MARYLAND ASTHMA CONTROL PROGRAM

Department of Health and Mental Hygiene
Family Health Administration
Center for Maternal and Child Health

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Data Brief #3:

Asthma Hospitalizations in Maryland

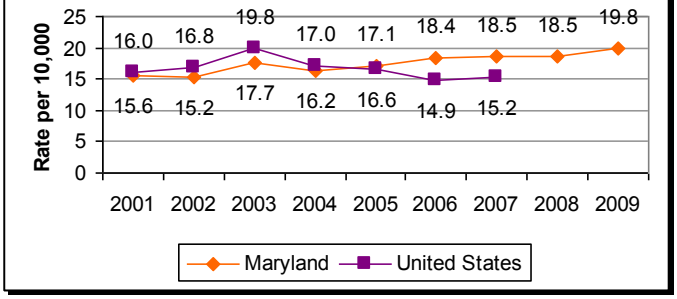
Background

Hospitalizations for asthma, like emergency department visits, are generally considered a failure of outpatient management. Although the data does not represent all persons with asthma, they provide a picture of those with the most severe or poorly controlled asthma, and those who may not have adequate access to preventive care.

This report presents hospital discharge data from the Maryland Health Services Cost Review Commission (HSCRC) for asthma among Marylanders. An asthma hospital discharge is defined as a hospitalization with principal diagnosis of asthma. Rates are calculated based on population statistics from the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) vintage population files. Data have been age-adjusted to the 2000 U.S. estimated population when possible. An asthma hospital discharge is defined as a hospitalization with principal diagnosis of asthma, which is an ICD-9 CM code of 493.0-493.9. Since some Maryland residents are hospitalized in neighboring states, data on hospitalization of Maryland residents from Delaware, Pennsylvania*, Washington D.C., and West Virginia are included when possible. Hospitalization numbers and rates presented in this report may differ from prior reports due to changes in analysis methods.†

What is Asthma? Asthma is a controllable chronic lung disease characterized by inflammation of the airways that leads to reversible airway narrowing and excess mucus secretion. This narrowing of the airway results in reduced airflow that may cause symptoms of wheezing, coughing, tightness of the chest, and difficulty breathing.

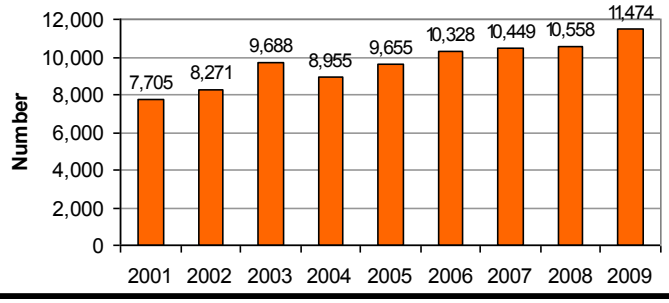
Figure 1: Asthma Hospitalization Rates, Maryland vs. United States, 2001-2009



Maryland HSCRC, Delaware Department of Health, Pennsylvania Health Care Cost Containment Council, West Virginia Health Care Authority, 2001-2009; CDC/National Center for Health Statistics, National Hospital Discharge Survey, 2001-2007.

[a] Rates are age-adjusted to the 2000 U.S. standard population.

Figure 2: Number of Asthma Hospitalizations, Maryland, 2001-2009



Maryland HSCRC, Delaware Department of Health, Pennsylvania Health Care Cost Containment Council, West Virginia Health Care Authority, 2001-2009.

As displayed in Figure 1, the hospitalization rate for Maryland residents was 19.8 (per 10,000 population) in 2009. Asthma hospitalizations in Maryland have increased almost 25% from 2001 to 2009. Maryland asthma hospitalization rates were lower than the United States until 2005. Since then, Maryland's rates have continually remained higher than the nation. Figure 2 shows the number of hospitalizations from 2001 to 2009. In 2009, there were 11,474 hospitalizations of Maryland residents due to a principle diagnosis of asthma.

