding.

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Prevalence of undiagnosed peripheral arterial disease in adults attending a family medicine healthcare centre, New Providence, The Bahamas

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Objective: To determine the prevalence of undiagnosed peripheral arterial disease (PAD) in adults attending a

family medicine healthcare centre, New Providence, The Bahamas.

Design and Methods: A cross-sectional study was done in 270 randomly selected patients ≥ 40 years attending the Princess Margaret Hospital's Family Medicine Clinic. Data were collected using the Edinburgh Claudication Questionnaire and Ankle Brachial Index (ABI). Patients with incompressible ankle arteries were referred for Toe Brachial Index assessment.

Results: Seven of the 270 persons screened were excluded due to previous PAD diagnosis. Females accounted for 82.1% (216/263) of the participants. Overall prevalence of undiagnosed PAD was found to be 14.1% (37/263; 95% CI: 12.1, 16.1) %, where 64.9% had a low ABI (< 0.9) and 35.1% had a high ABI (> 1.4); 90% were asymptomatic. The mean age (in years) of persons with PAD was 70.48 (± 1.90) compared to 60.41 (± 0.75) in persons without PAD ($p < 0.001$). Peripheral arterial disease in the elderly was 26.1% compared to 6.8% in non-elderly patients (Cramer's $V = 0.367, p < 0.001$).

Conclusions: The prevalence of asymptomatic undiagnosed PAD was high. The strongest association for PAD was advanced age. Ankle brachial index may be useful screening tool.

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Assessment of volume status using echocardiography in intensive care patients at the Queen Elizabeth Hospital, Barbados

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Objectives: To compare the central venous pressure (CVP) with inferior vena cava (IVC) index and other echocardiographic derived values of volume status in critically ill patients.

Design and Method: This is a prospective study on a consecutive sample of 36 patients admitted to the Surgical Intensive Care Unit of the Queen Elizabeth Hospital, who were being managed with central venous access. The following variables were recorded and analysed:

- CVP
- Volume status was classified subjectively as empty, normal, or full using echocardiography
- Left ventricular end diastolic and end systolic volumes
- Stroke volume and ejection fraction
- IVC index
- The measurements were repeated after fluid bolus in those patients considered hypovolaemic.

Results: There was no statistically significant correlation between CVP (5.8 ± 3.9 mmHg) and IVC Index ($0.26 \pm$

0.21 mmHg), or other echocardiography variables. A subset analysis in patients breathing spontaneously without positive end-expiratory pressure (PEEP) did not improve the correlation between IVC index and CVP. Significant correlation was observed amongst all variables before and after a fluid bolus. Subjective assessment of volume status is as good as invasive CVP or complicated IVC index calculations.

Conclusion: There is no one superior method of assessing volume status in critically ill patients. A trend of the individual methods is better than using isolated values. Subjective index of volume status is a simple and effective means of evaluating volume status.

P – 22

NMO-IgG antibody status: Neurological and pulmonary function in Jamaican patients with idiopathic demyelinating diseases

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Objective: To determine the epidemiology of neuromyelitis optica (NMO)-IgG antibody and lung function in Jamaican patients with central nervous system demyelinating diseases.

Design and Methods: This is a cross-sectional study of 36 patients with demyelinating disease. Neuromyelitis optica was defined by the 1999 NMO criteria and multiple sclerosis (MS) by the 2005 McDonald criteria. Data were collected by interview and notes. Serum samples were tested for NMO-IgG antibody.

Results: The mean age of onset of illness was 32.3 years. The female to male ratio was approximately 4:1. Ten patients had NMO and all were of African ethnicity; 57.1% of MS patients were of African ethnicity. The mean duration of illness in NMO patients was 2.3 ± 1.2 years and differed significantly from MS (mean = 11.7 ± 6.3 years) [$p < 0.001$]. Nine NMO patients tested positive for NMO-IgG antibody whilst none of the MS patient tested positive. The disability score was significantly different between those with and without NMO-IgG antibody (mean = 6.0 ± 2.8 vs 4.0 ± 2.4 , respectively; $p = 0.037$). The median (IQR) time lapse between optic neuritis and transverse myelitis for NMO patients was 10.0 (6.0, 24.0) months. There were significant differences between the spirometry recordings in NMO-IgG positive and NMO-IgG negative patients.

Conclusion: Neuromyelitis optica-IgG positive patients had a worse prognosis as illustrated by worse disability score, lung function and short time interval between transverse myelitis and optic neuritis. The need for

screening NMO-IgG antibody in Jamaican patients with demyelinating conditions is underscored.

P – 23

Prognostic factors in colorectal cancer in Trinidad and Tobago using Cox proportional hazards model

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Objective: To investigate and identify trends in prognostic factors for seven-year survival among patients diagnosed with colorectal cancer in Trinidad and Tobago for the years 2000–2006.

Design and Methods: Data were obtained from the Dr Elizabeth Quamina Cancer Registry of Trinidad and Tobago. Kaplan-Meier and Cox model-based analyses were done to determine survival times and probabilities for associated prognostic factors.

Results: Survival among those older than 80 years (RR = 2.50, 95% CI 1.39, 4.47, $p = 0.002$) was significantly higher compared to those 15–40 years old. East Indians (RR = 0.68, 95% CI 0.52, 0.88, $p = 0.004$) showed the highest overall survival. Patients with malignant neoplasm (RR = 6.10, 95% CI 3.27, 11.35, $p < 0.001$) had the worst overall survival at seven years (21.4%). Patients who received both surgery and chemotherapy (RR = 0.56, 95% CI 0.40, 0.78, $p = 0.001$) and patients who received both surgery and radiotherapy (RR = 0.60, 95% CI 0.39, 0.93, $p = 0.021$) had 73.3% and 68.2% overall survival at seven years.

Conclusion: Age, stage, morphology and treatment combination are significant prognostic factors for survival in colorectal cancer patients. Colorectal cancer was most common among patients of African descent and East Indians had the best survival rate. Patients in whom detection occurred when the cancer was localized had a fairly good survival rate.

P – 24

An assessment of the knowledge, attitude and practices of primary care physicians in New Providence and Grand Bahama, The Bahamas concerning colorectal cancer screening and perceived barriers thereto

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Objective: To assess knowledge, attitudes and practices (KAP) of primary care physicians (PCPs) in The Bahamas regarding colorectal cancer (CRC) screening and perceived barriers thereto.

Design and Methods: Ninety-two per cent (115/125) of known PCPs participated in this study *via* on-line Survey Monkey or hard copy questionnaire. Descriptive statistics was used to assess KAP concerning CRC screening and barriers as well as office systems used.

Results: Faecal occult blood test (FOBT) testing, immunochemical FOBT (61.7%) was indicated in 78.3% of respondents as at least “somewhat effective” to very effective. Flexible sigmoidoscopy, double contrast barium enema and virtual colonoscopy were indicated in $\geq 75\%$ as at least “somewhat effective” to very effective. Faecal DNA was indicated in 47.8% as at least “somewhat effective” to very effective. The median recommended commencement age for screening among participants was 50 years. Recommended cessation age range was 75–85 years. Median interval (years) for ordering the screenings was yearly for FOBT and faecal DNA and five yearly for flexible sigmoidoscopy and colonoscopy. Clinical evidence in the literature was the most influential in 93.1% of respondents ordering a screening test and 68.1% used verbal patient reminder systems. Barriers existed.

Conclusions: Bahamian PCPs were knowledgeable and attitudinally disposed to ordering the various CRC screening tests and are generally doing so.

P – 25

A clinical profile of breast cancer patients treated at tertiary care facilities in North Trinidad

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Objective: To determine the clinico-pathological features of breast cancer among patients admitted to cancer treatment centres in north Trinidad. The histological types, stage at presentation, and interventions were also investigated.

Design and Methods: A retrospective cohort design was used; data were collected from a review of medical records of patients meeting the entry criteria. Data on age, date of diagnosis, histological type, stage and interventions were abstracted from the medical records.

Results: Six hundred and forty patients were selected for the study and available for analysis. The annual cumulative incidence rate (CIR) of breast cancer for the calendar

years 2010 and 2011 in north Trinidad was 32.4 per 100 000 and 24.6 per 100 000 population. The age group 51–60 years had the highest proportion of cases. Breast cancer was more common in people of African origin, unemployed and married. Surgery and chemotherapy were the major interventions.

Conclusion: Breast cancer prevalence continues to be high in Trinidad.

P – 26

A review of cervical smear data at a provider laboratory in South Trinidad: 2006–2011

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Objective: To analyse cervical smear data to determine the quality of smears and diagnoses by age group before the introduction of human papillomavirus (HPV) vaccine.

Design and Methods: A retrospective review of all cervical smears at a provider laboratory in South Trinidad from 2006 to 2011 was done. The smears were taken at different locations throughout the country including primary care facilities, doctors’ private offices and mobile outreach programmes. Demographic, clinical and laboratory data were collected and descriptive analyses were performed.

Results: Virtually all the smears taken during this six-year period were of adequate quality. The smear findings indicated that the majority of smears (96.5%) were negative and this remained fairly constant over the six-year period. Of note, positive smear results were found in age groups as young as 15 years of age.

Conclusions: An organized national cervical screening programme does not exist in Trinidad. Cervical screening is opportunistic. Human papillomavirus vaccine was to be introduced in Trinidad and Tobago in secondary school aged students in 2012. It would be worth repeating this analysis of smear results after the HPV vaccination programme is established.

P – 27

Is there a case for early introduction of HPV vaccine for cervical cancer in St Kitts and Nevis?

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Objective: To determine whether there is a case for early introduction of the human papillomavirus (HPV) vaccine in St Kitts and Nevis (population 52 000).

Design and Methods: We analysed all available data on cervical cancer deaths and admissions for 2001–10 plus cervical cytology data for population coverage, slide positivity and clinical staging. We also carried out a knowledge survey and a cost benefit analysis.

Results: Cervical cancer was the leading cause of cancer admissions in 2005–2009, averaging 14 per annum with two to three deaths. The social and economic costs are very high. The overall coverage of the eligible population of St Kitts and Nevis for one smear per annum was 6–7%.

