



Aloha, E Komo Mai!

Stroke “Think Tank” Leadership Meeting
Saturday, April 5, 2003

Department of Health , American Heart Association,
Kona Community Hospital, Queen’s Medical Center,
Hawaii Outcomes Institute,
North Hawaii Outcomes Project

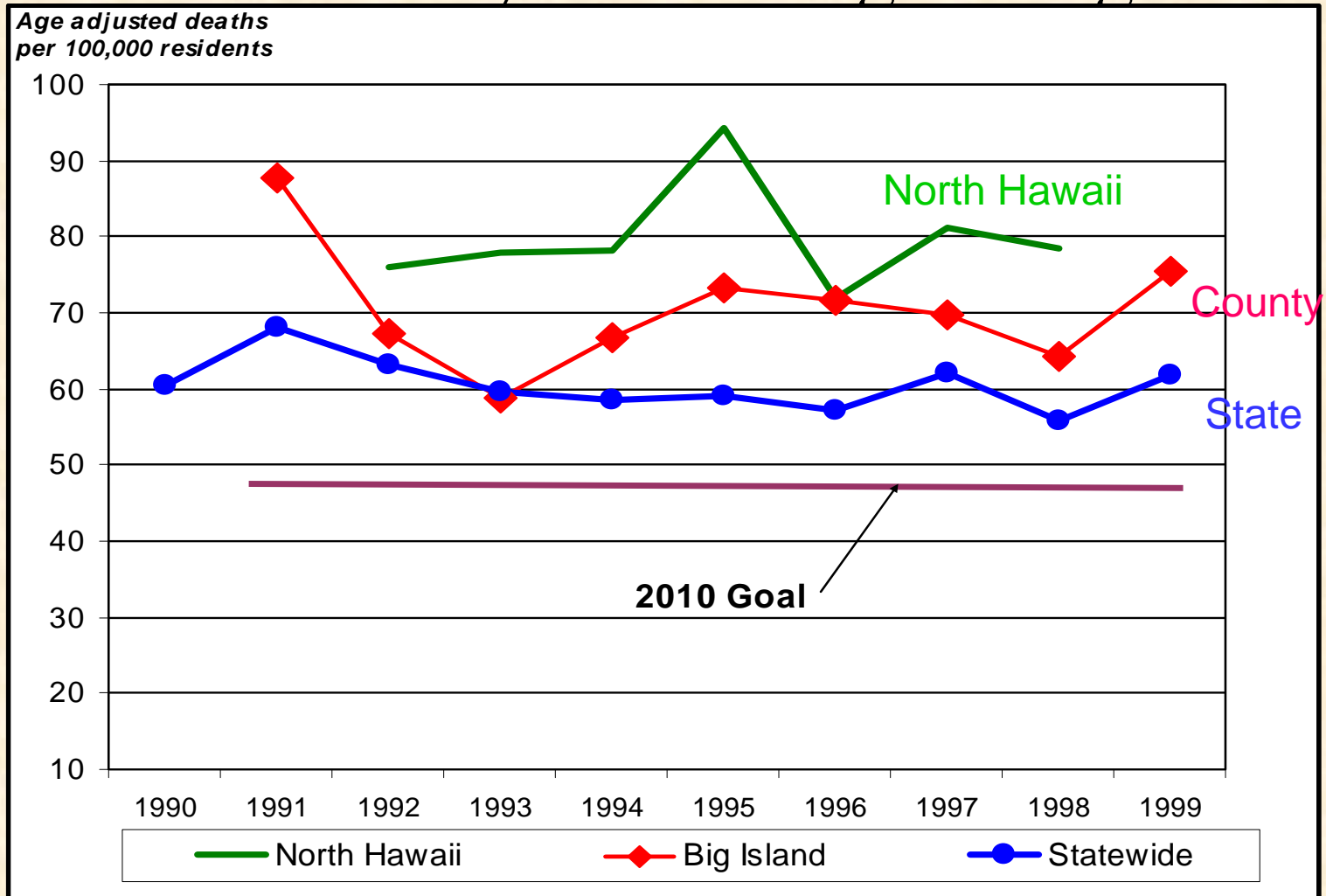


Stroke “Think Tank”

- Welcome & Mahalo
- Goals
- What is Behind the Big Island High Stroke Death Rate?
- Updates on stroke prevention & care at state and National level
- What would most help to reduce excess stroke mortality on the Big Island?

Stroke

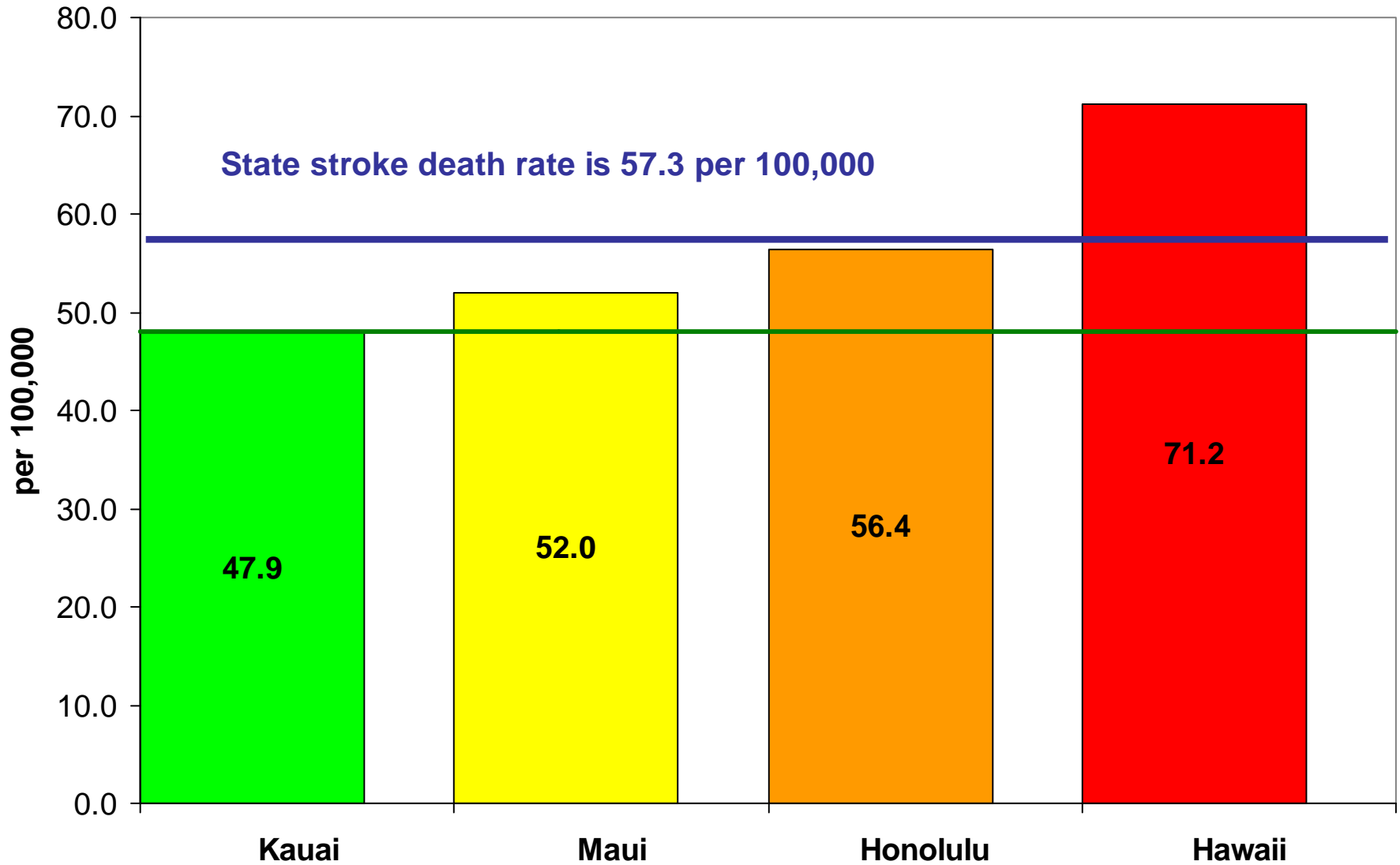
Death Rate - 3 year moving average



Stroke Deaths per 100,000 population, Year 2000

source (DOH website)

Goal: Reduce stroke deaths to 48 per 100,000 population.





