Communicable Diseases

Chairpersons: K Polson-Edwards, M Frankson

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Exploring exposure and symptomatic differences of Chikungunya virus in the adult population of Grenada

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Objective: From December 2013 to March 7, 2015, 22 283 confirmed/probable cases and 863 207 suspected cases of Chikungunya were reported in the Caribbean (1). More information regarding symptoms and protection factors is necessary to accurately inform the public and have effective case management. The purpose of this study was to assess age group differences with respect to Chikungunya symptoms and explore protection differences of people who have and have not had Chikungunya.
Subjects and Methods: A cross-sectional study sampling 154 participants was conducted from April to May 2015. Participants completed a 37-item questionnaire and were recruited from public places and at a local retirement association in Grenada.
Results: Knee-joint pain ($p < 0.05$) and persisting symptoms (rash $p < 0.05$, muscle pain $p < 0.005$, ankle-joint pain $p < 0.05$) were statistically significant for all age groups. No statistical difference was found for taking precautions before and after the outbreak for those who did and did not have Chikungunya. However, precaution comparisons for the home ($p < 0.001$) and work ($p < 0.001$) environments showed significant non-change for before and after the outbreak.
Conclusions: This study found that age was a factor for symptom development and persistence, and resistance to behaviour change is an important factor for future epidemic responses and intervention studies.

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Investigation of a pertussis outbreak in St Lucia

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Objective: To determine the characteristics of pertussis cases during the 2015 outbreak in St Lucia.
Subjects and Methods: National case definitions were created for identification of cases and all probable cases and their contacts were thoroughly investigated. A retrospective search for cases for the period January 1 to July 15, 2015, was conducted to determine the extent of the outbreak.
Results: Between January and August 2015, a total of 26 suspected cases were reported to the Ministry of Health, of which four were confirmed by polymerase chain reaction (PCR) and one was IgG positive for pertussis. The ages of the cases ranged from four weeks to 67 years, with 54% (14/26) under the age of one year (ranging from four weeks to six months). The male to female ratio was 1:1. Approximately 50% of the cases presented with a paroxysmal cough. Eighty-seven per cent (13/15) of the hospitalized cases were under one year of age. None of the infants had completed their primary series of pertussis vaccination. Sixty-four per cent (9/14) had not received any doses of a pertussis-containing vaccine and of the remaining 36% who had started their primary series, zero per cent had completed the same.
Conclusion: Infants are more likely to contract pertussis due to their immature immune system and incomplete vaccinate status. Changes in the vaccination schedule to ensure earlier immunization of infants should be encouraged.

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Long-term and seasonal dynamics of dengue in Barbados

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Objectives: To study the long-term trend in the epidemiologic characteristics and the seasonal dynamics of dengue in Barbados.
Subjects and Methods: This prospective, population-based study reports on dengue during the period January 2006 to December 2013. This report includes all the suspected and laboratory confirmed dengue cases in Barbados that were either positive IgM titre in acute serum sample and/or positive for NS1 (non-structural protein 1) antigen.
Results: There were 10 917 cases of suspected and 4250 cases of confirmed dengue. The highest number of cases was seen in the 0–15 years age group; 27.8% of suspected and 25.7% of confirmed cases were children < 15 years. Among the confirmed cases, 25% required hospitalization. The overall mean annual incidence of suspected and confirmed cases of dengue was 0.49% and 0.19%, respectively. An increasing trend in the annual incidence, with the incidence climbing up to 0.49% in 2013, was noted. The number of cases peaked during the months of September, October and December which coincide with the months of maximum rainfall in this country.
Conclusion: The annual incidence of dengue is on the rise with increasingly more severe epidemics seen over the study period. Dengue is primarily a childhood disease in this population with a higher than reported proportion of hospitalization. The majority of the cases occur during the rainy months.

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Emergence of Chikungunya in St Lucia, March 2014–December 2014

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Objective: To describe the epidemiology and clinical features of acute Chikungunya virus infections in St Lucia from March 2014–December 2014.
Subjects and Methods: This was a retrospective study using the database of cases of Chikungunya reported to the epidemiology unit of the Ministry of Health in St Lucia. At the start of the epidemic, most suspected cases underwent serological testing; this was discontinued as the epidemic progressed.
Results: During the study period, 899 suspected cases of Chikungunya were reported. More women were reported than men (female to male ratio: 1.69:1). The age range was 18 days to 96 years, with a mean age of 27.0 (SD 22.5) years. Children aged 0–4 years made up 22% of all cases. The overall attack rate during the study period was 5.2 per 1000 population, with the highest attack rate, 18.2 per 1000, being in children aged 0–4 years. Of the total cases, 93.9% complained of fever, 63.3% joint pain, 27.4% muscle pain, 22.5% a rash and 15.1% headache. There were no reported deaths. Three hundred and eighty-four suspected cases underwent serological testing, and of these, 236 cases tested positive: 72.9% on polymerase chain reaction (PCR) and 27.1% on immunoglobulin M (IgM).
Conclusions: This is the first description of an outbreak of Chikungunya in St Lucia. Reported attack rates were higher in women than men and highest in children under five years. Roughly 60% of reported suspected cases were true infections and thus over the nine-month period, at least three out of every 1000 St Lucians were infected.

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Bacteriology and antibiogram of pathogens isolated from wound infections at Cheshire Hall Medical Laboratory, Turks and Caicos Islands

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Objective: To identify pathogens that are frequently isolated from wound infections in the Turks and Caicos Islands and formulate antibiogram based on their patterns of antimicrobial susceptibility.
Subjects and Methods: Bacteriology and antimicrobial susceptibility data from 1343 wound swabs cultured at the Cheshire Hall Medical Laboratory between January 2013 and November 2015 were retrospectively analysed. The Kirby-Bauer disc diffusion technique was used to perform antimicrobial susceptibility testing.
Results: Of the 1343 swabs cultured, 79.1% were positive, yielding a total of 1687 bacterial isolates. Frequently isolated bacteria included *Staphylococcus aureus*, which accounted for 27.6% of isolates, approximately a third of which were methicillin resistant, *Pseudomonas* spp (12.1%), *Proteus* spp (8.2%), *Enterococcus* spp (7.8%), *Streptococcus agalactiae* (6.1%), *Klebsiella* spp (5.5%), *E coli* (5.2%), *Acinetobacter* spp (4.3%), coagulase negative staphylococcus (4.0%) and *Enterobacter* spp (3.7%). The highest resistance rates were seen among tetracycline

(46.3%), erythromycin (37.6%) and ceftriaxone (34.2%). Imipenem, penicillin, meropenem and vancomycin had sensitivity rates ranging from 92.3% to 99.5%. Individual resistance rates varied among isolates, some differing significantly from overall rates. When tested against antibiotics routinely used to treat *Pseudomonas* spp, resistance rates ranged from 1.4–55.5%.

Conclusion: Overall resistance rates were below 50%; however, some isolates show resistance rates of up to 95.9%. Sharing of information concerning the antibiogram as well as future updates with community physicians is recommended.