HEALTHY CAPITAL DISTRICT INITIATIVE

Building A Healthier Community

Health Equity Report

Index of Disparity

Healthy Capital District Initiative
Population Health Improvement Program
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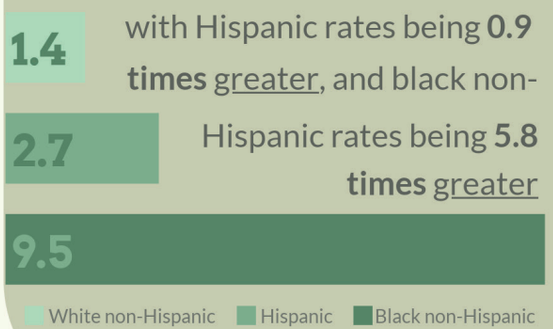
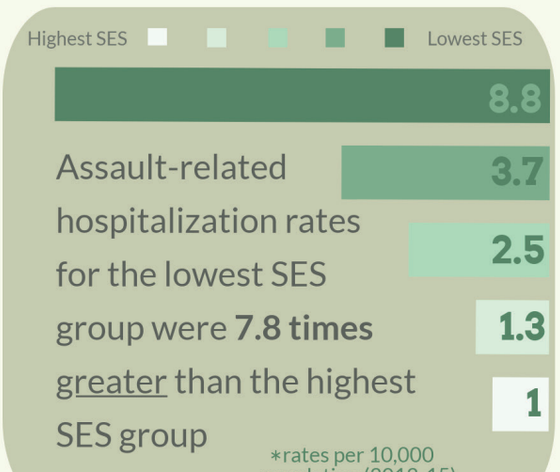
Health Disparities in the Capital Region

Health disparities are avoidable differences in the rates of disease, injury, or violence experienced by certain populations.[1] Disparate populations can be defined by way of race, ethnicity, socioeconomic status, gender, sexual orientation, disability, and geographic location. Across all populations, there are also disparities in access to achieving optimal health. Eliminating health disparities would lead to health equity for all.

Assault-related hospitalization rates were lowest for white non-hispanics, with Hispanic rates being **0.9 times** greater, and black non-Hispanic rates being **5.8 times** greater

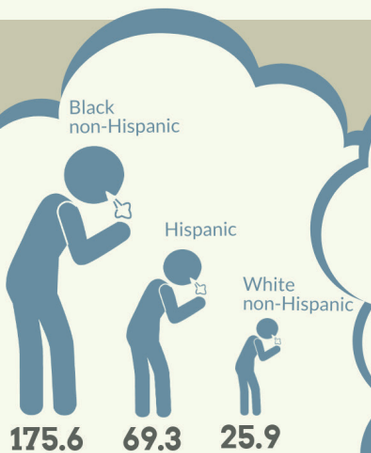


*rates per 10,000 population (2013-15)

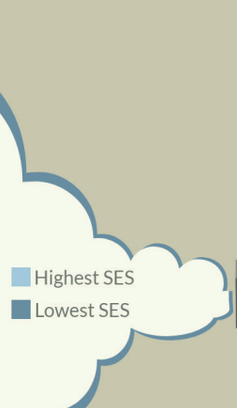


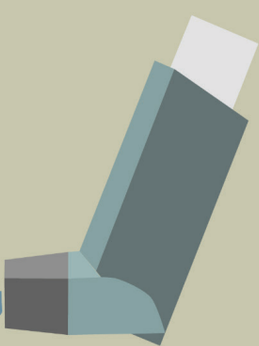
Assault-related hospitalization rates for the lowest SES group were **7.8 times** greater than the highest SES group

*rates per 10,000 population (2013-15)



Asthma emergency department visit rates were **5.8 times** greater for black non-Hispanics than white non-Hispanics, and **9.1 times** greater for low SES compared to high SES





*rates per 10,000 population (2013-15)

*rates per 1,000 females aged 15-17 (2012-14)

Adolescent pregnancy rates were lowest for white non-Hispanics, with Hispanic rates being **2.5 times** greater, and black non-Hispanic rates being **3 times** greater

Sources:
- 1. Centers for Disease Control and Prevention: Health Disparities (https://www.cdc.gov/healthyyouth/disparities/index.htm)
- NYS Vital Statistics
- State Planning and Research Cooperative System (SPARCS)
- NYS Prevention Agenda Dashboard

Introduction

Reducing health disparities is an Overarching Goal of the Nation's Healthy People 2020 [1] and a Major Priority Area in New York's Prevention Agenda.[2] Previous HCDI Health Equity Reports have focused on looking at Health Equity for specific topic areas such as diabetes, asthma, maternal and infant health, and obesity.[3] This Health Equity Report will look at a summary measure that can be utilized to identify the level of disparity for many types of health indicators—the Index of Disparity (ID).