Stroke and its Risk Factors in Hawaii County

Mira Liao, M.H.S.

Sharon Vitousek, M.D.



Why are we here?

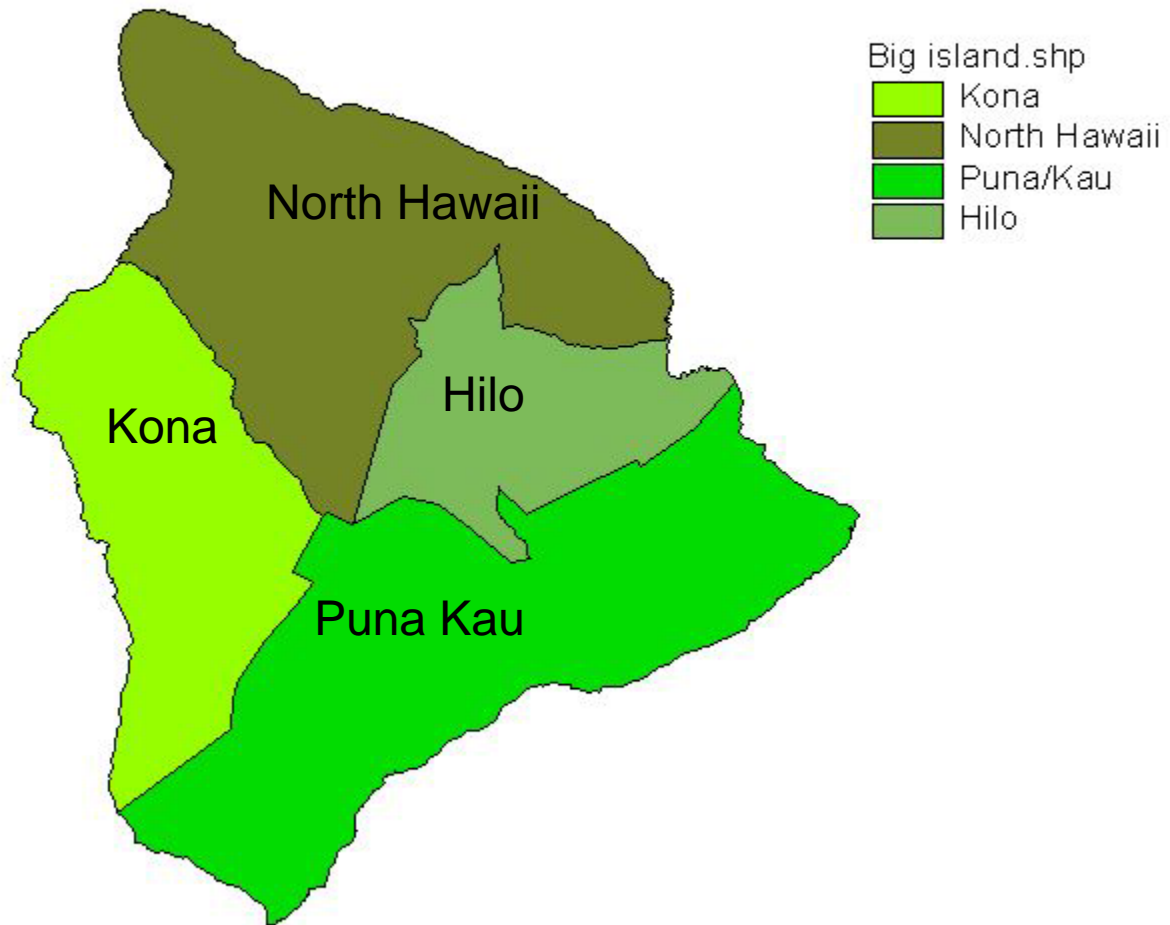
- Stroke is the third leading cause of death nationally and in the state of Hawaii
- HP 2010 goal is 48.0 deaths/100,000
- Actual 2000 rates:
 - National: 60.2
 - Hawaii state: 57.3
 - Hawaii county: **71.2**



What is Behind the Big Island's High Stroke Death Rate?

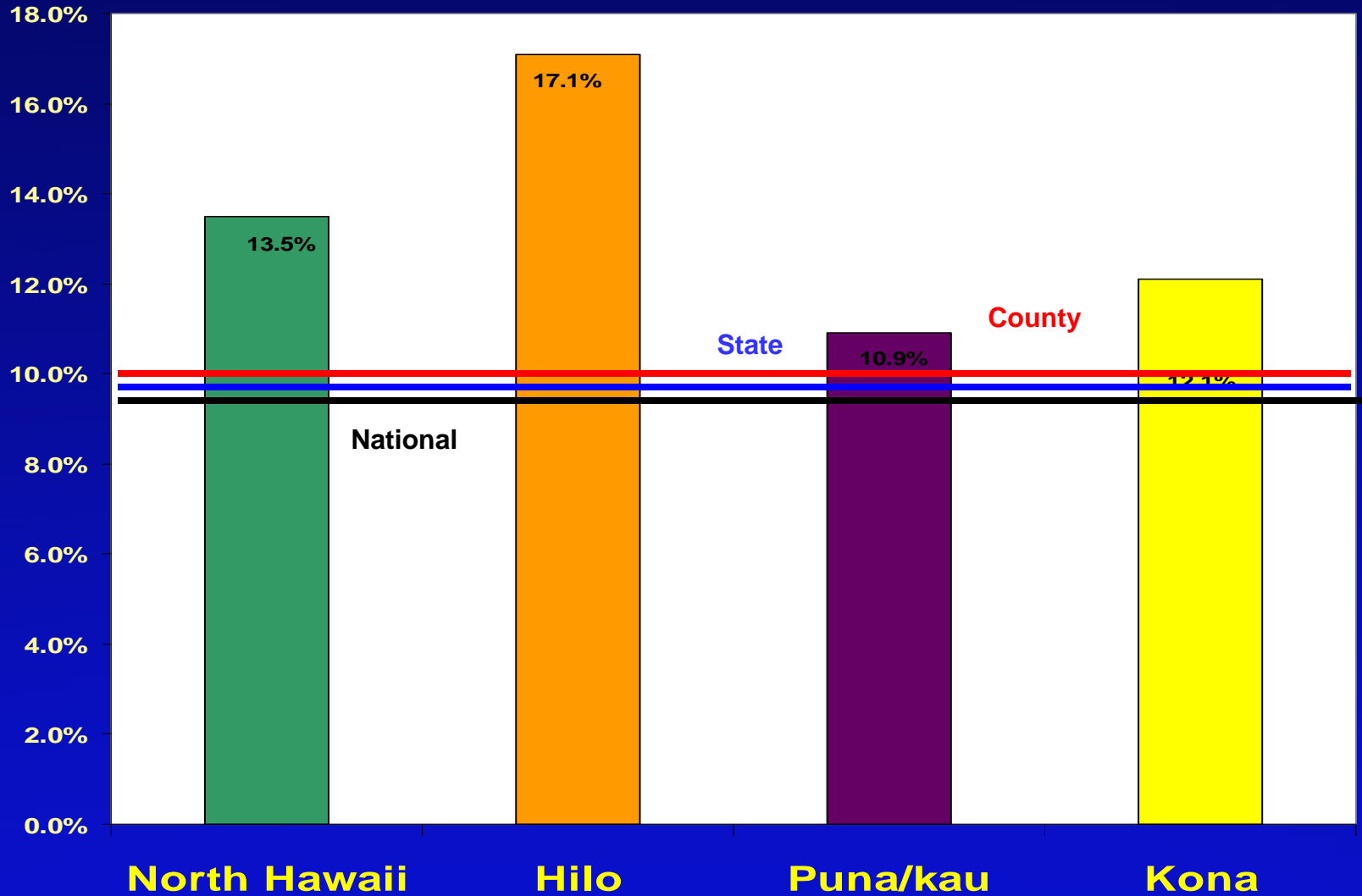
- Non modifiable risk factors--age
- ✓ Primary /Secondary Prevention
 - Modifiable risk factors?
 - Socioeconomic?
 - Access to primary Care?
 - Access to health insurance?
- ✓ Pre-hospital
 - Stroke recognition?
 - EMS?
- Hospital
 - Access to specialty care?
- Rehabilitation/Secondary prevention

