





Use of RUCAs in Health Services Research

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Purpose

- ❖ Introduce Rural-Urban Commuting Areas (RUCAs) (developed by our Rural Health Research Center and ERS)
- ❖ Show Selected Examples

RUCAs

RUCAs are a new Census tract-based taxonomy that utilizes the standard Census Bureau Urbanized Area and Urban Cluster definitions in combination with work commuting data to characterize the nation's Census tracts regarding their rural and urban status and functional relationships.

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RUCAs

A new Census tract-based taxonomy uses:

- ❖ standard Bureau of Census urbanized area and place definitions
- ❖ functional relationships per work commuting flows

RUCAs

- ❖ **New Version 2.0 now available**
- ❖ **Based on 2000 Census using 2004 ZIP code areas (and 2004 population estimates)**

Why RUCAs?

- ❖ There is no “universal” rural definition
- ❖ Concept of rural is nebulous at best
- ❖ Most definitions are county-based
- ❖ Provides sub county alternative
- ❖ Takes functional relationships, population, & population density into account
- ❖ Taxonomy is adjustable to fit unique needs
- ❖ Scheme allows better targeting
- ❖ Taxonomy is ongoing, multi purpose, objective, & rigorous

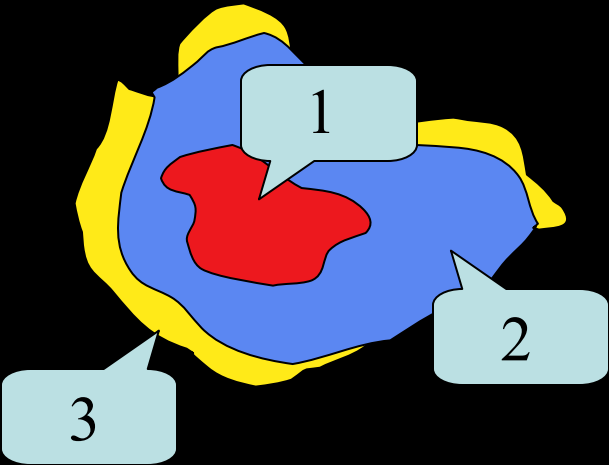
But Why Care?

So we:

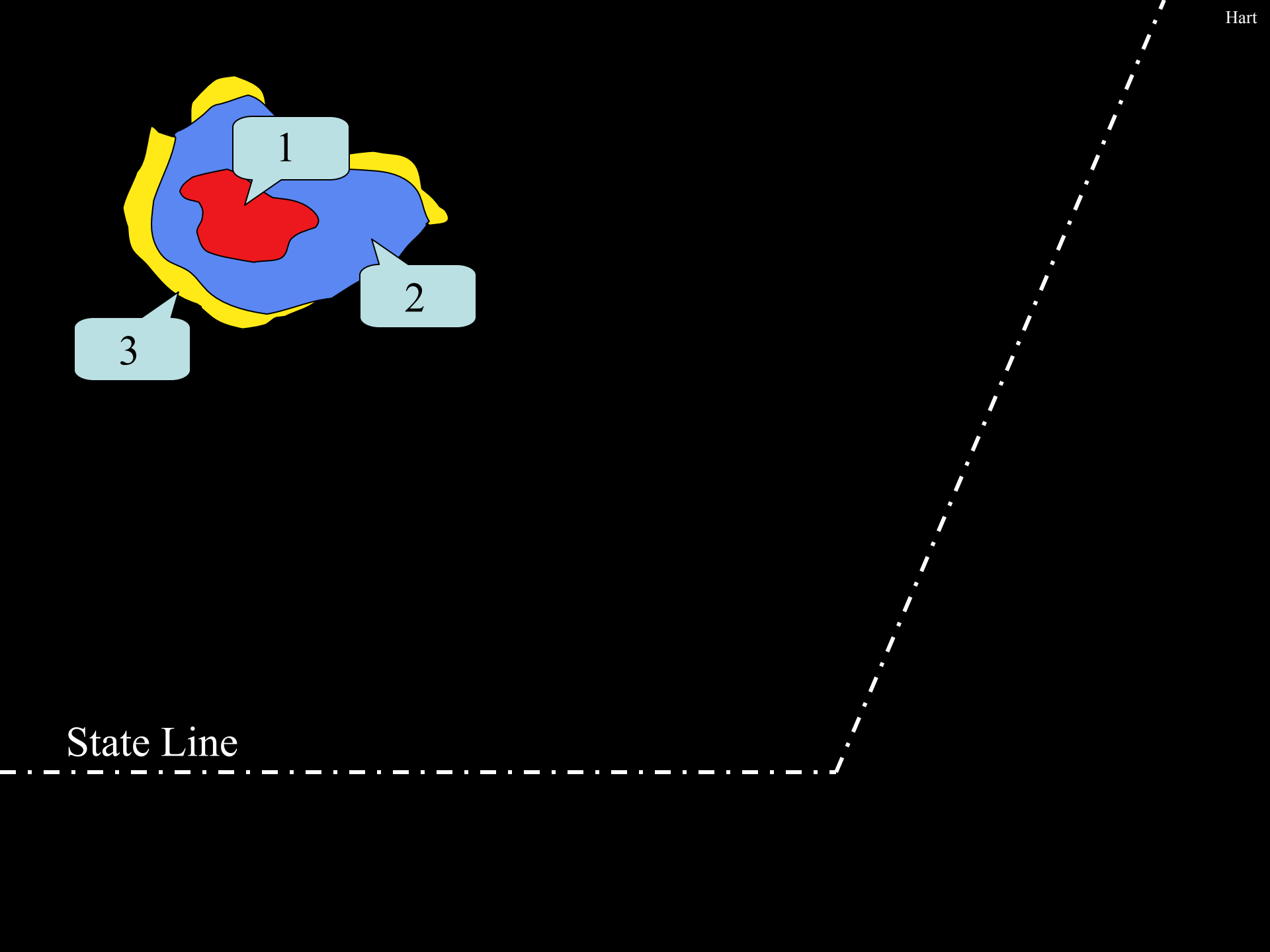
- ❖ do not miss research differences
- ❖ do not waste resources
- ❖ can target those in most need
- ❖ impartial empirical definition
- ❖ ultimately be more efficient and improve the health of the population

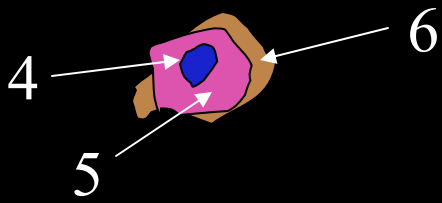
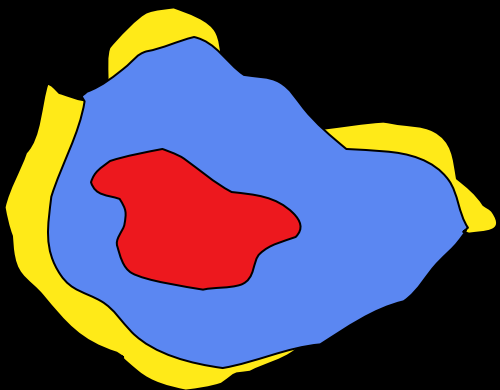
Intra Rural Important?

- ❖ Rural varies greatly from place to place
- ❖ Most rural folks receive most of care within rural areas

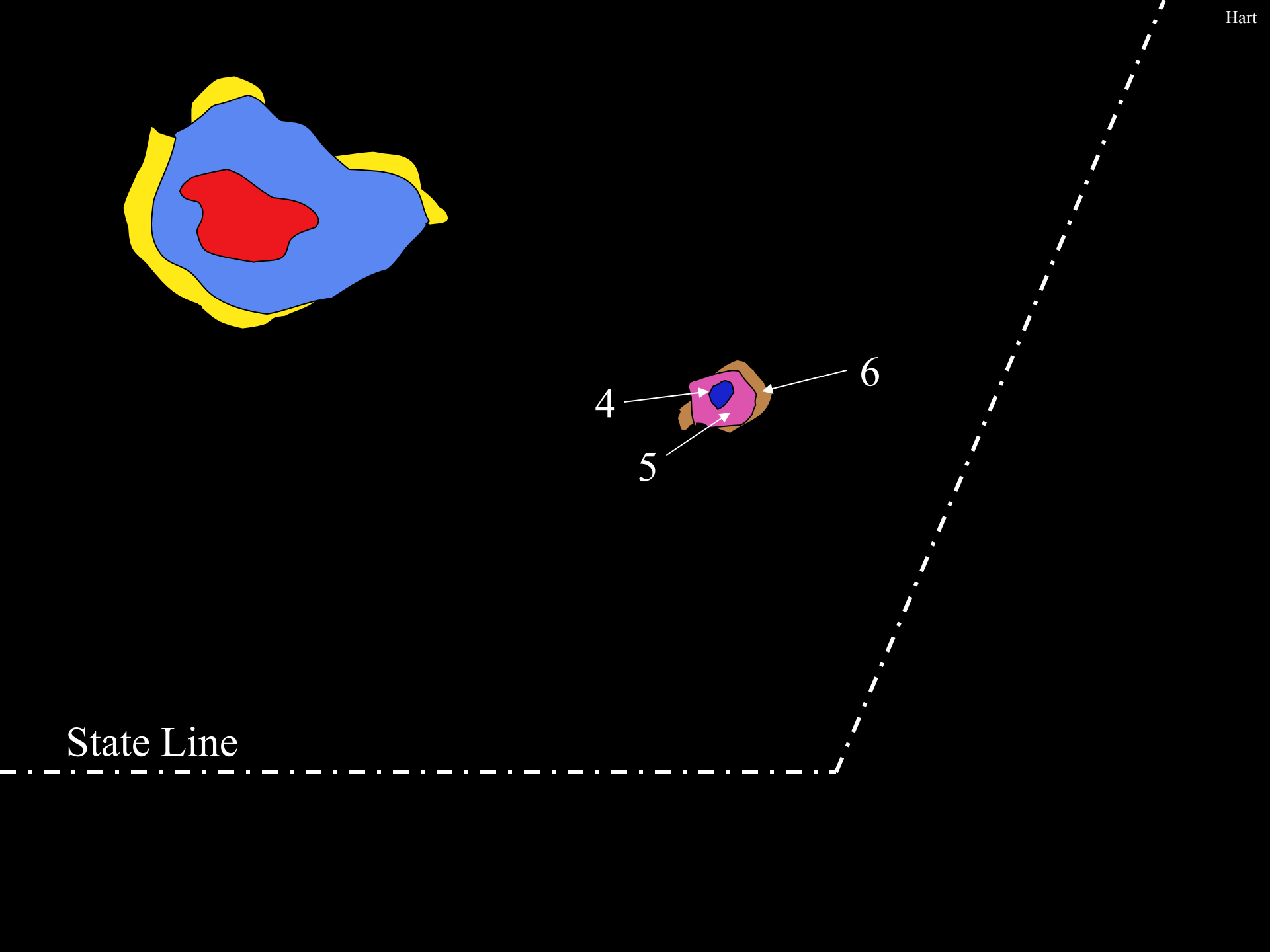


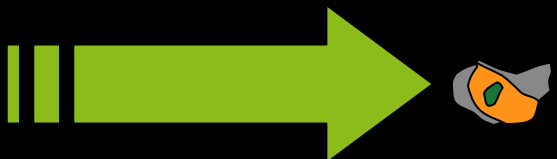
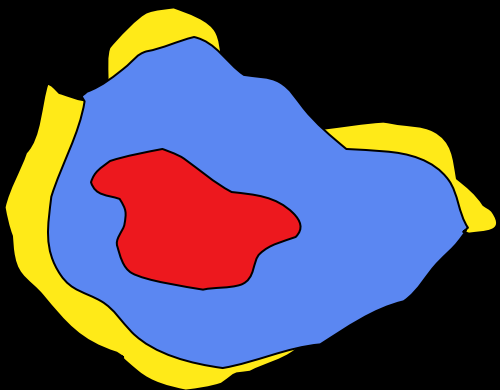
State Line



