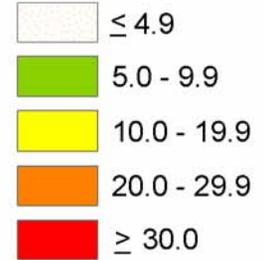


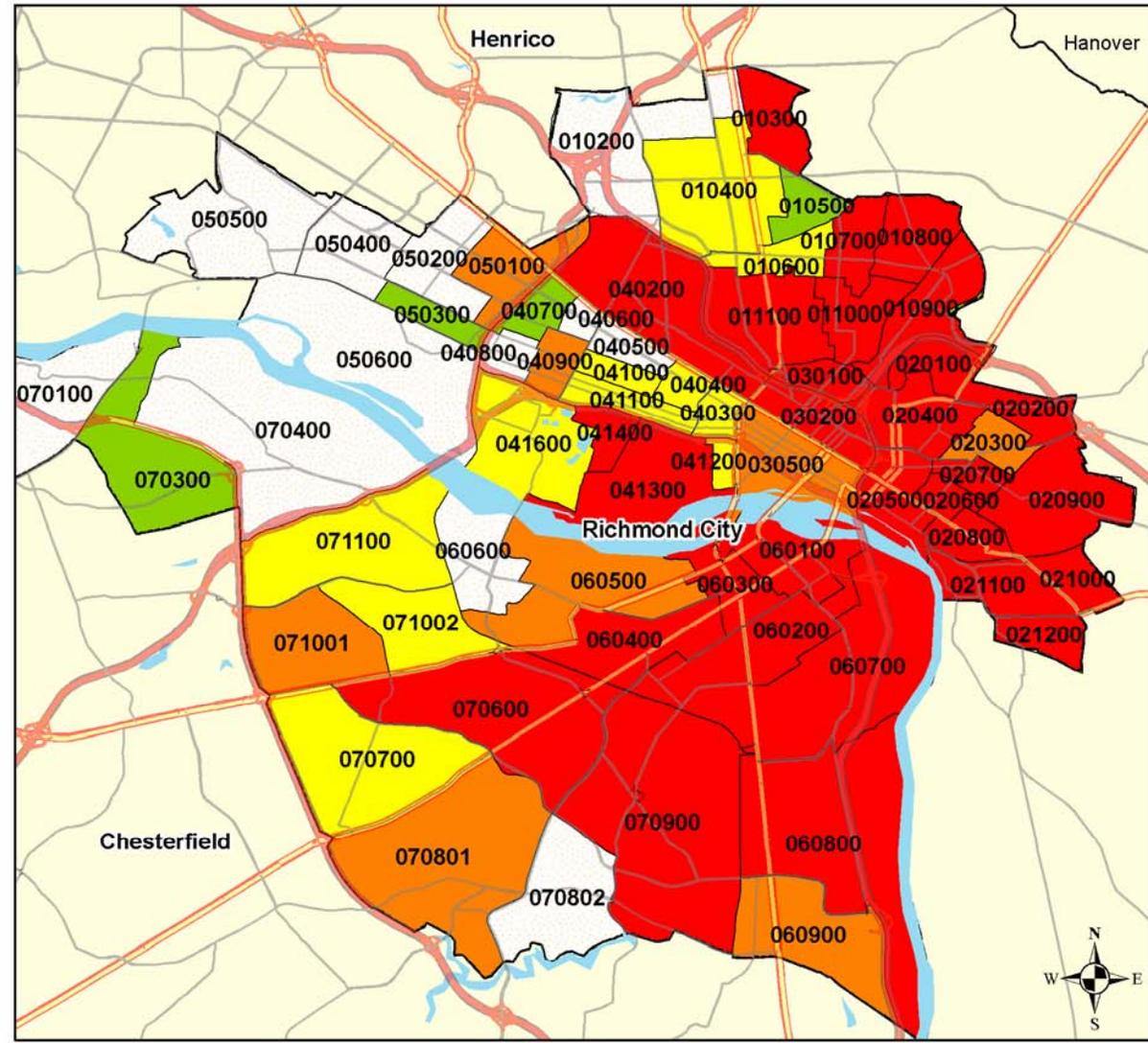
Distribution of Health, Disease, and
Social Determinants of Health in
Richmond, Chesterfield, and
Henrico

Richmond City Child Poverty* by Census Tract, 2000

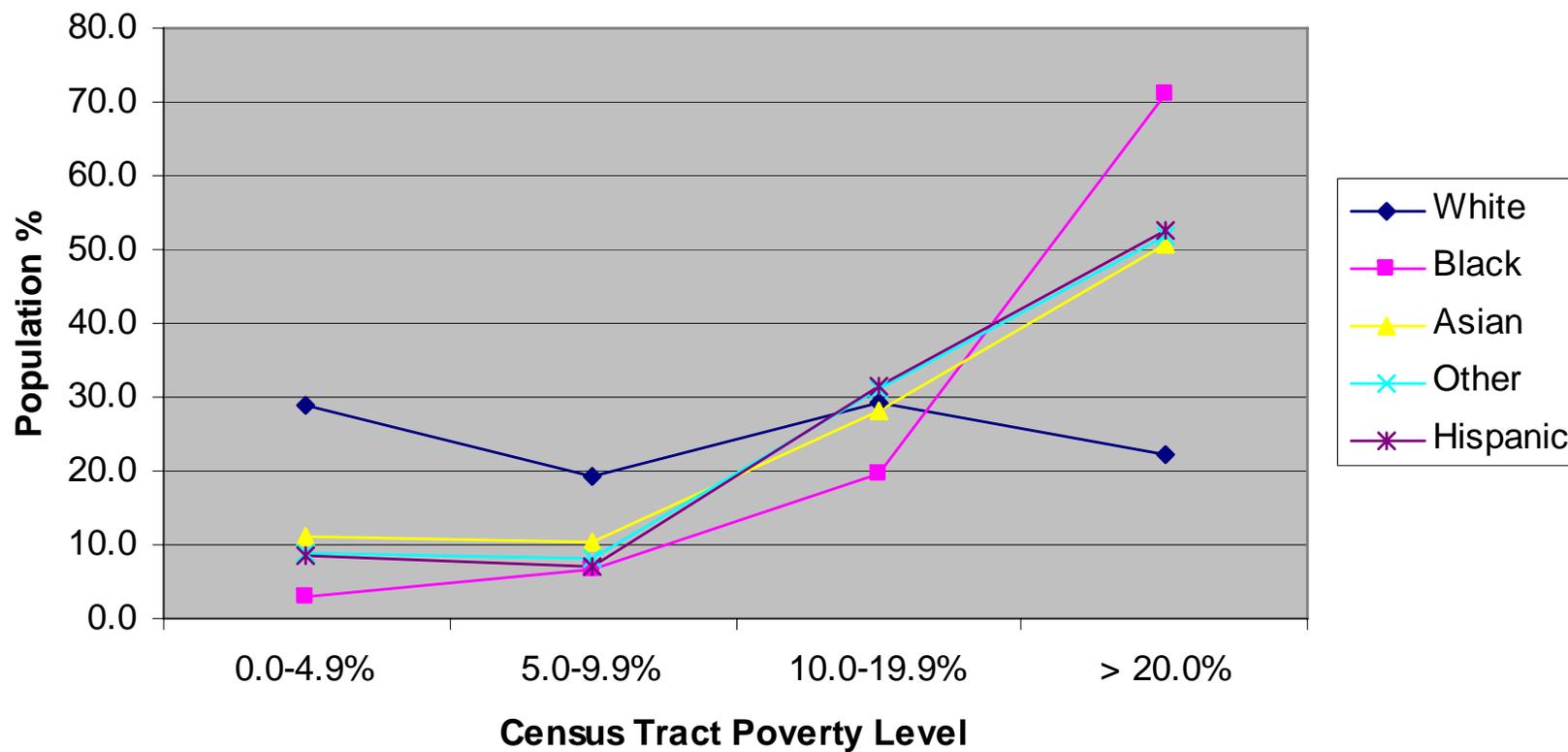
% population (under 18 years)
below federal poverty level



* Child Poverty - Persons under 18 years old living below the federal poverty level.
Source: US Census 2000, (SF3, P87).



