Hot Spotting, Cold Spotting, and the Health of the Public:
Achieving the Triple Aim in Metro Richmond

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Congressional Co-Chairs: The Honorable Joe Heck, DO; The Honorable Ami Bera, MD

Background: VCU Health System

- **Safety-net hospital that is part of an academic medical center**

- **MCV Hospital**
  - 805 acute care beds
  - 84,000 ED visits

- **Children's Hospital**

- **MCV Physician Group Practice**

- **Virginia Premier Health Plan**
  - 184,000 member Medicaid health plan

VCUHS Patients by Payer FY 2014

Pie chart: Other 5%, Uninsured 20%, Medicaid 22%, Medicare 25%, Commercial 28%
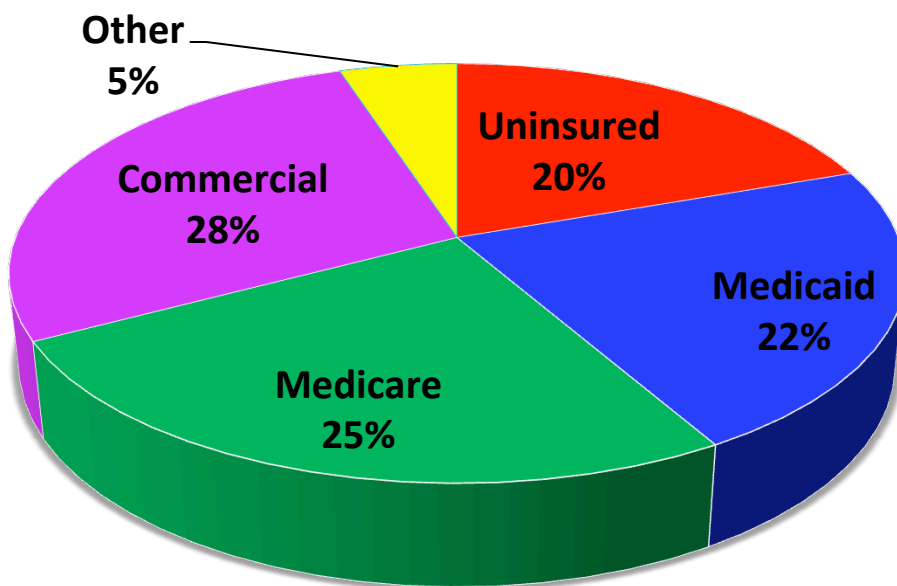
Background: Hot Spotting
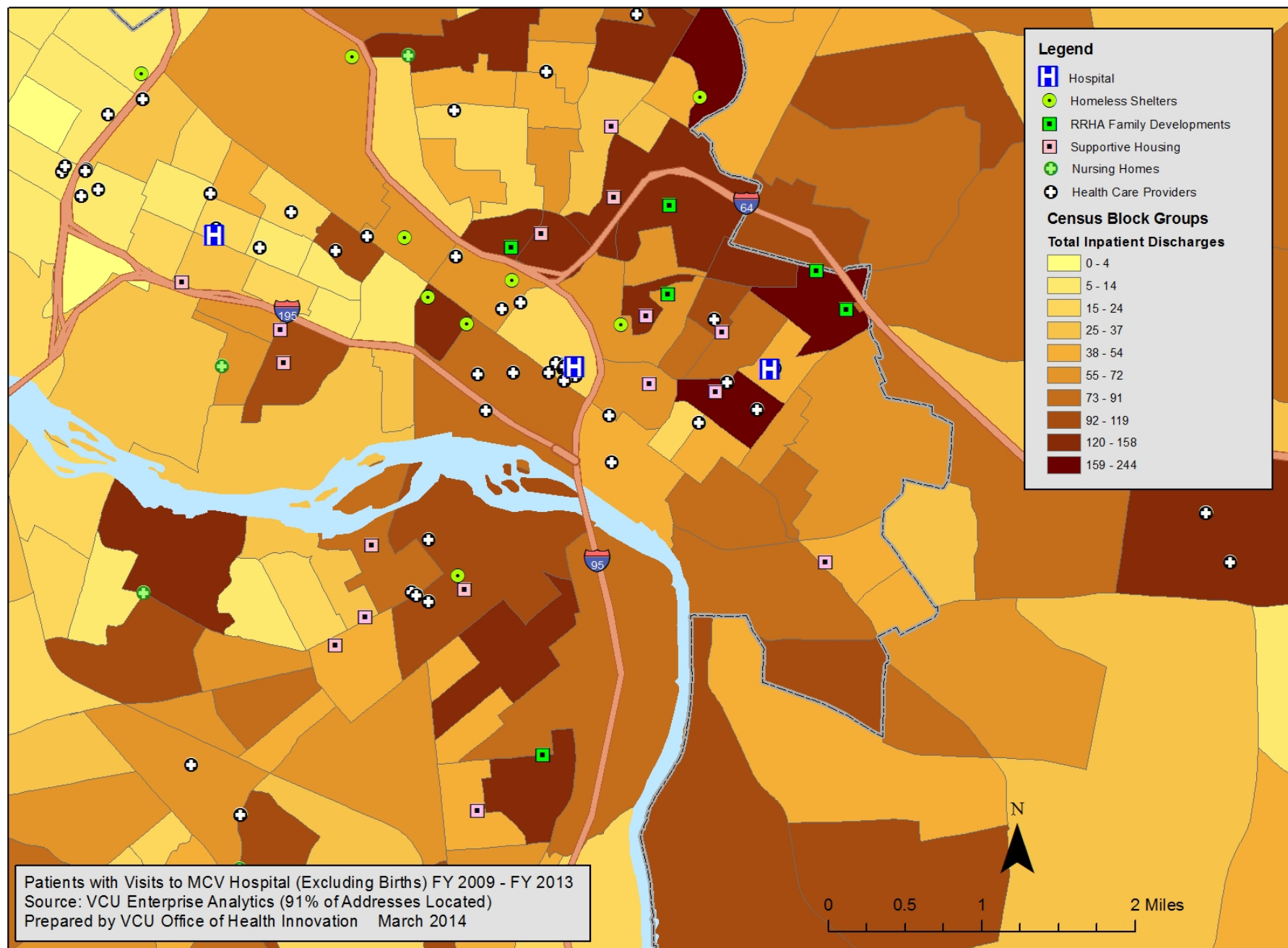
- Hot Spotting: identifying the geographic areas with the highest concentrations of Emergency Department and hospital utilization and costs