* "The Pennsylvania Health Care Cost Containment Council (PHC4) is an independent state agency responsible for addressing the problem of escalating health costs, ensuring the quality of health care, and increasing access to healthcare for all citizens regardless of ability to pay. PHC4 has provided data to this entity in an effort to further PHC4's mission of educating the public and containing health care costs in Pennsylvania. PHC4, its agents, and staff, have made no representation, guarantee, or warranty, expressed or implied, that the data -- financial, patient, payor, and physician specific information -- provided to this entity, are error-free, or that the use of the data will avoid differences of opinion or interpretation. This analysis was not prepared by PHC4. This analysis was done by MACP. PHC4, its agents and staff, bear no responsibility or liability for the results of the analysis, which are solely the opinion of MACP."

† Reports prior to 2002 presented hospitalization data determined by admission date. Since 2003, hospitalization data has been determined by discharge date. Additionally, instead of creating zip code-specific county data, county-specific data already provided by HSCRC has been used since 2006. Focusing on the county-specific data is viewed to be more accurate since many of the zip codes belong to more than one county.

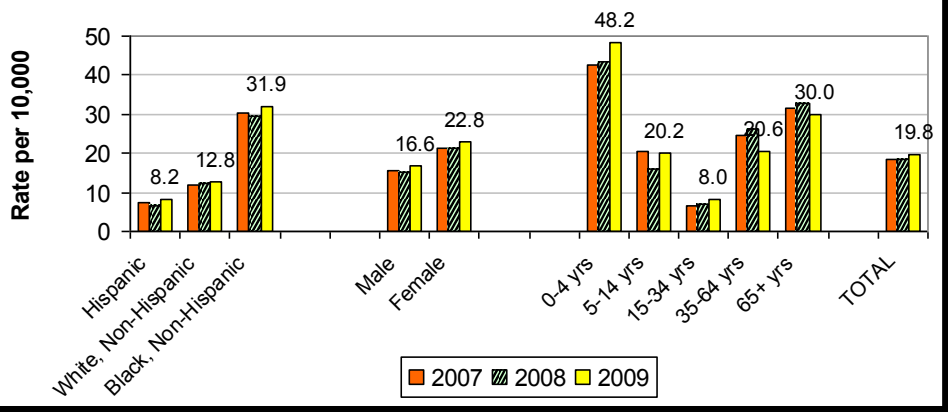
Asthma Hospitalization Trends by Race, Sex, and Age

As shown in Figure 3, hospitalization rates for non-Hispanic Blacks were 2.5 times higher than Whites in 2009.

Females continued to have higher hospitalization rates than males.

Children under the age of 5 years of age continued to have the highest hospitalization rates when compared to other age groups (48.2 hospitalizations per 10,000 population).

Figure 3: Asthma Hospitalization Visit Rates by Race, Sex, and Age
Maryland, 2007-2009



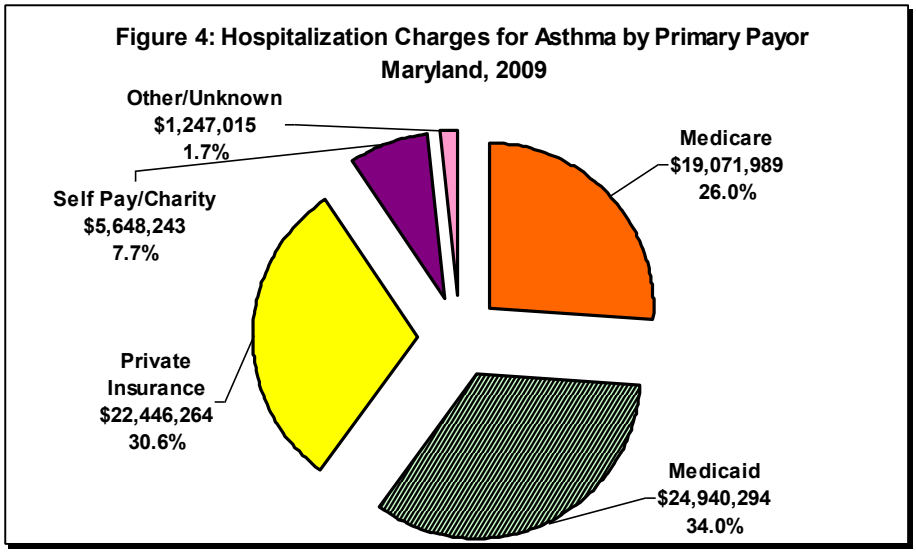
Maryland HSCRC, Delaware Department of Health; Pennsylvania Health Care Cost Containment Council, West Virginia Health Care Authority, 2007-2009.
[a] Rates are age-adjusted to the 2000 U.S. standard population.
[b] Includes Maryland residents hospitalized in Delaware, Pennsylvania, Washington D.C., and West Virginia.
[c] Out of state data for ethnicity only includes Pennsylvania.