The overall slide positivity rate was 5–6% with higher rates in town compared with country clinics. The rate was higher still at 18% in a private clinic in Nevis. Half of the public is unaware of the cause of cervical cancer but two-thirds support the introduction of HPV vaccine.

Conclusions: Cervical cancer is a serious problem in St Kitts and Nevis. Incomplete uptake of cervical cytology, fear and ignorance have led to delays in diagnosis and very high costs of treatment. Cost benefit analysis makes a good case for early introduction of HPV vaccine with a potential for near eradication of cervical cancer in five years.

P – 28

Prostate cancer incidence and mortality in Trinidad and Tobago in the first decade of the twenty-first century

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Objective: To examine prostate cancer incidence and mortality trends in Trinidad and Tobago during the first decade of the 21st century.

Design and Methods: Cancer incidence and mortality data for 2000–2010 were obtained from the National Cancer Registry at the Oncology Centre of Trinidad and Tobago. Data were examined to evaluate annual incidence patterns and trends using percentages and rates. Variables measured included age at diagnosis and death, ethnicity, and stage and grade of cancer. SPSS (Statistical Package for the Social Sciences) and Microsoft Excel (version 18 for Windows) were used to produce summary statistics and other data analysis.

Results: From 2000 to 2010, a total of 4215 prostate cancer cases were reported to the National Cancer Registry with incidence rates that ranged from 17.5–83.2 per 100 000. For the same period, while 2344 persons who

were diagnosed previously with prostate cancer died, only 1713 (73.1%) had this listed as the cause of death. Mortality rates ranged from 3.3–43.0 per 100 000 with the highest incidence recorded in 2005 and the highest mortality in 2003. The mean age at incidence across all ethnicities was 76 years and the mean age at death was 77 years.

Conclusion: Prostate cancer remained the most commonly diagnosed cancer in Trinidad and Tobago in the first half of the 21st century. Low mean number of years between diagnosis and death suggest the need for new and innovative efforts aimed at earlier detection and improved patient management.

P – 29

Perception of prostate screening services among men in Trinidad and Tobago

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Objective: To explore the perception of men toward prostate screening services to identify implications for policy and practice.

Design and Methods: A qualitative study was conducted among 75 men 19–60 years old from a cross-section of sociodemographic groups in Trinidad and Tobago. Data were collected during 14 focus group discussions.

Results: Men from all age groups, particularly those from the older age groups, were aware of prostate screening services and the need for examinations. Men reported feeling responsible for maintaining their health, but were unwilling to access prostate screening services. Concerns about digital rectal examination (DRE) were universal, and spontaneously raised in discussions. Anxieties related to fear of the implications of diagnosis. More significantly, unwillingness to seek screening was related to sensitivity to the associations of the DRE with homosexual activity and an ‘assault on manhood’. In a cultural context of extreme homophobia, such cultural meanings were a barrier for most men.

Conclusion: The major barriers to accessing services in Trinidad and Tobago are cultural beliefs, not lack of knowledge. Whilst addressing homophobia may be a long term goal, in the short term, health promotion which focusses on reducing the associations of digital rectal examinations with a threat to masculinity and stresses the responsibilities of men to take care of their own health may be productive in improving outcomes in this important area of men’s sexual and reproductive health.

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Clinical findings associated with homozygous sickle cell disease in the Barbadian population – Do we need a national SCD registry?

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Objectives: To document clinical findings associated with homozygous sickle cell disease (HbSS) in Barbados to aid in implementing an HbSS database for registration and observation.

Life for individuals with HbSS is complicated by acute illnesses and progressive organ damage. Despite this knowledge, the only documented report in the Barbadian population is an incidence study in 1999.

Design and Methods: Participants with HbSS were recruited from public and private clinics and support groups. A history of clinical symptoms was taken and blood and urine samples and echocardiograms were analysed.

Results: Forty-three persons participated (29 F/14 M; age range 10–62 years); 93% had a history of ever having a painful crisis. In the past year, 45% of participants had at least one crisis. There were > 61 crises in 18 individuals. Sixty-three per cent were managed at home and the majority of the others were treated and discharged from hospital; few were admitted. All crises were treated with opioid analgesics. Thirty per cent of participants had a history of chronic leg ulceration. Thirty-six persons had urinalysis, 23% reported micro-albuminuria (urinary protein/creatinine ratio 30–300 mg/g) and 19% macro-albuminuria (> 300 mg/g). Nineteen participants had echocardiograms, 32% indicated pulmonary hypertension (tricuspid regurgitant jet velocity (TRJV) > 2.5 m/s; age range 12–50 years).

Conclusion: It is thought that the symptoms of HbSS are less severe in Barbados compared to Jamaica; here we report that the prevalence of our measured adverse events is comparable. This information suggests that centralized, routine monitoring of HbSS morbidity and outcomes to improve the HbSS evidence base in Barbados may be necessary.

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Age-related histomorphological features of pterygium in Cayman Islands

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Objectives: To study histomorphological features of pterygium and the correlation of pterygium occurrence with age in the Cayman Islands.

Design and Methods: A retrospective study of 118 cases of pterygium diagnosed in Cayman Islands during March 2009–March 2011 was conducted. Surgically excised samples of pterygium were analysed for histomorphological features and age comparisons were also made.

Results: A total of 49 cases of pterygium occurred in the 41–59-year age group (41.5%). The histopathological features that were analysed were as follows: inflammation, neovascularization, hyalinization, solar elastosis and haemorrhage. These features were seen mostly in persons 41–59 years of age. Epithelial atypia was also analysed. Severe dysplasia including primary acquired melanosis (PAM) and ocular surface squamous neoplasm (OSSM) were seen in 12 of 118 patients (10.1%). Solar elastosis was significantly higher in the 41–59-year age group compared to the older age group.

Conclusions: Higher incidence of histomorphological features were seen in the 41–59-year age group, especially solar elastosis, compared to the older age group. Severe dysplasia including PAM and OSSM were seen in 10.1% of cases. Hence, examination of unsuspecting pterygium appears to be mandatory. High incidence of pterygium and associated histomorphological features in the 41–59-year age group appear to be directly related to outdoor sun exposure, lack of eye protection and the high prevalence of diabetes mellitus in the Caribbean region.

P – 33

Traumatic brain injury in The Bahamas

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Objective: To analyse the general incidence of traumatic brain injury (TBI) in The Bahamas during the years 1997 to 2012.

Design and Methods: Data from the study period were obtained from the Accident and Emergency (A&E) Registry of Princess Margaret Hospital, Doctors Hospital and Rand Memorial Hospital and also from Dr Magnus Ekedede's neurosurgical log books. Measurements of TBI-related hospitalization were made based on age, gender, cause of injury and record of discharges/admissions.

Results: The male to female ratio was 3:1. Over the 16-year period, TBI has been on a steady rise in The Bahamas. This study indicates an increase in A&E visits from an average of 47 patients per month during 1997–2002, to an average of 55 patients during 2003–2009, to an average of 67 patients during 2010–2012, with an average of 627.9

TBI A&E visits annually. Of these visits, 70% were discharged home, 20% were admitted to the ward, and 10% to the Intensive Care Unit (ICU). Of the 20% admitted to the ward, 17% were discharged and 3% were transferred to the ICU due to complications. Traumatic brain injury patients cost an estimated \$7.6 million annually before they leave hospital (not including neuro-rehabilitation which averages between \$250 000 and \$500 000 for six weeks of treatment in Florida).

Conclusion: The upward trend of TBI in The Bahamas is unsustainable for any healthcare institution, facility or government-run healthcare system because the costs involved are high and the socio-economic impact on society is dramatic.

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Intensive care unit admissions for severe acute asthma in paediatric patients in Barbados

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Objectives: This study aimed to evaluate the management and risk-adjusted outcomes of children admitted to a Paediatric Intensive Care Unit (PICU) at the Queen Elizabeth Hospital in Barbados with acute, severe, life-threatening asthma.

Design and Methods: A retrospective chart review of all patients admitted into the PICU with severe acute asthma over a five-year period was conducted. Data such as age, gender, length of stay, treatment regimes, co-morbid conditions, blood gas results, details of mechanical ventilation and complications were abstracted. The Paediatric Index of Mortality-2 (PIM-2) score on admission was calculated for each child.

Results: There were 100 admissions during the study period. However, only notes for 85 were available and complete. Among those admitted, 65.9% were male. The mean age was 6.4 ± 3.9 years; 10.6% had a past history of prematurity and lung disease, 70.6% had a positive family history of atopy and had prior admissions to hospital for asthma-related illnesses. Status asthmaticus accounted for up to 20% of PICU admissions and 10% of children had previous PICU admissions. All patients were treated with inhaled salbutamol, systemic corticosteroids and most received intravenous bronchodilators. The median length of stay in PICU was three days and the mean length of stay in hospital was six days. Only 7% required mechanical ventilation and there was a 1% mortality rate, with most patients surviving with prompt treatment in the PICU.

Conclusion: Previous hospitalizations for asthma and a history of non-compliance with prescribed medication were common factors predisposing ICU admissions for asthma.

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Factors affecting repeat visits to the emergency room by adults with asthma at the University Hospital of the West Indies and the National Chest Hospital

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Background: The World Health Organization (WHO) estimates that approximately 300 million people worldwide currently have asthma and its prevalence is expected to increase by 100 million by 2025. The prevalence of asthma in adults in Jamaica is 10.6%. Factors such as moderate to severe disease, low socio-economic status, non-adherence to medication, lack of private health insurance as well as not possessing a written asthma plan are repeatedly seen as major influences of repeat emergency room (ER) visits.

Objective: To examine the factors which are associated with repeat emergency room visits by adults with asthma in Jamaica.

Design and Methods: A cross-sectional survey was employed using quantitative and qualitative techniques. Cases were taken from the Medical Outpatient Department and the pulmonary clinic of the National Chest Hospital and the University Hospital of the West Indies, respectively.