Hawaii County





Population 65 Years and Older 2001





Primary/Secondary Prevention “Modifiable Risk Factors”

- High blood pressure
- Diabetes
- High cholesterol
- Obesity
- Smoking
- Alcohol (>5drinks/day)
- Physical inactivity
- Atrial Fibrillation

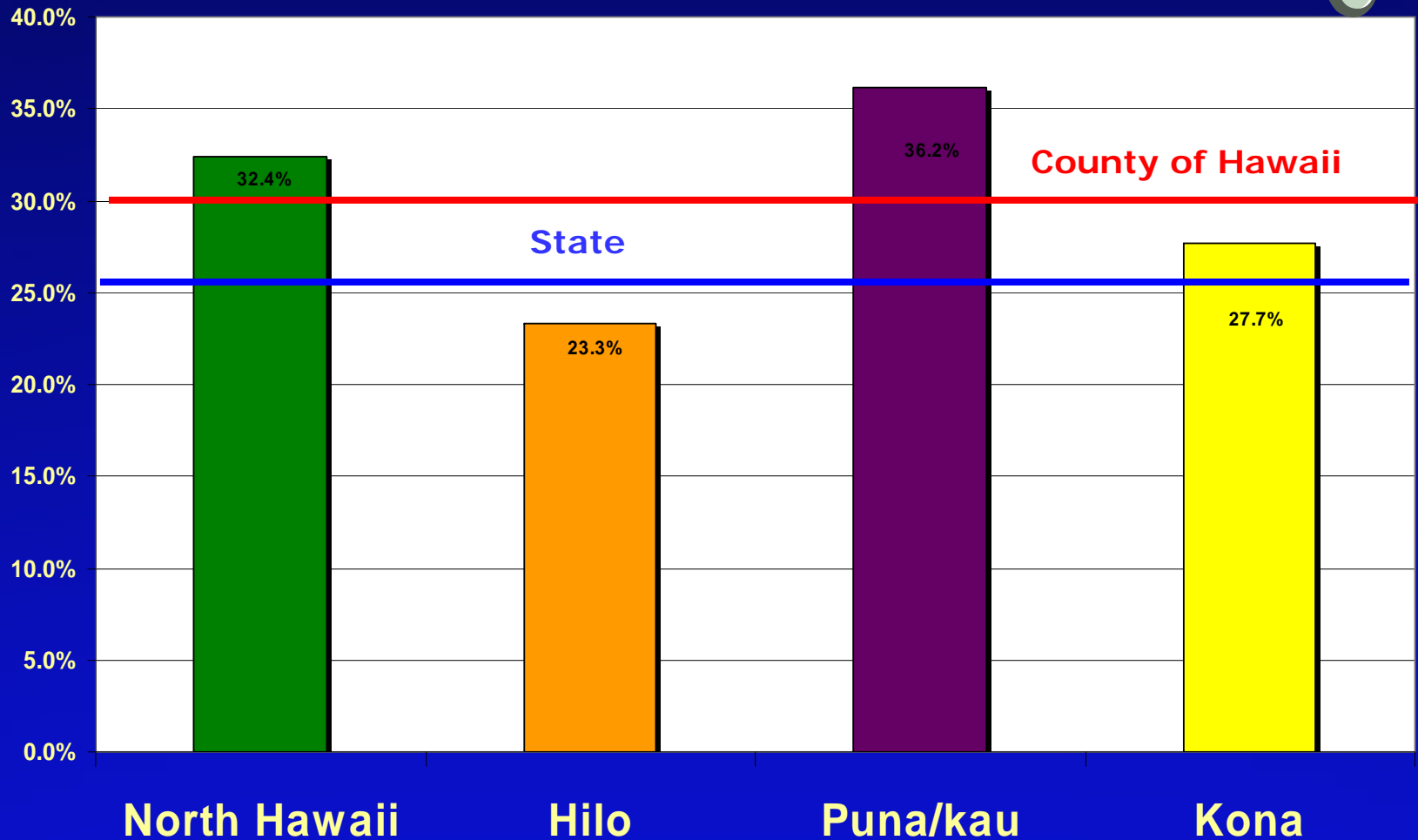


“Ever been told by a health professional you have high blood pressure?” 2001

- National: 25.6%
- State: 24.1%
- County: 24.8%

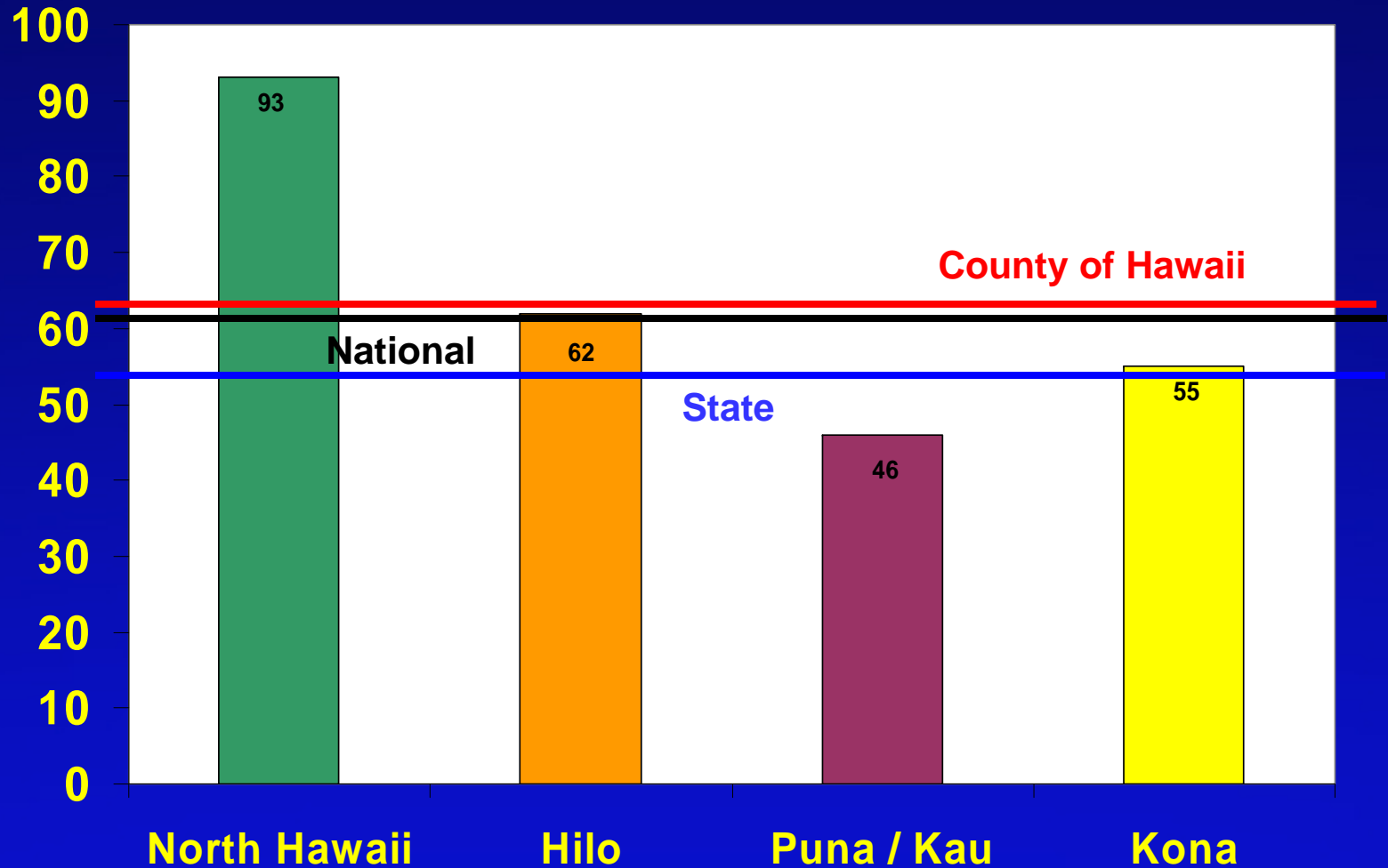


“Currently Medicated for High Blood Pressure?”