Richmond City - Population by Race/Ethnicity and Census Tract Poverty



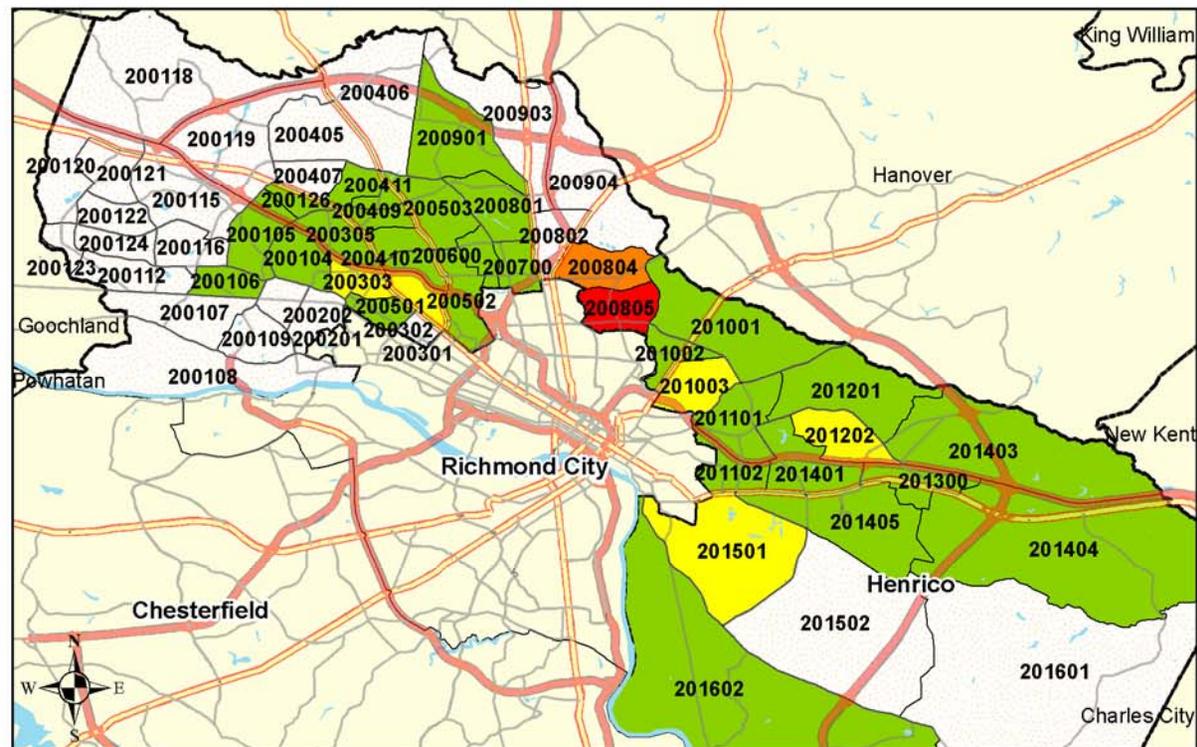
Source: US Census 2000; poverty (SF3, P87); race (SF1 P7); Hispanic ethnicity (SF1 P4).

Henrico County Poverty by Census Tract, 2000

% population below
federal poverty level

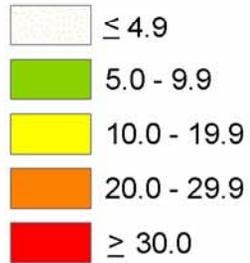


Source: US Census 2000, (SF3, P87).

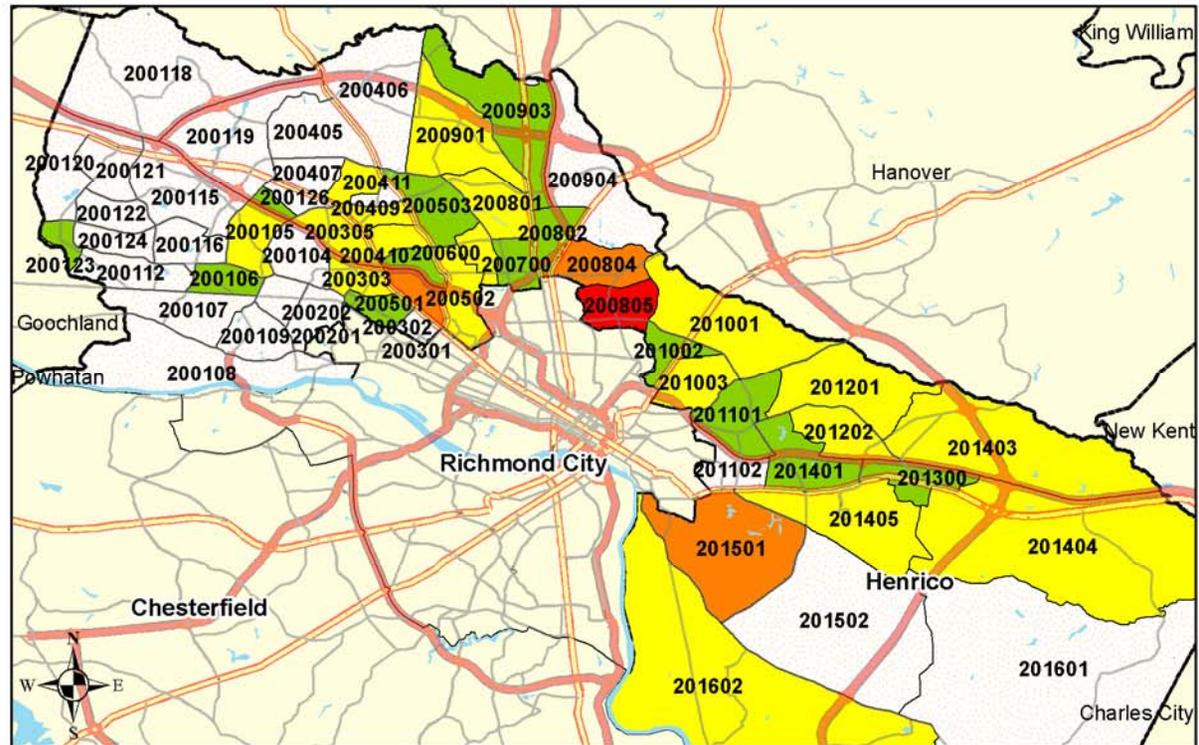


Henrico County Child Poverty* by Census Tract, 2000

% population (under 18 years)
below federal poverty level

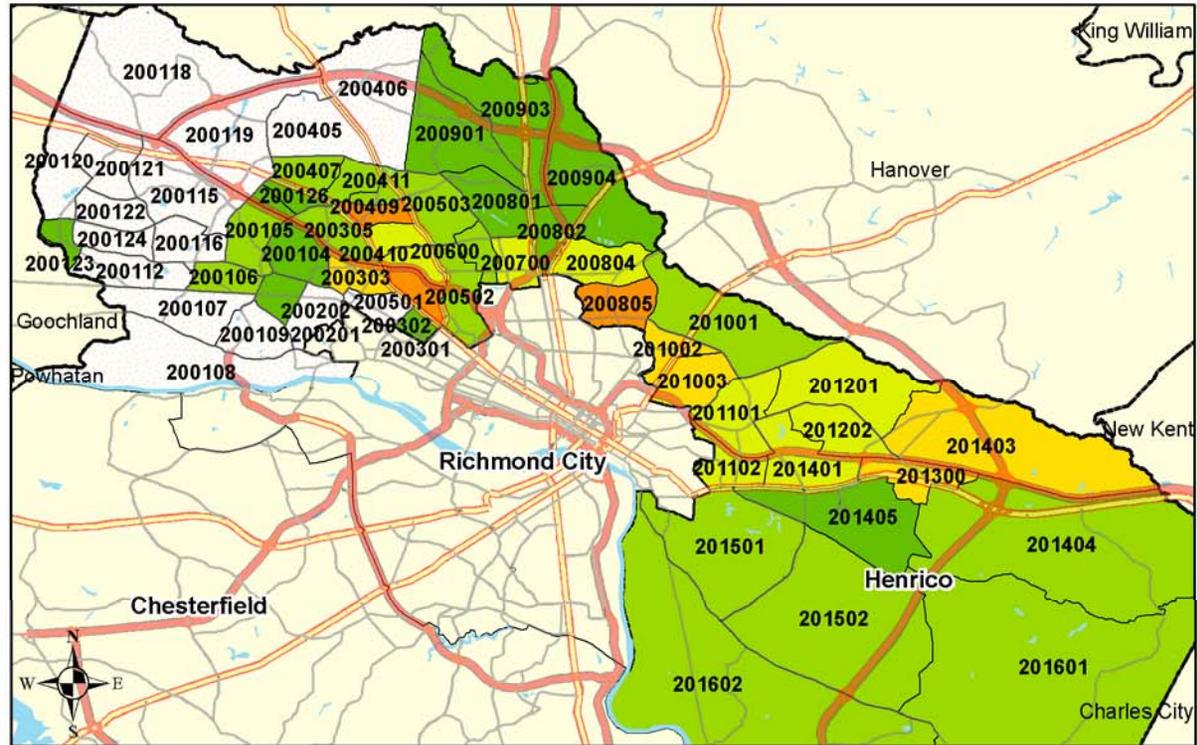


* Child Poverty - Persons under 18 years old
living below the federal poverty level.
Source: US Census 2000, (SF3, P87).