Results: More than 43% of participants had two or more emergency room visits (repeat ER visitors). Several factors were found to be associated with repeat emergency room visits over the last 12 months. Respondents who perceived themselves as having severe asthma were more than three times likely to be a repeat ER visitor (OR = 3.1; 95% CI 1.3, 7.6). Participants who self-reported compliance (OR = 3.7; 95% CI 1.5, 9.0), or who were measured by the asthma control test (ACT) as having poor control (OR = 4.2; 95% CI 1.7, 10.2) or had been hospitalized for asthma in the last 12 months (OR = 3.6; 95% CI 1.1, 12.0) were more likely to have been a repeat ER visitor for asthma care.

Conclusion: Repeated visits to the ER were associated with severity of asthma and poor control.

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Taping matters: The effects of Kinesio taping compared with rigid taping on pain levels during a functional step-down test in athletes with patello-femoral pain syndrome

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Objective: To determine the effects of rigid taping (RT) and Kinesio taping (KT) on pain levels and functional performance in Bahamian athletes aged 18–35 years with patellofemoral pain syndrome (PFPS).

Design and Methods: Fifty-one participants (mean age 26 ± 5 years; body mass index (BMI) 24.8 ± 2.51 ; 24 males and 27 females) were tested in a randomized mixed factorial experimental study during three different knee taping conditions: no taping (NT), KT and RT (17 in each group). Pain level was measured by a numerical pain rating scale (NPRS) and step-down test score as single step-downs over 30 seconds from an eight inch block. Data were statistically analysed using paired *t*-tests, Wilcoxon signed rank tests and analysis of variance (ANOVA).

Results: Both methods of patella taping reduced perceived pain levels (46% for KT and 39% for RT) and yielded higher step-test scores (25.8 ± 3 for KT and 22.5 ± 5 for RT) than the NT group (18.2 ± 0.89). Kinesio taping vs RT groups perceived pain scores was not significant.

Conclusion: Clinical application of Kinesio taping appears to be effective in relieving immediate pain and in enhancing functional performance in athletes with PFPS.

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Analysis of reasons for blood donor deferrals at Eric Williams Medical Sciences Complex Blood Collection Centre in Trinidad and Tobago

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Objective: To analyse the reasons for deferral of prospective blood donors at The Eric Williams Medical Sciences Complex Blood Collection Centre.

Design and Methods: We reviewed data from the blood collection centre showing reasons for deferral of 488 prospective blood donors who presented to the blood bank during the period April 2011 to May 2012. These prospective donors were screened using a questionnaire, a mini-medical examination involving blood pressure, pulse, weight and temperature checks as well as a haemoglobin

assessment. Haemoglobin was assessed using the copper sulphate method in 293 subjects (60%), or the HemoCue Hb201+ machine for 195 subjects (40%). Descriptive analysis of the results was performed.

Results: The highest reason for deferral was high blood pressure *ie* 126 prospective donors (25.8%). Other reasons included lack of sleep, 27 (5.5%), not eating before coming to blood bank, 5 (1.02%), drank alcohol/smoked prior, 9 (1.84%), tattoo/piercing, 14 (2.87%) and breast feeding and inter-current illnesses. One hundred and seventy-nine (36.7%) prospective donors were females aged 18 to 59 years. A total of 57 persons (11.7%) were deferred due to low haemoglobin; of these, 16 (28.1%) were screened using the copper sulphate method and 41 (71.9%) using the HemoCue method.

Conclusion: A high percentage of deferrals were due to reasons that would not potentially endanger the blood recipient and could be prevented. This emphasizes the need for education of the donor population prior to visiting the blood bank in order to avoid unnecessary visits.

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Surveillance of healthcare exposures in a general hospital in Barbados

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Objective: Healthcare exposures present a significant challenge for healthcare personnel, both within and outside of healthcare institutions. The objective of the present study was to review the occurrence of exposures in staff in a general hospital.

Design and Methods: Data were collected as part of routine surveillance of healthcare exposures being gathered from reports of visits of affected staff to the staff health clinic and accident and emergency department at the Queen Elizabeth Hospital during a five-year period. The total number and type of exposures which occurred were recorded and affected personnel were categorized according to occupation and clinical scenarios.

Results: Two hundred and twenty-seven exposures were documented during the period of study as classified into eight groups. The highest occurrence was among nursing staff, 77 (42%) exposures, 45 (20%) physicians, 20 (9%) medical students and 12 (5%) student nurses. Analysis by category of staff revealed that 39% of exposures took place during a nurse performed procedure and 27% during a physician performed procedure. Other categories involved were non-specific in 21 (9%), a cleaning procedure in 18 (7%) recapping of needles in 12 (5%), mucous membrane splash in 11 (5%), sustained in relation to a full sharps container in 9 (4%) and an unidentified scenario in 6 (3%).

Eighty-eight per cent were classified as being significant exposures.

Conclusion: There is a need to achieve a significant reduction in the occurrence of accidental incidental exposures for those at risk, through training, ongoing counselling and an aggressive injury prevention programme.

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Epidemiology of occupational exposures to blood borne infections among healthcare workers in Western Regional Health Authority, Jamaica

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Objectives: To determine the frequency of occupational exposure to blood borne infections of healthcare workers (HCWs), to describe their characteristics and outcome of the occupational exposures and to describe the hepatitis B immunization status.

Design and Methods: Occupational exposure to blood borne infections as reported by HCWs in the Western Regional Health Authority, Jamaica from January 2003 to December 2011 was reviewed. Data collected included category of workers affected, type of occupational exposure, institutions where exposure occurred, glove use at time of exposure, hepatitis B immunization status of affected persons and use of HIV post exposure prophylaxis (HIV-PEP).

Results: Two hundred and thirty-three occupational exposures were reported. The highest frequency of exposure was among medical and nursing staff, with female workers affected more often than their male counterparts. Needle stick injury was the occupational exposure incident most reported (74.2%). The majority of reports (78.1%) came from hospitals. The clinical areas (wards and clinics) were identified as the most common areas where exposures occurred (53.8%). One hundred and three healthcare workers were not wearing gloves at the time of the injury, of which 18% were giving intramuscular injections and 31% taking blood. One hundred and sixty-three (73%) of the affected healthcare workers reported being immunized against hepatitis B. The use of medication for HIV-PEP was highest among persons assessed as having high-risk exposures (92%).

Conclusion: There is a need for continuous sensitization and training of healthcare workers on the prevention of occupational exposure to blood borne infections, with special focus on the appropriate use of gloves.

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Knowledge, attitudes and practices of healthcare workers in the Western Regional Health Authority, regarding hepatitis B virus and immunization against hepatitis B

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Objective: To investigate the knowledge, attitudes and practices (KAP) regarding hepatitis B virus (HBV) and vaccination amongst healthcare workers (HCWs) in the Western Region Health Authority (WRHA), Jamaica.

Design and Methods: This was a cross-sectional descriptive study that utilized a self-administered questionnaire geared toward nurses and doctors at three public hospitals in Western Jamaica.

Results: Three hundred and seventy-five questionnaires were distributed and 276 were returned, giving a response rate of 73.6%. About 95% of HCWs knew that a person can get hepatitis B through a needle stick injury, tattooing and body piercing and 88% knew about mother-to-child transmission. A quarter of HCWs knew that HBV could be acquired nosocomial. Seventy-nine per cent stated HBV was more infectious than HIV; 38% did not know the effectiveness of the vaccine. Eighteen per cent did not wear face shield and 47% always used personal protective equipment when handling blood and body fluids. Eighty-one per cent completed three required doses of HBV vaccine. Healthcare workers working less than five years experienced 42.6% needle stick injuries; 50% were reluctant to report and take post exposure prophylaxis.

Conclusion: Healthcare workers need to be more aware of the risk of transmission of HBV and be compliant with the practices of universal precautions. Guidelines should be put in place to increase vaccination uptake and reduce the risk of exposure to HBV infection.

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Depression and social functioning factors among patients attending the community counselling and assessment centre and medical outpatient clinics at the Princess Margaret Hospital

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Objective: To determine the prevalence of depression, and factors associated with social functioning of persons accessing healthcare at two health treatment centres in Nassau, Bahamas.

Design and Methods: This cross-sectional study used consecutive sampling of persons 18–65 years old, attending the Community Counselling and Assessment Centre (CCAC) and Princess Margaret Hospital (PMH) health treatment centres. Instruments used to detect depression and social functioning factors were: a socio-demographic questionnaire, the Beck Depression Inventory and social functioning factors: excerpts from the Office of Population Censuses and Surveys of Psychiatric Morbidity in Great Britain. Chi-square tests, linear and logistic regression analysis were used to analyse the data.

Results: There were 289 participants; 64.7% were female, 45.3% were 18–45 years of age, 51.6% were single, and 49.8% were employed full-time. Depression prevalence was 34.3% for CCAC and 27.4% for PMH. Gender, treatment centre, divorced marital status, part-time employment and number of recent life events were statistically significantly related to depression.

Conclusion: One-third of study participants/clinic patients at CCAC and a quarter at PMH were assessed as having depression. Being female, divorced, employed part-time and experiencing more recent life stressors were found to increase risk for depression. Identifying high-risk individuals and making appropriate treatment accessible may reduce the burden and consequences of depression.

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A prospective randomized trial of pre-operative antibiotic prophylaxis in gynaecology

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Objective: To evaluate the effectiveness of pre-operative antibiotic prophylaxis for elective gynaecologic surgeries at the Georgetown Public Hospital Corporation (GPHC).

Design and Methods: Patients for elective gynaecologic surgery from July 2008 to May 2010 at GPHC were randomized to receive either a single dose of antibiotics 30 minutes prior to surgery or a seven-day course of antibiotics post-operation. They were evaluated throughout their hospital stay and at six weeks after discharge. Patients with active infection and children were excluded from the study. Sixty-six patients were excluded from the study either because of deviation from the protocol (20 patients) or unavailability of their records (46 patients).

Results: The overall incidence of surgical site infections for this study was 2.9% (95% CI: 0.4, 10.6). The rate of surgical site infections among patients who received pre-operative antibiotics was slightly higher than the control group (3.8% vs 2.4%). None of the patients who received cephazolin and cefuroxime pre-operatively had any sur-

gical site infections ($p < 0.0001$). The rate of early post-operation fever was two times higher among patients who received pre-operation prophylactic antibiotics (35% vs 14.3%). None of the patients who had clean surgeries and who had early post-operation fever developed surgical site infections.