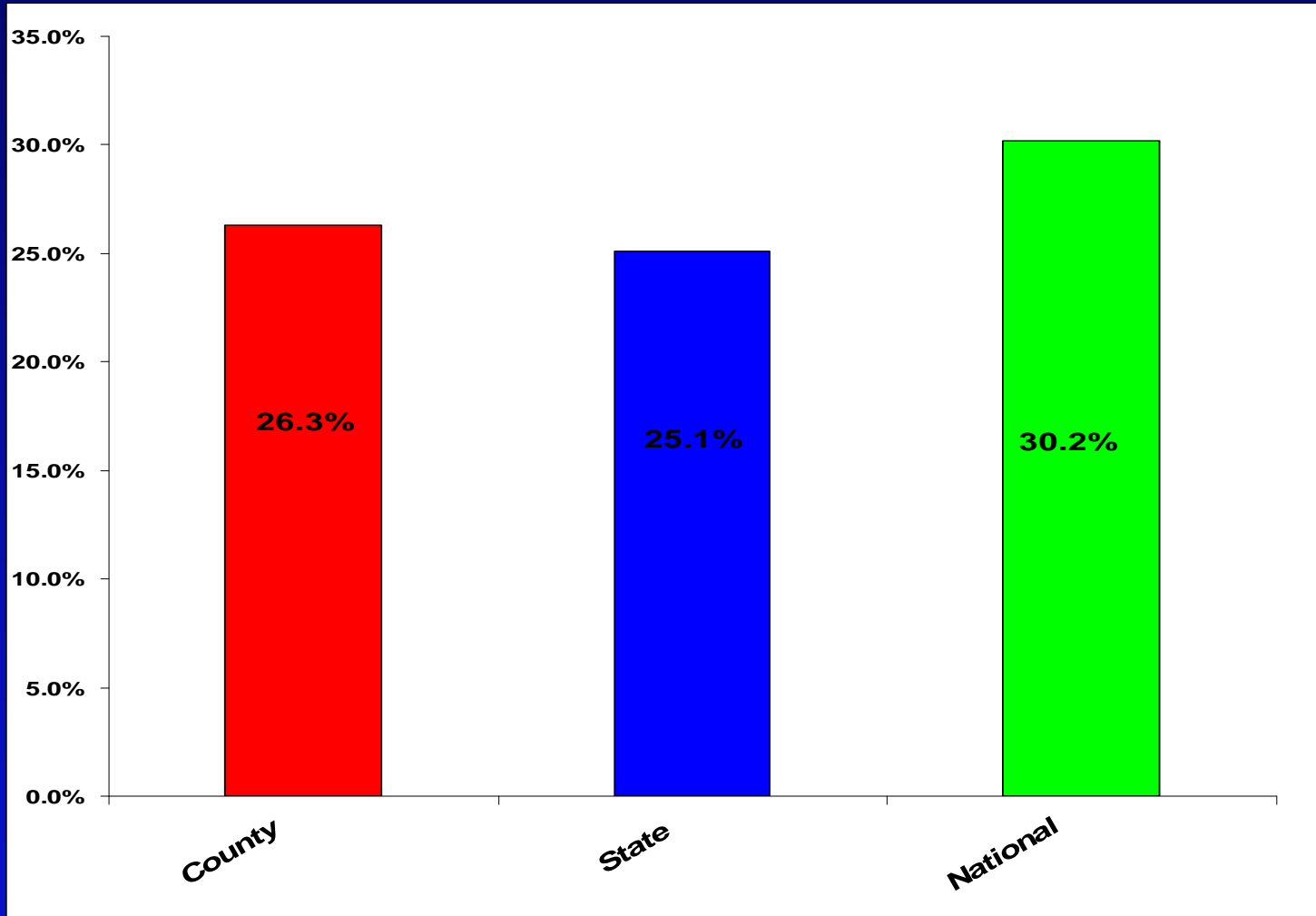


“Ever told you have diabetes?” (rate per 1,000)



