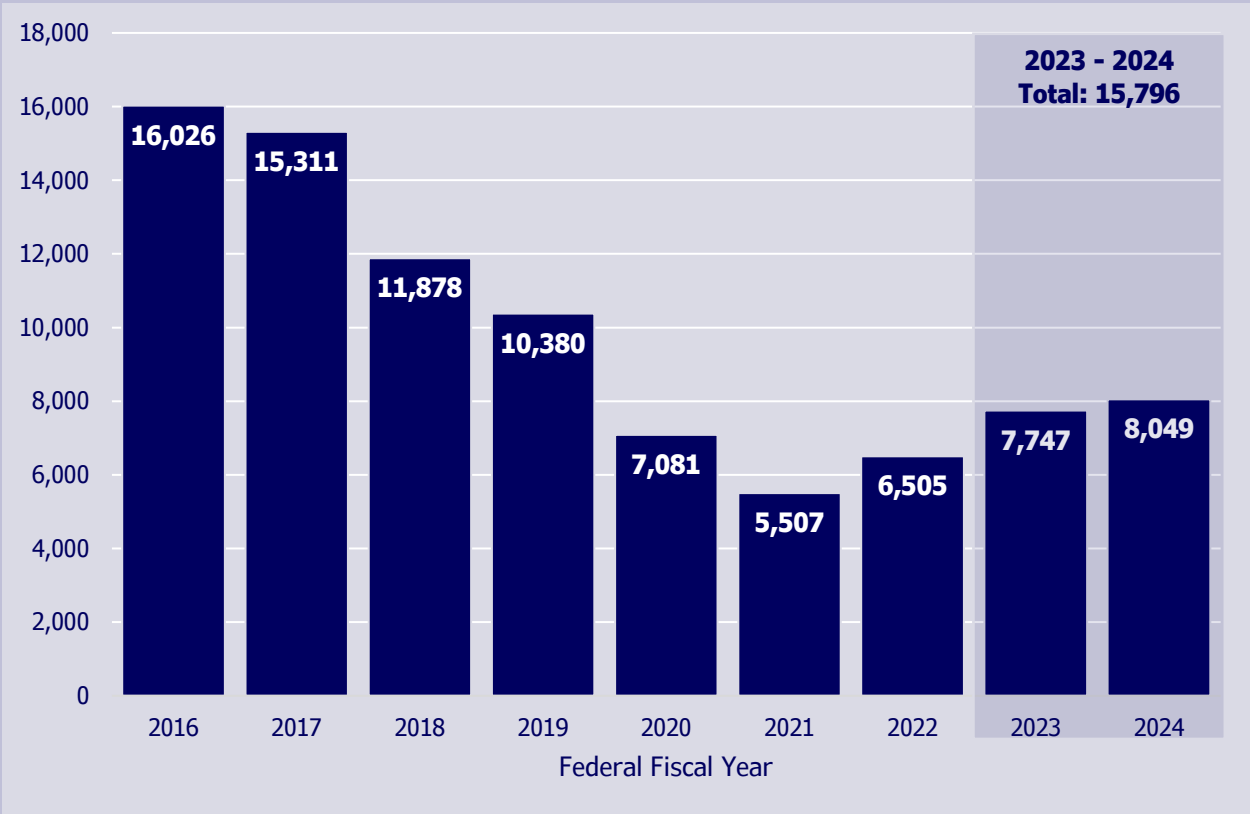# PHC4
Transparent Health Care Reporting

RESEARCH BRIEF

Asthma Hospitalizations in Pennsylvania

Asthma is a chronic disease characterized by inflammation of the airways in the lungs. Examining hospital admissions for asthma is one way to observe the quality of care provided to Pennsylvania residents with asthma. Timely diagnosis, effective primary care, and appropriate disease management can potentially prevent hospitalizations for asthma. This research brief focuses on hospitalizations for Pennsylvania residents (all ages) who were admitted to a Pennsylvania acute care hospital with a diagnosis of asthma. Trends are shown for federal fiscal years (FFY)[*] 2016 through 2024, with additional focus on hospitalizations from FFY 2023 through FFY 2024.

The total number of asthma hospitalizations for Pennsylvania residents declined from FFY 2016 to FFY 2021, then increased from FFY 2021 to FFY 2024.