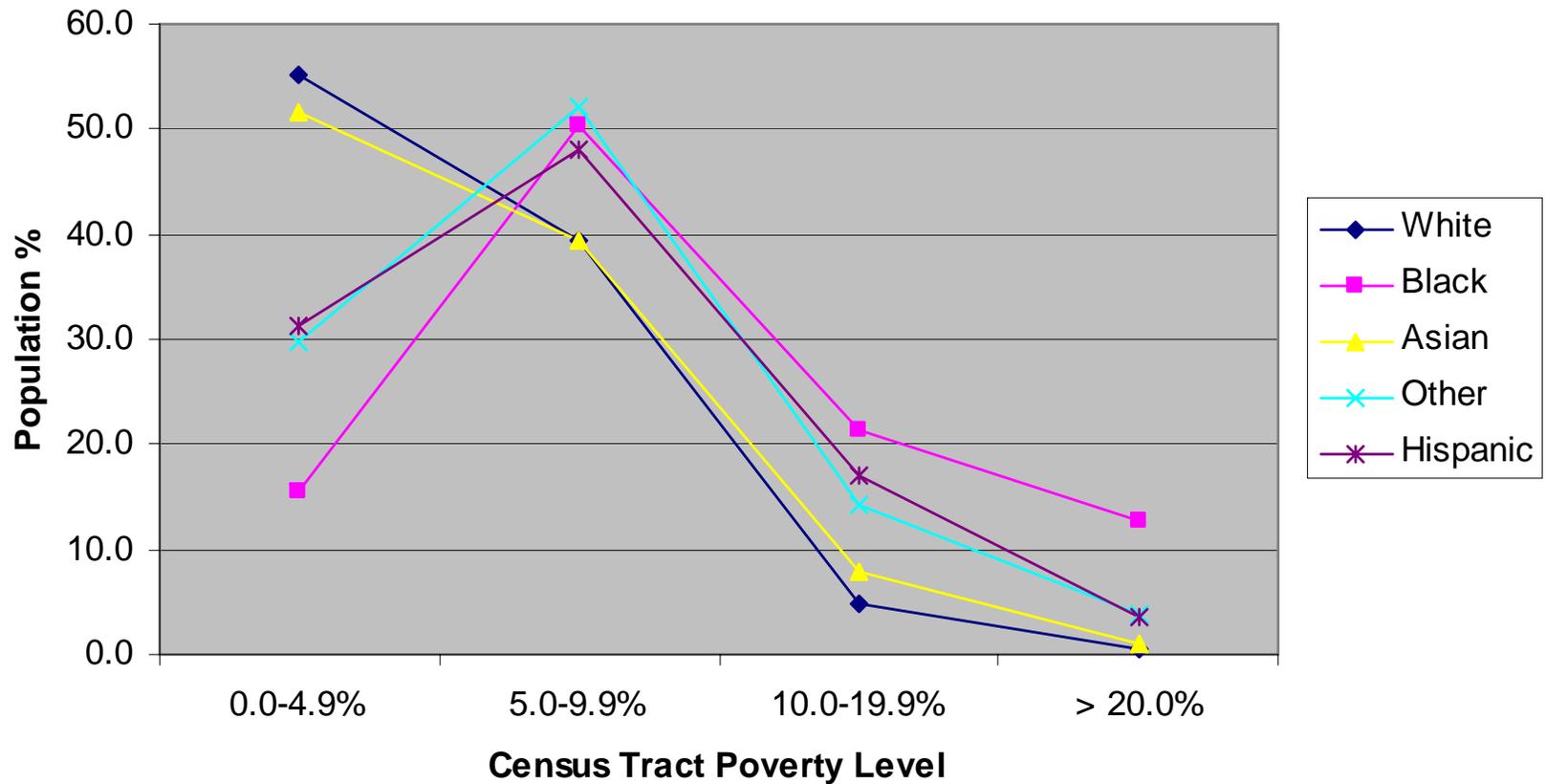
Henrico County Low Education* by Census Tract, 2000

Low Education
Population %



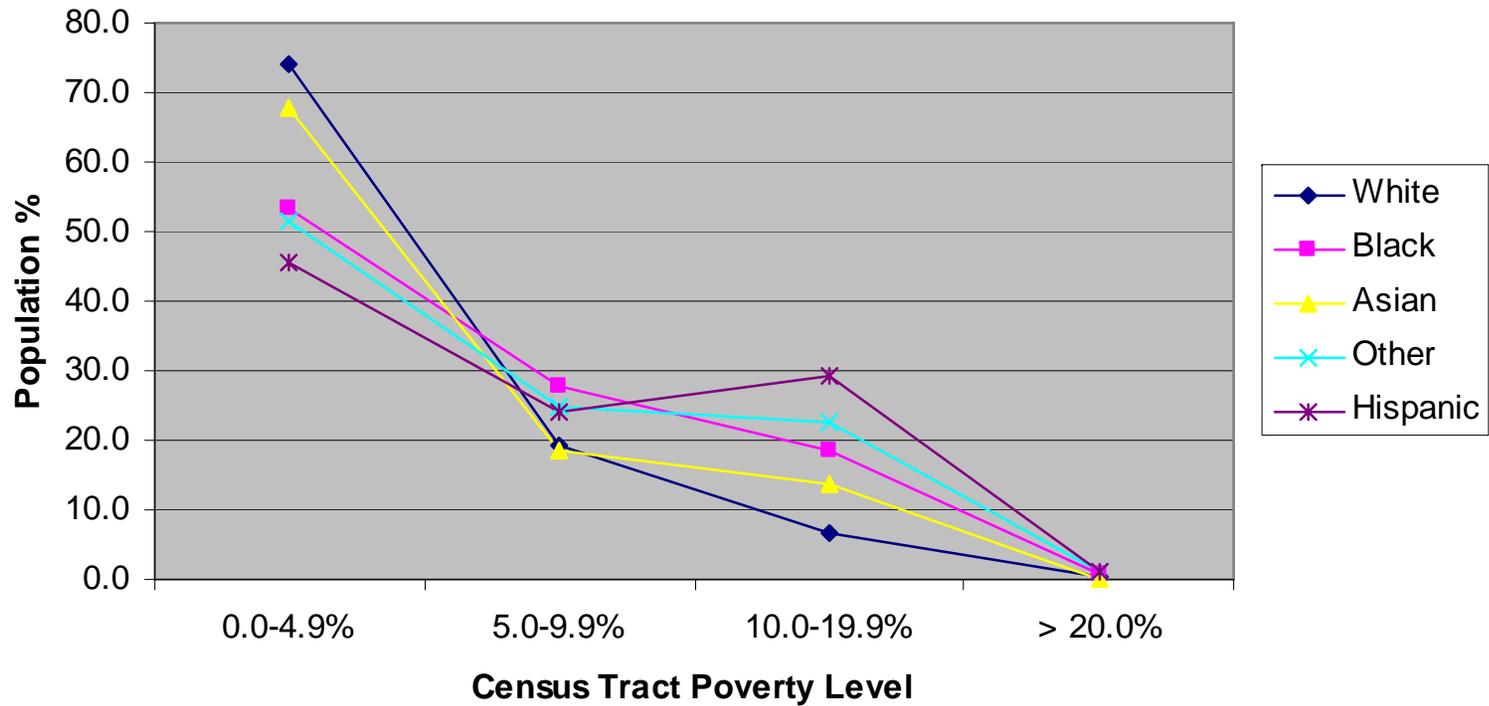
* Low Education: persons between the ages of 24 and 65 years old with neither a high school diploma nor GED.
Source: US Census 2000, (SF3, PCT 25).

