

Child Health, Infectious Disease

Keeping the Score on Child Survival in Trinidad as we Shift from Millennium Development Goal 4 to Sustainable Development Goal 3

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Objective: The purpose of this study is to determine the factors associated with child mortality as we transition from the Millennium Development Goal (MDG) to sustainable development goal 3 (SDG3).

Methods: A database of deaths in children under-five years in Trinidad from July 2013 to June 2014 was compiled from civil registration and vital statistics. This information was used to obtain the medical records for each death. Clinical details surrounding the birth and death of each deceased were extracted from the medical records, including date and cause of death.

Results: Results of findings including gravidity, parity, type of death, APGAR score, maternal age and birthweight were investigated. The most common cause of death in children under-five years of age was disorders relating to short gestation and unspecified low birthweight (ICD 10-P02). The under-five mortality rate was calculated to be 18.4 per 1000 live births.

Conclusions: We provide evidence that short gestation and low birthweight [> 1500 g] (ICD-10-PO2) and adolescent mothers were the main contributors to under-five mortality. We also showed that an Apgar score did not identify babies most vulnerable.

An Interim Review of the Benefits of the SickKids Caribbean Initiative to The Bahamas

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Objective: To audit the Sickkids Caribbean initiative (SCI) activities and case files of The Bahamian paediatric haematology/oncology referrals to assess the benefits of the SCI.

Method: In 2013, the Hospital for Sick Children (SickKids), Toronto, Canada, launched a five-year, not-for-profit twinning partnership to improve health outcomes for children with cancer and blood disorders with six English-speaking (low and middle income) Caribbean countries.

The SCI specific objectives are to advance training, education, clinical care, diagnostic services, a cancer registry and research. The activities of the SCI and the case files of all paediatric referrals were reviewed from 2013 to May 2016.

Results: The SickKids Foundation raised CAD \$8M; six Caribbean countries are being funded: The Bahamas, Barbados, Jamaica, St Lucia, St Vincent and the Grenadines and Trinidad and Tobago. The Bahamas established a telemedicine conference centre in July 2013 allowing greater audience participation. The Bahamas submitted 18 (18%) of the Caribbean 102 cases referred for consultations. Immunophenotyping was performed on 47 new leukaemia cases – two from the Bahamas. Three hundred and thirty-nine patients (diagnosed 2011–2015) were entered in the specially created cancer registry – 44 (13%) from The Bahamas. Eight SCI clinical care guidelines were produced for implementation. Sickkids Caribbean initiative provided travel grants for physicians, nurses and technicians to attend 13 international and regional continuing professional development activities. Four local nurses will participate in the advanced nursing programme starting in September 2016; three will be SCI funded.

Conclusion: The Bahamas has benefitted significantly from the twinning partnership with a model sustainable beyond the life of the funding based on its early successes.

The Rise and Fall of HIV in The Bahamas: 1983–2014. HIV Epidemiology, The Bahamas

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The Bahamas has the highest reported adult prevalence rates of the human immunodeficiency virus (HIV) in the Caribbean. Over the period 1983–2014, a cumulative total of 13 366 new HIV-infections were reported of which 7092 developed AIDS. An estimated 8630 persons are living with HIV in The Bahamas. Two hundred and sixty-seven persons were newly diagnosed with HIV-infections in 2014. This represents a reduction of HIV incident cases by 28% and 51% compared to the year 2005 and 2000, respectively. The human immunodeficiency virus adult prevalence rate was 3% in 2012 and decreased to 2% in 2014.

Males accounted for 51% of newly reported HIV-infections in 2014. New cases were mainly diagnosed in the age group 25-44 years. Youth and men who have sex

with men (MSM) with unprotected sexual practices have higher risks of HIV transmission rates.

During 2005–2014, 4710 persons died of AIDS. Acquired immune deficiency syndrome or acquired immunodeficiency syndrome (AIDS) was reported as the leading cause of death in The Bahamas in 2010. In the past 10 years, AIDS related mortality has declined by 35% largely due to better access to antiretroviral therapy (ART). Antiretroviral therapy is provided without cost and an estimated 58% of persons eligible for ART received treatment in 2014. Viral suppression was 43% among new HIV cases prescribed ART in 2014.