Conclusion: Pre-operative antibiotic prophylaxis at the Georgetown Public Hospital Corporation was associated with a low rate of surgical site infections.

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Intestinal microbiota transplantation in life-threatening colitis – Case report and review

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Objective: This is a report of a case of combined Crohn's colitis with associated toxic megacolon and superimposed *Clostridium difficile* colitis treated by intestinal microbiota transplantation.

Case Presentation: A 35-year old Trinidadian woman presented with treatment-refractory colitis caused by a combination of histologically confirmed Crohn's disease and simultaneously occurring *Clostridium difficile* associated disease (CDAD) resistant to both metronidazole and vancomycin. Resolution of existing toxic megacolon was achieved through the use of repeated fecal microbiota transplantation. *Clostridium difficile* associated disease is well recognized as a more frequently occurring player on the colitis stage. Is this 'combination colitis' a unique development or is it part of the ever-changing fabric of the epidemiology of inflammatory bowel disease?

Conclusion: Fecal microbiota transplantation holds the promise of an inexpensive and effective therapeutic option for life-threatening fulminant colitis. It provides a preferred alternative to colectomy with more complete and shorter response times and an absence of adverse effects in the management of treatment refractory colitis. It is hoped that this case report and review of the prevalence, incidence, risk factors and consequences of CDAD and inflammatory bowel disease will make physicians in the region aware of the increasing occurrence of this catastrophic combination of aetiologies and be positioned to access and offer this effective treatment option.

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Multi-drug resistant *Pseudomonas aeruginosa* at Georgetown Public Hospital Corporation

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Objective: To investigate the prevalence of multi-drug resistant *Pseudomonas aeruginosa* among inpatients at the Georgetown Public Hospital Corporation (GPHC) over a five-year period.

Design and Methods: A retrospective study was carried out by examining specimen culture reports from inpatients for *Pseudomonas aeruginosa* isolates tested between January 2006 and December 2010. Data were collected on the antimicrobial susceptibility, the number of isolates from each ward and the specimen type. Patterns emerging from the testing of the first line antibiotics gentamicin (10 µg), ciprofloxacin (5 µg), ceftriaxone (30 µg), piperacillin (100 µg) and ceftazidime (30 µg), and the second line antibiotics, amikacin (30 µg), cefotaxime (30 µg) and imipenem (10 µg) were investigated.

Results: A total of 252 *P aeruginosa* isolates were recorded. Of these, 38% were susceptible to all five of the first line antibiotics while one isolate was found to be resistant to seven of the drugs. Multi-drug resistance (MDR) was exhibited by 31% of isolates and MDR rates fluctuated from year to year. The highest number of MDR isolates was from wound swabs (78%) and the surgical wards had the highest prevalence (57%) of MDR *P aeruginosa*. Resistance to ceftriaxone was the highest (55%) and the most prevalent MDR phenotype was concurrent resistance to ceftriaxone, ciprofloxacin and gentamicin in about 52% of MDR isolates. The most effective antibiotics were imipenem and amikacin.

Conclusions: Multi-drug resistant *P aeruginosa* is present in almost all of the wards and an immediate priority for the hospital administration should be improving infection control procedures and re-evaluating treatment strategies for *P aeruginosa*.

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Bloodstream infections in the Intensive Care Unit at Georgetown Public Hospital Corporation: Aetiology and antibiotic resistance patterns

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Objective: To investigate the causative agents of bloodstream infections (BSIs) in the Intensive Care Unit (ICU) at the Georgetown Public Hospital Corporation, determine their antibiotic resistance patterns and risk factors for their acquisition.

Design and Methods: Data were collected retrospectively from patients admitted into the ICU at GPHC with bacteraemia, from July 2006 to July 2010. Results from identification tests on isolates, antibiotic sensitivity testing and specific information from patient records were documented.

Results: Of the 45 isolates identified from patients with BSIs, 21 (46.7%) were Gram positive and 22 (48.9%) were Gram negative. Two isolates were identified as *Candida* spp. Only six of the 21 Gram positive isolates were recorded as BSI pathogens; the others were considered as contaminants. *Enterobacter* spp was the most frequently isolated pathogen (22%) and resistance to cefuroxime, ceftriaxone, cephalothin and augmentin was found in > 80% of Gram negative isolates. One *Citrobacter* isolate was resistant to seven antibiotics, three of four *S aureus* isolates were methicillin-resistant and both of the *Enterococcus* isolates were resistant to vancomycin. The antibiotic sensitivity patterns of the 28 isolates showed that 20 (71%) of them were multi-drug resistant (MDR). Based on available patient records, prior antibiotic treatment was found to be significantly associated with BSI caused by MDR bacteria ($p < 0.05$).

Conclusions: This study has highlighted the occurrence of antimicrobial resistance in the ICU and underscored the need for immediate improvements in record keeping and the necessity for modifying treatment regimens for patients with BSIs.

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Outbreaks of respiratory syncytial virus in long-term care geriatric hospitals in Barbados, 2010–2012

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Objective: To describe the epidemiological aspects of three outbreaks of respiratory syncytial virus (RSV) in long-term care geriatric hospitals.

Design and Methods: Epidemiological and laboratory information for each of the three outbreaks of RSV in Barbados were collected and analysed. Cases were tested for RSV, influenza and other respiratory viruses using immunofluorescence assay (IFA).

Results: From May 2010–October 2012, three outbreaks of RSV were reported at three long-term care geriatric hospitals in Barbados. One outbreak occurred from May–July while the other two outbreaks occurred between September and October. The average number of cases per outbreak was 44 (range: 16–94) and the average number of confirmed RSV cases per outbreak was six (range: 3–11). In total, 7% (11/155) of cases required transfer to an acute care hospital for treatment and 6% (10/155) of cases died. Outbreaks lasted for an average of 20 days and ill health-care workers were identified in two of the three outbreaks. The largest and most severe of the outbreaks was reported in May 2010. In total, 94 cases, including eight deaths, were identified during this outbreak investigation.

Conclusions: These outbreaks of RSV among persons in geriatric long-term care facilities highlight that RSV is not just a paediatric disease but can be a serious infection among adults and elderly patients as well. Acute and long-term care health facilities should consider the importance of prompt outbreak detection and response to include implementation of infection control measures in order to help limit disease transmission during an outbreak.

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Leptospirosis in the Caribbean during 1997–2011, with highlights on outbreaks in Dominica and St Lucia

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Objective: To describe the epidemiology of leptospirosis in the English- and Dutch-speaking Caribbean from 1997–2011, highlighting outbreaks in Dominica and St Lucia in 2010 and 2011.

Design and Methods: Number of leptospirosis cases reported to the Caribbean Epidemiology Centre (CAREC) from 1997–2011 and mortality data reported to CAREC from 2000–2008 were examined.

Results: From 1997–2011, 7794 cases of leptospirosis were reported to CAREC, ranging from a low of 280 cases in 2010 to 1288 cases in 2005. Males were reported at three times the rate of females and the 25–44-year age group (37%) was the most frequently reported age group among cases, followed by the 45–64-year age group (25%). From 2000–2008, 472 deaths were attributed to leptospirosis, with an average of 52 deaths per year and a case-fatality ratio (CFR) of 9.3%. An outbreak of leptospirosis was reported in Dominica from June 2010–December 2011 that included 33 cases and four deaths

(CFR = 12%). A majority of cases had contact with rodents and/or through poor sanitation in and around the home. An outbreak of leptospirosis was reported in St Lucia from July 2010–December 2011 that included 43 cases and six deaths (CFR = 14%). Increased flooding following Hurricane Tomas was indicated as a contributing factor in this outbreak.

Conclusions: Leptospirosis has been reported from 15 Caribbean countries in the last 15 years, with outbreaks noted during periods following hurricanes and flooding due to increased rainfall. Caribbean countries should enhance surveillance for leptospirosis, especially after periods of heavy rainfall, hurricanes or other events that lead to flooding.

P – 48

An exploratory analysis of the epidemiology of human leptospirosis cases in Barbados for the period 2007–2011

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Objectives: Using incident cases of leptospirosis in Barbados from 2007–2011, to determine their demographic characteristics, whether an epidemic occurred in 2011 and the relationship between flood prone areas and incident leptospirosis.

Design and Methods: This was a quantitative, retrospective cross-sectional study with the population being all laboratory confirmed cases of leptospirosis from 2007–2011 in Barbados, ascertained from the Barbados Leptopira Laboratory. Incidence rates were calculated using census data as denominator. Poisson regression determined the significance of the excess of cases in 2011. Geographical information system (GIS) mapped rainfall data from the Meteorological Office were used to define flood prone areas.

Results: Among the 121 incident cases of leptospirosis from 2007–2011, 14% (17/111 with gender data) were female. The highest incidence was among 25–44-year old men. Among females, there was low incidence across all age groups. The incidence rate in males was 156 (12.7, 18.9)/100 000 compared with 2.4 (1.4, 3.8)/100 000 in females. The incidence rate in urban vs rural areas was 5 and 9/100 000, respectively ($p < 0.0001$). There was an epidemic in 2011 with incidence rates 48% higher in flood prone areas.

Conclusions: Risk factors include male gender and rural flood-prone residence. Health promotion efforts should consider these findings.

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The seroprevalence of leptospirosis in at-risk occupational groups

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Objective: To determine the seroprevalence of leptospirosis among persons in at-risk occupational groups and assess levels of general knowledge, safety practices and risk behaviours in the workplace.

Design and Methods: A cross-sectional study among persons in at-risk occupations was done. Consent forms were signed, questionnaires administered and blood was drawn. Sera samples were tested for anti-leptospiral antibodies using microscopic agglutination test (MAT) followed by in-house and commercial IgM and IgG ELISA assays.

Results: Seven hundred and thirty-two persons (481 males and 251 females) ages 15–79 years participated in the study. Blood samples were obtained from 687; anti-leptospiral IgM and IgG antibodies were present in 3.2% of males and 5.8% of the females. Antibodies were evident in general workers, 24 (6%, 14.0 ± 4.6), drivers, 7 (11%, 2.9 ± 1.1) and artisans, 6 (9.1%, 2.8 ± 1.0). Eight persons were previously diagnosed with leptospirosis. Headaches (35.7%), fever (21%) and jaundice (11.8%) were common symptoms. All questions on safety and transmission risks and general knowledge were answered correctly by 31% and 5.6%, respectively. Personal protective equipment (PPE) use was noted by 75% with gloves (90.6%) and boots (75%) used most frequently. Work was the primary risk factor noted in 37% of persons.