Henrico - Population by Race/Ethnicity and Census Tract Poverty



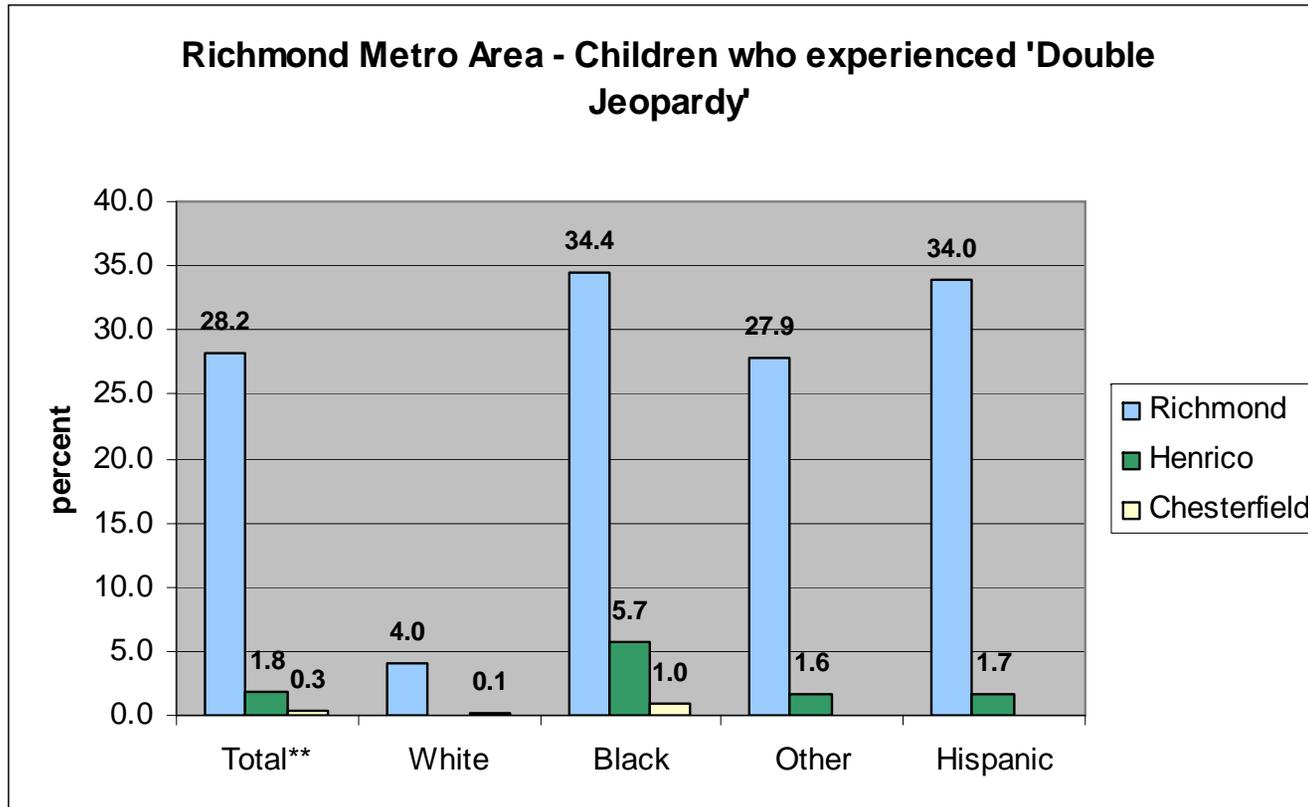
Source: US Census 2000; poverty (SF3, P87); race (SF1 P7); Hispanic ethnicity (SF1 P4).

Chesterfield - Population by Race/Ethnicity and Census Tract Poverty



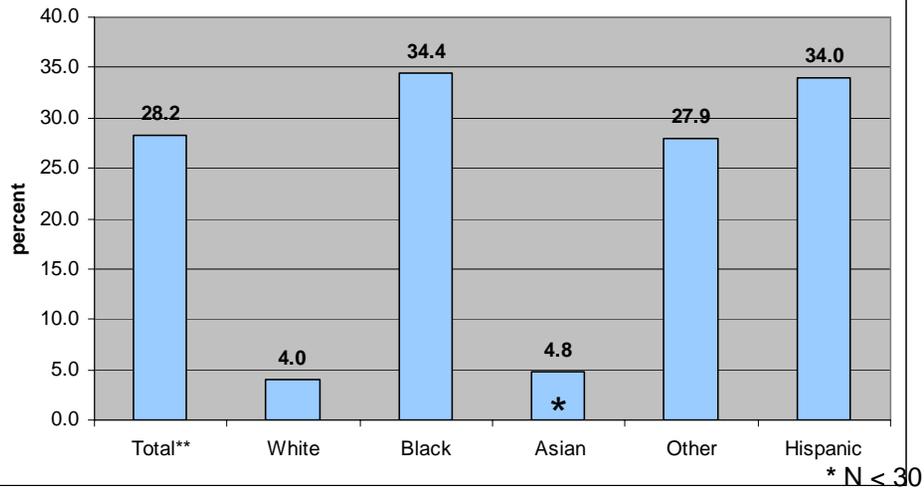
Source: US Census 2000; poverty (SF3, P87); race (SF1 P7); Hispanic ethnicity (SF1 P4).

NOTE: Where percents are not listed, n <30. (So Asian is not included because in all 3 localities the number of Asian kids in double jeopardy was < 30.

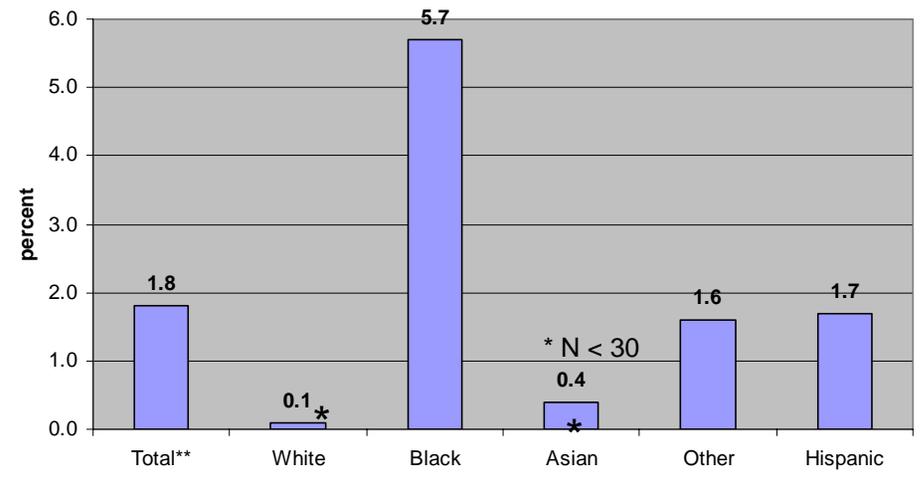


Double Jeopardy describes children (under 18 years old) that live in poor families and in poor neighborhoods. Poor neighborhoods are defined as census tracts (CTs) with greater than 20.0% poverty. The racial categories include persons of Hispanic and non-Hispanic origin; 'Other' includes American Indian, Alaska Native, Native Hawaiian and other Pacific Islander, some other race alone, and two or more races. **Total number of children living below the federal poverty level reflects the sum of the four racial categories since Hispanic ethnicity could not be determined for each race. Source: Census 2000, SF3, P159.

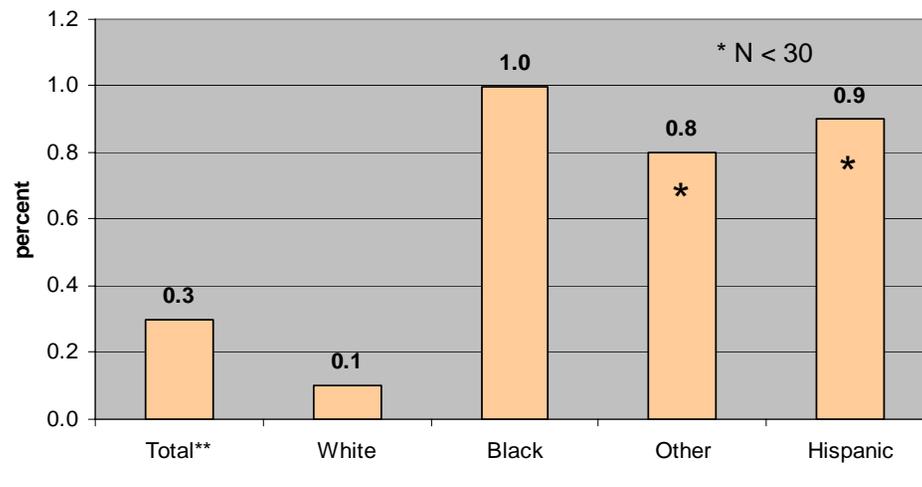
Richmond City - Children who experienced 'Double Jeopardy'