- Cold spotting*: identifying communities that do not provide the essential opportunities for health: employment, education, grocery stores, safe sidewalks, good air quality, social support

*Source: Westfall J.M. Cold spotting: linking primary care and public health to create communities of solution. J Am Board Fam Med. 2013;26(3):239-40.
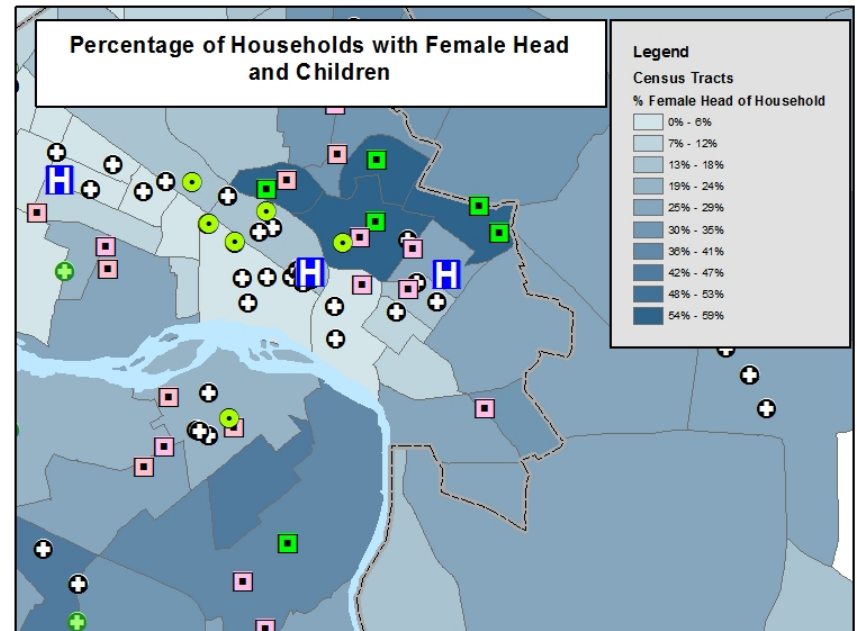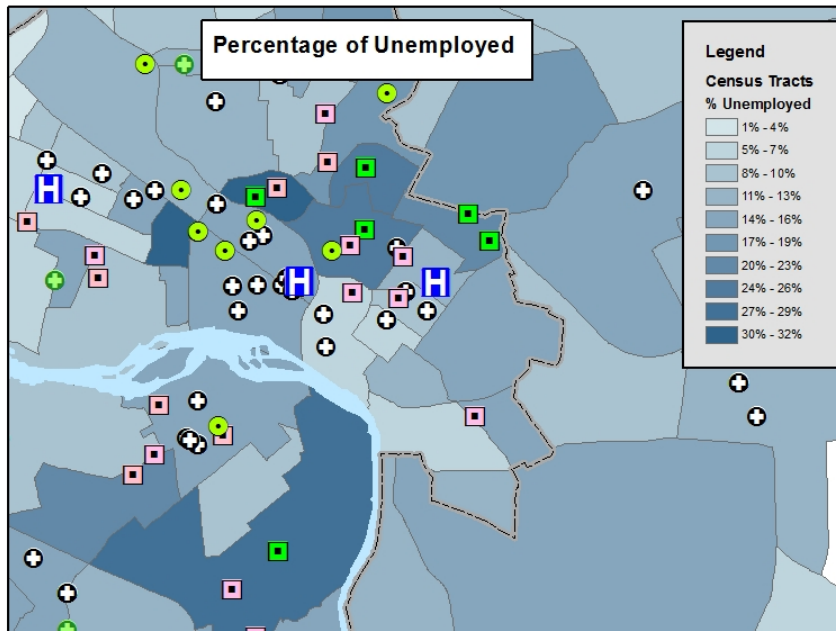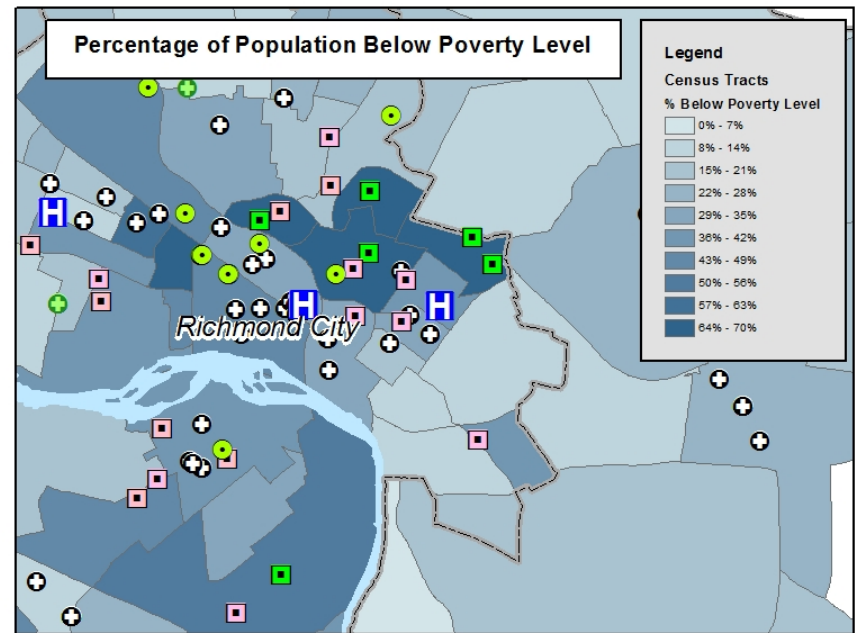
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Goals

1. Identify the health care "hot spots" in the Greater Richmond area with the highest utilization and costs and the "cold spots" with the poorest social determinants of health.

2. Understand the demographic, clinical and social profiles of patients in "hot spots" and their patterns of health care utilization compared to the overall VCU Health System patient population.

3. Engage health system and community stakeholders to discuss strategies to decrease overutilization and improve health outcomes.