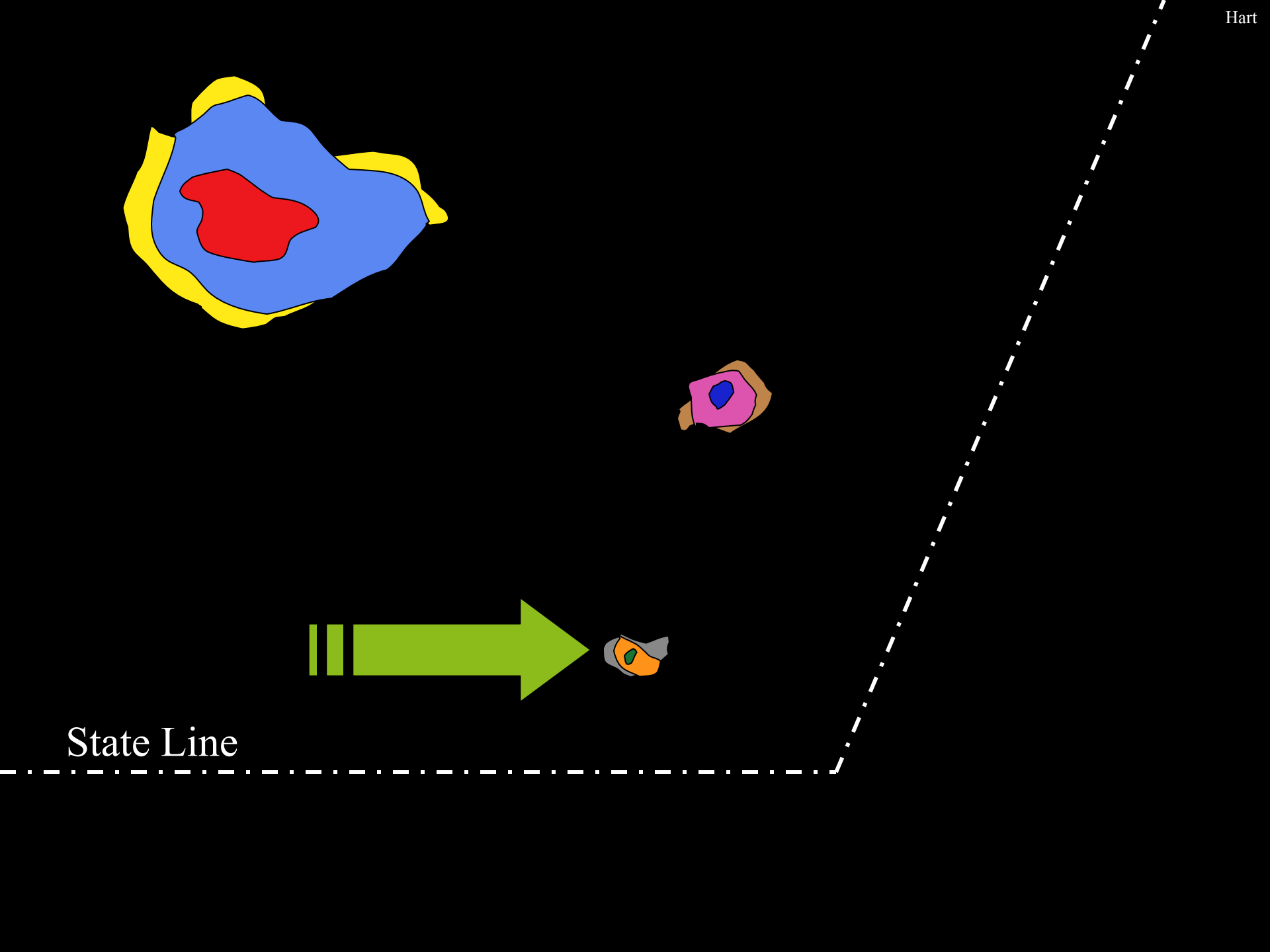


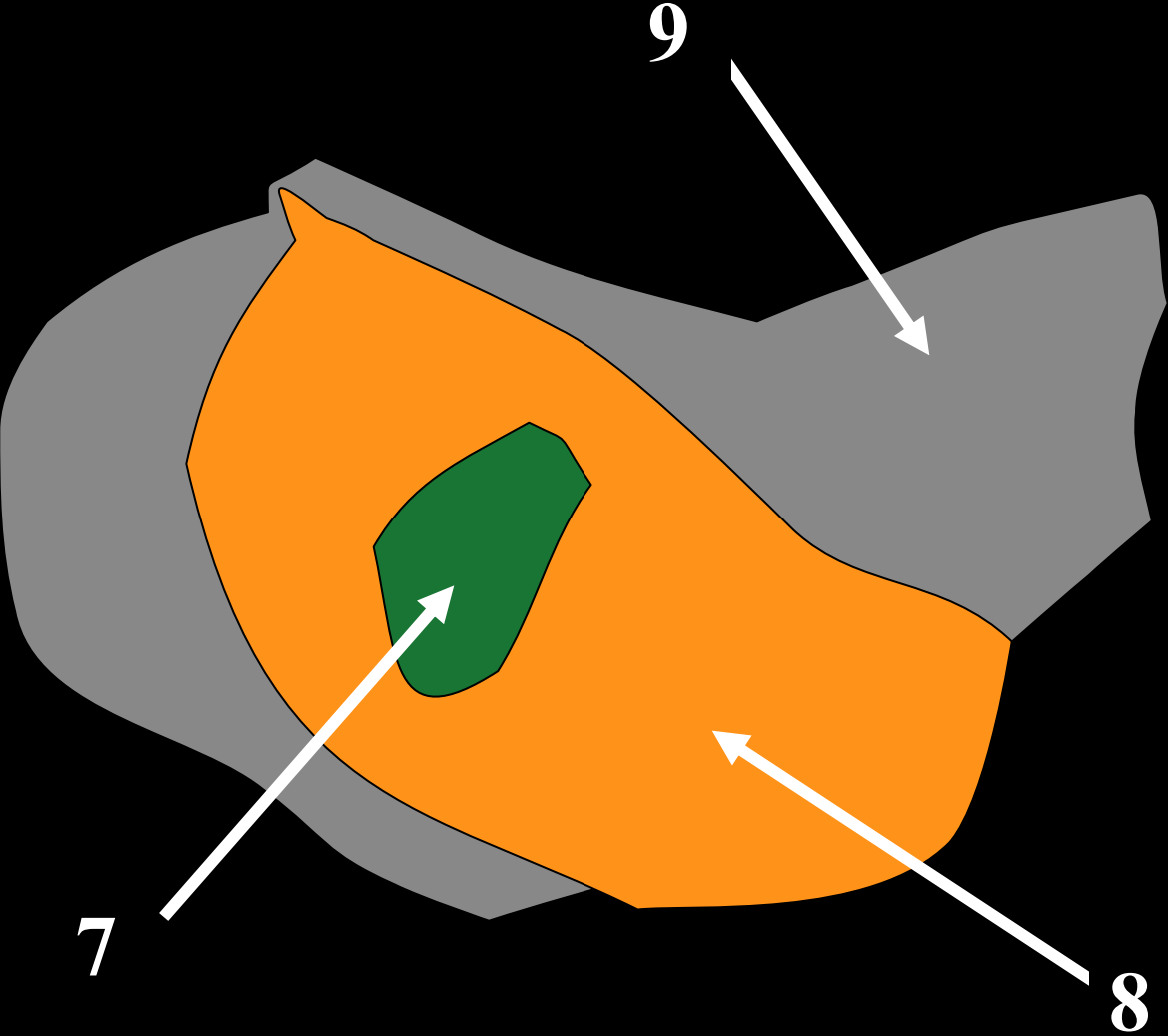
State Line

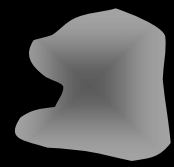
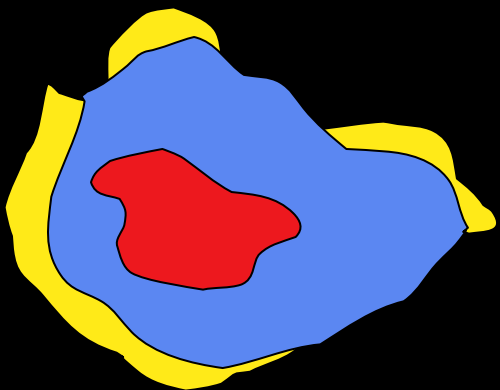