The ID is a simple method for summarizing disparities across groups within a population that can be applied across health indicators, and across different populations. The Index of Disparity indicates how different the population sub-group rates are from one another, no matter if they are higher or lower than the total population rate. As the difference between the sub-group rates increase, the ID increases. By definition, the Index of Disparity is the average of the absolute difference between rates for specific groups within a population and the overall population rate, divided by the rate for the overall population, expressed as a percentage.[4]

Below is an example of how the Index of Disparity is calculated:

Asthma ED Visits per 10,000 by Race/Ethnicity

Total Population	44.9	Difference
White non-Hispanic	25.9	19.0
Black non-Hispanic	175.6	130.7
Hispanic	69.3	24.4
	Σ	174.1

Average of Differences: 174.1 / 3 = 58.03

Index of Disparity: 58.3 / 44.9 = **129.3%**

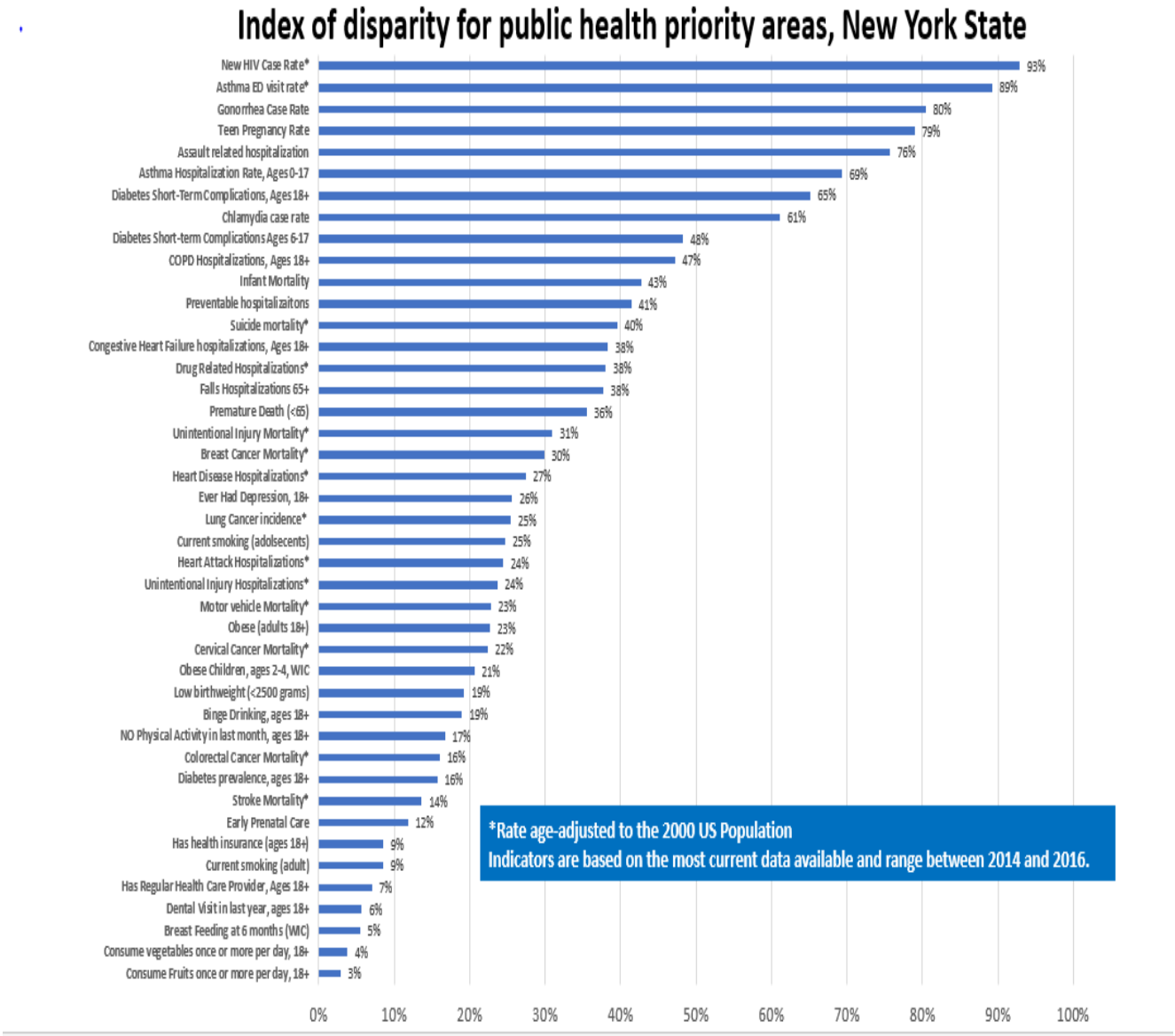
The authors who developed the Index of Disparity considered 60.0% or higher as very high, and 25.0%-59.9% as moderately high disparity effect.[4]