Number of Asthma Hospitalizations in Pennsylvania
Federal Fiscal Year 2016 to 2024

2023 - 2024 Total: 15,796

Federal Fiscal Year	Number
2016	16,026
2017	15,311
2018	11,878
2019	10,380
2020	7,081
2021	5,507
2022	6,505
2023	7,747
2024	8,049

The results below (except for page 5) focus on the more recent 15,796 hospitalizations from FFY 2023 through FFY 2024.

* Federal fiscal year reflects twelve consecutive months beginning in October and ending in September.

RESEARCH BRIEF

Asthma Hospitalizations, FFY 2023-2024
by Patient Characteristic

Population Characteristic		Hospitalization Rate per 10,000 PA Residents[1]	Number of Hospitalizations	Average Length of Hospital Stay[2] (in days)
Statewide		**12.2**	**15,796**	**2.9**
Age	Less than 18 years	23.4	6,192	1.9
	18-39 years	5.8	2,136	2.7
	40-64 years	10.6	4,311	3.6
	65 years and older	12.2	3,157	3.9
Sex[3]	Female	14.3	9,400	3.2
	Male	10.0	6,394	2.4
Race and Ethnicity	Black, non-Hispanic	40.5	5,686	2.8
	Hispanic	20.6	2,382	2.6
	White, non-Hispanic	6.7	6,422	3.2
	Other, non-Hispanic	16.2	1,306	2.6
Poverty Rate[4]	Less than 10%	7.6	5,160	3.1
	10% to less than 25%	12.4	6,244	2.9
	25% or more	36.7	4,392	2.7
Rural/Urban Residency[5]	Rural	6.4	2,155	3.0
	Urban	14.2	13,641	2.9

[1]Hospitalization rates were based on 2023 US Census Bureau population data.
[2]Only hospitalizations with valid length of stay were included.
[3]Only patients identified as female or male were included.
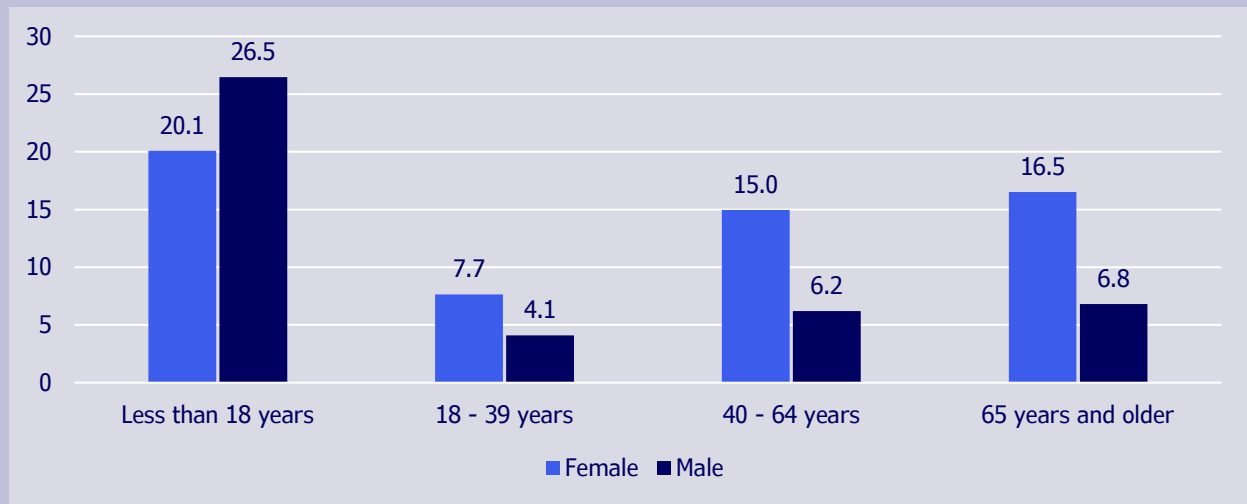[4]Poverty rates were based on 2023 US Census Bureau estimates at the patient zip code level.
[5]Rural versus urban classification was determined by the patient's county of residence and based on the population density, according to the Center for Rural Pennsylvania.

