

Exhibit 16

Puerto Rico Asthma Prevalence & Mortality Fact Sheet



Puerto Rico Asthma Project Asthma Surveillance System

Puerto Rico Department of Health
Maternal, Child and Adolescent Health Division

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The objective of this fact sheet is to disseminate prevalence and mortality information for asthma in Puerto Rico with a geographical approach. Lifetime and current asthma prevalence is included for children (0 to 17 years) and adults (18 years or older) by health care region using the 2007 Puerto Rico Behavioral Risk Factor Surveillance Survey (PR-BRFSS) data. In 1993, the government of Puerto Rico conducted a health care reform grouping the 78 municipalities into 8 health regions to provide centralized health care services and initiatives. PR-BRFSS collected data up to this level of geographical resolution. Lifetime and current asthma cases were selected using the two standard BRFSS asthma definitions (www.cdc.gov/brfss).

Asthma mortality data was obtained for the years 1989 to 2008 through the Vital Statistics Office, Puerto Rico Department of Health, which collects death certificates information from the national database of the Puerto Rico Demographic Registry. An asthma death was defined as any death between the ages of 5 to 54 years with a primary diagnosis of asthma using the International Code of Disease (ICD-9th revision) 493.0-493.9 from 1989 to 1998, and J45, J46 (ICD-10th revision) from 1999 to 2008.

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Prevalence

Figure 1. Lifetime childhood asthma prevalence by health regions, Puerto Rico 2007

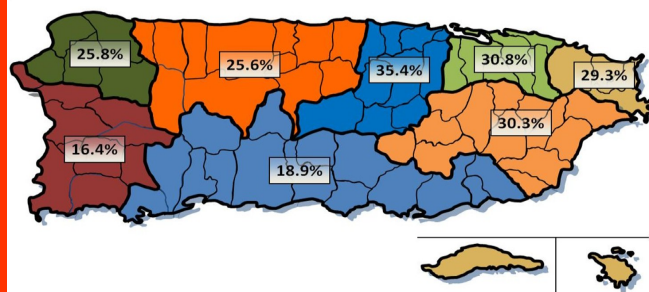


Figure 2. Current childhood asthma prevalence by health regions, Puerto Rico 2007

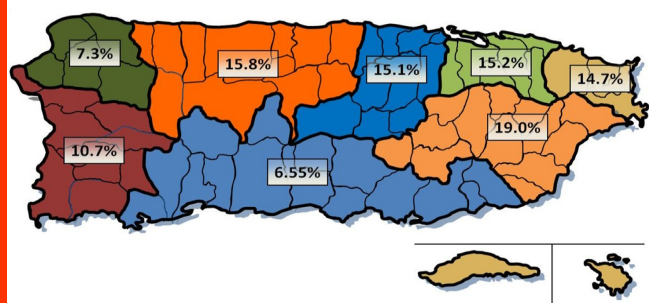


Figure 3. Lifetime adult asthma prevalence by health regions, Puerto Rico 2007

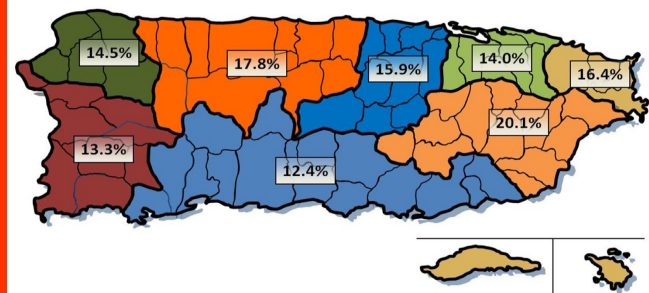
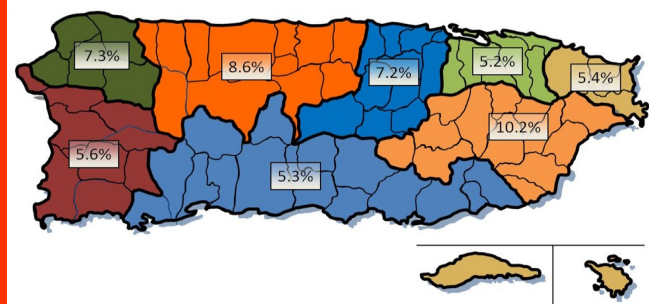


Figure 4. Current adult asthma prevalence by health regions, Puerto Rico 2007



Data Source: BRFSS 2007.