Conclusions: Continuous educational interventions and enforcing PPE usage are required for all workers whose occupations place them at a higher risk for the acquisition of leptospirosis.

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Outbreak of staphylococcal food poisoning associated with pre-cooked ham, Bermuda, 2011

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Objective: To characterize an outbreak of staphylococcal food poisoning associated with pre-cooked ham at a catered local school breakfast event.

Design and Methods: Structured interviews of event attendees (n = 12) who reported one or more symptom

such as vomiting, diarrhoea, abdominal cramps and nausea within one to six hours of food consumption were the basis of a retrospective cohort study. Clinical specimens from ill persons, the implicated food handler and a sample of the implicated food were collected for microbiological and chemical analyses. Environmental assessments of the catering establishment were also conducted.

Results: Nine cases (75%) required emergency medical treatment. However, there were no hospitalizations or deaths. Analysis of food histories identified a statistically significant association between consumption of ham and illness (RR = 2.11, 95% CI: 1.31, 3.39, $p < 0.001$). Environmental assessments indicated that time and temperature abuse, and poor food handling practices had likely occurred during preparation of the ham. *Staphylococcus aureus* was isolated from stool specimens of ill persons, the implicated ham and the nasal swab of the asymptomatic, implicated food handler. Further testing of the *S aureus* isolates all showed positivity for staphylococcal enterotoxin A by polymerase chain reaction (PCR), were indistinguishable by pulsed-field gel electrophoresis (PFGE) and exhibited a unique PFGE pattern not before seen by the US Centers for Disease Control and Prevention (CDC).

Conclusions: This outbreak revealed a novel PFGE *S aureus* pattern and demonstrated how the integration of epidemiological, laboratory and environmental aspects in food-borne disease surveillance can result in prompt, thorough and successful outbreak investigations, thereby allowing for timely implementation of prevention and control measures.

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Importance of domestic water containers as *Aedes aegypti* breeding sites in Suriname: Implications for dengue control

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Objective: To assess *Aedes* spp larval indices in communities at risk for dengue transmission in Suriname and determine key *Aedes* breeding sites.

Design and Methods: Entomological surveys were done in five communities divided over four districts. Potential and positive *Aedes* spp mosquito breeding sites (water holding containers) were identified and recorded. The containers were categorized into types. Larval indices, the Breteau index, house index and container index were calculated. Based on frequency of positivity for *Aedes* larvae, a key container type for *Aedes* breeding was identified.

Results: A total of 1105 houses were (re-)visited between May and August 2012. The calculated indices showed that all five communities are dengue sensitive. The Breteau index (number of positive containers per 100 houses) of four out of the five communities indicated high dengue transmission risk and ranged from 105.7 to 346.6. The container type most frequently found positive was 'water storage container'. Mosquito samples taken from positive containers were all identified as *Aedes aegypti*.

Conclusion: The abundance of water storage containers in the communities results in high dengue transmission risk. National dengue control activities should include measures to reduce breeding sites in the communities. Environmental management with community participation is advised. Increased access to piped water supply should be promoted.

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Lessons learnt from surveillance during the Influenza A (H1N1) 2009 pandemic in the English and Dutch-speaking Caribbean

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Objective: To provide a summary of the regional surveillance activities conducted in response to the pandemic and document lessons learnt from these activities.

Lessons learnt: Once the first cases of pandemic influenza were identified, surveillance, including sampling of cases and laboratory testing, at the Caribbean Epidemiology Centre (CAREC) and in its 23-member countries (English- and Dutch-speaking Caribbean) was intensified. There were many lessons learnt from the response to influenza pandemic:

- All countries and regions must be prepared to detect and respond to public health emergencies in a timely manner.
- Surveillance in countries has to be efficient and timely and requires clinical, epidemiological and laboratory input in a collaborative manner.
- Surge capacity for laboratory testing should be planned for.
- A Caribbean regional laboratory network is needed to support the detection of communicable disease pathogens of concern to the region.
- Risk communication is vital to the management of a public health emergency.
- It is essential to plan for surge capacity in the event of emergencies through cross-training and networking across the region.

- International and regional collaborations are critical when managing a public health emergency.

Conclusions: The English- and Dutch-speaking Caribbean regional surveillance system responded well to the rapidly changing phases of the pandemic influenza, despite experiencing many challenges. There was good team work with high levels of commitment, as well as flexibility, at all levels. The experience of the pandemic has strengthened regional and national capacity to detect and respond to public health emergencies and outbreaks in the future.

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Determinants of HIV testing intentions among residents of a community in Trinidad

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Objective: To examine the determinants of HIV testing among residents of a community in Trinidad.

Design and Methods: A random sampling strategy was used to select participants and 186 residents participated, 50% males and 50% females, whose ages ranged from 18 to 85 years. Survey methodology was employed and data were collected through face-to-face interviews. Multiple and logistic regression were used for data analysis.

Results: Awareness, previous testing history, conditions influencing testing decisions and age contributed significantly to the prediction of testing intentions ($p < 0.001$, $R^2_{adj} = 0.30$, with confidence limits from 0.22 to 0.44). Logistic regression revealed that respondents with higher levels of awareness are 1.1 times more likely to have had an HIV test in the past than respondents with lower levels of awareness. Respondents who reported higher levels of perception of risk were 0.92 times less likely to have had an HIV test in the past than those who reported lower levels of perception of risk. Younger respondents were 0.94 times more likely to have had an HIV test in the past than older respondents.

Conclusions: Awareness, age and perception of risk are important predictors of testing intentions and behaviours. Awareness-building campaigns should target persons of varying ages and socio-cultural and socio-economic backgrounds with emphasis on older persons, as results suggest higher levels of testing among younger persons. A revised approach to HIV testing as a routine medical requirement may contribute to delinking testing from some of the negative HIV/AIDS stigma.

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Evidence of delay in sexual initiation, multiple partnerships and condom use among young people from the PAHO review of Caribbean HIV behavioural studies

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Objective: To develop a Caribbean regional profile of youth sexual behaviour associated with risk of HIV.

Design and Methods: A review of sexual behaviour surveys with youth aged 15–24 years was conducted as part of the Pan American Health Organization (PAHO) HIV Caribbean Office's *Review and Gender Analysis of Caribbean HIV Behavioural and Seroprevalence Studies*. Studies with internationally recommended indicators were prioritized. Studies were sought *via* database searches and contact with researchers and national AIDS programmes.

Results: Inter-country comparisons and longitudinal analyses were limited by lack of uniformity in study indicators. Among 15–24 year olds, most were sexually active, though most females in some countries reported they never had sex; more than half of sexually active youth reported sex before 16 years, the legal age of consent; first sex was usually with someone older, with age differences larger for females; a minority reported multiple partnerships in the past year, with higher percentages among males; condom use varied widely, but at first sex did not exceed 53% among males and 78% among females.

Conclusion: Sexually active young people are vulnerable through early sexual initiation, intergenerational sex, multiple partnerships and inconsistent condom use. Efforts to promote delay in sexual initiation, reduction in the number of sex partners and condom use should be supplemented with initiatives against harmful gender norms, child abuse and transactional sex and skills to negotiate safe sex. Standardization of survey methods to facilitate cross-study comparisons should continue and encompass additional risk factors such as transactional sex, gender-based violence, drug use and HIV treatment adherence.

P – 55

Chronic diseases in over-40 HIV positive patients in Tobago during 2003 to 2012

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Objective: To ascertain whether the standard of care related to the screening, management, care and treatment of non-communicable chronic diseases (NCDs) in HIV positive patients over 40 years of age was met and to access risk factors for cardiovascular disease as well as documenting the related morbidity and mortality in our cohort.

Design and Methods: An audit tool was designed to capture pertinent information, events and laboratory reports related to risk factors screening, diagnosis and treatment of NCDs and HIV.

Results: There were 571 identified HIV positive patients, of these, 58 died and 29 were lost to follow-up in the study period. There were 67 patients over age 40 years on presentation, 127 over 40 by January 2010. Fifty per cent had more than two co-morbidities; of these, 70% had more than four cardiovascular risk factors and at least two NCDs that needed treatment. The standard of care was met for 95% of the over-40 patients. Dyslipidaemia at 26% was the most common laboratory abnormality, followed by high blood pressure (21%) and diabetes (16%).

Conclusion: The age-related co-morbidities that arise in an older and aging HIV positive population represent an important concern and a growing challenge for Tobago Health Promotion Clinic's HIV treatment programme to provide optimal long-term HIV care, screening and treatment for NCDs and dyslipidaemia.

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Substance use in pregnancy at the San Fernando General Hospital in Trinidad

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Objective: To determine the prevalence of tobacco, alcohol, marijuana and cocaine use among mothers giving birth at the San Fernando General Hospital.

Design and Methods: All mothers giving birth at the San Fernando General Hospital, from March 1, 2009 to May 1, 2011, were invited to participate in the study. A questionnaire was administered to elicit self-reported information on use of alcohol, tobacco, marijuana and cocaine.

Meconium sample was collected from each newborn and analysed for the presence of cocaine and marijuana metabolites using direct ELISA kits (Immunoanalysis Corporation).

Results: Meconium samples (n = 624) were analysed and 493 (79%) mothers completed the questionnaire. Maternal age ranged from 15–43 years; 10% (n = 49) of respondents reported substance use as follows: alcohol (n = 49), tobacco (n = 14) and marijuana (n = 2). Reported marijuana use by father, participant (mother) and other residents at home was uniformly low (n < 5); tobacco and alcohol use were least prevalent among mothers compared to fathers and other residents. When mothers and fathers were compared, differences were six-fold and three-fold, respectively, for tobacco and alcohol. No participant reported cocaine use; however, 22 (3.6%) and 39 (6.3%) meconium samples tested positive for cocaine and marijuana, respectively.