Looking at ID by race/ethnicity for the Capital Region, 9 of the 37 health indicators reviewed had an ID of 70.0% or greater. Asthma ED visits had the highest ID at 129.3%, while stroke mortality had the lowest at 7.3%. For ID by SES, 10 of the 32 health indicators reviewed had an ID of 50% or greater. Again, asthma ED visits had the highest ID at 91.1%, while congestive heart failure mortality had the lowest ID at 5.0%. In New York, sexually transmitted diseases, asthma, and diabetes each had multiple indicators in the top 10 that were highly disparate. In the Capital Region, asthma, assault, diabetes and birth indicators dominated the top 10 most disparate by race/ethnicity.

This Health Equity Report will look at Index of Disparity across a number of health indicators, and identify the effect of disparity defined on the basis of race/ethnicity and socioeconomic status (SES). Index of Disparity for selected indicators was calculated for the Capital Region and for each of the six counties. Tables for each of the race/ethnicity-specific and SES-specific rates were also included in this report.

State Context

In its State Health Assessment 2018, the NYSDOH utilized the Index of Disparity in identifying the effect of disparity, defined on the basis of race/ethnicity, across public health priority areas.[5]



Eight of the 43 health indicators analyzed had an ID of over 60% with new HIV case rate (93%), asthma ED visit rate (89%), gonorrhea case rate (80%), teen pregnancy rate (79%), and assault-related hospitalization rate (76%) having the highest IDs.

Capital Region

Index of Disparity (ID) Summary for the Capital Region

Highlights:

ID for Race/Ethnicity

The Capital Region had 9 of the 37 health indicators reviewed by race/ethnicity with an ID of 70.0% or greater. Indicators with the highest IDs were: asthma-related; assault-related; adolescent pregnancy; diabetes-related; and percent of deaths that were premature.

For the high ID indicators, black non-Hispanic rates were the major factor for the high ID. Black non-Hispanic rates ranged from 1.9 times higher (preventive hospitalizations) to 4.0 times higher (assault hospitalizations) than the general population. Hispanics also had higher rates than the general population for these indicators, except for the diabetes short-term and long-term complication hospitalizations where they had slightly lower rates than the white non-Hispanic population. The white-non-Hispanic population had the highest rates for opioid overdose hospitalizations and opioid overdose ED visits.

When looking at trends over the past decade, the black non-Hispanic population had consistently higher rates than either the white-non-Hispanic or Hispanic population. The exception is for opioid overdose ED visits and hospitalizations where white non-Hispanics had the higher rates since 2012-2014.

ID for SES

For ID by SES, 10 of the 32 health indicators reviewed had an ID of 50% or greater. Indicators with the highest IDs were: asthma-related; assault-related; diabetes-related; mental disease and disorders; and COPD/CLRD hospitalizations.

The high ID indicators showed decreasing rates from SES 1 (low) to SES 5 (high), with SES 1 and SES 2 contributing the most to the Index of Disparity. SES 1 rates ranged from 3.8 times higher (COPD/CLRD hospitalizations) to 10.1 times higher (asthma ED visits) than SES 5.

When looking at the trends over the last decade, SES 1 residents had consistently higher rates followed by residents from SES 2.