VCUHS Inpatient Discharges by Greater Richmond Census Block Groups

Legend

H	Hospital
⊙	Homeless Shelters
■	RRHA Family Developments
▫	Supportive Housing
⊕	Nursing Homes
✛	Health Care Providers

Census Block Groups

Total Inpatient Discharges

- 0 - 4
- 5 - 14
- 15 - 24
- 25 - 37
- 38 - 54
- 55 - 72
- 73 - 91
- 92 - 119
- 120 - 158
- 159 - 244

Patients with Visits to MCV Hospital (Excluding Births) FY 2009 - FY 2013
Source: VCU Enterprise Analytics (91% of Addresses Located)
Prepared by VCU Office of Health Innovation   March 2014

0   0.5   1   2 Miles
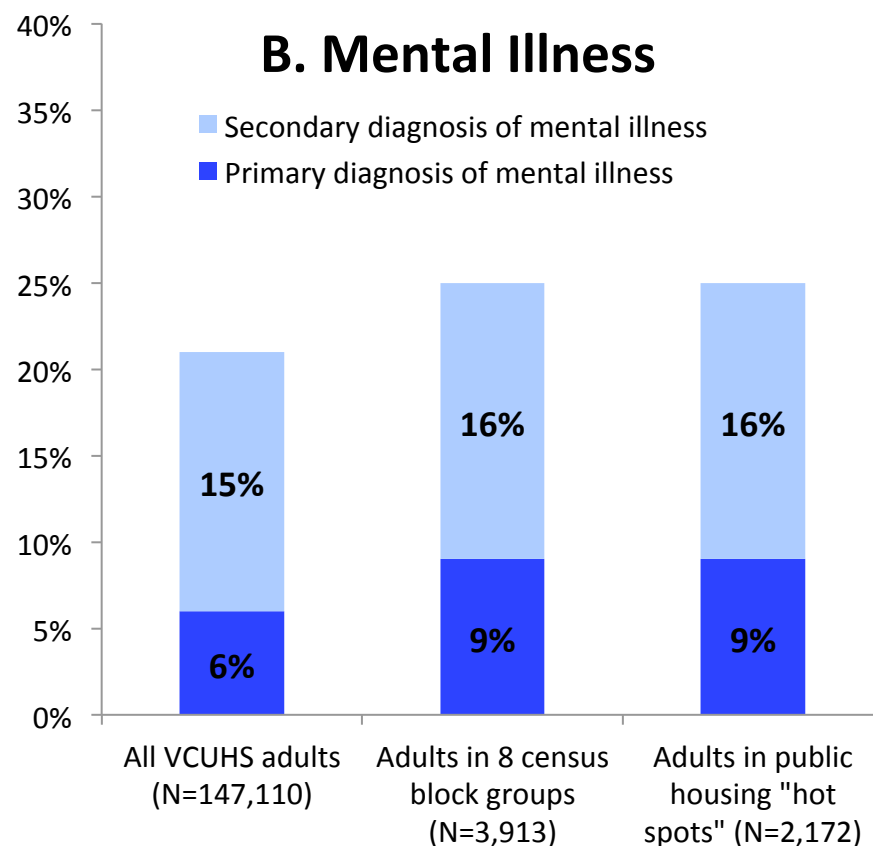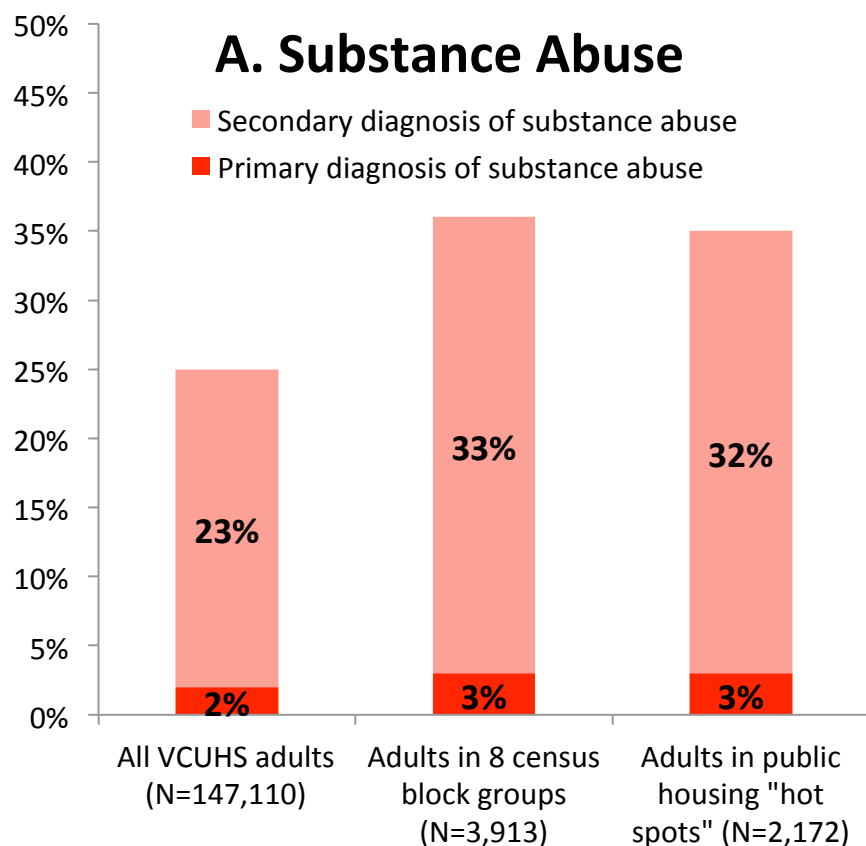
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VCU Health System Inpatient Discharges and Regional Demographics
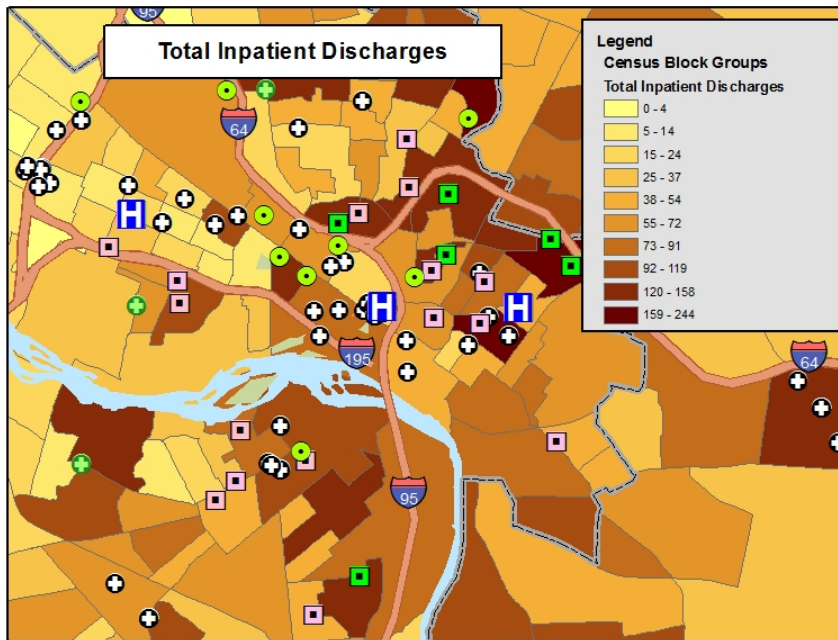
Most Prevalent Conditions Among Adults in Richmond Public Housing "Hot Spots" Across All Services, FY 2009-13 (n = 2,177)

