Pertussis in Brazil: An overview from 1988 to 2009
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Background: The introduction of pertussis vaccination in the past decades reduced substantially the number of cases; however, despite the high vaccination coverage rates, pertussis is still a major threat to public health all over the world including Brazil. In this study we present an overview of pertussis in Brazil in the last two decades.

Methods: Between 1988 and 2009, the National Reference Laboratory for Pertussis, Instituto Adolfo Lutz, São Paulo, Brazil, received a total of 985 presumptively identified Bordetella spp strains, isolated from sporadic cases and/or some pertussis outbreaks. The strains were forwarded by the Regional Laboratories in São Paulo State and by the Central Public Health Laboratories throughout the country. Identification of the species was done by standard methods. Detection of O1 antigen, and the serotyping were done by slide agglutination test using O1, and Fim 2 and Fim 3 antibodies, respectively. Molecular characterization was done by Pulsed Field Gel Electrophoresis (PFGE).

Results: All the 985 strains were confirmed as Bordetella pertussis and the most of them belonged to the serotype 1,3. Strains from southeastern states accounted for 67% (660/985), most of them from São Paulo State (646/985; 65.6%). The remaining 325 strains were from south region (147/985, 15%), northeastern states (87/985, 8.8%), north region (48/985, 5%) and central area (43/985, 4.4%). The great majority (81.1%, 799/985) was from children under twelve years of age, and among them 84.4% (675/799) was from infants aged less than six months. Strains from adolescents and adults accounted for 3.2% (32/985) and 8% (78/985), respectively. The age group was unknown in approximately 7.7%. Strains belonging to several PFGE patterns were identified and some were prevalent.

Conclusion: Different B. pertussis clones circulate all over the country. These data do not cover all the country, and may represent only a fraction of the actual number of pertussis cases due to the underreporting, despite pertussis is, in Brazil, a reportable disease since 2001. Data on age distribution of pertussis cases may contribute to develop the policy of booster doses of vaccine in adolescents and adults.

Serogroup B epidemiology in the southern cone of South America. A literature review
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Background: The epidemiology of meningococcal disease differs greatly by country and time period. Only passive surveillance systems for meningococcal disease exist in countries in South America. Thus, little is known about the pattern of serogroup distribution by country in this region. Existing data showed that serogroup B is prevalent worldwide, with various strains and clones causing endemic, sporadic and epidemic disease. Several of these clones are very virulent. Understanding the local and national seroepidemiology of group B meningococcal disease is critical for vaccine formulations and vaccine policies.

Methods: We examined the current disease burden caused by serogroup B in the southern cone of South America, comprised of Brazil, Uruguay, Paraguay, Chile, and Argentina. Clinical data were retrieved following systematic review of the literature by country. The 2008 SIREVA report on invasive disease was also consulted.

Results: Until the late twentieth century, countries in the southern cone had similar disease epidemiology to Latin America as a whole. However, in recent years, this has changed. In Brazil, significant differences in epidemiology can be identified between areas close to other southern cone countries and areas bordering Andean or Caribbean countries. Fluctuations in the proportion of serogroup B versus serogroup C disease have been observed in southern cone countries, yet serogroup B consistently accounted for a significant disease burden throughout the early 21st century. For example, 100% of serotypable meningococcal disease reported in Chile between 1990 and 2003 was attributed to serogroup B, as was 40% to 65% of disease in Brazil. In Argentina, serogroup B consistently accounts for about 60% of invasive meningococcal disease. Even with the emergence of disease caused by Serogroups Y and W-135 in Brazil and Argentina since 2000, serogroup B has remained the cause of a consistent and ongoing public health problem.

Conclusion: Invasive disease caused by meningococcal serogroup B remains an important public health issue in the southern cone countries. An effective vaccine against group B meningococcal is needed to reduce the burden of disease in South America.
and sent to 110 Indiana hospital emergency department nurse managers.

Results: The results indicated only three (7.1%) responding hospital emergency departments had written bloodborne pathogen educational policies. Ten (20.8%) emergency departments provided some form of bloodborne pathogen education for injection drug users. Major barriers indicated for not providing patient education consisted of insufficient monetary resources, injection drug users denying a drug history, and emergency department nurses being unable to identify injection drug usage.

Conclusion: On the basis of the findings and within the limitations of the study, the following conclusions were drawn: Indiana hospital emergency departments do not provide bloodborne pathogen education for injection drug users.

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Neighborhood urban environmental quality conditions probably drive malaria and diarrhea mortality in Accra, Ghana

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Background: Urbanization is an urban change process which alters the structure and function of urban environment. The alteration in the quality of urban environmental quality conditions has significant implications for urban health both in terms of change of vector ecology and infectious disease transmission.

Methods: Study objectives: To investigate the relationship between infectious disease (malaria and diarrhea) mortality and spatial change in neighborhood urban environmental quality in a rapidly urbanizing area in a low income economy. Design: A time-point spatial analysis of cluster-level environmental and mortality data using Principal Component Analytic (PCA) and multiple linear regression models. Methods: Environmental variables were extracted from the Ghana Census 2000 database and mortality data were obtained and pooled together from the Ghana Births and Deaths Registry in Accra over the period 1998-2002.

Results: While there was a very strong evidence of a difference in the risk of urban malaria mortality across urban environmental zones of differing neighborhood urban environmental quality conditions, no such evidence of a difference in urban diarrhea mortality risk was observed across these zones. Additionally, whereas bivariate analyses showed a weak to very strong evidence of association between the environmental variables and malaria mortality, not the least evidence of association was observed between urban diarrhea mortality and the environmental variables.

Conclusions: We conclude that environmental management initiatives intended for infectious disease control might substantially reduce and/or lower the neighborhood urban environmental quality attributable fraction of the risk of urban malaria mortality more than that for urban diarrhea mortality in rapidly urbanizing areas in a low income setting.

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Incidence of hospital- and ICU-admitted community-acquired pneumonia: A population-based study in Uruguay

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Background: Community-acquired Pneumonia (CAP) is still an important health problem with high mortality and intensive care unit (ICU) requirement. Basal requirement rates of hospital and ICU (intensive care unit) admission are related to age, social condition, comorbidities and clinical severity and are important background for requirements in influenza pandemic period.

Objective: to estimate the incidence rates of CAP requiring hospital- and ICU-admission in the department of Rivera, Uruguay, in non influenza pandemic period.

Methods: a prospective cohort of all CAP patient’s > 15 years admitted between 1st May 2005 and 30th April 2007 to all hospitals and their respective ICU in Rivera, Uruguay, were assessed and followed up. Rivera is a northern department of Uruguay with 78.000 inhabitants and have 3 community hospitals. Annual incidence rates were calculated for age and sex strata. Denominators were obtained from National Institute of Statistics.