Conclusion: Alcohol and tobacco were the most common substances used during pregnancy. Reported use *versus* meconium test results for marijuana (0.4% *versus* 6.3%) and cocaine (0% *versus* 3.6%) highlight the magnitude of under-reporting. It is recommended that meconium analysis for these substances be done on suspicion of maternal drug use.

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The emergency contraceptive pill: Knowledge, attitudes and practices of women in Barbados

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Objectives: To determine the knowledge, attitudes and practices of Barbadian women with regard to the emergency contraceptive pill (ECP).

Design and Methods: Women aged 18–44 years attending three public sector polyclinics completed a questionnaire. Sampling was in proportion to clinic size and age distribution of the population.

Results: Of 378 respondents (response rate 91%, mean age 31 years, SD ± 7.6), 86% were previously pregnant; 17, 22, 46 and 15% had 0, 1, 2–3 and ≥ 4 children, respectively; 35% indicated the last pregnancy was unplanned, 52% used contraception at last intercourse, 26% would be happy if they were pregnant, 29% reported a termination of pregnancy, 39% were aware that the ECP existed and could be used to prevent pregnancy after intercourse, and 14% had ever used them. Of the 149 women who knew ECPs existed, 23% knew the correct time limit for use, and decreasing age group ($p = 0.003$) was associated with use. Most users (66%) reported obtaining the

pill directly from a private pharmacy without a prescription. After reviewing information on the pill, 243 (64%) did not exclude using them if necessary; of these, 42% preferred to obtain them without prescription from a pharmacy, 35% from a private doctor and 23% from a polyclinic. Concerns about side effects and that the pill causes abortions were the main reasons for not intending to use the method.

Conclusions: Public education is needed to increase ECP knowledge and use. Access can be improved by making the pill officially an over-the-counter medication and available through public sector pharmacies.

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The “coolest” medicinal herbs in Trinidad

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Objectives: An ethnobotanical survey was undertaken in Trinidad to identify plants used for ‘cooling’ and fever, these related to the antiquated ‘hot/cold’ concept of humoral medicine.

Design and Methods: The survey was conducted between October 2007 and July 2008 in 50 rural communities and included face-to-face interviews with 450 households.

Results: Details on the plants being used, the part or parts being used and forms in which remedies were made were obtained. Forty-four plant species belonging to 31 families were used for ‘cooling’ in 48 out of the 50 communities with 238 citations. *Macfadyena unguis cati* (L) AH Gentry, *Stachytarpheta jamaicensis* (L) Vahl, *Senna alata* (L) Roxb, *Momordica charantia* L and *Peperomia pellucida* (L) Kunth accounted for a significant proportion of the citations (142/238; 40.9%). There were 109 citations for the treatment of fever from 41 out of 50 communities. A total of 28 plant species belonging to 19 families were identified with *Cymbopogon citratus* (DC) Staff and *Neurolaena lobata* (L) Cass accounting for 75 or 68.8% of all citations.

Conclusions: Our findings confirm that humoral medicine remains popular in rural communities throughout Trinidad. Published reports show that these plants possess antimicrobial, anti-inflammatory and related biological activities, which may be related to their traditional use in humoral medicine. However, caution must be taken as *in vitro* and animal studies cannot be easily extrapolated to humans. Clinical studies must be undertaken to determine efficacy and safety of these herbal home remedies.

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***Annona muricata* Linn (Annonaceae) [sour sop] displays moderate inhibition against major drug metabolizing enzymes: Implications for drug-herb interactions**

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Objective: To investigate drug-herb interactions between the aqueous extract of *Annona muricata* Linn (Annonaceae) [sour sop] and commonly prescribed medication metabolized by cytochrome P450 (CYP) enzymes, CYP3A4 and CYP2D6, two major drug metabolizing enzymes.

Design and Methods: The potency of *A muricata* aqueous leaf extract against the activities of CYP3A4 and CYP2D6 was evaluated using heterologously expressed CYP enzymes by a fluorimetric assay.

Results: *A muricata* was found to moderately inhibit the major drug metabolizing enzyme activities, with IC₅₀ values of 481.9 ± 45.9 µg/ml and 146.1 ± 14.2 µg/ml for CYP3A4 and CYP2D6, respectively. *A muricata* is a weaker inhibitor against CYP3A4 when compared to *Rhytidophyllum tomentosa*, *Psidium guajava*, *Symphytium officinale*, *Momordica charantia*, *Picrasma excelsa*, *Hypericum perforatum*, fish oil and coenzyme Q-10. However, it was found to be more potent against CYP2D6 activity when compared to *Rhytidophyllum tomentosa*, *Momordica charantia* and *Picrasma excelsa*.

Conclusions: The relatively weak inhibition displayed by *A muricata* on the activity of CYP3A4 in this *in vitro* assay indicates that clinically relevant drug-herb interactions are highly unlikely with medications reliant on this enzyme for their metabolism. However, a clinical trial may be necessary to conclusively determine if the moderate inhibition displayed by the same tea is likely to result in pharmacokinetic based drug adversities when administered together with medications reliant of CYP2D6 metabolism.

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Epidemiology of accidental poisoning exposures among the population of the Western Regional Health Authority, Jamaica

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Objectives: To determine the frequency of accidental poisoning exposure by age group and gender, to identify the agents involved in the exposures, to describe the

clinical presentation of those affected and to ascertain the frequency of hospitalization for those exposures.

Design and Methods: Accidental poisoning exposures reported by healthcare workers *via* notification forms in the Western Regional Health Authority in Jamaica from January 2009 to December 2011 were reviewed. Data collected included age group, type of agent, presenting symptoms and cases hospitalized.

Results: Three hundred and seventy-seven cases were notified. The majority of cases were in the < 5-year age group (65%). There were 218 (58%) males. One hundred and ten (33%) cases presented with vomiting. Other significant symptoms included; drowsiness (27 cases), burning sensation (22 cases) and weakness (17 cases). One hundred and thirteen (34%) of the cases were exposed to bleach, while other chemicals accounted for 10%. Ingestion of medications accounted for 83 (22%) of the cases. Three hundred and fifty-six (94%) were seen in secondary care facilities while 21 presented to primary care sites; 289 (77%) of the cases were admitted as part of the management while one case (0.3%) reportedly died. Investigation reports were received for 235 cases (62%). Of these, 57% were confirmed positive.

Conclusion: This study clearly showed that the prevalence of accidental poisoning continued to be high. Whilst the rate of death was low, the risk for morbidity was high. Further analysis of the factors contributing to the incidents may help in developing more effective strategies to address the problem.

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Prevalence of mental and physical health conditions in the Caribbean: A close-up of Jamaica and Guyana

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Objective: To explore prevalence and associated factors of physical and mental health in Jamaica and Guyana.

Design and Methods: We used two representative samples collected both in Jamaica and Guyana to address our research objectives. Face-to-face interviewing and questionnaires were the primary methods of data collection. The Jamaican sample consisted of 1216 participants, while the Guyanese sampled was larger and totalled 2068 respondents. Both samples used a modified version of the World Health Organization Composite of Interview Diagnostics (WHO CIDI) as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) to assess lifetime mental disorders (*eg* alcohol abuse, substance abuse, mania). We

also examined physical health conditions such as perceived general health, hypertension and diabetes. Descriptives and Chi-square test of independence were used to address rates and associated factors of physical and mental health.

Results: Rates of mental conditions differed slightly across contexts. Higher rates of mental disorder were generally found among Guyanese participants compared to Jamaicans. This was more evident for specific disorders including alcohol abuse (3.6% vs 2.2%), drug abuse (1.4% vs 1.3%), substance abuse (4.7% vs 2.7%) and mania (0.4% vs 0.1%). Jamaicans tended to have poorer physical condition than their Guyanese counterparts particularly surrounding diabetes (7.5% vs 6.6%), arthritis (7.5% vs 6.6%) and general perceived health (25.7% vs 17.5%). Mental and physical health was also associated with social and demographic factors.

Conclusions: The study suggests the need for in-depth analysis on associated and contributing determinants of the physical and mental conditions of individuals within these contexts.

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Correlates of types of disabilities among the disabled population in St Vincent and the Grenadines

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Objective: To compare socio-demographics, level of function, alcohol and drug dependence and presence of a caregiver among the different types of disabilities reported in St Vincent and the Grenadines.

Design and Methods: The study participants were 2195 (94.1%) persons identified as having a disability by a cross-sectional, population-based survey conducted in St Vincent and the Grenadines. Participants were located through a combination of registration lists from local clinics as well as through house-to-house survey methods.

All households were visited and face-to-face interviews conducted by a medical team of both Cubans and Vincentians. Questionnaires and other instruments used were standardized and compatible with other regions. Secondary data analysis was conducted using multinomial regression.

Results: Results indicated that persons with intellectual disabilities were the youngest among the disabled population and that multiple, including visual disabilities, affected the older persons in the population. Persons with mental disabilities as well as with higher levels of function were more likely to be drug and alcohol dependent while lower academic levels were associated with hearing disabilities.

Conclusion: This research highlights the significant consequences of disabilities, such as the inability of many persons with hearing disabilities to achieve levels of education comparable to that of the non-disabled population. Hence, interventions need to be implemented as appropriate to reduce/eliminate disabilities to improve public health in St Vincent and the Grenadines.

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Prevalence of anaemia in relation to food insecurity

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Objectives: To describe the level of anaemia in children aged 6–9 years in St Kitts, their situation of household insecurity and the link between household food insecurity and anaemia in these children.

Design and Methods: This was a cross-sectional survey of children aged 6–9 years selected from seven government primary schools in St Kitts. Anthropometry (height and weight) and a capillary blood sample for testing for anaemia (Hemocue) were done at school and household food security was ascertained by questionnaire with the children's caregivers.

Results: The prevalence of anaemia was 37% using a haemoglobin cut-off of below 11.5 g/dL. The anthropometric measures showed no evidence of stunting or wasting. A total of 20% of the children lived in food insecure households, 2% with very low food security. An examination of the link between food security status and anaemia showed no association. Of food secure households, 37.9% of the children were anaemic and of those with food insecurity, 36.8% were anaemic. Despite these high rates of food insecurity and anaemia, we do not see any evidence of poor growth.