State Line

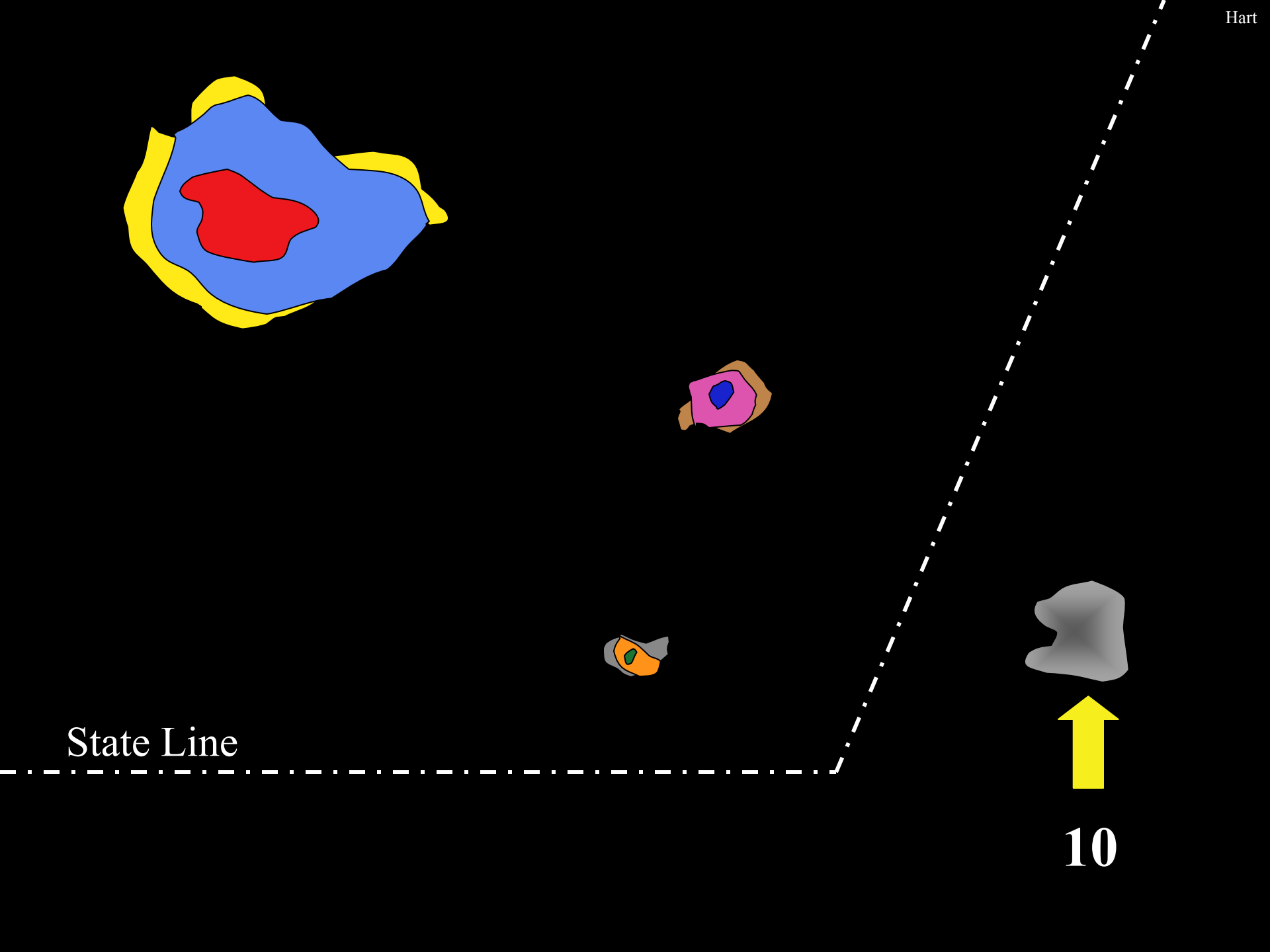


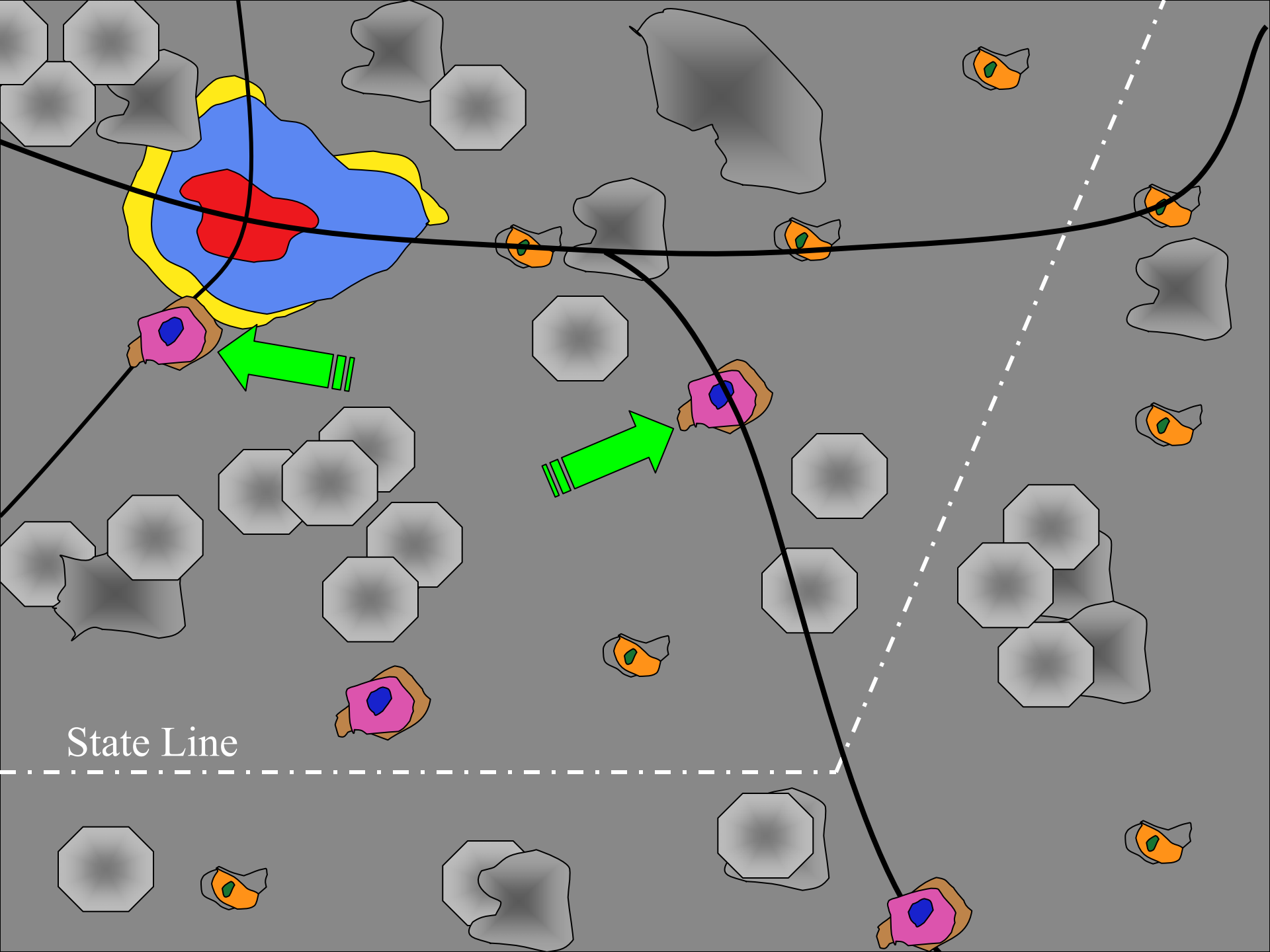




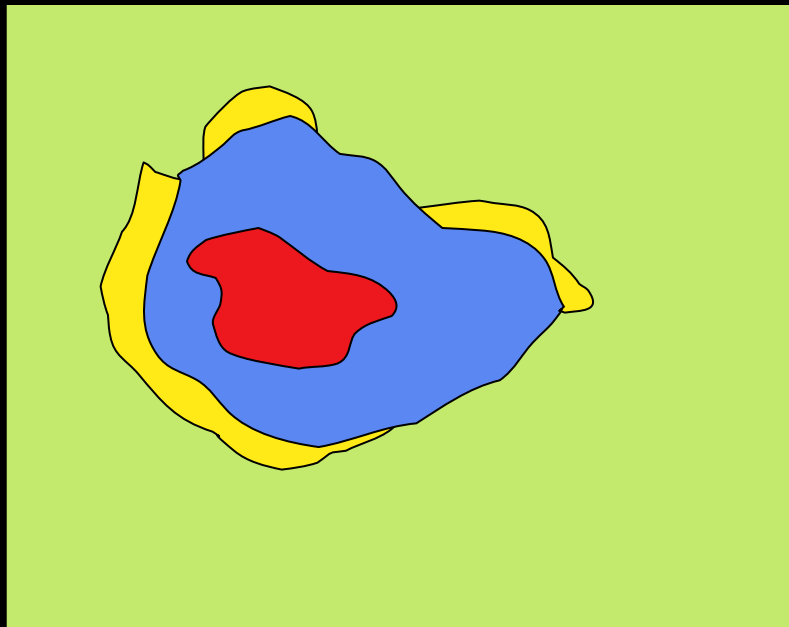
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State Line