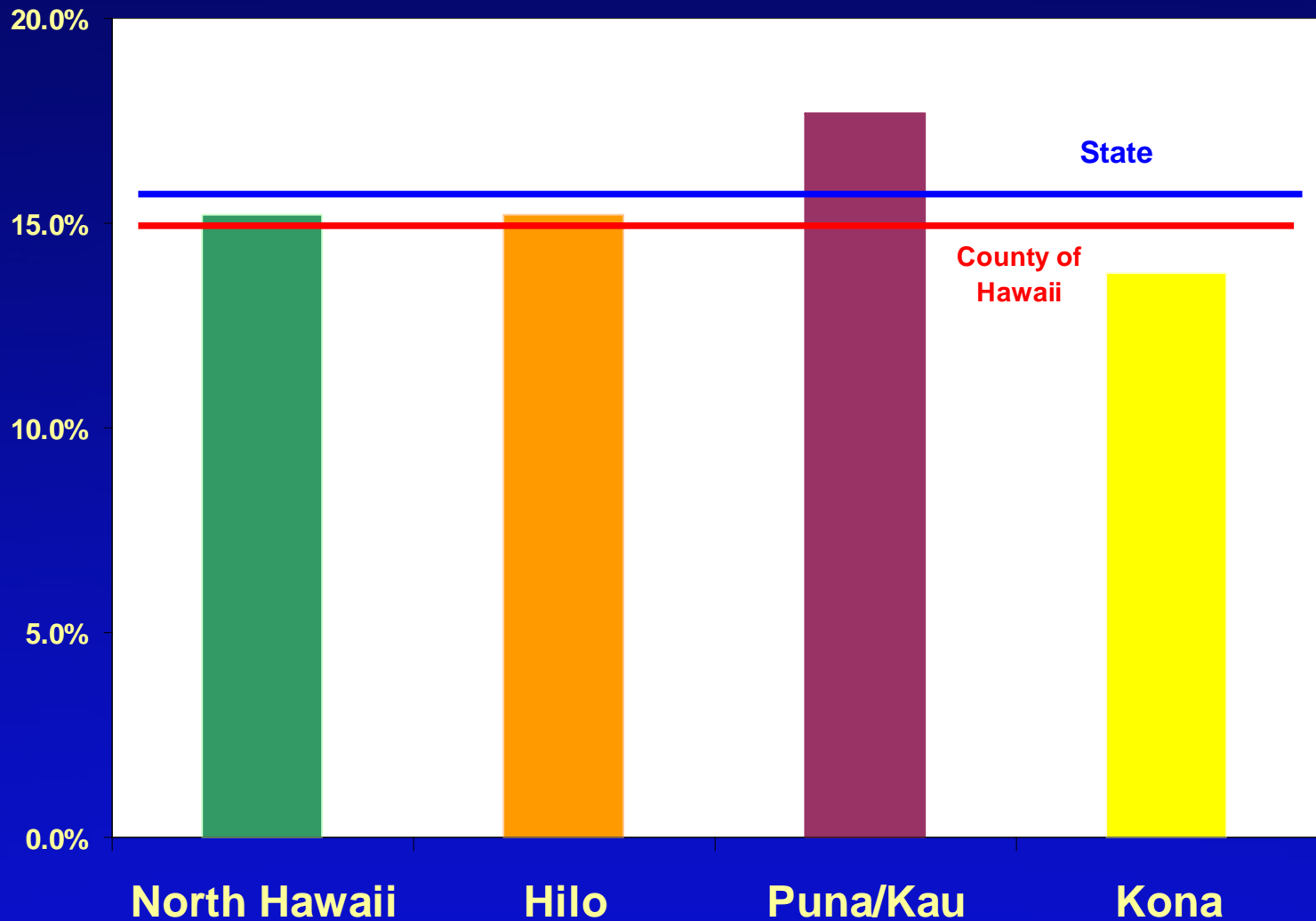


“Ever been told high cholesterol?” 2001



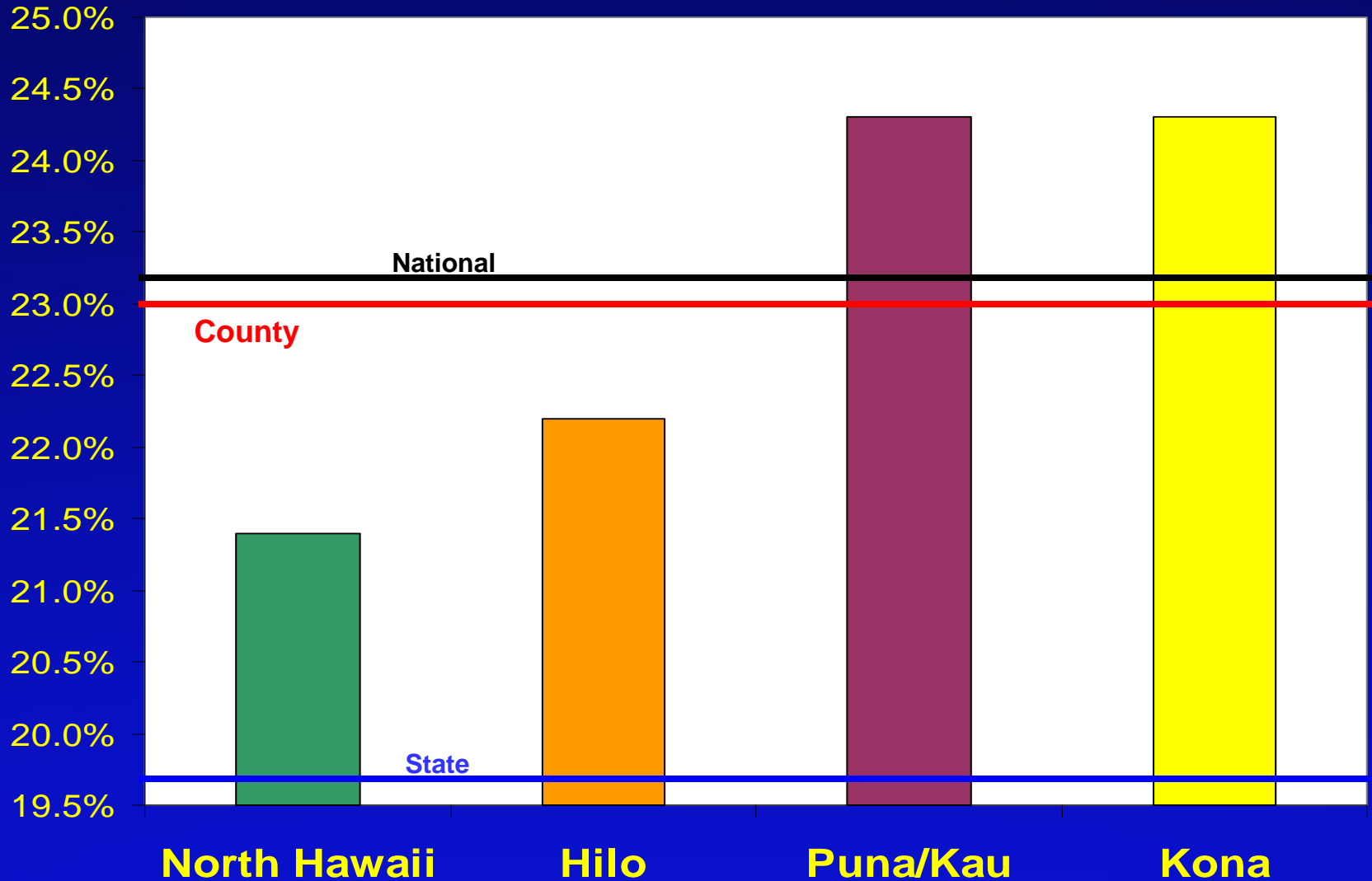
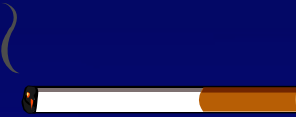


Obesity (BMI \geq 30) 2000





Adults "Smoked in Last 30 days?" 2000





Primary/Secondary Prevention Population “Risk Factors”

- Socioeconomic status associated with increased stroke mortality
 - High Income Disparity (Kawachi)
 - Education
 - Ethnicity
- Access to care
 - Un insured
 - Low Primary Physicians/ Population Ratio



Wide Income Disparity is Associated with Poor Health

Economic Measures

Gap between haves & have nots
("Robin Hood Index")

Health Measures

- ✓ Higher overall mortality
- ✓ **Stroke mortality**
- ✓ Infant mortality

Source: Ichiro Kawachi, Ph.D. Income Inequality, Primary Care, and Health Indicators

Source: Business Week: The Unhealthy US income gap, Nov 10, 1997



Hawaii Island Socioeconomic Profile

Socioeconomic Risk Factors

- H Population growth (increasing disparity)
- L Median household income
- H “Not Making a Livable income”
- 2 More than one job
- H Unemployed
- H No Health Insurance

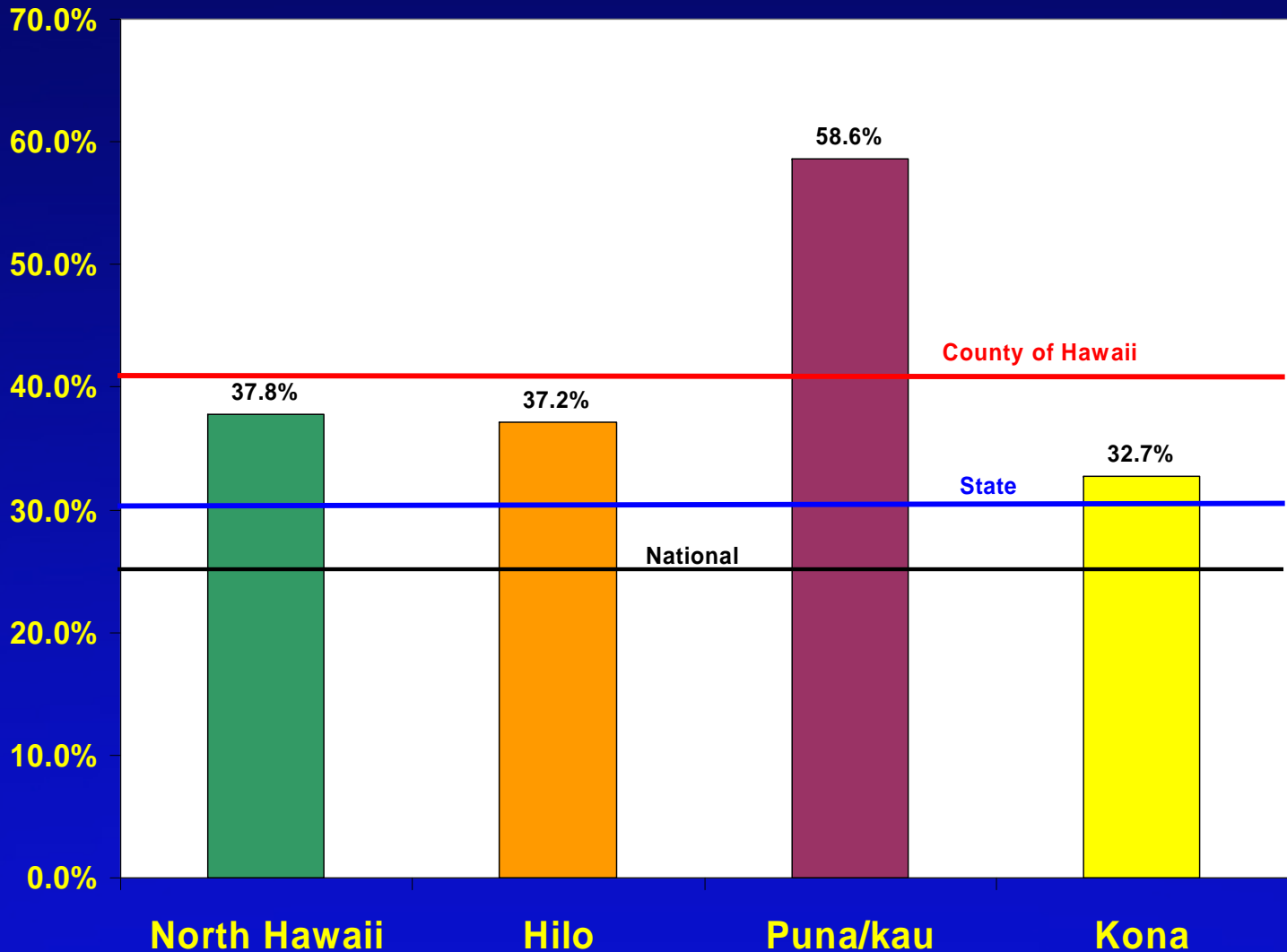
Health Measures

- H Stroke mortality
- H Infant mortality



Not Making a “Livable Income”

