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ORIGINAL ARTICLE

Secular trends in infant mortality by age-group and avoidable components in the State of São Paulo, 1996–2012

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KEYWORDS
Infant mortality;
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Abstract
Objective: To describe trends and composition of infant mortality rate in the State of São Paulo, from 1996 to 2012.
Methods: An ecological study was conducted, based on official secondary data of births and infant deaths of residents in São Paulo, from 1996 to 2012. The infant mortality rate was calculated by the direct method and was analyzed by graphs and polynomial regression models for age groups (early neonatal, late neonatal and post-neonatal) and for groups of avoidable causes of death.
Results: The mortality rate in the State of São Paulo tended to fall, ranging from 22.5 to 11.5 per thousand live births. Half of the infant deaths occurred in the early neonatal group. The proportion of avoidable infant deaths varied from 76.0 to 68.7%. The deaths which were avoidable by adequate attention to women during pregnancy and childbirth and newborn care accounted for 54% of infant deaths throughout the period.
Conclusions: The mortality rate levels are still far from those in developed countries, which highlight the need to prioritize access and quality of healthcare services during pregnancy, childbirth and newborn care, especially in the first week of life, aiming at achieving standards of infant mortality similar to those of developed societies.
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PALAVRAS-CHAVE
Mortalidade infantil;
Atenção à saúde;
Estudos ecológicos;
Estudos de séries temporais

Tendência secular da mortalidade infantil, componentes etários e evitabilidade no Estado de São Paulo – 1996 a 2012

Resumo

Objetivo: Conhecer a tendência e a composição da taxa de mortalidade infantil no Estado de São Paulo de 1996 a 2012.

Métodos: Estudo ecológico, baseado em dados secundários oficiais de nascimentos e óbitos infantis de residentes no Estado de São Paulo, de 1996 a 2012. A taxa de mortalidade infantil, calculada pelo método direto, foi analisada por meio de gráficos e modelos de regressão polinomial para os grupos etários (neonatal precoce, tardio e pós-neonatal) e para grupos de causas evitáveis de óbito.

Resultados: A taxa de mortalidade infantil no Estado de São Paulo apresentou tendência de queda, variou de 22,5 a 11,5 por mil nascidos vivos. Metade dos óbitos infantis ocorreu no grupo etário neonatal precoce. A proporção de óbitos infantis evitáveis variou de 76,0% a 68,7%. As causas reduzíveis por adequada atenção à mulher na gestação e parto e ao recém-nascido representaram 54% dos óbitos infantis em todo o período.

Conclusões: Os níveis da taxa de mortalidade infantil ainda estão distantes dos observados em países desenvolvidos, o que evidencia a necessidade de priorizar o acesso e a qualidade dos serviços assistenciais durante a gravidez, o parto e o período neonatal, principalmente na primeira semana de vida, para atingir padrões de mortalidade infantil próximos aos de sociedades desenvolvidas.

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Introduction

Infant mortality rate (IMR) reflects the living and health conditions of populations, estimates the risk of death among children under one year old, and expresses the inequities in different parts of the world, as can be seen in Africa and Europe, whose IMR in 2013 were 60 and 11 per 1000 live births (‰ LB), respectively.[1–4]

Reducing child mortality is one of the goals of the ''eight Millennium Development Goals (MDGs)'' established by the United Nations (UN) and agreed by Brazil, along with 190 nations in 2000. The Brazilian goal (IMR 15.7‰ LB by 2015) has already been met in 2011 (IMR 15.3‰ LB).[3,5] However, due to its territorial extent the country has a large variability in IMR and difficulty in producing accurate estimates of this indicator.[6,7] The highest IMR are in the North and Northeast and the lowest in the South and Southeast.[5,7] For example, in 2008–2010, the IMR corrected by active search of vital statistics was 11.2‰ LB in Santa Catarina and 28.7‰ LB in Amapá.[7]

São Paulo State, the country's main socioeconomic region, with 18.2% of Brazilian infant deaths, had an IMR of 11.6‰ LB in 2011 and ranks third among states. When compared to the Latin America countries, the State of São Paulo only has rates higher than those of Cuba and Chile, which showed IMR below 10‰ LB. Although within the agreed target, the IMR of São Paulo is far from those of developed countries, which are not higher than 5‰ LB, showing that there is still considerable room for improvement.[3,5,8,9]

In Brazil, in the 1980s, the main causes that contributed to the reduction of infant mortality in Brazil belonged to the group of preventable diseases through proper sanitation, and half of the deaths occurred in the post-neonatal period.[9,10] The majority of infant deaths occur in the neonatal period and are associated with both the quality and access to health services that provide prenatal, childbirth, and newborncare.[1–3,11] Despite this change in the scenario of infant deaths over time, the preventable conditions as determinants of infant mortality predominate.

In 1977, the analysis of preventable deaths was proposed as a health care quality indicator, and defined as those that should not occur if health centers were effective.[2,12] From this concept, researchers in different countries have developed preventability criteria to identify these preventable deaths. The first Brazilian list for classification of avoidable causes of infant deaths was proposed in 2000 by the Fundação Sistema Estadual de Análise de Dados do Governo do Estado de São Paulo (SEADE – a state system of data analysis), according to which the avoidable deaths are those that can be prevented, regardless of the availability of local resources, technologies, existing procedures or treatments. In 2007, the current Brazilian list applicable to children under five years old was developed, based on existing classifications, concepts of preventable deaths related to actions of health services and technology available in the Unified Health System (''Sistema Único de Saúde'' – SUS).[1,2,13]

Knowledge of the infant mortality trend in São Paulo State helps to map the evolution and current state of this population health status and provides important information to local administrators who design reduction and prevention strategies for infant mortality. In this context, the aim of this study is to describe the secular trend of infant mortality rate in the State of São Paulo by age group and group of avoidable causes through actions of health services.

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