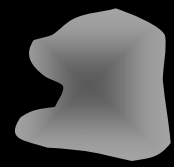




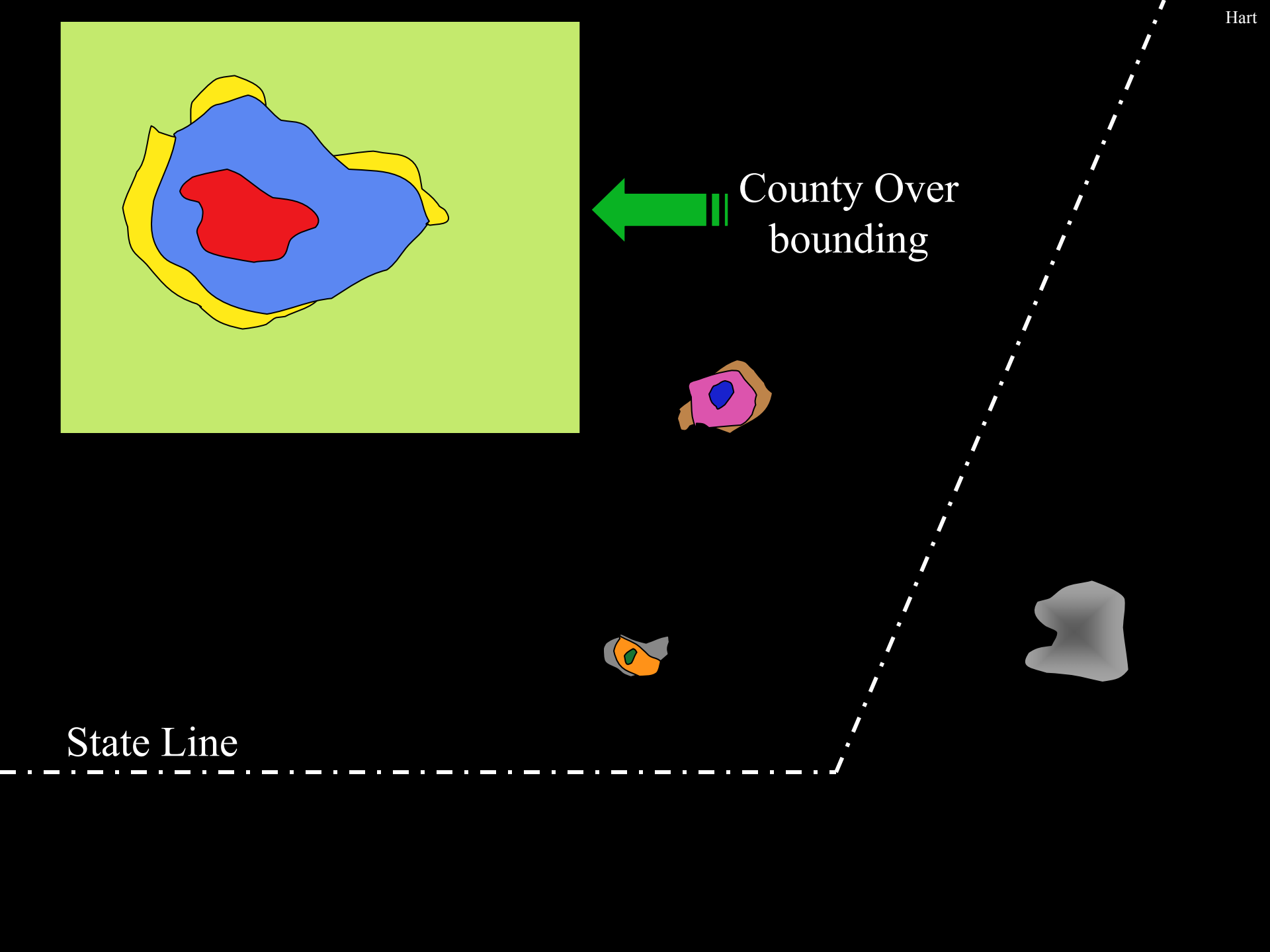
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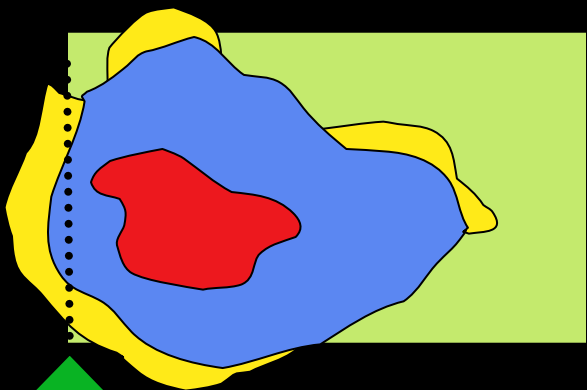


County Over
bounding

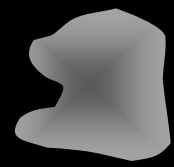


State Line

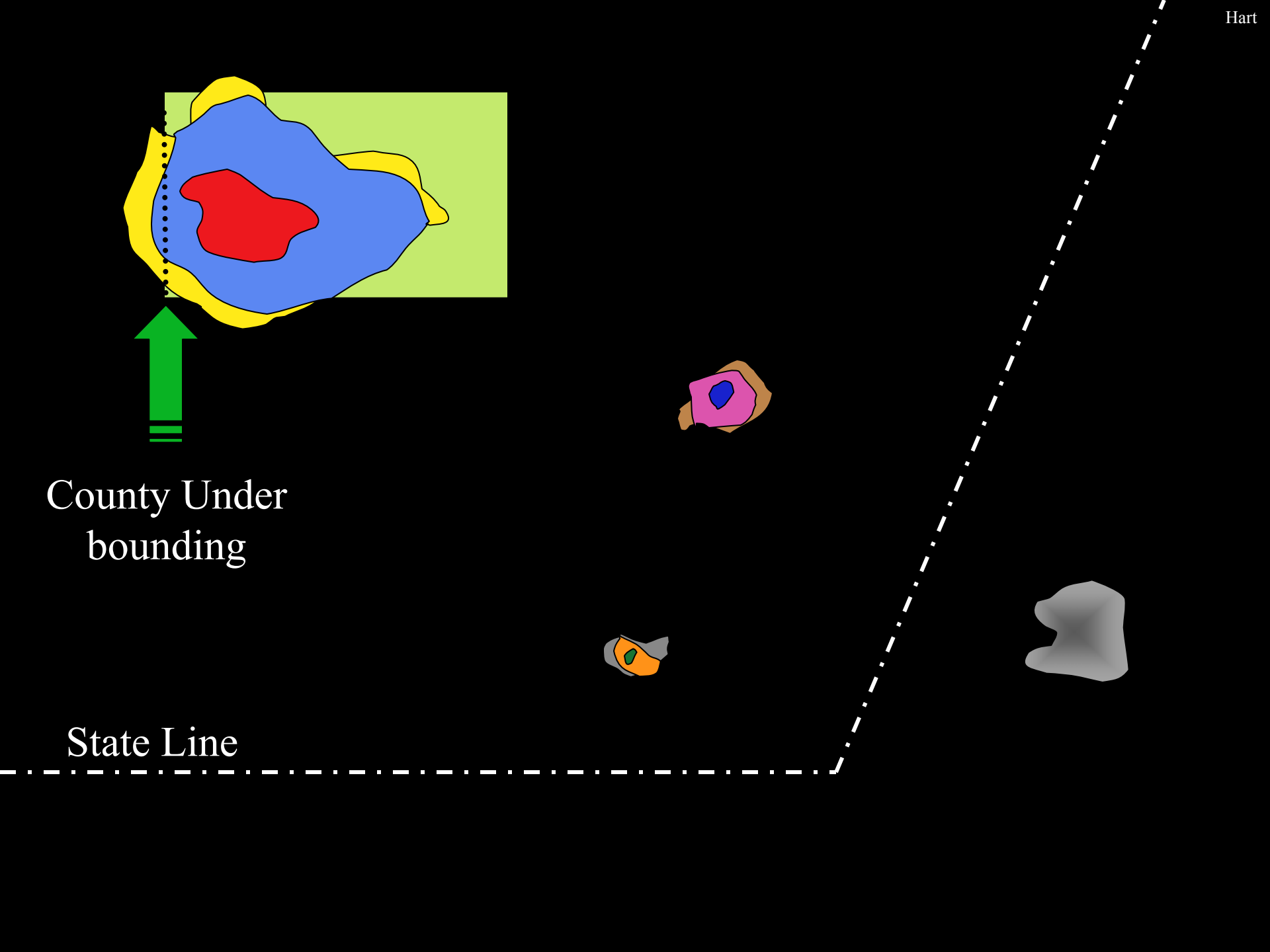




County Under
bounding



State Line

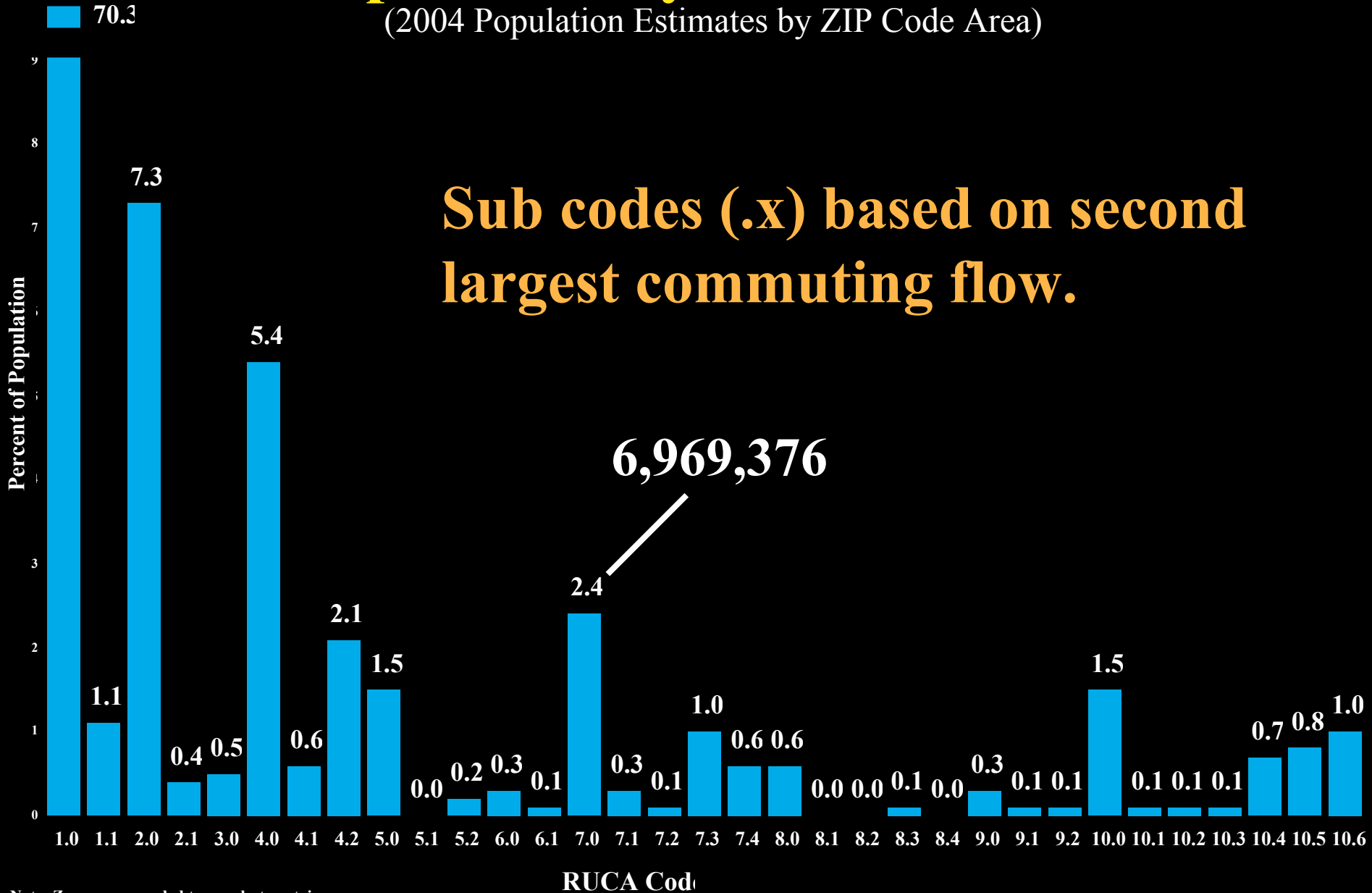


RUCA Codes X.X

1. Urban core Census tract
2. Census tract strongly tied to urban core
3. Census tract weakly tied to urban core
4. Large town Census tract
5. Census tract strongly tied to large town
6. Census tract weakly tied to large town
7. Small town Census tract
8. Census tract strongly tied to small town
9. Census tract weakly tied to small town
10. Isolated smaller rural Census tract