Henrico - Children who experienced 'Double Jeopardy'



Chesterfield - Children who experienced 'Double Jeopardy'



Health and Disease

Hospital Discharges for Ambulatory Care Sensitive Conditions

- Made up of 12 indicators that measure adult hospital discharges for ambulatory care sensitive conditions (ACSC).
- ACSCs represent conditions for which hospitalizations could be avoided if the patient receives timely and adequate outpatient care.
- Also represents conditions for which the risk of acquiring and the risk of complications is strongly influenced by SDOH
- 12 Indicators Include:
 - Diabetes (Short-term and Long-term Complications)
 - Chronic obstructive pulmonary disease
 - Hypertension
 - Congestive heart failure
 - Dehydration
 - Bacterial pneumonia
 - Urinary Tract Infection
 - Angina without procedure
 - Uncontrolled diabetes
 - Adult asthma
 - Lower-extremity amputation among patients with diabetes

Richmond Metro Area Prevention Quality Indicator Overall Composite Measure

(Includes all PQIs except Low Birth Weight
and Perforated Appendix)
Based on Virginia Hospital Discharge Claims
January 1, 2006 to December 31, 2006

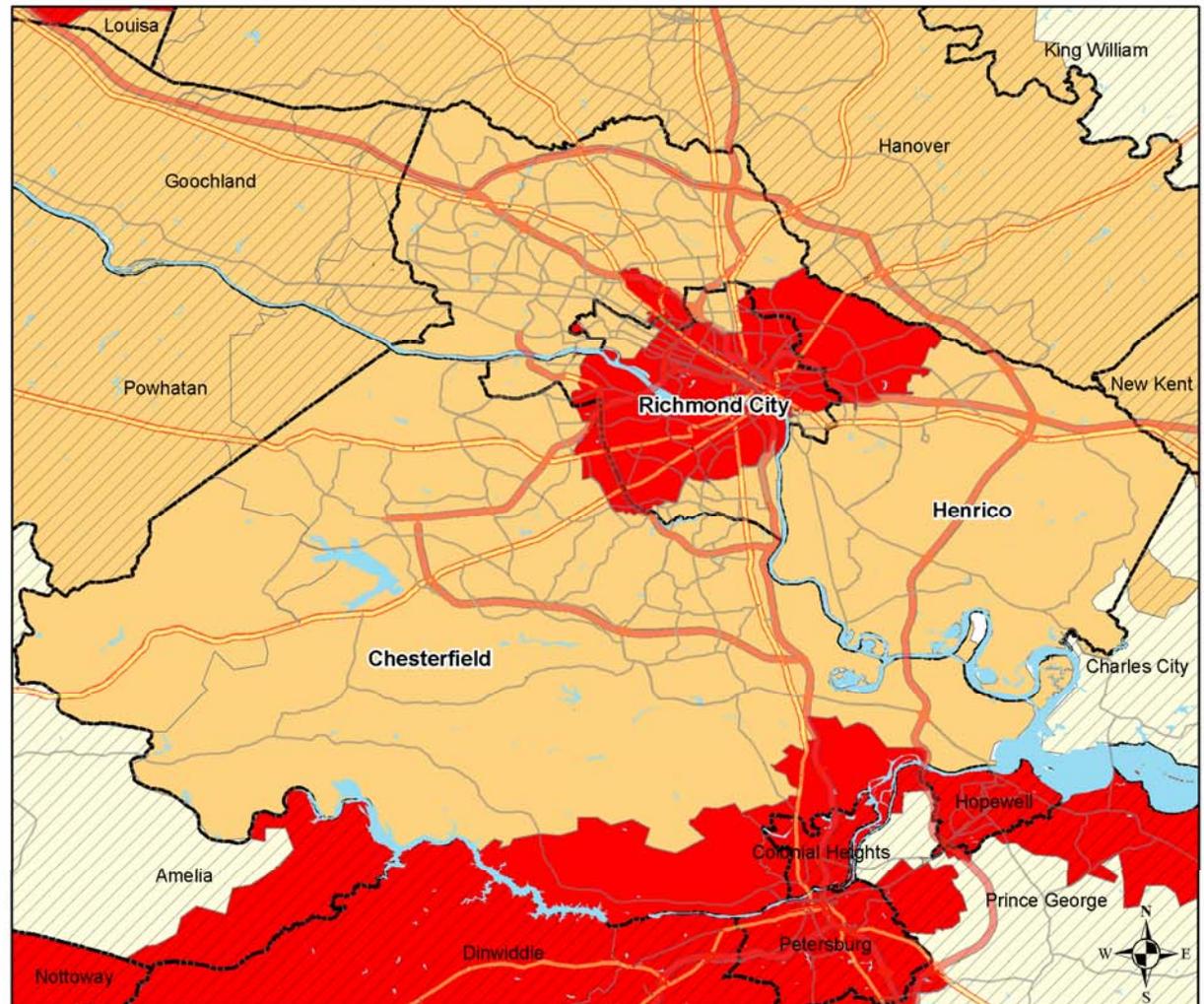
Overall Risk Adjusted Rate

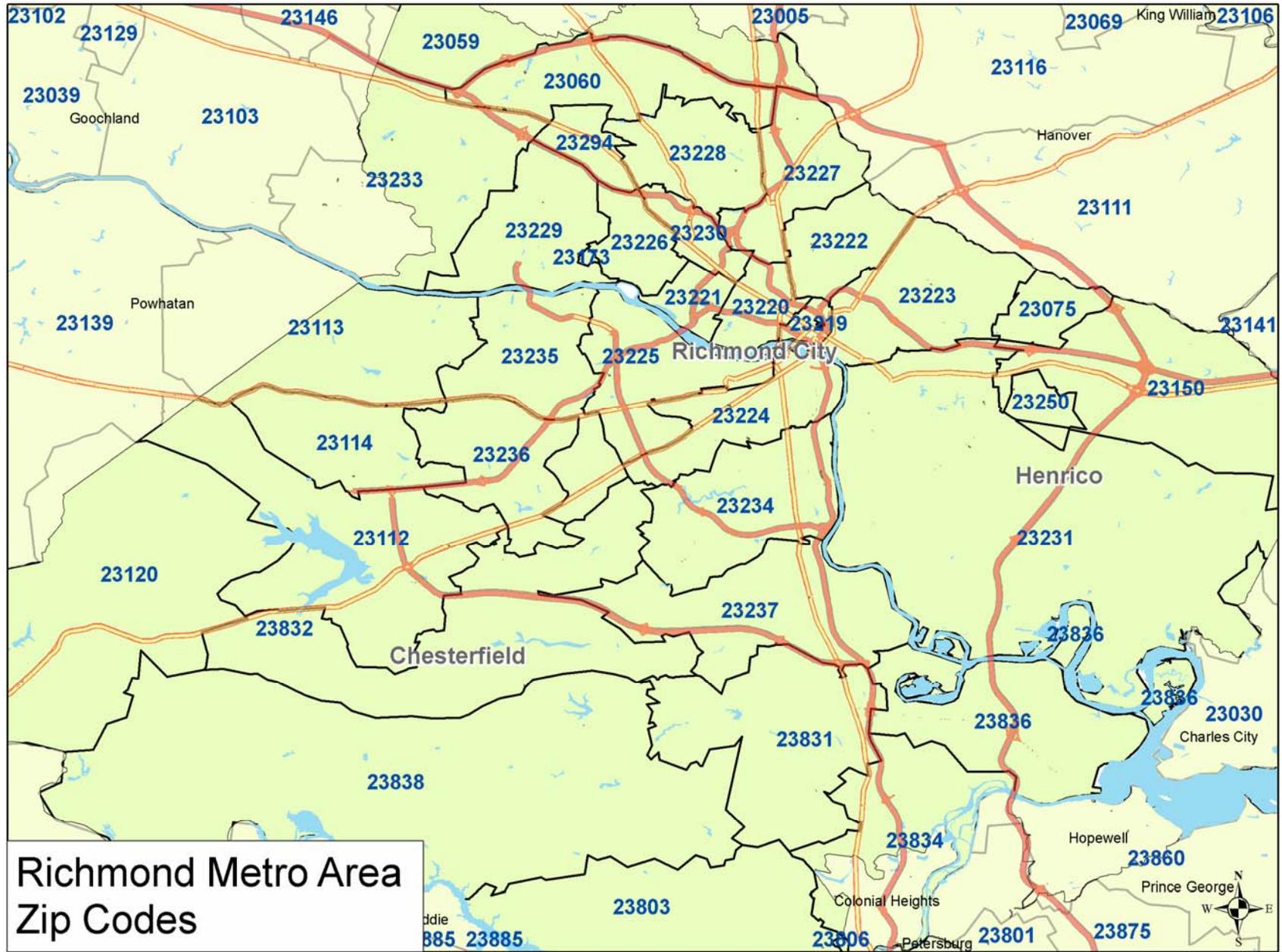
- Below State Rate
- Comparable to National Rate
- Above National Rate

National rate per 1,000 population* is 18.79**
State rate per 1,000 population* is 14.68

* Population age 18 years or older. Rates
calculated by zip code.