Households less than 185% of Poverty





Primary /Secondary Prevention Access to Primary Physicians

- Number licensed physicians per population
 - National: **2.8** per 1,000 people
 - State: **2.7** per 1,000
 - County: **2.1** per 1,000
- ****“Have a PCP?” 70 % (N=533)**
- ****“Travel out of North Hawaii for Primary Care?” 30%**



Stroke Recognition 2001

- Number of symptoms aware of
- Awareness of specific symptoms:
 - Confusion, trouble speaking
 - Numbness/weakness in face, arm, leg
 - Vision
 - Chest pain/discomfort
 - Balance, dizziness
 - Severe headache
- No difference between county and state



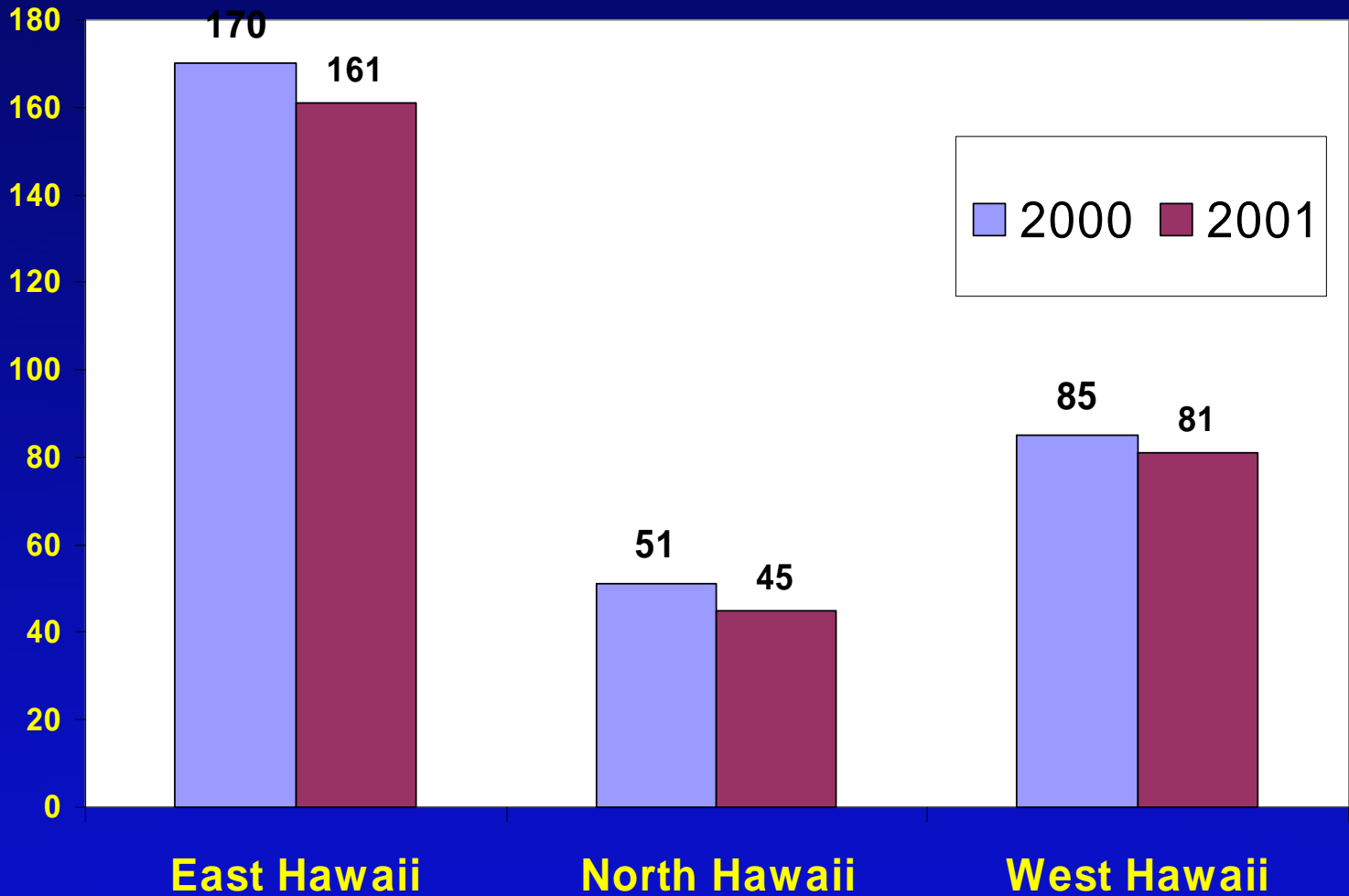
Big Island Stroke Hospital Discharges Similar to State By:

- Age
- Source of Admission
- Ethnicity
- Severity of Illness
- Type of Stroke
- Discharge disposition