Hospitalization rates were higher than the statewide baseline for:

- Residents age less than 18 years old
- Female residents
- Black (non-Hispanic) residents, Hispanic residents, and residents classified as Other (non-Hispanic)
- Residents who live in areas with a poverty rate of 10% or more
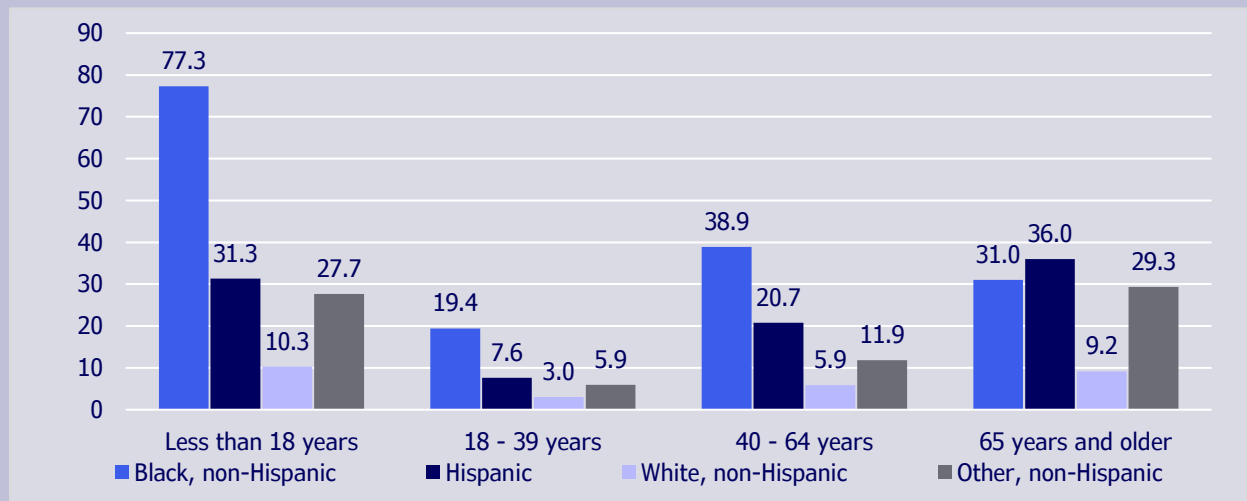- Residents who live in urban counties

RESEARCH BRIEF

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Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Sex and Age

Chart: Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Sex and Age (Female, Male)

Age Group	Female	Male
Less than 18 years	20.1	26.5
18 - 39 years	7.7	4.1
40 - 64 years	15.0	6.2
65 years and older	16.5	6.8

- For residents age less than 18 years, males had the highest asthma hospitalization rate.
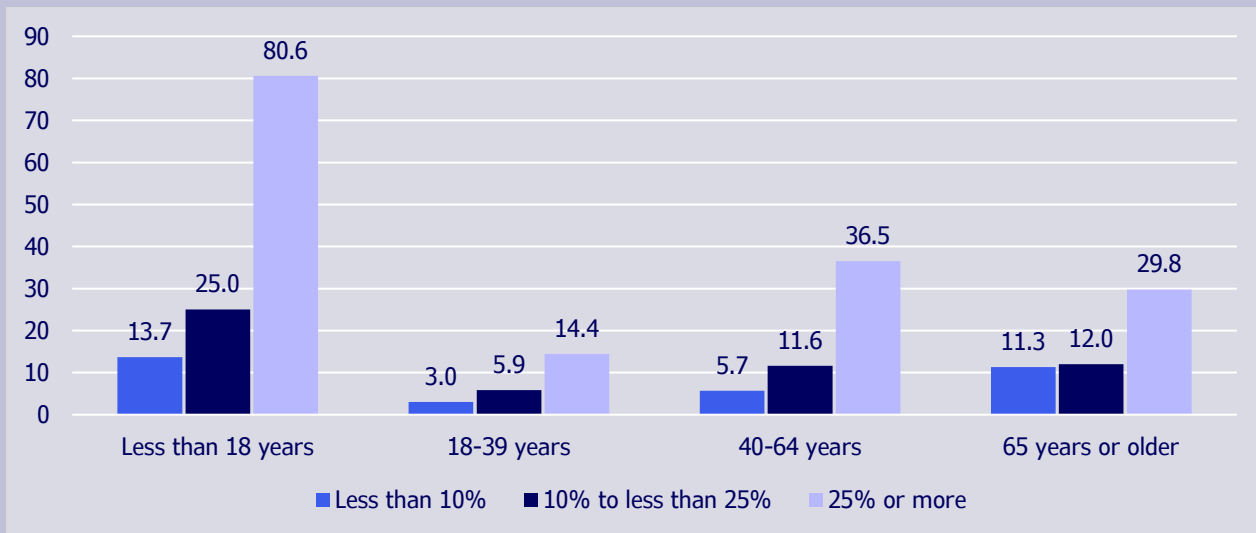- For each of the older age groups, females had the highest asthma hospitalization rates.

Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Race/Ethnicity and Age

Chart: Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Race/Ethnicity and Age (Black, non-Hispanic; Hispanic; White, non-Hispanic; Other, non-Hispanic)

Age Group	Black, non-Hispanic	Hispanic	White, non-Hispanic	Other, non-Hispanic
Less than 18 years	77.3	31.3	10.3	27.7
18 - 39 years	19.4	7.6	3.0	5.9
40 - 64 years	38.9	20.7	5.9	11.9
65 years and older	31.0	36.0	9.2	29.3

- Black, non-Hispanic residents had the highest asthma hospitalization rates for all age groups under age 65 years.
- Among residents age 65 and older, Hispanic residents had the highest asthma hospitalization rate.
- White, non-Hispanic residents had the lowest asthma hospitalization rates for all age groups.
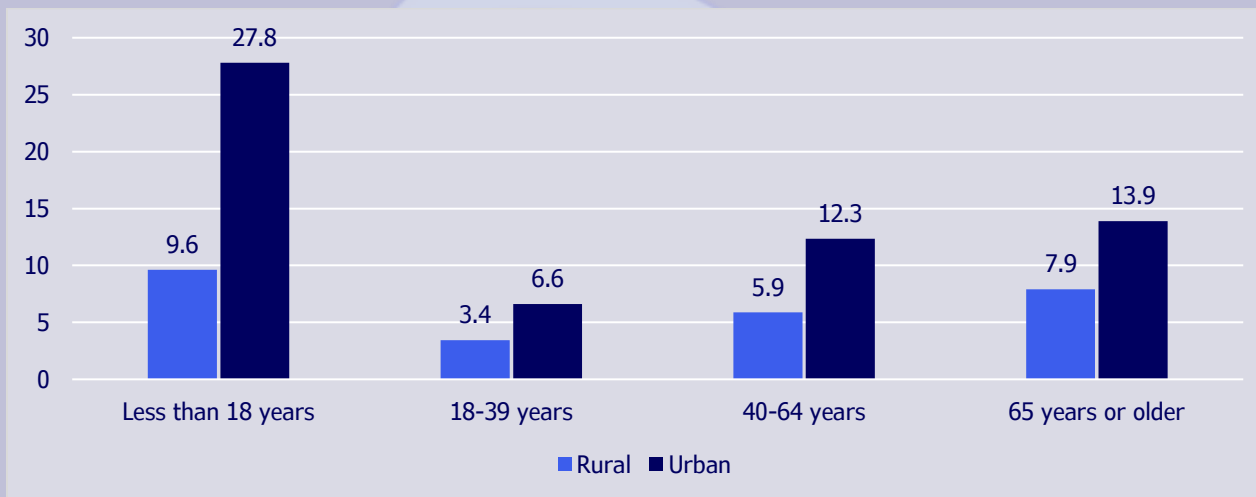
RESEARCH BRIEF

Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Poverty Rate and Age

Legend: Less than 10% ■ 10% to less than 25% ■ 25% or more

Age group	Less than 10%	10% to less than 25%	25% or more
Less than 18 years	13.7	25.0	80.6
18-39 years	3.0	5.9	14.4
40-64 years	5.7	11.6	36.5
65 years or older	11.3	12.0	29.8

- Residents living in communities with a poverty rate of 25% or more had the highest asthma hospitalization rates for all age groups.
- Residents living in communities with a poverty rate of less than 10% had the lowest asthma hospitalization rates for all age groups.

Asthma Hospitalization Rates per 10,000 Pennsylvania Residents, FFY 2023-2024, by Rural/Urban Residency and Age

Legend: ■ Rural ■ Urban

Age group	Rural	Urban
Less than 18 years	9.6	27.8
18-39 years	3.4	6.6
40-64 years	5.9	12.3
65 years or older	7.9	13.9

- Residents living in urban counties had the highest asthma hospitalization rates for all age groups.