** Source: Nationwide Inpatient Sample,
2004, AHRQ Website:
<http://www.qualityindicators.ahrq.gov>





Richmond Metro Area
Zip Codes

| | Zip | All Cases | Overall Rate | Number of Cases by PQI Code* | | | | | | | | | | | | Top PQI |
|---------------------|-------|-----------|--------------|------------------------------|----|----|-----|-----|----|-----|----|----|----|-----|--------------------------|--------------------------|
| | | | | 1 | 3 | 5 | 7 | 8 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| Chesterfield County | 23114 | 73 | 660.3 | 2 | 2 | 8 | 3 | 12 | 2 | 15 | 12 | 3 | 1 | 13 | 0 | Bacterial Pneumonia |
| | 23838 | 63 | 814.0 | 1 | 8 | 5 | 1 | 18 | 2 | 11 | 9 | 2 | 0 | 2 | 4 | Congestive Heart Failure |
| | 23112 | 246 | 836.0 | 9 | 22 | 15 | 2 | 63 | 14 | 43 | 33 | 7 | 3 | 31 | 4 | Congestive Heart Failure |
| | 23836 | 65 | 993.4 | 2 | 7 | 6 | 1 | 16 | 6 | 9 | 5 | 1 | 0 | 11 | 1 | Congestive Heart Failure |
| | 23113 | 150 | 1086.3 | 3 | 7 | 9 | 0 | 51 | 14 | 28 | 17 | 4 | 2 | 13 | 2 | Congestive Heart Failure |
| | 23236 | 214 | 1169.7 | 10 | 25 | 18 | 5 | 56 | 13 | 24 | 31 | 3 | 1 | 20 | 8 | Congestive Heart Failure |
| | 23832 | 216 | 1202.1 | 6 | 15 | 13 | 1 | 61 | 11 | 36 | 35 | 5 | 3 | 26 | 4 | Congestive Heart Failure |
| | 23831 | 247 | 1220.7 | 7 | 16 | 24 | 4 | 86 | 13 | 37 | 23 | 4 | 4 | 21 | 8 | Congestive Heart Failure |
| | 23235 | 279 | 1235.5 | 4 | 22 | 21 | 5 | 94 | 17 | 42 | 26 | 0 | 2 | 37 | 9 | Congestive Heart Failure |
| | 23237 | 184 | 1255.6 | 8 | 15 | 18 | 4 | 51 | 11 | 27 | 20 | 1 | 2 | 21 | 6 | Congestive Heart Failure |
| 23234 | 442 | 1592.5 | 24 | 45 | 22 | 12 | 143 | 23 | 70 | 41 | 3 | 2 | 50 | 7 | Congestive Heart Failure | |
| Henrico County | 23294 | 111 | 824.4 | 8 | 4 | 8 | 5 | 36 | 6 | 16 | 12 | 0 | 0 | 13 | 3 | Congestive Heart Failure |
| | 23233 | 322 | 833.3 | 2 | 19 | 36 | 2 | 88 | 26 | 59 | 59 | 4 | 0 | 18 | 9 | Congestive Heart Failure |
| | 23060 | 194 | 888.2 | 5 | 14 | 16 | 3 | 58 | 14 | 35 | 27 | 4 | 0 | 15 | 3 | Congestive Heart Failure |
| | 23226 | 141 | 1015.1 | 3 | 7 | 14 | 0 | 49 | 12 | 29 | 14 | 1 | 1 | 10 | 1 | Congestive Heart Failure |
| | 23150 | 105 | 1170.4 | 3 | 16 | 11 | 0 | 27 | 5 | 17 | 7 | 1 | 0 | 7 | 11 | Congestive Heart Failure |
| | 23229 | 291 | 1174.0 | 7 | 24 | 31 | 3 | 88 | 19 | 56 | 38 | 1 | 0 | 21 | 3 | Congestive Heart Failure |
| | 23075 | 100 | 1297.4 | 7 | 7 | 7 | 4 | 30 | 7 | 16 | 9 | 1 | 0 | 8 | 4 | Congestive Heart Failure |
| | 23228 | 443 | 1682.4 | 5 | 51 | 39 | 4 | 125 | 21 | 91 | 60 | 2 | 1 | 32 | 12 | Congestive Heart Failure |
| | 23231 | 383 | 1782.9 | 20 | 34 | 24 | 6 | 118 | 13 | 56 | 32 | 4 | 4 | 53 | 19 | Congestive Heart Failure |
| | 23227 | 418 | 2247.6 | 6 | 31 | 27 | 3 | 137 | 23 | 76 | 62 | 2 | 2 | 39 | 10 | Congestive Heart Failure |
| Richmond City | 23221 | 117 | 926.4 | 5 | 15 | 9 | 2 | 29 | 5 | 23 | 13 | 0 | 1 | 11 | 4 | Congestive Heart Failure |
| | 23220 | 333 | 1321.8 | 26 | 40 | 28 | 10 | 90 | 10 | 44 | 24 | 4 | 8 | 39 | 10 | Congestive Heart Failure |
| | 23230 | 98 | 1798.2 | 3 | 11 | 5 | 0 | 35 | 7 | 17 | 9 | 1 | 0 | 7 | 3 | Congestive Heart Failure |
| | 23225 | 600 | 1983.3 | 34 | 70 | 36 | 8 | 159 | 33 | 100 | 65 | 3 | 4 | 72 | 16 | Congestive Heart Failure |
| | 23223 | 768 | 2404.1 | 34 | 81 | 31 | 26 | 246 | 39 | 99 | 48 | 18 | 14 | 107 | 25 | Congestive Heart Failure |
| | 23224 | 553 | 2532.5 | 25 | 47 | 28 | 15 | 178 | 20 | 57 | 59 | 5 | 9 | 89 | 21 | Congestive Heart Failure |
| | 23222 | 548 | 2617.6 | 32 | 59 | 22 | 14 | 179 | 23 | 59 | 25 | 9 | 11 | 94 | 21 | Congestive Heart Failure |
| | 23219 | 54 | 3208.6 | 1 | 15 | 2 | 0 | 17 | 0 | 4 | 4 | 0 | 2 | 9 | 0 | Congestive Heart Failure |

| Prevention Quality Indicator (PQI) Codes |
|--|
| 1 - Diabetes Short-term Complications |
| 3 - Diabetes Long-term Complications |
| 5 - Chronic Obstructive Pulmonary Disease |
| 7 - Hypertension |
| 8 - Congestive Heart Failure |
| 10 - Dehydration |
| 11 - Bacterial Pneumonia |
| 12 - Urinary Tract Infection |
| 13 - Angina without Procedure |
| 14 - Uncontrolled Diabetes |
| 15 - Asthma |
| 16 - Lower-extremity Amputation among Patients with Diabetes |

Source: VHI, 2006, AHRQ for PQI Criteria.