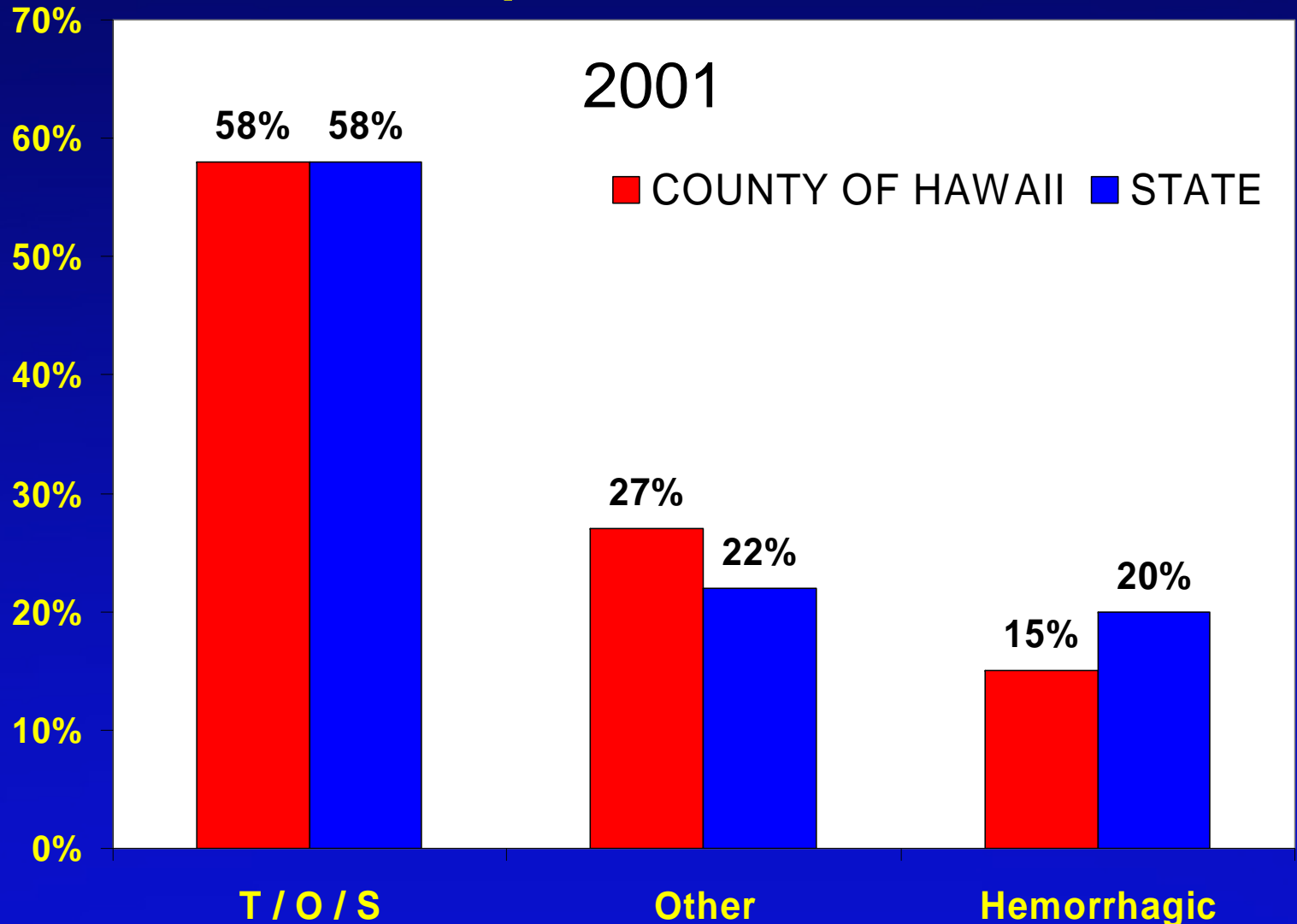
Big Island Stroke Hospital Discharges

Patients





Big Island Types of Stroke Compared to State

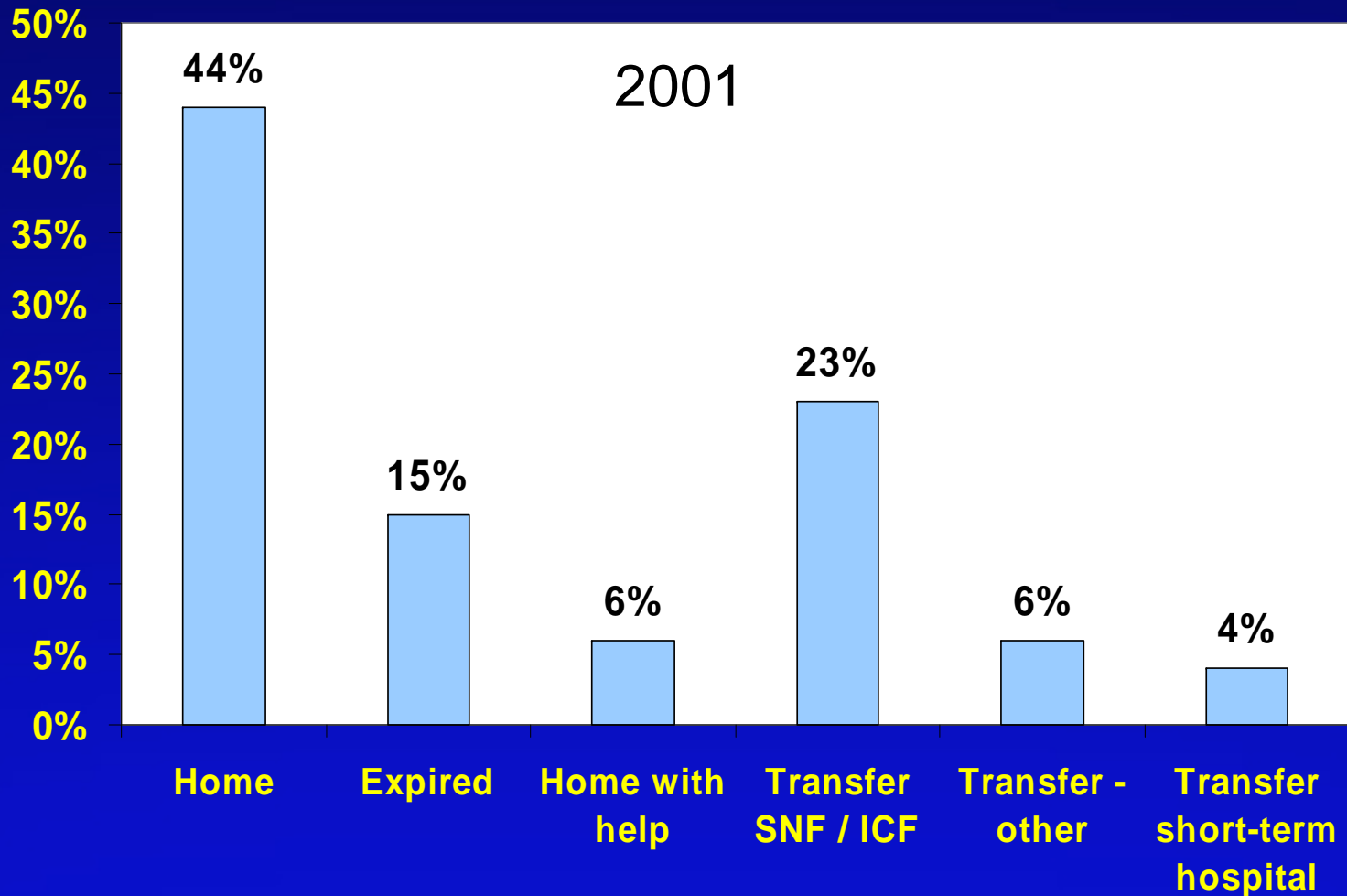


Source: Hawaii Health Information Corporation



Big Island

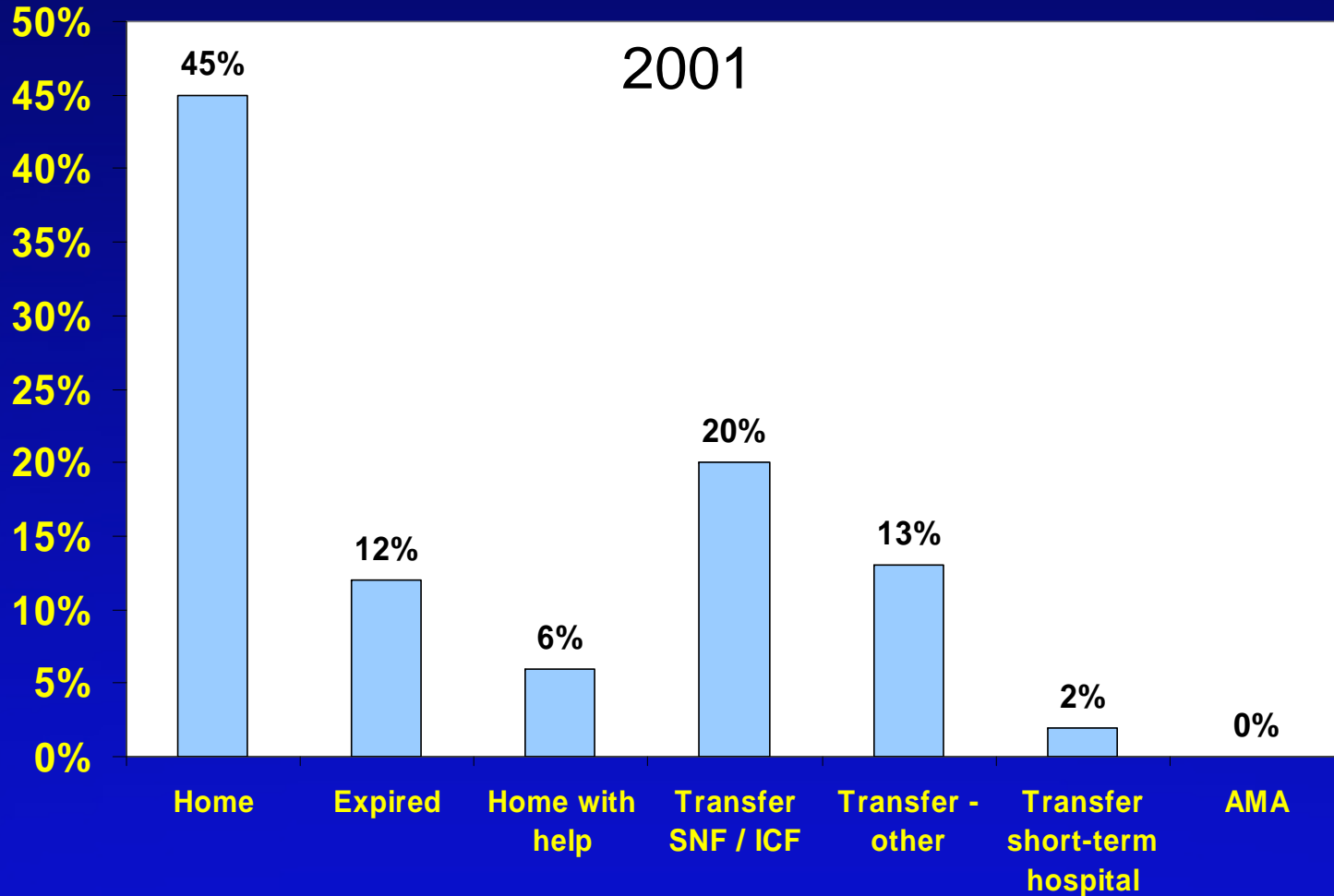
Stroke Hospital Discharge Disposition





State

Stroke Hospital Discharge Disposition





Hawaii County Stroke Hospital Discharge Rate Compared to State

2000

Calculated by dividing stroke hospital discharges by population

- State: **200** discharges/100,000 population
- County: **206** discharges/100,000 population



Hawaii County TIA Hospital Discharge Rate Compared to State

2000

Calculated by dividing TIA hospital discharges by population,

- State: **68** per 100,000 population
- County: **58** per 100,000 population



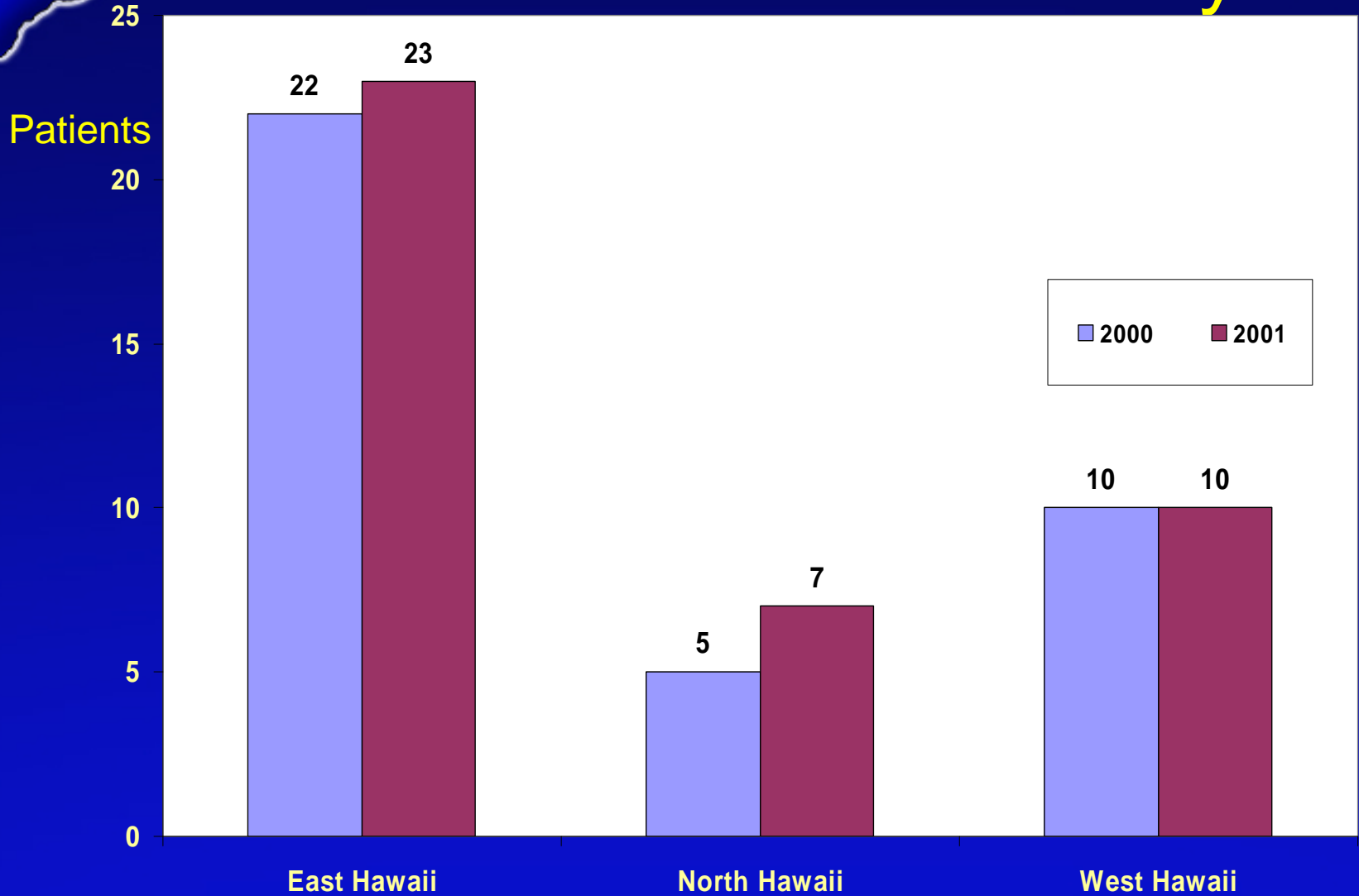