Readmissions for Asthma within 90 Days, FFY 2023, by Patient Characteristic

Category	Characteristic	Rate
	Statewide	7.8%
Age	Less than 18 years	6.5%
	18-39 years	9.3%
	40-64 years	10.4%
	65 years or more	5.7%
Sex[1]	Female	7.9%
	Male	7.7%
Race and Ethnicity	Black, non-Hispanic	10.1%
	Hispanic	7.4%
	White, non-Hispanic	6.2%
	Other, non-Hispanic	6.8%
Poverty Rate[2]	Less than 10%	6.4%
	10% to less than 25%	8.0%
	25% or more	9.2%
Primary Payer[3]	Commercial	4.9%
	Medicaid	9.5%
	Medicare	7.5%
Rural/Urban Residency[4]	Rural	7.7%
	Urban	7.8%

[1]Only patients identified as female or male were included.
[2]Poverty rates were based on 2023 US Census Bureau estimates at the patient zip code level.
[3]Only patients identified as having commercial, Medicaid, or Medicare insurance were included.
[4]Rural versus urban classification was determined by the patient's county of residence and based on the population density, according to the Center for Rural Pennsylvania.

In FFY 2023, readmission rates varied across patient characteristics. By category, the highest rates of readmission for asthma were for:

- Patients age 40-64
- Female patients
- Black, non-Hispanic patients
- Patients who live in areas with a poverty rate of 25% or more
- Patients with Medicaid as the primary payer
- Patients who live in urban counties

RESEARCH BRIEF

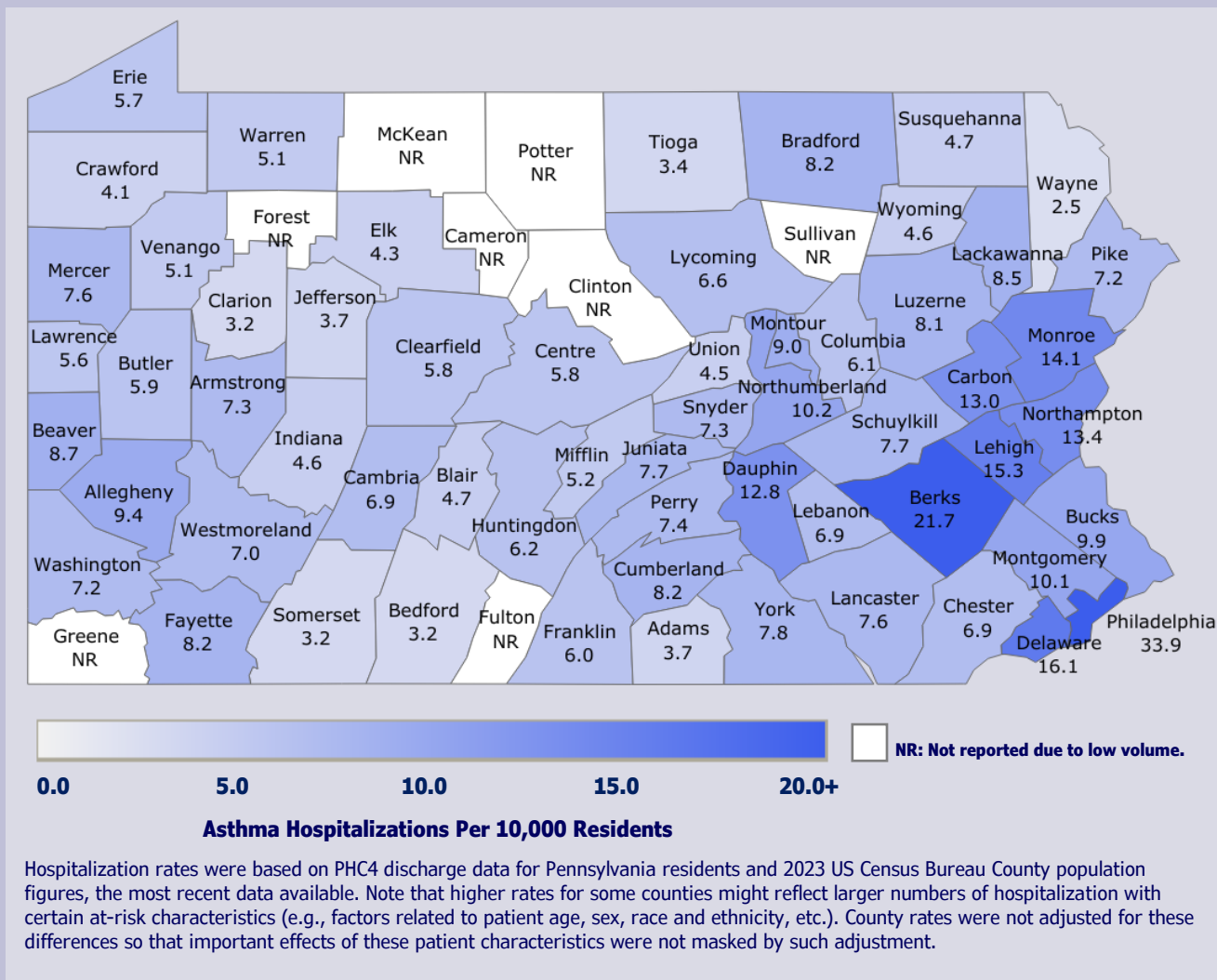## Asthma Hospitalizations per 10,000 Pennsylvania Residents, FFY 2023-2024, by Patient County