The prevention of mother-to-child transmission (PMTCT) of HIV-programme has been successful. Vertical transmission has declined from 30% prior to 1995 to 3.1% in 2014. Progress has been made in treatment and care of HIV-infection in the past 30 years, however, HIV/AIDS continues to be an important public health issue in The Bahamas.

Temporal Trends in the Incidence of *Staphylococcus aureus* Bacteraemia at a Teaching Hospital in Nassau, The Bahamas, 2012 to 2015

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Objective: There is a paucity of data regarding *Staphylococcus aureus* bacteraemia (SAB) in The Bahamian population. We determined trends in prevalence, demographic and co-morbid conditions associated with SAB and the 30-day mortality rates in patients at the Princess Margaret Hospital (PMH) Nassau, The Bahamas.

Method: A four-year January 1, 2012 – December 31, 2015 retrospective chart review was conducted of patients ≥ 18 years of age with initial episodes of SAB using the microbiology database and medical records from the Medical Records Department.

Results: *Staphylococcus aureus* (*S aureus*) represented 10.30% (201) of positive blood cultures for the study period. Of these, 62.69% were male and median age was 52 (range, 18–100) years. Methicillin-susceptible *Staphylococcus aureus* (MSSA) represented 73.68%. According to acquisition type, 12.44% were nosocomial, 67.66% health-care associated and 19.90% were community acquired. Diabetes represented 37.31% and end-stage renal disease (ESRD) 31.34%. No source of infection was identified in 43.78%. The 30-day (*S aureus*) bacteraemia (SAB) mortality rate was 22.22% (2012), 30.95% (2013), 32.20% (2014) and 29.69% (2015). Males accounted for 59.32% (35) of 30-day mortality. For 30-day mortality, age groups 18–39 years represented 20.34% (12), 40–59 years –

35.59% (21), 60–79 years – 28.81% (17) and ≥ 80 years – 15.25% (9). Methicillin-susceptible *Staphylococcus aureus* accounted for 64.41% (38) of 30-day mortality cases.

Conclusions: *Staphylococcus aureus* bacteraemia remains an important clinical entity at Princess Margaret Hospital (PMH). Thirty-day mortality rates are high in both subtypes and increasing mortality trends are observed in the younger population. Inability to identify a source of SAB remained high over the four-year period.

Resistance Patterns of Uropathogens in Community Acquired Urinary Tract Infections in New Providence, The Bahamas

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Objectives: To determine which uropathogens are found in positive urine cultures, the resistance patterns produced and which antibiotics are used to treat community acquired Urinary Tract Infections (UTI) in community clinics in Nassau, Commonwealth of The Bahamas.

Method: The study was a cross-sectional observational study which involved obtaining microbiology results from participant's urine samples obtained during the interviewing encounter over the period September 2015 to January 2016.

Results: There were 109 participants in the study, 14% were male and 86% were female. *Escherichia coli* (*E coli*) made-up 42% of cultures and trimethoprim/sulfamethoxazole was the most prescribed antibiotics overall. However, ciprofloxacin was used more often in the men studied. Trimethoprim/sulfamethoxazole showed a resistance pattern of 29.9%. Antibiotic choices were consistent with international guidelines except for duration of therapy. Resistance to ampicillin, amoxicillin and clavulanate, ceftriaxone, tetracycline and trimethoprim/sulfamethoxazole were also above 20%.

Conclusion: Common pathogens such as *E coli*, in this study proved to have high rates of resistance for common antibiotics suggested by guidelines for empirical treatment. Such that international guidelines could be inappropriate for the population in the study. Trimethoprim/sulfamethoxazole is not recommended in first line therapy. Nitrofurantoin should be a considered first choice in empirical treatment. Ciprofloxacin was the choice antibiotic for men in the study. Guidelines should be developed which are appropriate for the region with further research and continued surveillance.