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Session: *Epidemiology and Public Health III*

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Room: Ballroom

Epidemiological aspects of meningococcal disease in the Federal District, Brazil, from 2000 to 2011M.C. Tauil¹, C.S.R. Carvalho², A.C. Vieira³, E.A. Waldman⁴¹ University of Sao Paulo, Sao Paulo, Brazil² State Department of Health of the Federal District, Distrito Federal, Brazil³ Central Public Health Laboratory of the Federal District, Distrito Federal, Brazil⁴ University of Sao Paulo, Sao paulo, Brazil

Background: Meningococcal disease (MD) is a serious public health concern, associated with high case fatality rates (10–20%) and substantial morbidity. The objectives of this study were to analyze epidemiological aspects of MD in the Federal District (FD), Brazil, from 2000 to 2011 and to assess the impact of the meningococcal serogroup C conjugate vaccine (MCCV).

Methods & Materials: Descriptive study of cases of MD among residents of the FD. We included in the study confirmed cases of MD reported to the local surveillance. To reduce underreporting we compared data to the Brazilian Mortality Database and the Public Health Laboratory Database. We studied sociodemographic, clinical, and pathogen-related variables. For the assessment of the impact of MCCV, which was introduced in 2010 for children under two, we compared the incidence of MD before and after vaccine introduction in the recommended age groups for vaccination.

Results: We analyzed 490 confirmed cases of MD in the period. The strain B:4:7:P1.19,15 predominated before 2005 with 67.8% (61/90) and the strains C:23:P1.14-6 with 40.9% (61/149) and C:2a:P1.5, 2 with 12.8% (19/149) were more prevalent after 2005. The average annual rates of incidence and mortality of MD in the period were, respectively, 1.7 and 0.4/100,000 inhabitants/year and the average fatality rate was 21%. The incidence rate of MD was higher in children under one year, ranging from 13.1 in 2011 to 38.7/100,000 inhabitants/year in 2000. Fatality rate was higher in the group of 40 years old and more (40%) and among children with two years old (32%). There was a statistically significant reduction (p -value = 0.02) in the incidence of MD in children under two years old from 21.3/100,000 inhabitants/year in 2009, to 6.6/100,000 inhabitants/year in 2011.

Conclusion: This study enabled us to verify the age groups most affected by MD, the circulating phenotypes and to make a preliminary assessment of the impact of conjugate vaccine against serogroup C, after the first year of its introduction in the routine immunization program.

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Private sector treatment of childhood tuberculosis in South AfricaB.T. Magazi^{1,*}, S. Machingaidze²¹ NHLS/University of Pretoria, Pretoria, South Africa² National Institute of Communicable Diseases, Johannesburg, South Africa

Background: According to the World Health Organisation (WHO), South Africa (SA) is listed among the 22 high tuberculosis (TB) burden countries. In 2011 SA reported 37,883 new cases of childhood TB. The accuracy and completeness of this information is doubtful due to the diagnostic challenges of paediatric TB and poor surveillance mechanisms. This data potentially excludes those children treated outside the National TB Programme (NTP) facilities.

Outside the Private-Public Mix partnerships, the role of the private sector in paediatric TB care is unknown.

Methods & Materials: A PubMed literature search (with an appropriate search strategy), in-depth interviews with experts and a review of a nationwide private hospital network hospitalizations database was done to extract existing data about children treated in non NTP facilities, broken down by age and disease type, and understand the relative importance of these numbers compared to the NTP figures. National Health Laboratories Coporate Datawarehouse data was also reviewed. The Private-Public Mix partners, e.g mines, were excluded.

Results: The literature search yielded no specific data relating to the treatment of children in the SA non-NTP facilities.

The experts interviewed, concurred that TB diagnosed in these facilities was referred to NTPs for treatment. TB treatment is free in the NTP. However, they noted that TB care in the private sector was associated with diagnostic and treatment delays.

759 cases of TB were admitted into the private hospital network during 2007–2012. 145 were laboratory confirmed PTB cases, compared to 58 411 diagnosed in public sector laboratories. The network has 28.4% market share of the private bed space, by extrapolation these cases represent 0.9% of confirmed TB. 51% of these were <5 years old. 33% of all cases had non-respiratory disease. The results exclude ambulatory patients.