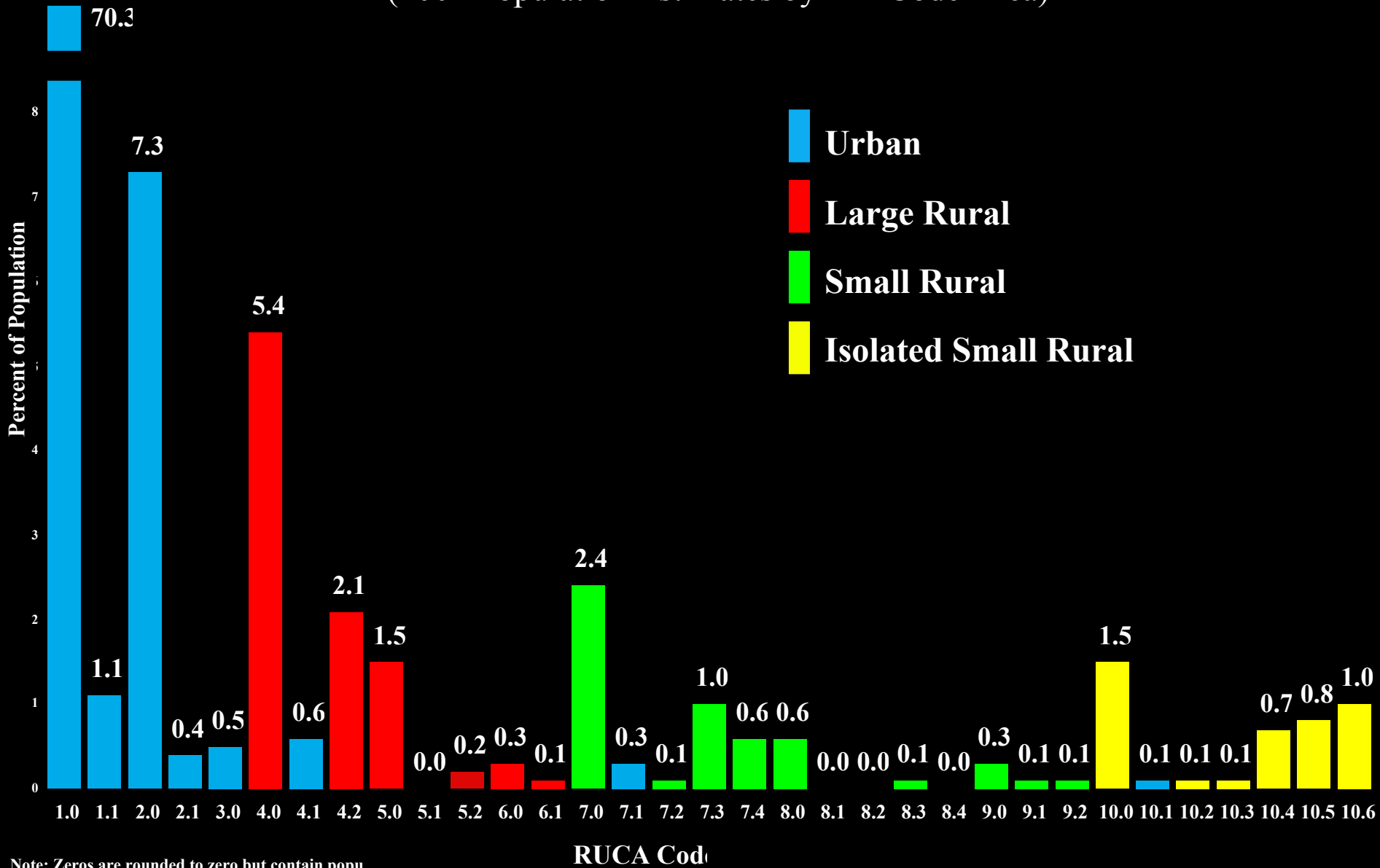
Population by RUCA Codes

(2004 Population Estimates by ZIP Code Area)



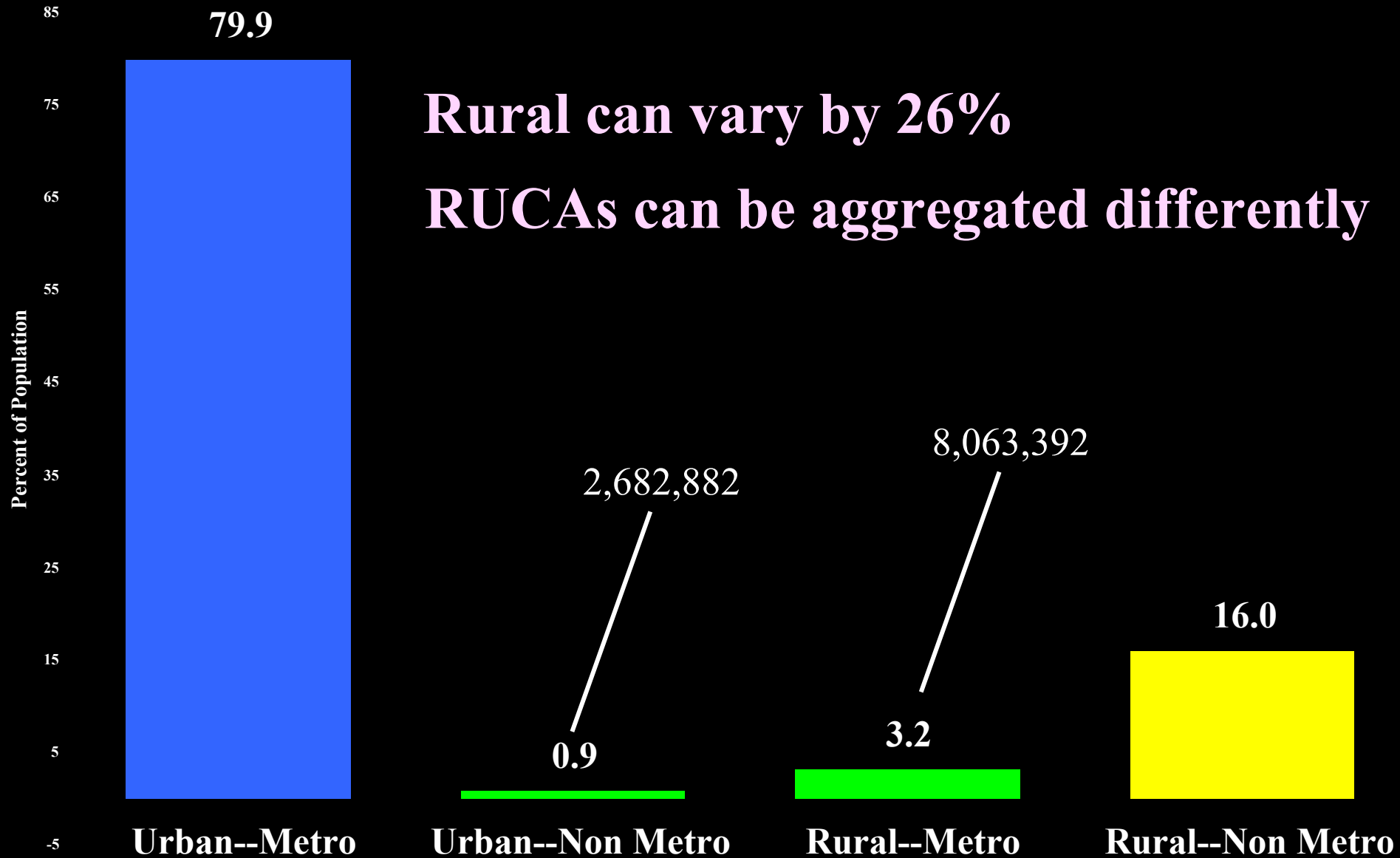
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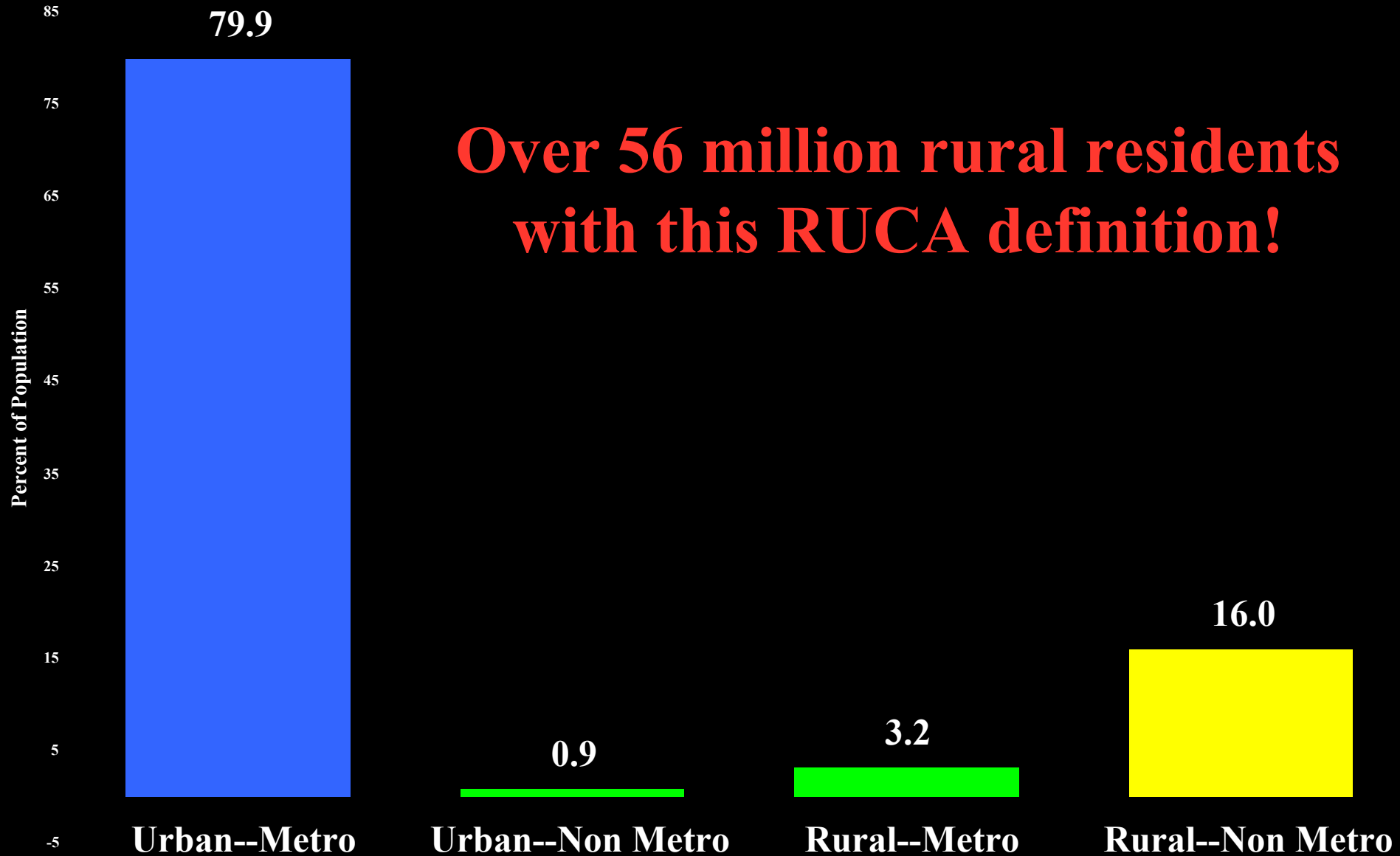
Comparison of OMB (Metro/Non) and RUCA (Urban/Rural)