Condition	Percentage
Mental Illness	27%
Hypertension	22%
COPD	18%
Asthma	14%
Diabetes	13%
Substance Use	9%
Heart Failure	4%
Dermatology	4%

Percentage of adults (ages 18 and older)
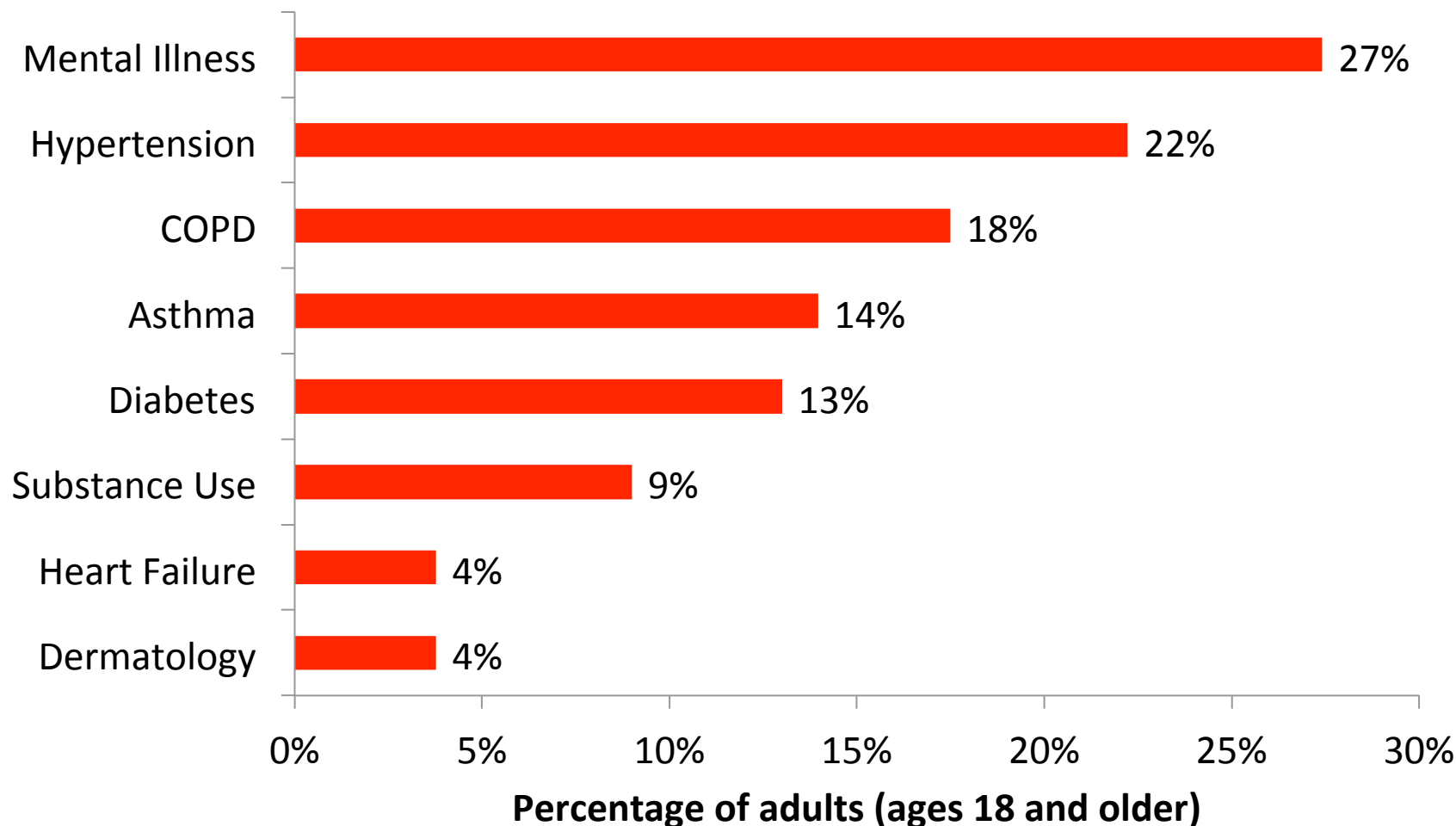
Note: Includes primary and secondary ICD-9 codes for VCU health system encounters for adults (ages 18 and older, N=2,177) during last 18 months (9/1/2012 – 2/28/2014) in Emergency Department, inpatient, and outpatient (primary care and specialty care) settings. Excludes inpatient discharges for birth/delivery.

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Percent of Inpatient Discharges in the Past 18 Months with Primary or Secondary Diagnosis of Substance Abuse and Mental Illness in Public Housing "Hot Spots" compared to all VCUHS Adults

A. Substance Abuse

- Secondary diagnosis of substance abuse
- Primary diagnosis of substance abuse

Category	Secondary	Primary
All VCUHS adults (N=147,110)	23%	2%
Adults in 8 census block groups (N=3,913)	33%	3%
Adults in public housing "hot spots" (N=2,172)	32%	3%