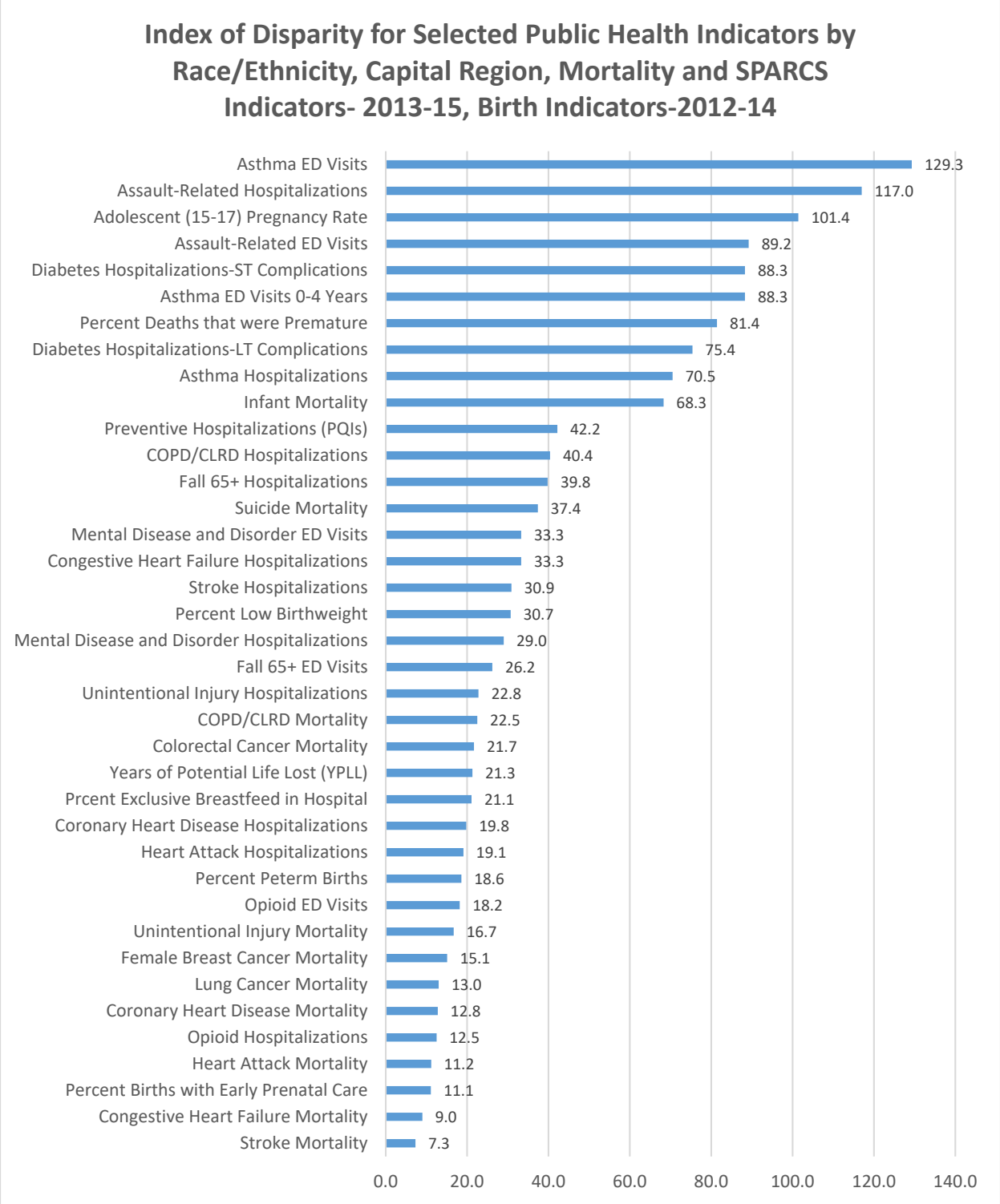
Index of Disparity (ID) by Race/Ethnicity

- The Capital Region had 9 of the 37 health indicators reviewed by race/ethnicity with an ID of 70.0% or greater. Indicators with the greatest ID were: asthma ED visits (129.3%); assault-related hospitalizations (117.0%); adolescent pregnancy (101.4%); assault-related ED visits (89.2%); diabetes hospitalizations short-term complications (88.3%); asthma ED visits 0-4 years (88.3%); percent of deaths that were premature (81.4%); diabetes hospitalizations-long term complications (75.4%); and asthma hospitalizations (70.5%). (*Narrative p. 6, 7).*
- Rates for the Capital Region's black non-Hispanic residents contributed the greatest towards the ID. Compared to the general population, black non-Hispanic rates were: 4 times higher for assault-related hospitalizations; 3.9 times higher for asthma ED visits; 3.4 times higher for assault ED visits; and 3.2 times higher for diabetes hospitalizations for short-term complications. *(Narrative, p 8)*
- White non-Hispanic residents had the highest rates for elderly fall hospitalizations (ID 39.8); suicide mortality (ID 37.4); elderly fall ED (ID 26.2); opioid overdose ED visits (ID 18.2); and opioid overdose hospitalizations (ID 12.5). *(Narrative, p 8)*
- When looking at trends over the past decade, the black non-Hispanic population had consistently higher rates than either the white-non-Hispanic or Hispanic population. The exception is for opioid overdose ED visits and hospitalizations where white non-Hispanics had the higher rates since 2012-2014. *(Appendix I, p. 1-7)*