(2004 Population Estimates)



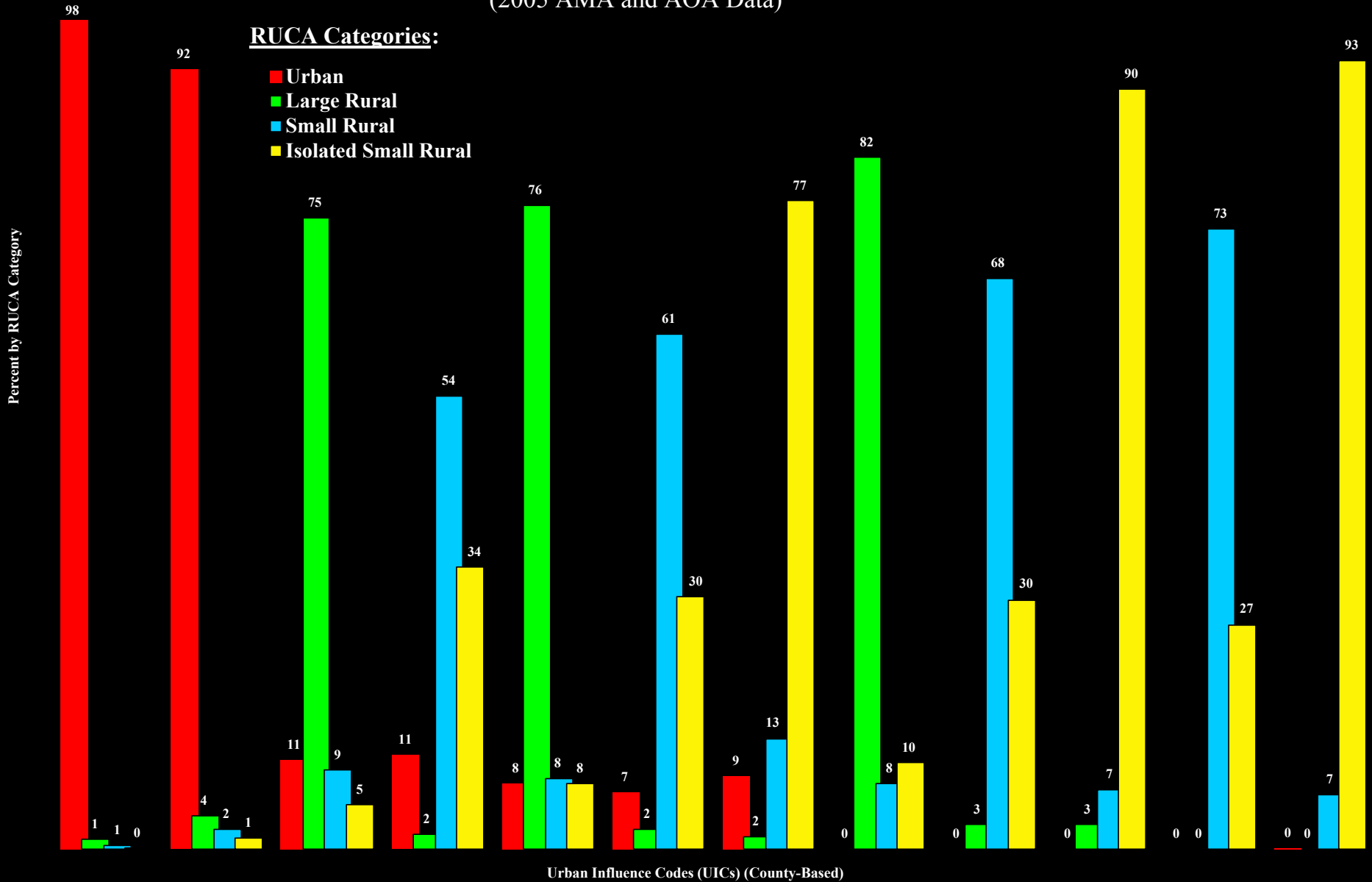
Comparison of OMB (Metro/Non) and RUCA (Urban/Rural)

(2004 Population Estimates)



Population by UIC and RUCA Category

(2005 AMA and AOA Data)



RUCA Tools

- ❖ **Travel time & distance to Urbanized Areas and Large Urban Clusters**
- ❖ **Size of Urbanized Areas for 1s, 2s, and 3s**
- ❖ **Size of Large Urban Clusters for 4/5/6s & 7/8/9s**
- ❖ **Size of Urbanized Area or Urban Cluster associated with largest secondary commuting flow**
- ❖ **County identifier of largest population portion of each ZIP code**
- ❖ **Of course, other variables to be linked (e.g., poverty)**

**ALL THESE SHOULD BE ON OUR WEB SITE
WITHIN TWO WEEKS**

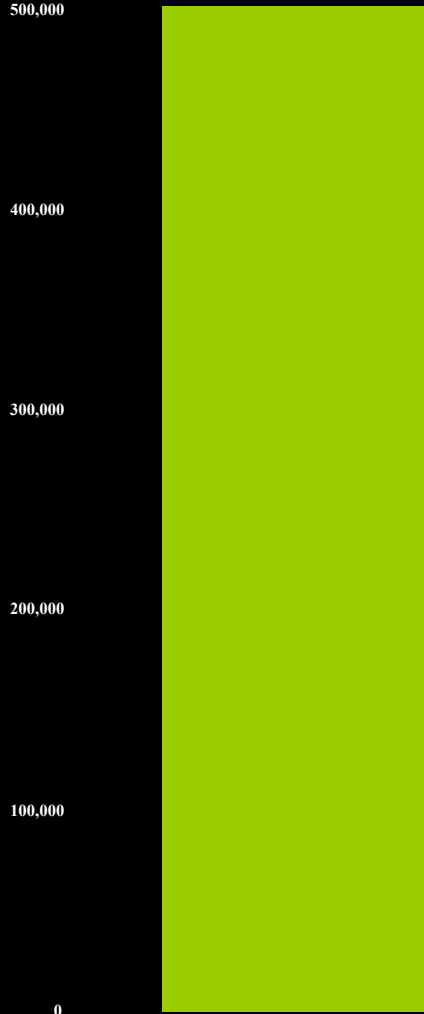
Examples of RUCA Uses

- ❖ Federal programs: ORHP, CMS, OAT
- ❖ National data sets: NSSRN, HCUP
- ❖ Demography and ERS
- ❖ Health-Related Research

Patient Care Physicians by RUCA Categories

(2005 AMA and AOA Data)

501,335 (89.0%)



Over 62,000 Rural PC Physicians!

% Physicians Rural: 11.0%

% Population Rural: 19.2%

41,125 (7.3%)

14,899 (2.6%)

6,027 (1.1%)