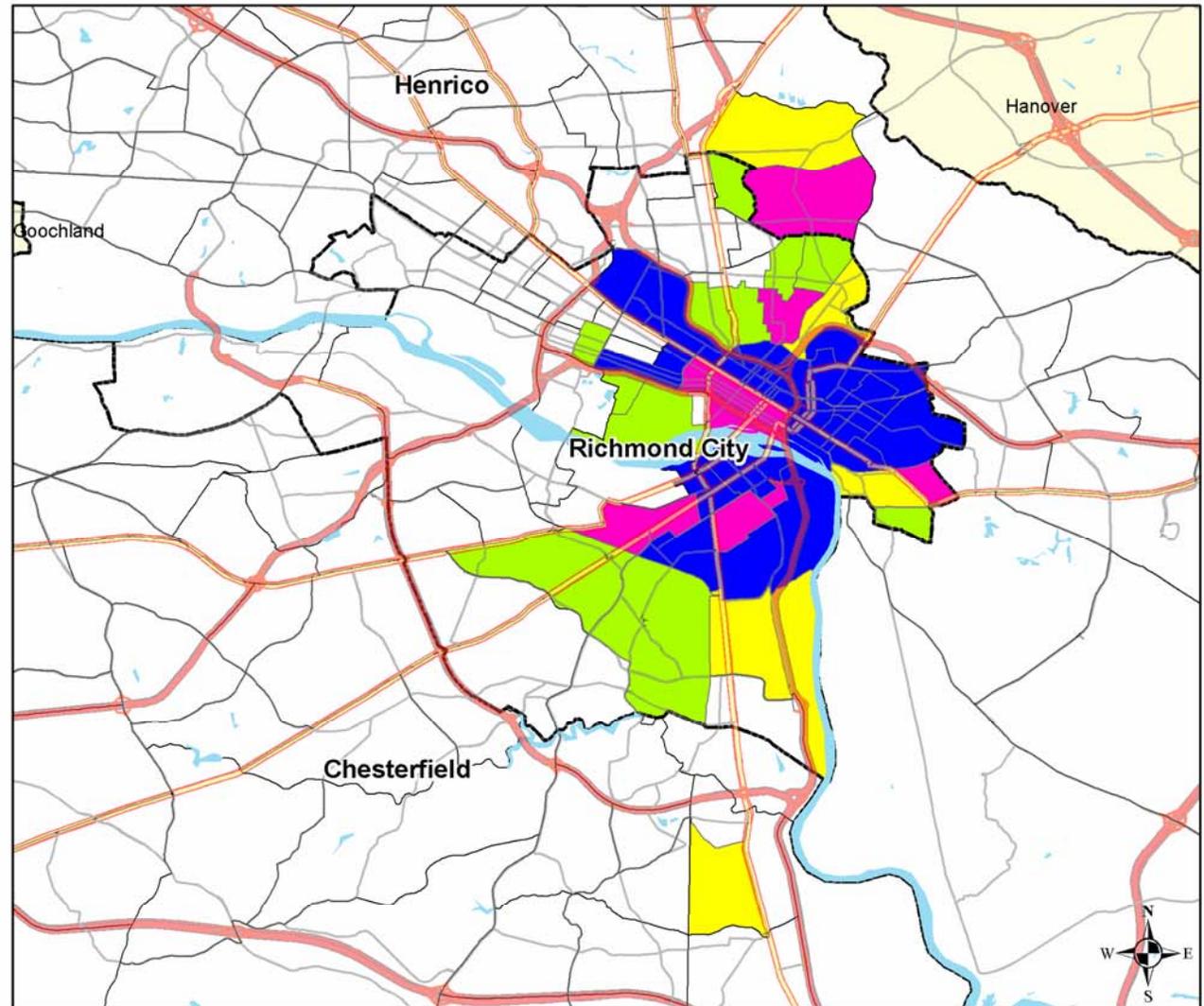
Richmond Metro Area

The History of Poor Census Tracts* 1970-2000

Poor census tracts in the:

-  Current decade (2000)
-  Last 2 decades (1990-2000)
-  Last 3 decades (1980-2000)
-  Last 4 decades (1970-2000)

* Poor census tracts--20 percent or more residents were below the federal poverty level as determined by the US Census. [1970, 1980, and 1990 census tracts normalized to Census 2000 boundaries]



Source: Neighborhood Change Database: Geolytics, Inc. Neighborhood Change Database 1970-2000 Tract Data Long Form Release 1.1 [CD-ROM]. Brunswick, NJ: Geolytics, Inc. [Producer and Distributor], 2004.

Richmond Metro Area Persistent Poverty and Low Birth Weight Rate*

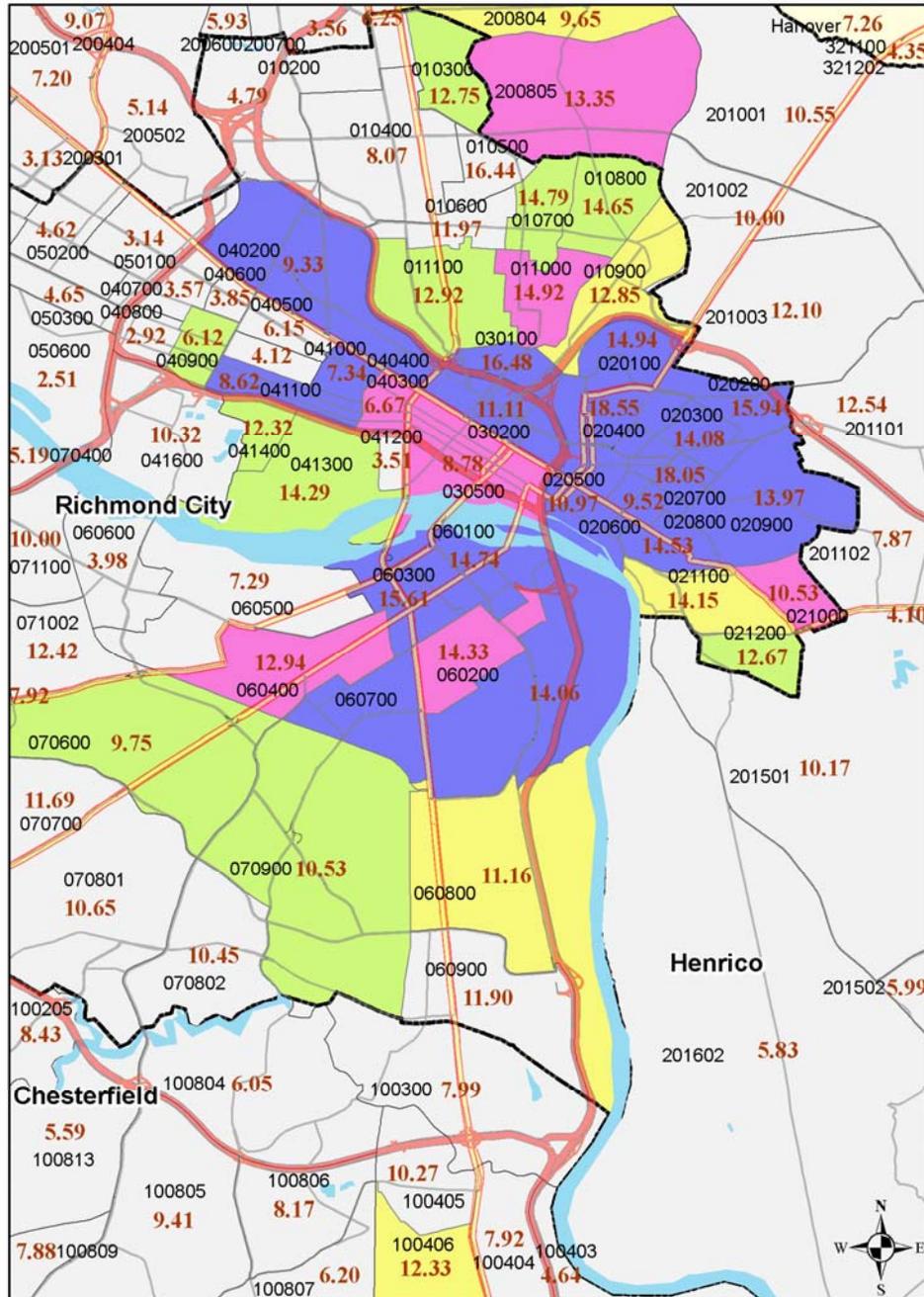
Poor census tracts** in the:

- Current decade (2000)
- Last 2 decades (1990-2000)
- Last 3 decades (1980-2000)
- Last 4 decades (1970-2000)

*Low Birth Weight Rate: (per 100 live births); shown on map. Source: VDH Vital Statistics, (1996-2005, geocoding error rate= 10%); Data consists of singleton births for mothers aged 15-44 years.