B. Mental Illness

- Secondary diagnosis of mental illness
- Primary diagnosis of mental illness

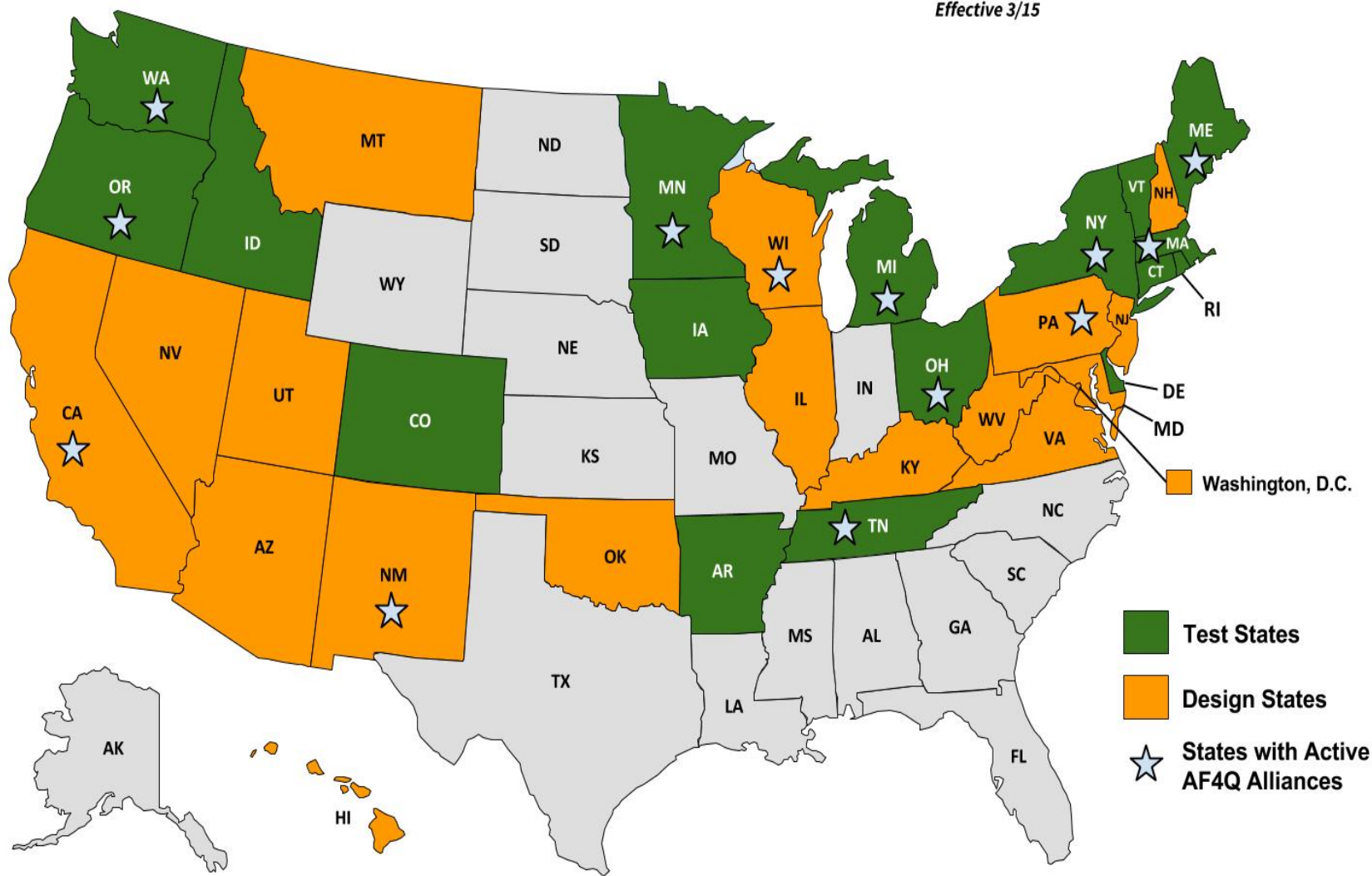| Category	Secondary	Primary
All VCUHS adults (N=147,110)	15%	6%
Adults in 8 census block groups (N=3,913)	16%	9%
Adults in public housing "hot spots" (N=2,172)	16%	9%