Urban

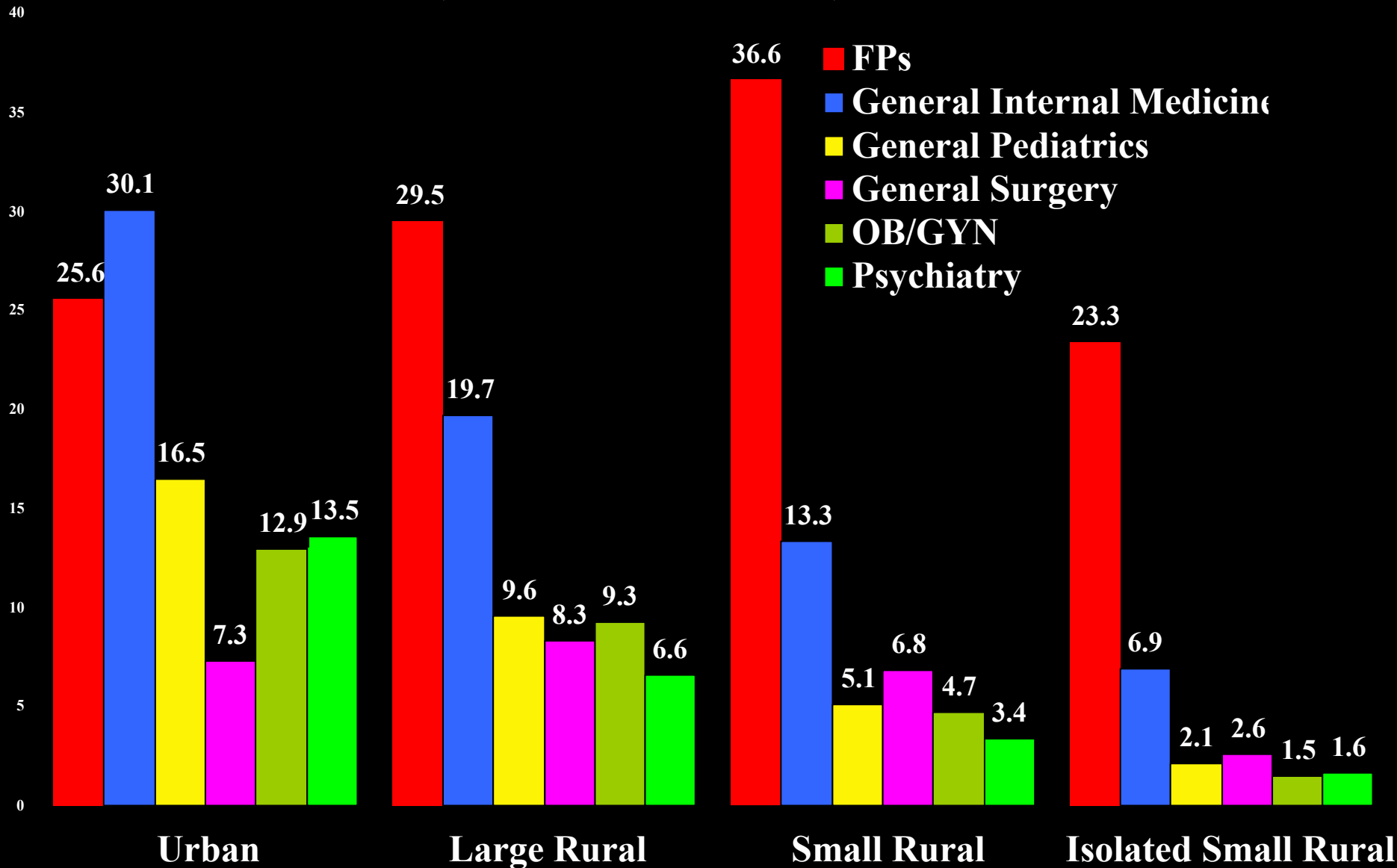
Large Rural

Small Rural

Isolated Small Rural

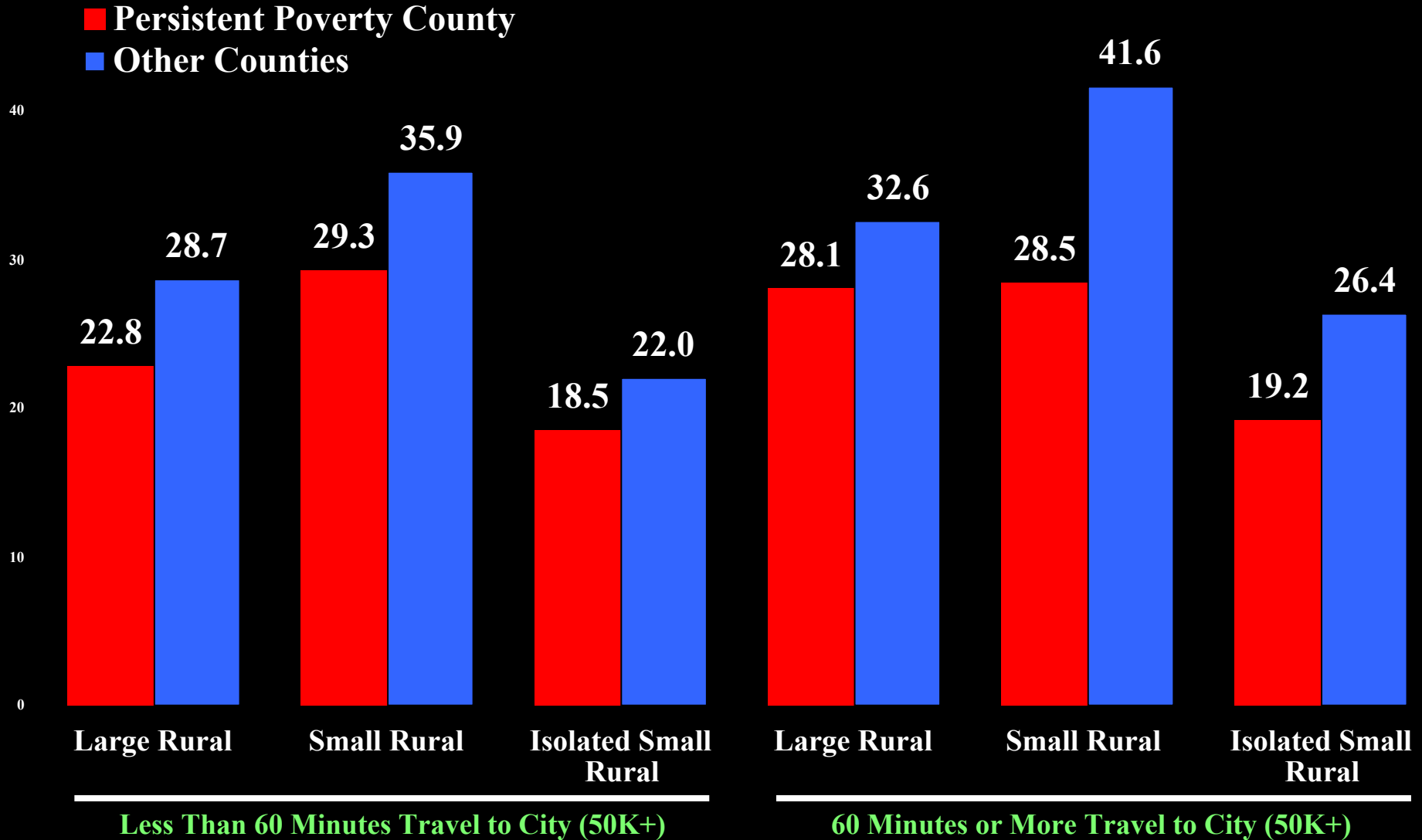
Phy/Pop Ratio by Spec & Location

(2005 AMA and AOA Data)

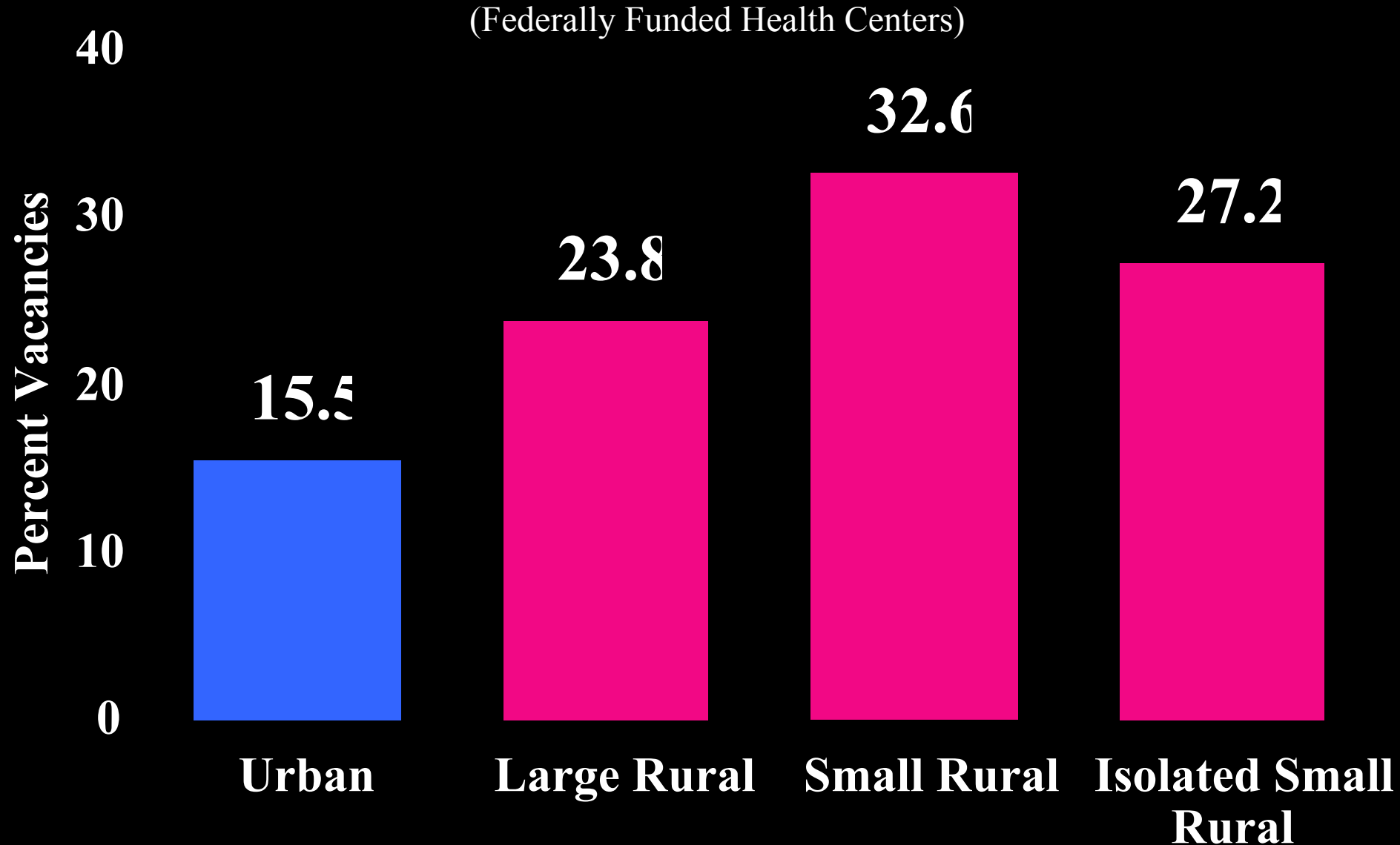


FP/Pop Ratio by Rural RUCA Categories by Persistent Poverty County Status

(2005 AMA and AOA Data)