Conclusion: The high prevalence of anaemia in children in St Kitts is not explained by living in food insecure households.

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Body mass index in doctors and patients and their attitudes to providing and accepting weight loss advice

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Objective: To study body mass index (BMI) in doctors and patients and determine how BMI relates to providing and accepting weight loss advice.

Design and Methods: A cross-sectional study was conducted among doctors, working in health centres in Victoria County, and patients who attended chronic disease clinics at the health centres. Body mass index was measured and participants were asked to state where they thought they fell on a visual BMI scale. Statistical package SPSS was used for analysis.

Results: Forty-seven per cent of doctors were found to be overweight or obese while 70% of patients had a raised BMI. Using the visual scale, approximately 73.3% of patients indicated that an overweight or obese BMI was ideal for them. Of the 45 patients who were obese, two thirds thought they were slightly overweight and one third thought they were very overweight. Sixty-eight per cent of patients with a raised BMI thought they needed to lose weight; 40% of patients refused to take advice from overweight or obese doctors. Of the eight doctors with raised BMI, all thought they were very overweight according to the visual scale. The doctors with normal weight (n = 9) all thought they were overweight. Doctors stated they would start giving weight loss advice to patients who were considered to be at least normal weight.

Conclusions: It appears doctors think they are fatter than they actually are and patients think they are thinner, which can affect health-seeking behaviour.

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Relationship between dietary practices and hypercholesterolaemia among patients attending the West Demerara Regional Hospital, Guyana

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Objective: To investigate the relationship between dietary practices and hypercholesterolaemia among employed and unemployed persons from the West Demerara Region.

Design and Methods: A cross-sectional survey was conducted among 1000 randomly selected adults (240 males and 760 females) aged 18–75 years who visited the West Demerara Regional Hospital (WDRH). Serum cholesterol levels were measured using a ChemWell chemistry analyser and the eating habits were assessed using a structured questionnaire.

Results: Sixty-four per cent of employed respondents and 69% of the unemployed respondents had high blood cholesterol levels. Among unemployed respondents, 26% snacked five or more times per week while 21% consumed higher amounts of high dietary animal fats and proteins daily. A greater proportion of working respondents “ate

out” while 13% skipped breakfast and 5% skipped lunch. Further, the working respondents also consumed more alcohol frequently.

Conclusion: The prevalence of hypercholesterolaemia was higher in unemployed respondents. Additional research is needed to assess the relationship between dietary lifestyle risk factors and hypercholesterolaemia in Guyana. More effective health promotion and education strategies should be implemented to curb this growing public health concern.

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Qualitative analysis of university students’ knowledge, attitudes and behaviours regarding dietary choices in Barbados

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Objective: To explore students’ knowledge, attitudes and behaviours regarding making dietary choices.

Design and Methods: Purposive sampling was used to select 16 students, representative of the diverse student body of the University of West Indies, Cave Hill Campus, to participate in three focus groups, which were conducted on campus in July 2012. Students discussed their typical on-campus eating experiences, and factors which impacted their dietary choices. Interview transcripts were analysed using Framework Analysis with NVivo.

Results: Students reported consuming diets high in carbohydrate and protein, and very low in vegetables or fruits. Students stated that dietary choices were impacted by personal preference, as well as (a) socio-cultural, (b) economic and (c) student-life-specific factors. In reference to socio-cultural factors, they raised issues such as meal composition, portion sizes, media messages, childhood experiences and social status. Economic factors cited included cost, variety, and availability of food on campus. Other student-specific factors included availability of time to eat and issues related to convenience of securing food. Most students placed the highest priority on convenience and not health when making meal choices. However, many students reported eating off campus or packing lunches as efforts to make better food choices.

Conclusion: Conditions and policies that contribute to the limited availability and high costs of healthy food choices on campus present greater barriers to healthy eating compared with off campus. Findings suggest that changes in university policy might foster healthier dietary choices among students and could encourage young people to develop lifelong healthy eating habits.

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The dietary perceptions and food-related behaviours of dietetics and nutrition students at the University of Technology, Jamaica

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Objective: To examine the dietary perceptions and food-related behaviours of the University of Technology, Jamaica's Dietetic and Nutrition (DN) students.

Design and Methods: A cross-sectional survey using 86 students was conducted. A questionnaire was used to assess the dietary perceptions and food-related behaviours of DN students. Dietary pattern of DN students was categorized as 'poor/fair/good' based on the composite score of responses. Analysis of responses to an open-ended question on the impact of the programme on dietary pattern was used to correlate dietary pattern to stage of behaviour change using the Transtheoretical Model of Behaviour Change.

Results: The range for mean perceived ability to eat balanced diets daily (0–1) was highest in year 1 (0.7) and lowest in year 4 (0.4). Year 2 had the highest mean composite score with range (0–27) for food-related behaviour ($x = 18.08$, $s = 2.50$), with year 1 being the lowest ($x = 16.83$, $s = 3.42$). Overall, cost of food items was the most significant factor affecting food choice (34.8%) with perceived healthiness being least important (10.9%).

Conclusions: There was no significant association between food-related behaviour and year group. Confounders such as economic status and ease of access were major contributors.

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Investigation of food safety and nutrition: Knowledge, attitudes and practice (KAP) of food service workers in Trinidad and St Kitts

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Objective: To determine the level of food safety and nutrition knowledge, attitudes and practices of food service workers contracted by selected National School Dietary Services Limited (NSDSL) kitchens in Trinidad and school meals centres (SMC) in St Kitts.

Design and Methods: A survey design method was used for data collection. Three NSDSL kitchens were chosen in

Trinidad and one SMC kitchen in St Kitts. All kitchens were chosen as part of a purposive sample. All persons present in the kitchen on the day the study was conducted became a part of the sample and were asked to complete the eighty-five item self-administered questionnaire.

Results: The sample comprised 66 respondents with an age range of 20–61 years. The gender distribution was 53 females and 13 males. Thirty-two respondents came from the three Trinidad kitchens and 34 from the single St Kitts kitchen. The study revealed minor differences in knowledge, attitude and practice (KAP) measures between Trinidad and St Kitts but showed significant differences in nutrition knowledge between temporary and permanent workers ($p = 0.03$).

Conclusion: Greater attention should be paid to the intricate relationship between nutrition and food safety issues. It has been shown that issues of food safety and nutrition KAP affect health and longevity of many societies, and should therefore take a pivotal role in establishing policy and legislation for any nation.

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Evaluation of water sanitation health education programme: Working with the knowledge of the basic sanitation services in a developing community in rural Haiti after the 2010 earthquake

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Objective: To measure the knowledge regarding the new sanitation water system being implemented in Dessources – a rural community in the municipality of Croix-des-Bouquets in Haiti after two years of an intervention programme.

Design and Methods: A cross-sectional epidemiologic design was used to measure the knowledge of the people in the community using a semi-structured questionnaire. Data collection followed a face-to-face interview process in all houses of the community. The instrument content validity was performed by a panel of experts followed by Cronbach's alpha test to establish the reliability of knowledge scale. Association measures were also done using the STATA 11.0 statistical package.

Results: Content validity test were performed with minimum changes and an alpha of 0.74 was obtained for the scale. Response rate was 65.57% (41/60 houses); those not participating were only those that did not meet the inclusion criteria. Most of the participants (77.5%) were

21–49 years old and 85% had been living in the community for more than 20 years. Bivariate analysis showed that the people of Dessources had adequate knowledge. Significant differences were found, however, among the zones that are not using the new sanitary systems and among families with more than seven members per house. **Conclusions:** The evaluation showed that people of Dessources in Haiti had a high knowledge regarding the new water sanitation system and provided evidence of an adequate health education programme intervention.

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Extended spectrum β -lactamase-producing enterobacteriaceae on the island of Barbados: What does our wastewater tell us?

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Objective: To screen sewage for extended spectrum beta-lactamase (ESBL)-producing enteric bacteria and to determine the susceptibility of the ESBL-producing *E coli* isolates to a variety of antibiotics.

Design and Methods: Raw and treated sewage were collected from the two wastewater treatment plants on the island of Barbados over a four-week period. Samples of sewage were plated on eosin methylene blue agar containing 2 mg/L of cefotaxime to select for ESBL-producers. Phenotypic confirmation of ESBL-production was performed by the combined-disk method using cefotaxime and ceftazidime, with and without clavulanic acid. The susceptibility of ESBL-producing *E coli* isolates to a panel of ten antibiotics was determined by disk-diffusion assay according to Clinical and Laboratory Standards Institute (CLSI) guidelines.

Results: All sewage samples yielded ESBL-producers. A total of 284 presumptive ESBL-producers were isolated, of which 185 (65.1%) were confirmed. Forty per cent of the confirmed ESBL-producing isolates were identified as *E coli*. Amongst these *E coli* isolates, there was a high level of resistance to ciprofloxacin (93%), trimethoprim-sulfamethoxazole (69%) and 30% of isolates were resistant to cefepime. All *E coli* isolates were susceptible to imipenem, meropenem, amikacin and piperacillin/tazobactam. Ninety-six per cent of the ESBL-producing *E coli* strains were resistant to more than one class of antibiotic.

Conclusions: This study demonstrated the presence of ESBL-producers in the sewage from Barbados, which may implicate the community as a reservoir for ESBL-producers. The ESBL-producing *E coli* strains demonstrated a high level of co-resistance but were susceptible to the carbapenems.

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Knowledge, attitudes and practices of communities to flood prevention in north and south Trinidad, West Indies

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Objective: To determine the knowledge, attitudes and practices (KAP) of flood prevention in two communities, Barrackpore and St Augustine, Trinidad, both of which have a history of major flooding events in recent years.

Design and Methods: A KAP questionnaire was developed using both categorical and quantitative questions of open, closed and semi-closed styles. Questions covered demography and socio-economic variables, as well as knowledge and understanding of the causes of flooding and to elicit their attitudes and practices to prevent or cope with flooding episodes.

Results: A total of 359 questionnaires were administered in the two flood prone areas of Trinidad: 45% (163) in Barrackpore and 55% (196) in St Augustine. Ninety-eight per cent of the respondents from Barrackpore and 55% from St Augustine knew where they lived were flood prone. They identified the main causes of flooding as poor drainage and proximity to rivers and identified the time when flooding occurred but did not develop flood protection strategies or a flood recovery plan.