Index of Disparity (ID) by Socioeconomic Status (SES)

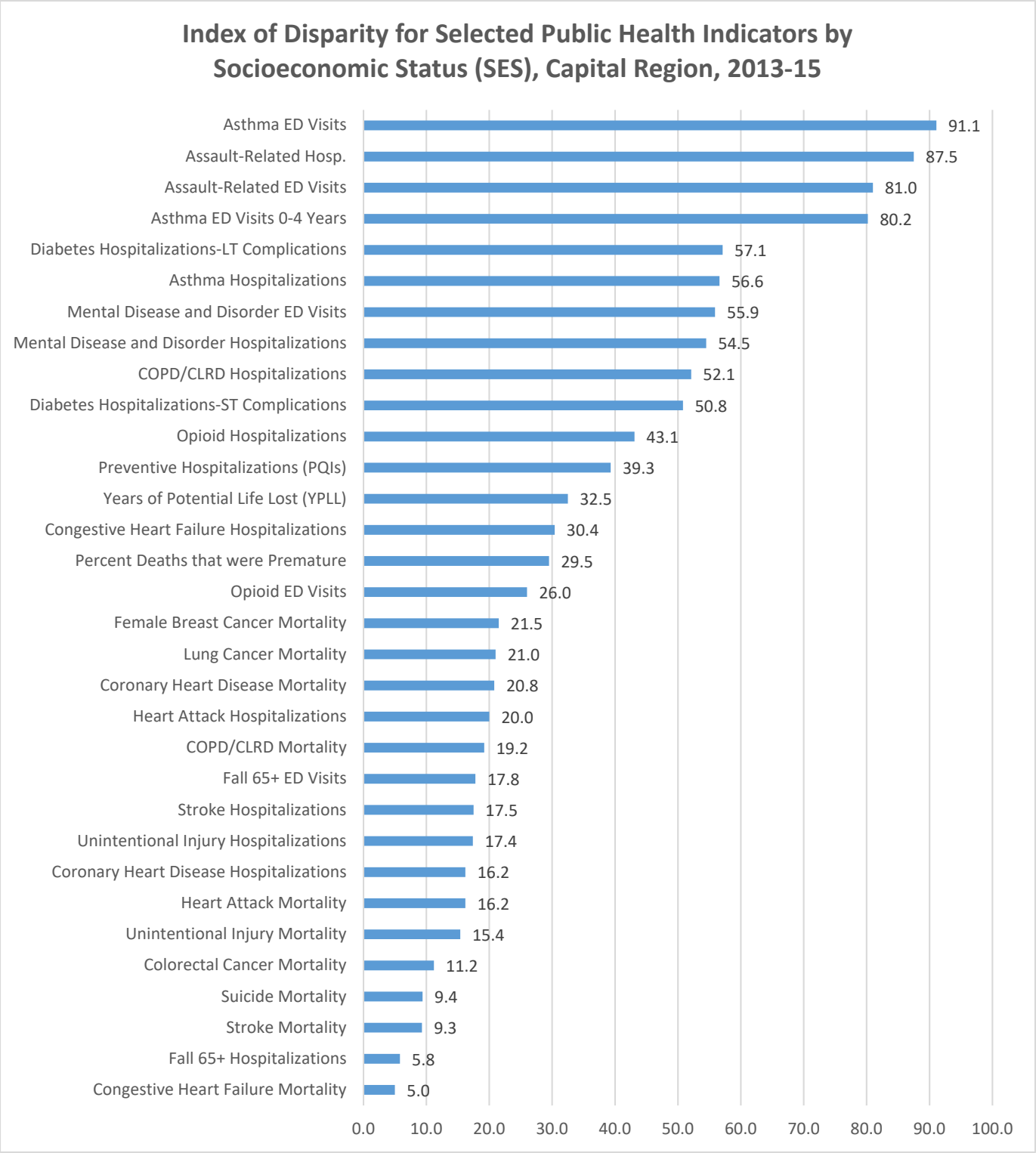
- The Capital Region had 10 of the 32 health indicators reviewed by socioeconomic status with an ID of 50.0% or greater. Indicators with the greatest ID were: asthma ED visits (91.1%); assault-related hospitalizations (87.5%); assault-related ED visits (81.0%); and asthma ED visits 0-4 yrs. (80.2%). (*Narrative p. 8, 9).*
- The ten high ID indicators showed decreasing rates from SES 1 (low) to SES 5 (high), with SES 1 and SES 2 contributing the most to the ID. SES 1 rates ranged from 10.1 times higher (asthma ED visits), and 8.8 times higher (assault-related hospitalizations) to 3.8 times higher (COPD/CLRD hospitalizations), than SES 5. *(Narrative, p. 10)*
- When looking at the trends over the last decade, SES 1 residents had consistently higher rates followed by residents from SES 2. *(Appendix I, p. 8-14)*