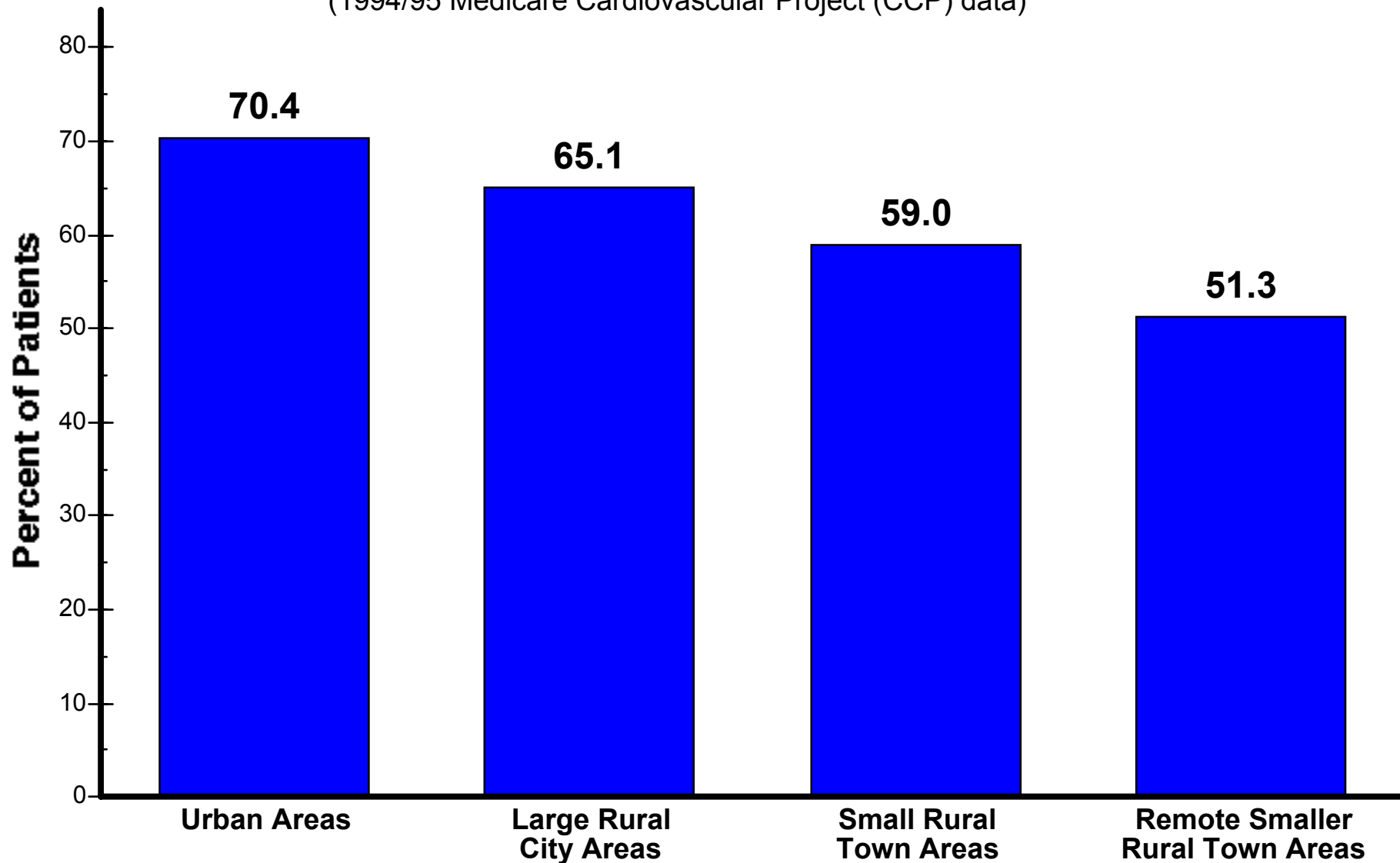


Dentist Vacancy Rates by Location Type



IV Nitroglycerin for AMI Medicare Patients by Hospital Location

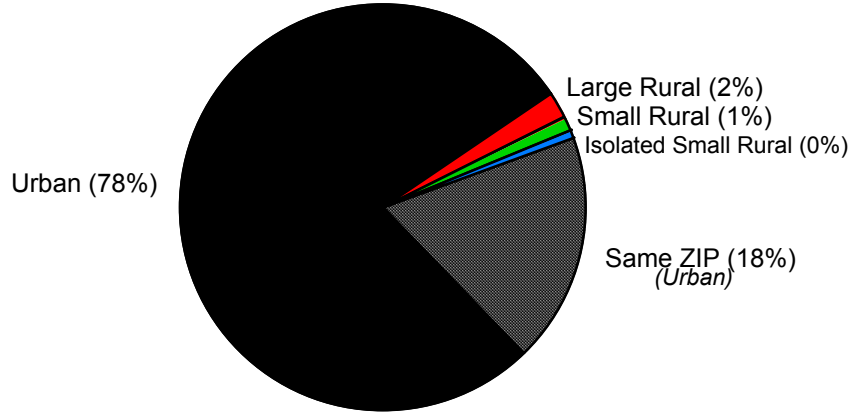
(1994/95 Medicare Cardiovascular Project (CCP) data)



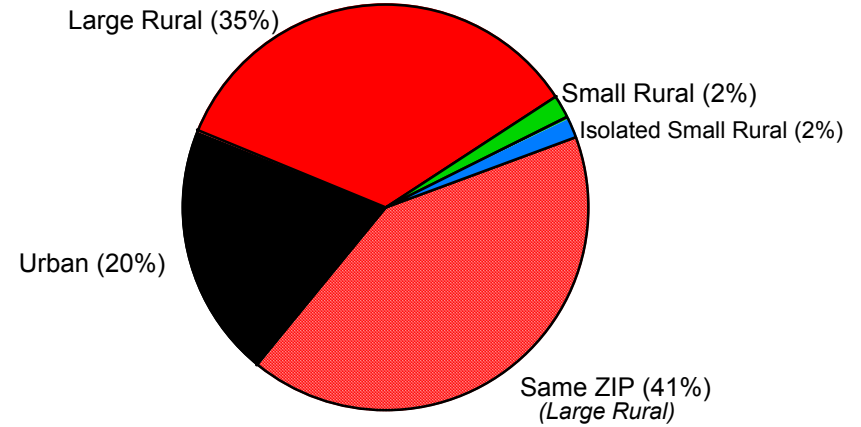
Medicare Elderly Visit Origins and Care Destinations

(1998 Medicare Elderly Ambulatory Visits: AK, ID, NC, SC, and WA)

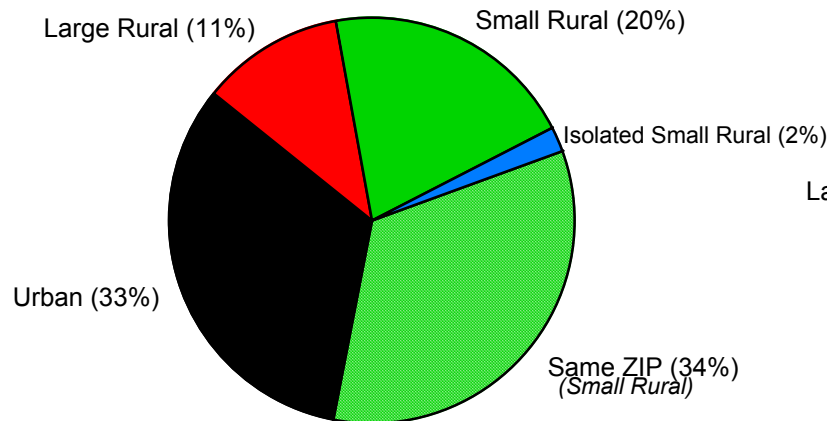
Urban Residents



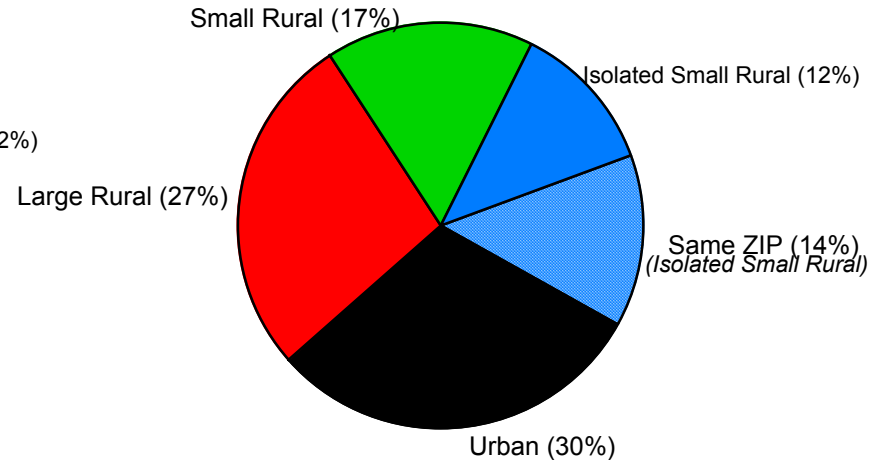
Large Rural Residents



Small Rural Residents



Isolated Smaller Rural Residents

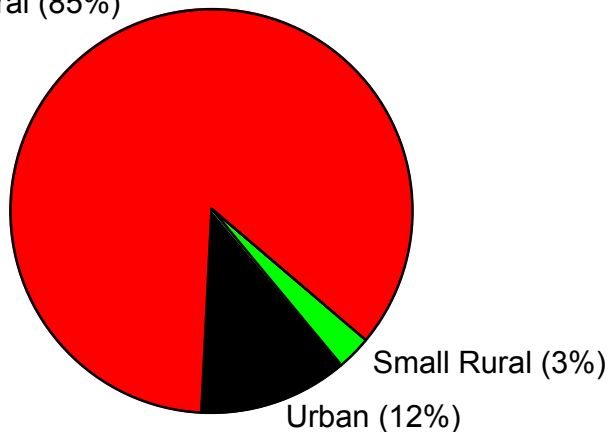


Note: Volume of the pies is proportional to the number of visits:
 Urban (12,389,696); Large Rural (3,499,306); Small Rural (2,696,055), and Isolated Smaller rural (1,907,208).

Figure 2-7: FM Residency Training by Location of Training and Parent Residency Location
(2000 FM Residency Director Survey, n= 435)

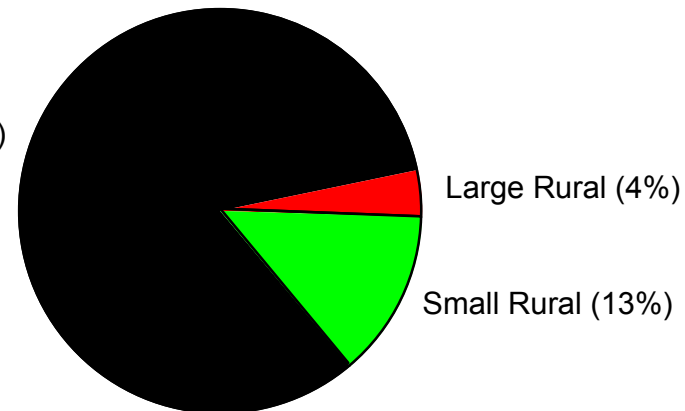
Large Rural Communities

Large Rural (85%)



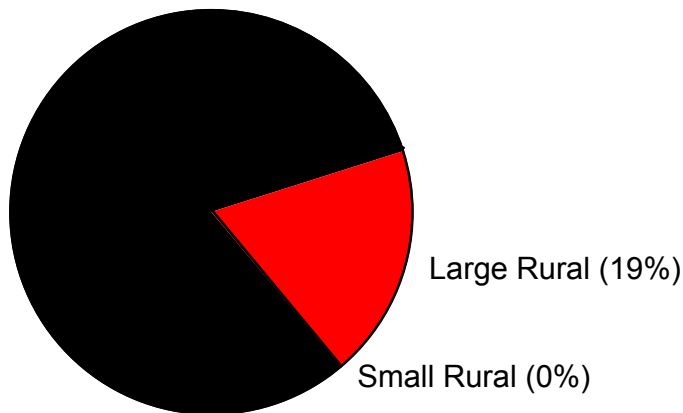
Small Rural Communities

Urban (83%)



Isolated Small Rural Communities

Urban (81%)



No core residencies were located in isolated small rural locations.

SUMMARY

- ❖ RUCA Version 2.0 is available for use (ZIPs)
- ❖ RUCAs can be tailored to research/policy analysis needs
- ❖ ZIP code-based RUCAs are more sensitive and adaptable than county-based taxonomies for analyses
- ❖ New analysis tools for use with RUCAs will be available within two weeks
- ❖ Researchers NEED to pay as much attention to geographic units as to other methods



Web Sites

Rural Health Research Center (RUCAs):

<http://depts.washington.edu/uwruca/>

Center for Health Workforce Studies:

<http://depts.washington.edu/uwchws/>

Regional Information Center:

<http://depts.washington.edu/wwamiric/>

Thanks

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