The Cost of Asthma Hospitalizations

Total charges for asthma hospitalizations in 2009 were approximately $73 million. The average charge for an inpatient stay for asthma in 2009 was $6,843.

At 34%, Medicaid was largest source of payment due to asthma hospitalizations. Overall, public insurance (Medicaid and Medicare) contributed to 60% of the asthma hospitalization costs.

Figure 4: Hospitalization Charges for Asthma by Primary Payor
Maryland, 2009



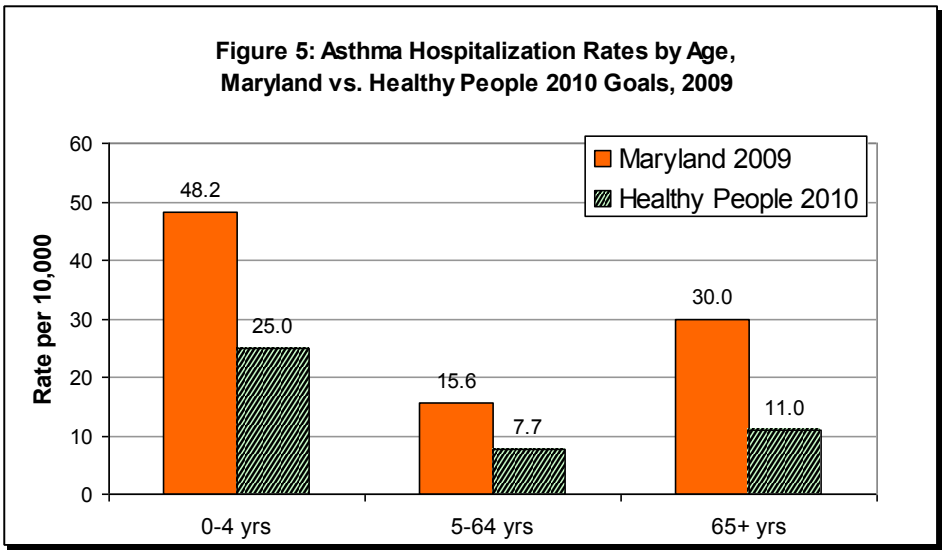
Maryland HSCRC, 2009.

Maryland residents hospitalized for asthma spent a total of 40,313 days in the hospital during 2009, with an average stay of 3.8 days. Females and Whites had a longer average hospital stay than their counterparts. The length of hospitalization stays increased with age. Children under 5 years old spent an average of 1.8 days in the hospital, while adults aged 65 years and older spent, on average, 5.3 days in the hospital for asthma. [Maryland HSCRC, 2009; out of state hospitalizations not included]

Asthma Hospitalization Rates and Healthy People 2010 Goals

As shown in Figure 5, Maryland's asthma hospitalization rates over the past five years have exceeded Healthy People 2010 goals for all age groups.

Figure 5: Asthma Hospitalization Rates by Age, Maryland vs. Healthy People 2010 Goals, 2009