Index of Disparity by Race/Ethnicity--Capital Region



Index of Disparity and Rates by Race/Ethnicity, Capital Region		Rates (age-adjusted except for birth/preg. Indicators)			
Indicator	Index of Disparity	White non-Hispanic	Black non-Hisapnic	Hispanic	Total*
Asthma ED Visits per 10,000 (2013-15)	**129.3**	25.9	175.6	69.3	44.9
Assault-Related Hospitalizations per 10,000 (2013-15)	**117.0**	1.4	9.5	2.7	2.4
Adolescent (15-17) Pregnancy Rate per 1,000 (2012-14)	**101.4**	10.3	41.4	36.0	16.6
Assault-Related ED Visits per 10,000 (2013-15)	**89.2**	25.8	124.8	37.9	37.2
Asthna ED Visits 0-4 Years per 10,000 (2013-15)	**88.3**	48.3	292.4	89.8	93.6
Diabetes Hosp.-ST Complications per 10,000 (2013-15)	**88.3**	4.6	18.2	4.2	5.7
Percent Deaths that were Premature (2013-15)	**81.4**	19.9	48.1	47.5	22.0
Diabetes Hosp.-LT Complications per 10,000 (2013-15)	**75.4**	5.5	18.8	5.0	6.5
Asthma Hospitalizations per 10,000 (2013-15)	**70.5**	6.9	23.2	10.8	8.7
Infant Mortality per 1,000 births (2012-14)	**68.3**	4.5	15.5	7.3	6.0
Preventive Hospitalizations (PQIs) per 10,000 (2013-15)	**42.2**	97.2	198.4	73.3	104.9
COPD/CLRD Hospitalizations per 10,000 (2013-15)	**40.4**	20.6	42.3	16.9	22.6
Fall 65+ Hospitalizations per 10,000 (2013-15)	**39.8**	166.0	88.8	45.0	164.9
Suicide Mortality per 100,000 (2013-15)	**37.4**	11.6	6.6	3.6	10.7
Mental Disease and Disorder ED Visits per 10,000 (2013-15)	**33.3**	129.4	245.6	116.2	139.9
Congestive Heart Failure Hosp. per 10,000 (2013-15)	**33.3**	17.6	35.1	17.5	19.0
Stroke Hospitalizations per 10,000 (2013-15)	**30.9**	18.2	28.7	12.0	19.4
Percent Low Birthweight (2012-14)	**30.7**	6.7	13.4	7.3	7.6
Mental Disease and Disorder Hosp. per 10,000 (2013-15)	**29.0**	52.1	87.3	42.3	54.9
Fall 65+ ED Visits per 10,000 (2013-15)	**26.2**	341.3	271.0	143.0	339.9
Unintentional Injury Hospitalizations per 10,000 (2013-15)	**22.8**	98.0	124.0	58.0	101.6
COPD/CLRD Mortality per 100,000 (2013-15)	**22.5**	41.0	29.8	24.2	40.1
Colorectal Cancer Mortality per 100,000 (2013-15)	**21.7**	14.2	18.3	9.1	14.3
Years of Potential Life Lost (YPLL) per 100,000 (2013-15)	**21.3**	5,092	8,552	5,430	5,421
Percent Exclusive Breastfeed in Hospital (2015)	**21.1**	68.6	41.7	51.4	66.7
Coronary Heart Disease Hosp. per 10,000 (2013-15)	**19.8**	20.1	22.0	10.4	20.9
Heart Attack Hospitalizations per 10,000 (2013-15)	**19.1**	12.4	12.5	6.4	12.9
Percent Peterm Births (2012-14)	**18.6**	9.9	15.1	10.7	10.2
Opioid ED Visits per 100,000 (2013-15)	**18.2**	27.3	21.0	17.9	23.5
Unintentional Injury Mortality per 100,000 (2013-15)	**16.7**	22.4	17.8	15.4	21.6
Female Breast Cancer Mortality per 100,000 (2013-15)	**15.1**	18.4	26.2	19.2	18.6
Lung Cancer Mortality per 100,000 (2013-15)	**13.0**	46.8	50.8	33.4	46.2
Coronary Heart Disease Mortality per 100,000 (2013-15)	**12.8**	110.8	118.8	76.3	110.7
Opioid Hospitalizations per 100,000 (2013-15)	**12.5**	11.0	7.4	10.1	10.4
Heart Attack Mortality per 100,000 (2013-15)	**11.2**	22.6	26.8	19.3	22.7
Percent Births with Early Prenatal Care (2012-14)	**11.1**	79.5	63.5	67.0	76.3
Congestive Heart Failure Mortality per 100,000 (2013-15)	**9.0**	17.5	13.9	18.5	17.4
Stroke Mortality per 10,000 (2013-15)	**7.3**	27.3	26.2	22.9	27.5
* Total includes "all other" R/E categories					