Puerto Rico Health Regions:

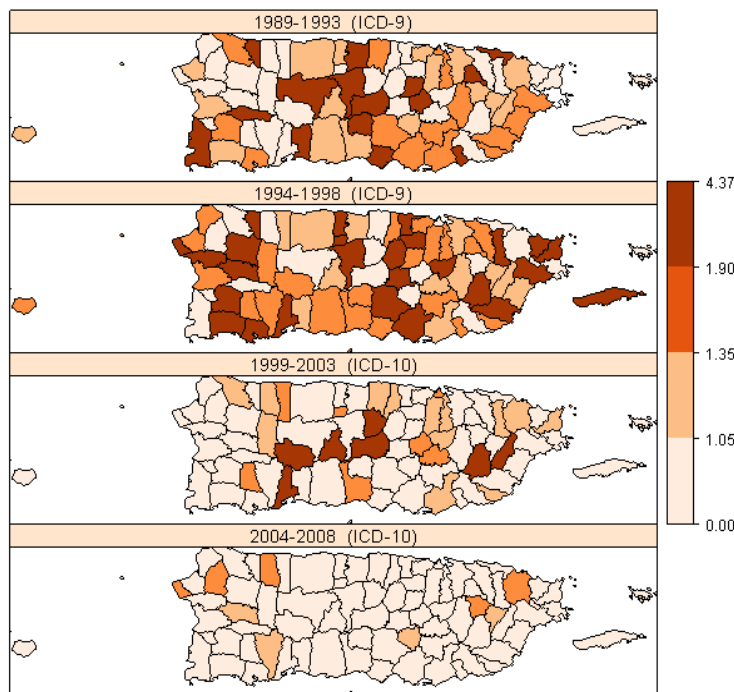
Aguadilla	Metro	Ponce
Arecibo	Fajardo	Mayaguez
Bayamón	Caguas	

- ❖ The Puerto Rico overall lifetime and current childhood asthma prevalence was 28.4% and 13.6% respectively.
- ❖ The lifetime childhood asthma prevalence by health care region ranged between 16.4% in the Mayaguez region to 35.4% at Bayamón region (Figure 1).
- ❖ The current childhood asthma prevalence by health care region range between 6.6% in the Ponce region to 19.0% in the Caguas region (Figure 2).
- ❖ The Puerto Rico overall lifetime and current adult asthma prevalence was 15.5% and 6.1% respectively.
- ❖ The lifetime adult asthma prevalence by health care region range between 12.4% in the Ponce region to 20.1% in the Caguas region (Figure 3).
- ❖ The current adult asthma prevalence by health care region range between 5.2% in the Metro region to 10.2% in the Caguas region (Figure 4).
- ❖ The Caguas region prevalence rates for both child and adults were above the overall expected Puerto Rican asthma rates.

Mortality

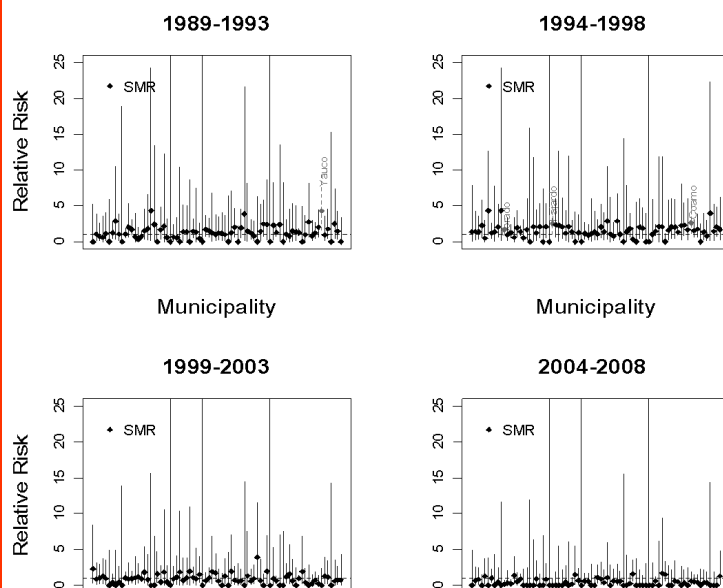
Figure 5

Age-Sex adjusted Standardized Mortality Ratio of asthma, 1989-2008



- ❖ The asthma mortality rates between the 5 to 54 years of age were 1.69 for 1989-1993; 2.06 for 1994-1998; 1.29 for 1999-2003 and 0.75 for 2004-2008 per 100,000.
- ❖ There were 49, 59, 28 and 10 municipalities with an SMR higher than expected (SMR=1) for each time period respectively (1989-1993, 1994-1998, 1999-2003 and 2004-2008) (Figure 5).
- ❖ A decrease was observed in the overall mortality rate after the implementation of the ICD-10 during the 1999-2003 period (Figure 5).

Figure 6 . Age-sex adjusted Standardized Mortality Ratio & 95% CI by municipalities and time period.



- ❖ During the time period of 1989-1993, the municipality of Yauco had a significantly higher age-sex adjusted SMR than the expected (Figure 6).
- ❖ During the time period of 1994-1998, the municipalities of Dorado, Fajardo and Coamo had a significantly higher age-sex adjusted SMR than the expected (Figure 6).
- ❖ After the ICD-10 implementation there were no municipalities with an SMR higher than the expected (Figure 6).

Data Source: 1989-2008 Vital Statistics Office PRDOH.

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