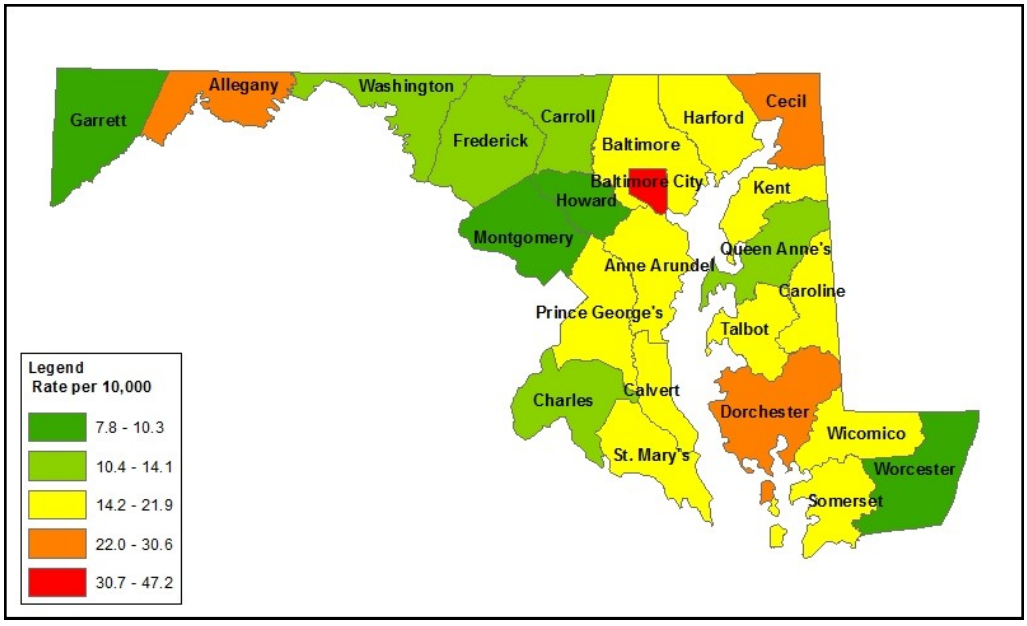


Maryland HSCRC, 2009; Delaware Department of Health, 2009; Pennsylvania Health Care Cost Containment Council, 2009; West Virginia Health Care Authority, 2009; DATA2010 Healthy People 2010 Database, U.S. Department of Health and Human Services, 2010.
[a] Rates are age-adjusted to the 2000 U.S. standard population.
[b] Includes Maryland residents hospitalized in Delaware, Pennsylvania, Washington D.C., and West Virginia.

Asthma Hospitalization Rates by Jurisdiction

Baltimore City, Allegany, Cecil, and Dorchester had significantly higher asthma hospitalization rates compared to Maryland's state asthma hospitalization rate in 2009 (47.2, 30.6, 26.9, and 24.4 per 10,000 vs. 19.8 per 10,000).

Figure 6: Asthma Hospitalization Rates by Jurisdiction, Maryland 2009



Maryland HSCRC, 2009; Pennsylvania Health Care Cost Containment Council, 2009; West Virginia Health Care Authority, 2009.
[a] Rates are age-adjusted to the 2000 U.S. standard population.
[b] Includes Maryland residents hospitalized in Pennsylvania, Washington D.C., and West Virginia.

Asthma Hospitalization Rates by Jurisdiction – Continued

Table 1: Maryland Hospitalization Rates by Jurisdiction, 2009

Jurisdiction	Hospitalization Rates (per 10,000)	Total Number of Hospitalizations
NORTHWEST	16.1 **	788
Garrett	8.0 **	25
Allegany	30.6 **	259
Washington	13.0 **	190
Frederick	13.9 **	314
BALTIMORE METRO	24.7 **	6,610
Baltimore City	47.2 **	2,946
Baltimore County	21.9	1,743
Anne Arundel	19.5	1,038
Carroll	13.5 **	219
Howard	7.8 **	219
Harford	17.5	429
NATIONAL CAPITOL	14.0 **	2,578
Montgomery	10.3 **	1,031
Prince George's	18.6	1,547
SOUTHERN MD	17.1	560
Calvert	17.5	151
Charles	14.1 **	194
Saint Mary's	21.0	215
EASTERN SHORE	19.2	886
Cecil	26.9 **	278
Kent	19.3	43
Queen Anne's	11.5 **	58
Caroline	21.9	77
Talbot	21.9	86
Dorchester	24.4 **	84
Wicomico	17.2	160
Somerset	21.0	51
Worcester	9.2 **	49
TOTAL	19.8	11,474

Maryland HSCRC, 2009; Pennsylvania Health Care Cost Containment Council, 2009; West Virginia Health Care Authority, 2009.

[a] Rates are age-adjusted to the 2000 U.S. standard population.

[b] Includes Maryland residents hospitalized in Washington D.C. and West Virginia.

**Rate significantly different from state of Maryland rate ($p < 0.05$).

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