Note: Excludes discharges for birth/delivery. Mental illness is CCS-MHSA general tool categories 650-659, 662, 670 and mental illness-related cotes from category 663. Substance abuse is CCS-MHSA general tool categories 660-661 and substance-related codes from category 663.
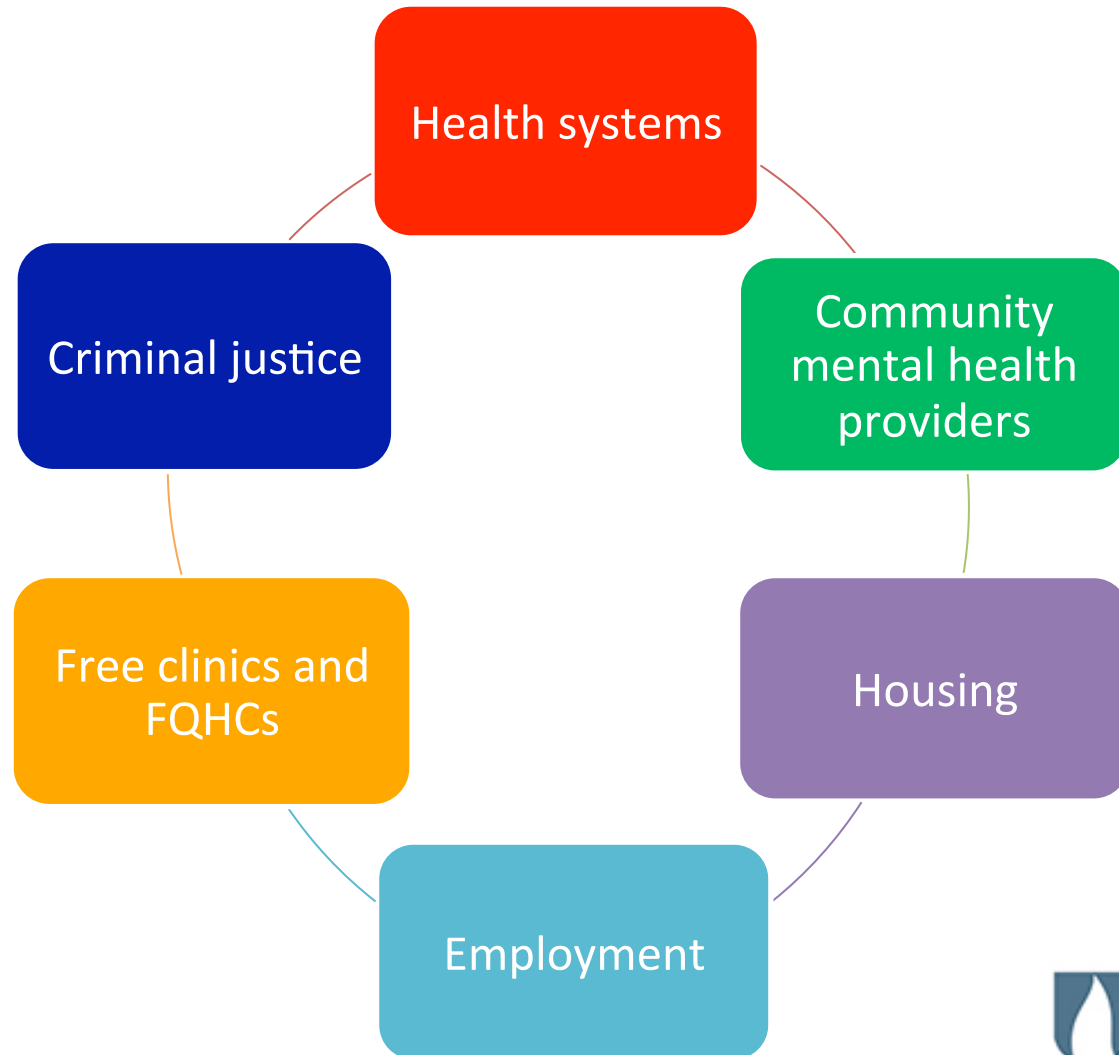
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State Innovation Model Participants

Effective 3/15

Test States

Design States

States with Active AF4Q Alliances

Washington, D.C.

American Samoa, Northern Mariana Islands, Puerto Rico

CHCS Center for Health Care Strategies, Inc.

SIM Metro Richmond Behavioral Health Planning Group

Conclusions

- Health systems can address the needs of their "super-utilizers" by identifying the "hot spots" where they live, their leading diagnoses, and the social and environmental factors that lead to preventable hospitalizations.

- Mental illness and substance abuse are important drivers of hospitalizations in public housing "hot spots" and for the entire population served by VCUHS.

- Policies enacted at the local, state, and Federal level can markedly improve health outcomes and control costs by addressing the economic and social conditions that drive people to hospitals.

- CMMI SIM awards are supporting local as well as statewide health care innovation.

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