Index of Disparity by Socioeconomic Status--Capital Region



Index of Disparity and Rates by Socioeconomic Status, Capital Region		Age-Adjusted Rates				
Indicator	Index of Disparity	SES 1	SES 2	SES 3	SES 4	SES 5
Asthma ED Visits per 10,000 (2013-15)	**91.1**	182.2	91.6	48.7	25.5	18.0
Assault-Related Hospitalizations per 10,000 (2013-15)	**87.5**	8.8	3.7	2.5	1.3	1.0
Assault-Related ED Visits per 10,000 (2013-15)	**81.0**	137.5	72.1	40.6	22.1	18.3
Asthna ED Visits 0-4 Years per 10,000 (2013-15)	**80.2**	314.1	188.5	89.4	47.3	45.3
Diabetes Hosp.-LT Complications per 10,000 (2013-15)	**57.1**	18.6	9.7	8.0	5.1	4.0
Asthma Hospitalizations per 10,000 (2013-15)	**56.6**	23.1	15.7	9.4	6.6	5.6
Mental Disease and Disorder ED Visits per 10,000 (2013-15)	**55.9**	406.6	245.7	151.3	120.8	96.4
Mental Disease and Disorder Hosp. per 10,000 (2013-15)	**54.5**	134.7	93.8	53.7	43.0	34.1
COPD/CLRD Hospitalizations per 10,000 (2013-15)	**52.1**	56.8	41.3	24.8	19.1	14.8
Diabetes Hosp.-ST Complications per 10,000 (2013-15)	**50.8**	15.5	8.7	6.5	4.6	3.8
Opioid Hospitalizations per 100,000 (2013-15)	**43.1**	25.3	12.2	13.2	10.0	6.2
Preventive Hospitalizations (PQIs) per 10,000 (2013-15)	**39.3**	232.6	160.5	116.4	95.8	78.8
Years of Potential Life Lost (YPLL) per 100,000 (2013-15)	**32.5**	9,708	6,903	5,937	4,394	3,916
Congestive Heart Failure Hosp. per 10,000 (2013-15)	**30.4**	35.3	26.1	21.6	17.2	15.4
Percent of Deaths that were Premature (2013-15)	**29.5**	44.3	23.7	23.1	18.9	17.6
Opioid ED Visits per 100,000 (2013-15)	**26.0**	47.7	35.8	26.3	25.6	23.3
Female Breast Cancer Mortality per 100,000 (2013-15)	**21.7**	28.3	22.2	20.4	16.3	15.8
Lung Cancer Mortality per 100,000 (2013-15)	**21.0**	68.0	56.4	48.0	48.2	33.6
Coronary Heart Disease Mortality per 100,000 (2013-15)	**20.8**	156.2	147.6	109.2	101.4	89.2
Heart Attack Hospitalizations per 10,000 (2013-15)	**20.0**	18.5	16.7	14.0	12.0	10.8
COPD/CLRD Mortality per 100,000 (2013-15)	**19.2**	52.0	54.7	38.3	37.8	32.2
Fall 65+ ED Visits per 10,000 (2013-15)	**17.8**	515.2	499.5	374.8	343.3	339.1
Stroke Hospitalizations per 10,000 (2013-15)	**17.5**	29.4	23.8	20.7	18.8	17.4
Unintentional Injury Hospitalizations per 10,000 (2013-15)	**17.4**	148.0	127.8	109.6	96.7	91.2
Coronary Heart Disease Hosp. per 10,000 (2013-15)	**16.2**	27.9	26.0	22.6	20.4	17.4
Heart Attack Mortality per 100,000 (2013-15)	**16.2**	25.3	31.7	22.2	21.9	17.1
Unintentional Injury Mortality per 100,000 (2013-15)	**15.4**	29.1	27.3	21.1	19.8	21.4
Colorectal Cancer Mortality per 100,000 (2013-15)	**11.0**	14.6	19.0	13.3	13.6	13.1
Suicide Mortality per 100,000 (2013-15)	**9.4**	11.1	10.8	12.9	8.8	10.5
Stroke Mortality per 10,000 (2013-15)	**9.3**	32.8	30.3	28.4	27.1	24.2
Fall 65+ Hospitalizations per 10,000 (2013-15)	**5.8**	194.4	188.0	172.0	161.6	174.0
Congestive Heart Failure Mortality per 100,000 (2013-15)	**5.0**	20.1	17.6	17.8	16.5	17.6
Red = unstable rate-numerator <10 events						