Conclusions: Special attention should be paid to improving the drainage systems, implementing an early warning system for flood prone areas, educating householders on flood prevention, developing community participation programmes in collaboration with government to prevent dumping of garbage/debris in water courses and providing healthcare in both the short and long term.

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Using social network analysis to understand how social capital influences knowledge flows in rural communities

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Objective: To better understand how social capital influences knowledge flow within rural communities.

Design and Methods: Using the case of Saint Lucia, we applied social network analysis and socio-spatial knowledge network methodologies in two rural farming communities: Black Bay and Marquis. Data were collected through 112 surveys of farmer households, eight farmer

focus groups and 55 discussion points with community leaders. Data were analysed using UCINET software for network analysis and NETDRAW for network visualization.

Results: The number of farmers (nodes) per community (k) was 40 in Black Bay and 72 in Marquis. In Black Bay, respondents reported 62 “knowledge received” ties from, and 59 “knowledge given” ties to, other community farmers. Corresponding values for Marquis were 106 and 102 ties, respectively. In Marquis, kinship ties were most dense (average degree 3.72). The knowledge network in Black Bay indicated more bridging social capital, indicating “weak ties” connecting different groups. In contrast, the knowledge network in Marquis depended on high bonding social capital, reflecting “strong ties” among family, friends and neighbours. Strong ties are efficient in information flow; they facilitate group identity and cohesiveness but limit access to new information.

Conclusions: Social network analysis, informed by social capital theory, can be used to map community knowledge networks and identify structural constraints to knowledge flow that may limit innovation. Better understanding of social capital in rural communities has the potential to improve the design of science-based food security and health policies seeking to foster innovation.

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Setting up clinical cohorts based on data from a national health information system: HIV cohort as a case study

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Objective: To describe the methodological approach to setting up a clinical cohort from a national health information system.

Design and Methods: The Belize Health Information System (BHIS) is the operational system in which clinical data are collected. A second layer consisting of a set of source tables has been defined. These source tables, which are regularly updated from the BHIS, are intended to include clinical information for analysis. To set up a clinical cohort, patients must be selected from these tables based on well-defined inclusion criteria. These patients and their clinical data are retrieved from the source tables into a cohort database.

Results: A set of 17 source tables was defined into which data from the BHIS were extracted, transformed and loaded. For the HIV cohort, ten inclusion criteria were identified – five were considered ‘hard criteria’ and five were considered ‘soft criteria’. Patients identified through

at least one hard criterion were directly added to the cohort list. Subsequently, all other patients in the source tables were reviewed based on the soft criteria. Patients thus identified were manually reviewed before addition to the cohort list. For all patients in the cohort list, data were transferred from the source tables into a cohort database.

Conclusions: A generic strategy to set up clinical cohorts using data from a national health information system was defined and implemented on an HIV cohort. This approach has implications for secondary HIV surveillance as well as surveillance of other chronic diseases.

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Prescribing confidence among junior doctors in Trinidad and Tobago

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Objective: To assess the self-reported confidence levels in prescription writing among interns and house officers at public tertiary hospitals throughout Trinidad and Tobago.

Design and Methods: A cross-sectional survey was conducted between July 2010 and January 2012 using a modified questionnaire among eligible junior doctors at public hospitals throughout the country.

Results: One hundred and forty-seven junior doctors returned completed questionnaires (response rate of 73.5%) and about half were either house officers (50.3%) or female (51.7%). The majority of respondents (64.7%) were trained at the regional university. Although most junior doctors did not rate their current knowledge of clinical pharmacology and therapeutics highly, they reported that the teaching of pharmacology was sufficient to allow rational prescribing. Antibiotics were identified as the class of drugs that both interns (89.3%) and house officers (83.6%) were most comfortable prescribing without supervision. However, significant numbers of interns (68.3%) and house officers (43.2%) reported that they were reluctant to prescribe antiarrhythmic drugs without supervision. Most junior doctors (58.8%) had witnessed an adverse drug reaction during their post-graduation clinical exposure and most of these events (61.6%) had been preventable.

Conclusions: Junior doctors in Trinidad and Tobago reported high levels of confidence to prescribe. However, house officers reported higher levels of confidence than interns to prescribe several classes of drug which may be directly related to clinical exposure. This study highlights the need for curriculum reform to include the teaching of clinical pharmacology and therapeutics, with emphasis on skills training in rational prescription writing.

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Emotional intelligence in medical students: An exploratory study at the School of Medicine, Faculty of Medical Sciences, The University of the West Indies, Trinidad and Tobago

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Objectives: To explore the emotional intelligence (EI) in medical students at a Caribbean medical school at various levels of training and investigate the association with students' gender, age, year of study and ethnicity.

Design and Methods: A cross sectional study design using convenient sampling of 304 undergraduate medical students from years 2 to 5 was used. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT V 2.0) was administered to test the four branches of EI including perceiving emotions, facilitating thought, understanding emotions and managing emotions. Means and standard deviation (SD) were calculated for sub populations and various subscales. In addition, *t*-test, Analysis of variance (ANOVA) and *r* values were calculated to establish the effects of selected variables (gender, age, year of study, and ethnicity) on total and sub scales EI scores.

Results: The total mean score for EI fell within the average according to MSCEIT standards. Gender analysis showed significantly higher scores for males and for younger age groups (< 25 years). Year of study and ethnicity did not yield any significant differences.

Conclusions: These findings of higher EI scores in males and younger students are unusual, given the well publicized stereotype of the Caribbean male and the perception that advancing age brings maturity and emotional stability. It would be valuable to widen this study to include medical students from other campuses of the University of the West Indies and those enrolled at offshore medical schools in the Caribbean. Since EI is considered to be important in the assessment and training of medical undergraduates, consideration should be given to introducing interventions aimed at increasing EI.

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Attitudes toward gay men and lesbians among future healthcare providers in Barbados

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Objective: To assess medical students' attitudes and investigate the correlates of sexual orientation stigma found in the total sample, including religiosity and gender.

Design and Methods: Participants were a purposive sample of 66 medical students with a mean age of 21.92 years (SD = 3.46). They included 52 women and 45 students of Barbadian nationality. They completed the Sexual Prejudice Scale (SPS), the Index of Attitudes toward Homosexuals (IAH), and a demographic questionnaire.

Results: Scores on either subscale of the SPS can range from 15 to 90, with higher scores indicating greater prejudice. The mean scores of the validation study sample were 30.41 for the lesbian subscale and 31.53 for the gay men subscale. For the sample of medical students, the mean score on the lesbian subscale was 53.61 (SD = 12.37) and the mean score on the gay men subscale was 54.29 (SD = 13.19). Their scores on the IAH had a mean of 69.49 (SD = 18.71). Index of Attitudes toward Homosexuals scores above 50 usually indicate homophobia. Indicators of religiosity had significant ($p < 0.001$) relationships with the attitudinal measures, suggesting that greater religiosity is associated with more sexual prejudice. Gender differences were found for the total sample ($n = 251$), but not for medical students.

Conclusions: Medical students evidence moderately negative attitudes toward gay men and lesbians. This is concerning, as negative attitudes from healthcare providers can influence the willingness of gay and lesbian patients to seek care and to disclose risk behaviours for sexually transmitted diseases.

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Prevalence of stress among undergraduate students at The University of the West Indies, St Augustine

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Objective: To explore levels of stress among university students with respect to primary independent variables: gender, faculty and year of study; and secondary independent variables such as age, ethnicity, heart rate, blood pressure and body temperature.

Design and Methods: University Students Stress Questionnaire was administered to 540 students selected by stratified random sampling. The collected data were subjected to analysis of variance (ANOVA), *t*-test and χ^2 , and calculated using SPSS version 20.

Results: Faculty and year of study played an independent role in determining global stress levels. Females were affected more by academic, time management and interpersonal issues, whereas males were more affected by

work related issues. Age was directly proportional to stress levels experienced. Afro-Trinbagonian students were more stressed ($M = 510.88$) than their indo-Trinbagonian ($M = 464.44$) counterparts. Body temperature was a clinical indicator of stress levels in students at the University of the West Indies.

Conclusion: Students were stressed depending on many different factors; namely their gender, year of study and faculty enrolled in. Ethnic background and age were also key factors in determining overall stress levels. Researchers have shown that stress has always had a detrimental effect on the performance of the individuals. In this context, it is suggested that the University should put certain mechanisms in place so that students' mental and physical health is not affected by stress, which in turn will have adverse effect on academic performance.

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Psychological stress and burnout among medical students at The University of the West Indies

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Objective: To investigate the level of stress and related feelings of burnout in medical students across five years of undergraduate education at the Cave Hill campus of the University of the West Indies (UWI).

Design and Methods: The design is a cross-sectional, self-administered questionnaire survey of medical students at UWI, Cave Hill campus and consisted of a modified Maslach Burnout Inventory-Human Services Survey with additional questionnaire items developed by the authors.

Results: One hundred and nineteen students participated in the survey over the five class years: 21.8% male and 78.2% female. Students with high scores of emotional exhaustion (EA), depersonalization (DP) and personal accomplishment (PA) were reviewed. Phase 2 students had significantly higher levels of emotional exhaustion ($p = 0.0004$) and lower levels of personal accomplishment ($p = 0.012$) than Phase 1 students. Pearson's r correlations showed a moderate positive relationship between age and personal accomplishment ($r = .375, p < 0.001$). Older persons tended to have greater personal accomplishment scores. Persons who had financial constraints in the past 12 months had significantly higher emotional exhaustion scores ($M = 31.42, SD = 11.84; p = 0.028$) and depersonalisation scores ($M = 9.58, SD = 6.76; p = 0.024$) than those who did not ($M = 25.55, SD = 10.04; M = 6.12, SD = 5.68$, respectively). No differences were found in relationship to ethnicity, educational histories, parental educational histories, marital status, or effect of serious illness in self or family.

Conclusions: The study correlates directly with the assumptions that medical students, in general, have a high degree of emotional exhaustion which increases as they progress through their medical career.