County	Number	Rate	County	Number	Rate
Statewide	15,796	12.2	Juniata	18	7.7
Adams	40	3.7	Lackawanna	184	8.5
Allegheny	1,148	9.4	Lancaster	422	7.6
Armstrong	47	7.3	Lawrence	47	5.6
Beaver	144	8.7	Lebanon	99	6.9
Bedford	15	3.2	Lehigh	578	15.3
Berks	939	21.7	Luzerne	265	8.1
Blair	57	4.7	Lycoming	74	6.6
Bradford	49	8.2	McKean	NR	NR
Bucks	640	9.9	Mercer	82	7.6
Butler	117	5.9	Mifflin	24	5.2
Cambria	90	6.9	Monroe	234	14.1
Cameron	NR	NR	Montgomery	876	10.1
Carbon	85	13.0	Montour	16	9.0
Centre	92	5.8	Northampton	426	13.4
Chester	379	6.9	Northumberland	92	10.2
Clarion	12	3.2	Perry	34	7.4
Clearfield	45	5.8	Philadelphia	5,262	33.9
Clinton	NR	NR	Pike	44	7.2
Columbia	40	6.1	Potter	NR	NR
Crawford	34	4.1	Schuylkill	110	7.7
Cumberland	222	8.2	Snyder	29	7.3
Dauphin	370	12.8	Somerset	23	3.2
Delaware	928	16.1	Sullivan	NR	NR
Elk	13	4.3	Susquehanna	18	4.7
Erie	153	5.7	Tioga	14	3.4
Fayette	101	8.2	Union	19	4.5
Forest	NR	NR	Venango	25	5.1
Franklin	94	6.0	Warren	19	5.1
Fulton	NR	NR	Washington	152	7.2
Greene	NR	NR	Wayne	13	2.5
Huntingdon	27	6.2	Westmoreland	245	7.0
Indiana	38	4.6	Wyoming	12	4.6
Jefferson	16	3.7	York	361	7.8

NR: Not Reported due to low volume.

RESEARCH BRIEF

Asthma Hospitalizations per 10,000 Pennsylvania Residents, FFY 2023-2024

Asthma Hospitalizations Per 10,000 Residents

0.0   5.0   10.0   15.0   20.0+

NR: Not reported due to low volume.

Hospitalization rates were based on PHC4 discharge data for Pennsylvania residents and 2023 US Census Bureau County population figures, the most recent data available. Note that higher rates for some counties might reflect larger numbers of hospitalization with certain at-risk characteristics (e.g., factors related to patient age, sex, race and ethnicity, etc.). County rates were not adjusted for these differences so that important effects of these patient characteristics were not masked by such adjustment.

About PHC4

Created by the PA General Assembly in 1986, the Pennsylvania Health Care Cost Containment Council (PHC4) is an independent council charged with collecting, analyzing and reporting information that can be used to improve the quality and restrain the cost of health care in the state. Today, PHC4 is a recognized national leader in public health care reporting. PHC4 is governed by a council with members representing business, labor, consumers, health care providers, insurers, health economists and state government.

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