**Poor census tracts--20 percent or more residents were below the federal poverty level as determined by the US Census.

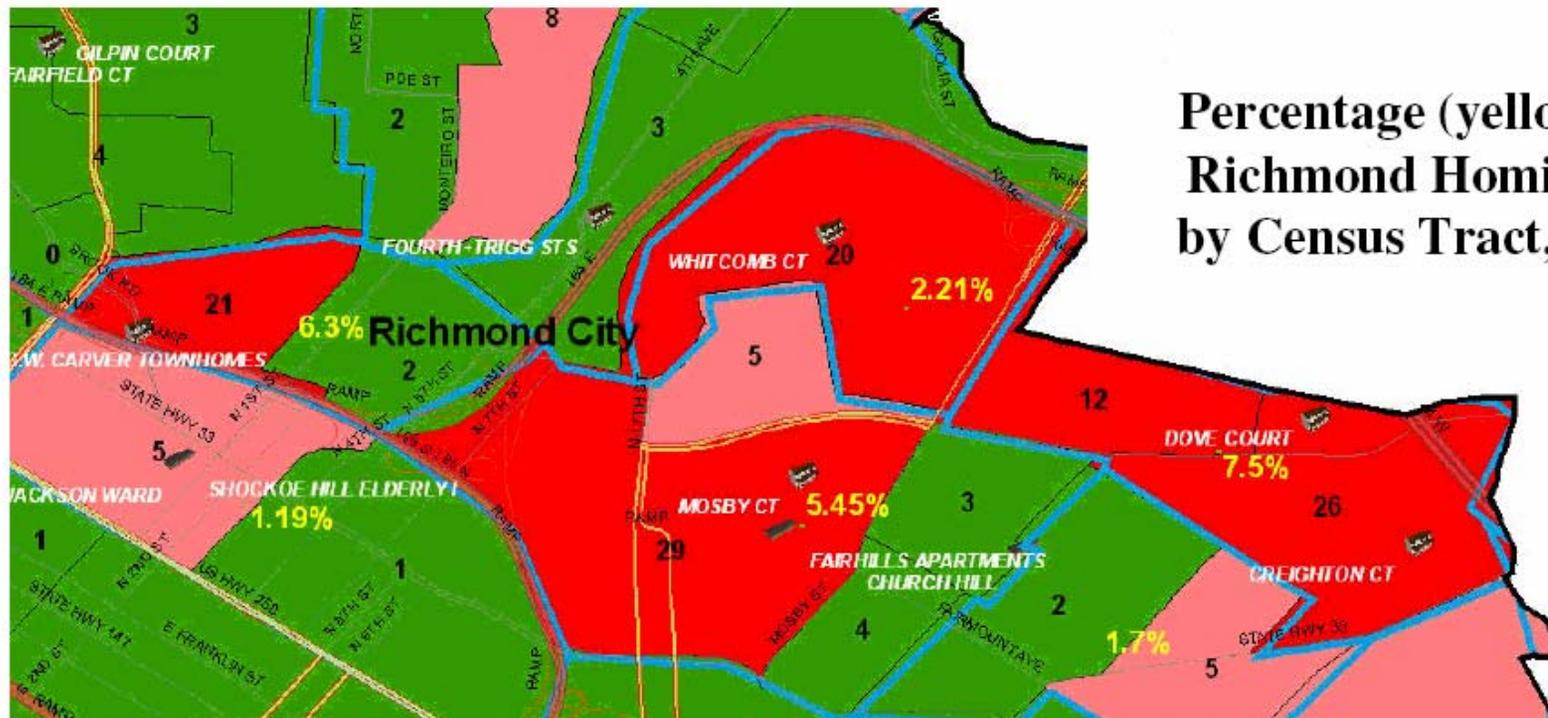
** Source: Neighborhood Change Database: Geolytics, Inc. 1970-2000 Tract Data Long Form Release 1.1 [CD-ROM]. Brunswick, NJ: 2004.



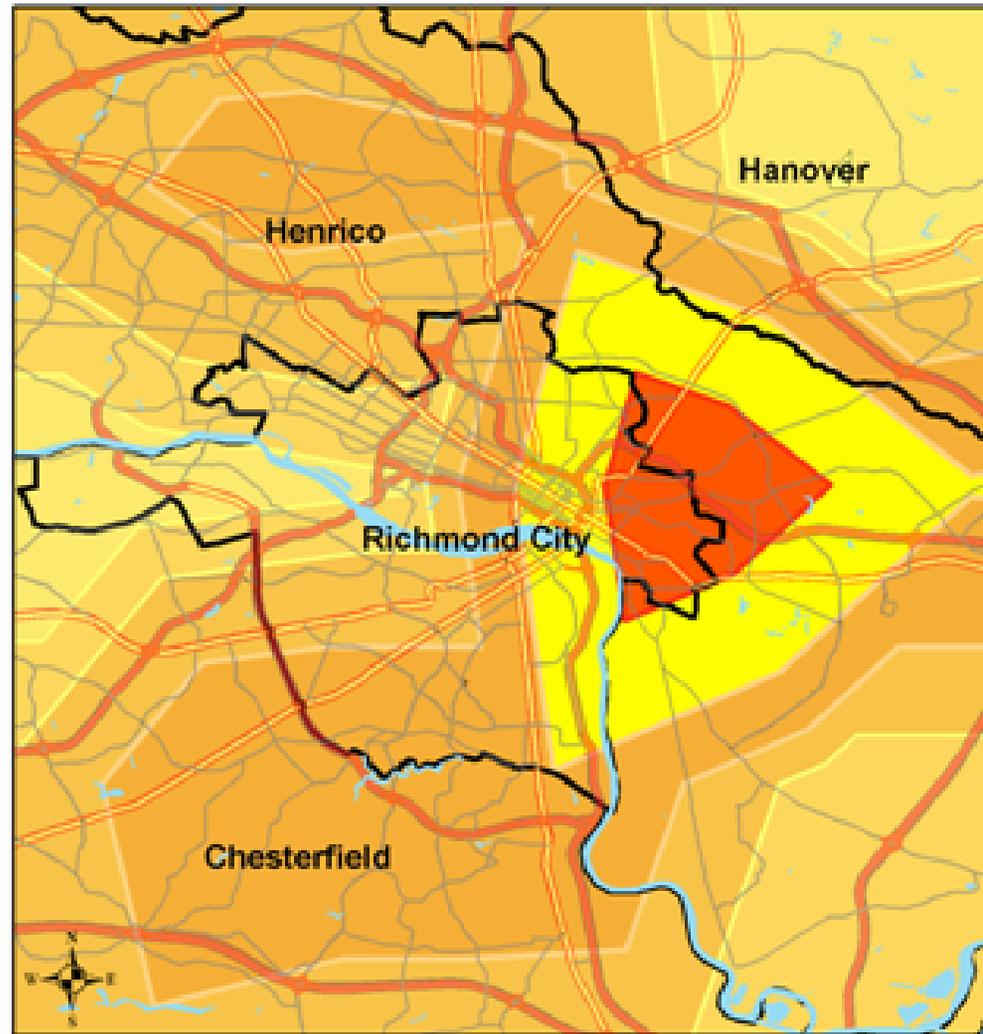
NOTE: THIS MAP SHOWS ALL AREAS WITH SOME PERSISTENCE OF POVERTY. (ONLY ONE CT IN CHESTERFIELD AND 2 CTS IN HENRICO.)

Richmond, Virginia

Infant Deaths by Census Block Group, 1990-2005



Predictive Kriging Analysis Infant Deaths by Block Group



Source: VDH Vital Statistics, 1990-2005.

Infant Mortality and Poverty

- 58% of infant deaths in the Richmond Metro Area are directly accounted for by Block Group Poverty Level

High Priority Census Tracts

- | Richmond | Chesterfield | Henrico |
|-----------------|---------------------|----------------|
| | 100406 | 200805 |
| | 100407 | 200804 |
| | 100403 | 201003 |
| | 100506 | 201501 |
| | 100300 | 201202 |
| | | 200303 |

Conclusions

- Distribution of SDOH varies across the Richmond region
- Richmond City has a higher rate of poverty and a significant % of racial/ethnic minorities live in high poverty communities
- Adverse SDOH and negative health outcomes cluster in the East End of Richmond, the Fairfield District of Henrico, and a few CTs in Chesterfield

Conclusions

- Data points to multiple health conditions that overlap in high priority areas
- **The common thread is the distribution of SDOH**; therefore, in addition to targeting health care and behavior change, **it is critical to address the SDOH and the policies that determine their distribution**
- **Community-based participatory research** should be the guiding framework for working with communities and neighborhoods, **increasing understanding** of health inequities and their causes, **promoting health**, and **changing public policy** that determines opportunities to be healthy
- GIS and spatial analysis provide critical information to identify high priority target areas, to understand the distribution of resources and opportunities at the neighborhood level, and to link health inequities to policies that determine the distribution of SDOH