ICD-10 Code	<1 year (%)	1-4 years (%)	5-14 years (%)	Total
Laboratory Confirmed	33(23)	41(28)	71(49)	145
Respiratory Tuberculosis				
Respiratory Tuberculosis not Laboratory Confirmed	86(24)	111(31)	163(45)	360
CNS Tuberculosis	28(27)	31(30)	45(43)	104
Other Organs	47(39)	25(21)	47(39)	119
Military TB	202(27)	214(29)	343(45)	759

Children with Tuberculosis diagnosed in the private hospital database (2007–2012).

Children with Tuberculosis diagnosed in the private hospital database (2007–2012)

Conclusion: Little is known about the true burden of children seeking TB care in the SA private sector outside the PPM mix, hence there is a need to establish a surveillance system for these patients. A once off survey to determine amount of paediatric TB being managed in the private sector is needed.

Currently, there is no evidence of a system that ensures continuity of care and assesses treatment outcomes for these children.

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Towards eradication of yaws disease by 2020 using a single dose of azithromycin in mass treatment



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Background: Yaws is a disfiguring non-venereal treponemal disease, one of the neglected tropical diseases continued to be prevalent in isolated pockets in some of the tropical countries in African, Asia and Western Pacific Regions of the World Health Organization (WHO). It is a disease commonly seen among marginalized poor section of the most neglected population. More than 50% of the cases occur in children. Generally, it is said “yaws begins where the road ends”.

Between 1952 and 1964, the WHO and the UNICEF embarked on global treponema control campaigns to administer a single dose long-acting benzathine penicillin to all yaws cases and their contacts. About 50 million people were treated in 46 endemic countries during the campaign. As a result, the burden the disease reduced by more than 95 percent from 50 million to 2.5 million. Subsequently, yaws lost its priority in the light of emerging other priority disease control programmers and the goal of eradication was not reached.

Methods & Materials: The authors reviewed available information on progress on yaws eradication and efficacy of azithromycin drug intervention to cure the disease.

One of the main objectives of the presentation is to advocate global participants towards yaws disease to gain support to set a momentum to achieve eradication by 2020.

Results: Though the extent of the endemicity is fully not known, about 90 countries were believed to be endemic in the 1950s; 12 countries of them reported new yaws cases - 56 223 (2008) and 47 800 (2012) (WHO 2012).

Encouraged by the recent evidence of efficacy of a single oral dose of azithromycin in curing yaws disease in Papua New Guinea and Ghana, WHO recommended single dose azithromycin-based treatment strategy (Morges strategy 2012). Initially, a single dose of azithromycin to entire yaws endemic community followed by targeted treatment of cases and contacts.

Conclusion: Yaws endemic countries met in Geneva, Switzerland in 2012 and 2013 and drafted operational guidelines to implement the new treatment strategy. Ghana, Papua New Guinea, Solomon Islands and Vanuatu implemented pilot projects to gain more experience in 2013.

World Health Assembly resolution in 2013 included yaws for eradication by 2020.

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Prevalence of malaria and predisposing factors to antimalarial drug resistance in Ota



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Background: Antimalarial drug resistance has emerged as one of the greatest challenges facing malaria control today. It has also been implicated in the spread of malaria to new areas and re-emergence of malaria in areas where the disease had been eradicated. In this study, Prevalence and predisposing factors to malaria were determined.

Methods & Materials: Prevalence of falciparum malaria was determined by microscopic examination of Giemsa-stained blood samples of patients who presented with fever in selected State Hospitals in Ogun State between 2008 and 2011. Structured Questionnaires were administered to patients or/and parents of infants to determine the factors that could lead to the development of drug resistance by the parasite in the study population.

Results: Out of 4066 subjects screened during the period of study, 2550 (61.1%) were positive. Highest prevalence (72%) was recorded in children 1-5 years while the same group also had the highest parasitaemia of 1080. The study showed that 24.6% of the patient visit hospitals for treatment, 12.0% use local healers while 25.0% buy antimalarial drugs without prescription. It was also observed that some use more than one method in their management of malaria. Those who combined antimalarial drugs with traditional medicine from local healers were found to be 17.4%. Only 18% of the sample population used Insecticide treated mosquito nets, 42.3% use window and door nets while 13% did not employ any mosquito preventive method.

Conclusion: Continuous use of the current antimalarial drugs increases the chance of resistance developing to those drugs. Control of drug use and reducing exposure of parasites to the drugs are most effective where the parasite is still sensitive to the drug.

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