Data and Methods

The Index of Disparity is the average of the absolute difference between rates for specific groups within a population and the overall population rate, divided by the rate for the overall population, expressed as a percentage.

Index of Disparity = ($\sum |r_{(1-n)} - R| / n) / R*100$, where r = group rate and R = total population rate.

This Health Equity Report presents NYS, Capital Region, and county-level data for Index of Disparity, defined on the basis of race/ethnicity, and of SES, across selected public health indicators. The Report used the health indicators utilized in the State Health Assessment 2018 where information was available at the county-level by race/ethnicity and/or SES. For example, birth-related indicators were not utilized in the SES analyses, as they were available by race/ethnicity but not by SES. Disease case rates, such as HIV or gonorrhea incidence, were not available at the county level by race/ethnicity or SES.

Hospitalization and Emergency Department (ED) visit data were generated from the State Planning and Research Cooperative System (SPARCS). Mortality data were generated form NYS Vital Statistics. The Common Grounds Health's SPARCS and Vital Statistics Data Portals were used to generate mortality and hospitalization and ED visit data by race/ethnicity and SES. Birth-related information were collected from the NYSDOH County Health Indicators by Race/Ethnicity (CHIRE) Reports.

When analyzing the data for this Report, a 2012 undercount of hospitalizations and ED visits, was identified. Therefore, 2012 was omitted for all trend graphs using hospitalization-based indicators and ED visit-bases trend graphs.

The Index of Disparity was generated based on the following groupings:

Race/Ethnicity—White non-Hispanic, Black non-Hispanic, Hispanic.
Socioeconomic status—SES 1 (low), SES 2, SES 3, SES 4, SES 5 (high).

Geographic Groupings include: Capital Region, Albany, Columbia, Greene, Rensselaer, Saratoga and Schenectady.

The Common Ground Health Data Portal included a SES query, with analysis available at the Zip code level or by Zip Code aggregate, including county. SES was based on average income, level of education, value of housing stock, age of housing stock, population crowding, percent of persons paying more than 35% of their income on housing, and percent of children living in single parent households. The Common Ground Health Data Portal only had SES scores available for counties north and west of Westchester County. Each Zip code was assigned a value of SES 1 through SES 5, with SES 1 being the lowest and SES 5 being the highest. SES 1 and SES 5 each contain 15% of the population, SES 2 and SES 4 each

contain 20% of the population, and SES 3 contains 30% of the population. Since the SES categories are Zip-code based, data generated by SES might vary from data generated by county.

Appendices

Appendix I-Capital Region Race/Ethnicity-specific and SES-specific Trend Graphs for Selected Indicators

Appendix II- County-specific Index of Disparity Data

References

1. Healthy People 2020, Framework. https://www.healthypeople.gov/sites/default/files/HP2020Framework.pdf

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5. Updating the Prevention Agenda for 2019-2024; State Health Assessment 2018. https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/background.htm.

6. Common Ground Health SPARCS and Vital Statistics Data Portal. https://portal.commongroundhealth.org