Stroke Mortality

2000

- Deaths due to stroke
 - State: **57.3** deaths/100,000 population
 - County: **71.2** deaths/100,000



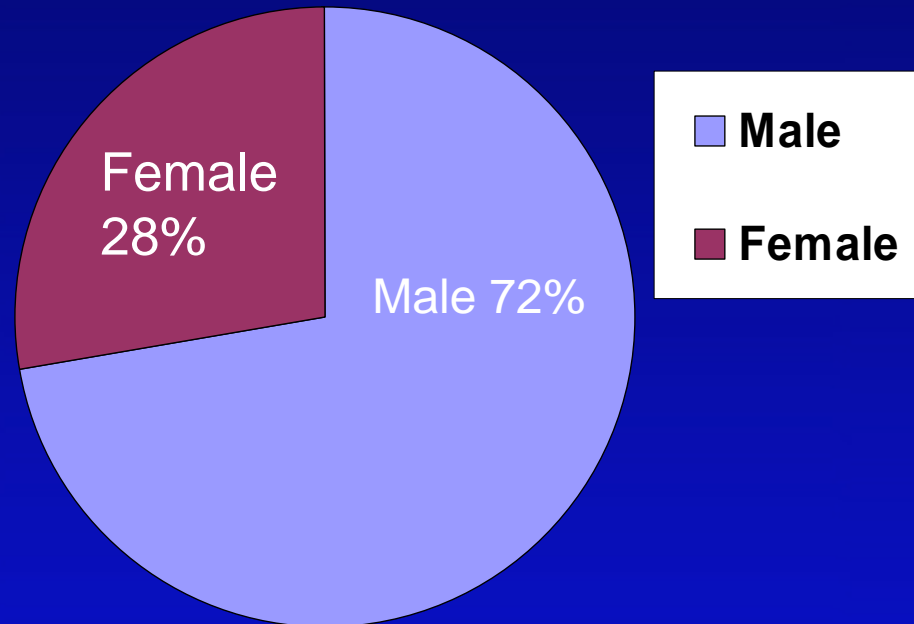
Big Island: Carotid Endarterectomy



Source: Hawaii Health Information Corporation



State Carotid Endarterectomy by Gender: 2001





What is behind the Big Island's high stroke death rate?

- Access to Specialty Physicians
 - Neurologists, Neurosurgeons, CV Surgeons
- Hospital Care
 - Slightly higher in hospital mortality
 - Stroke teams?
 - Stroke units?
 - Infrastructure-



What is behind the Big Island's high stroke death rate?

- Age?
 - County's percent 65 and older similar to state
- Modifiable risk factors?
 - Higher smoking rate, obesity, diabetes
 - Slightly higher cholesterol
 - Self reported Hypertension similar
 - ? Less treatment in Hilo
- Chain of Survival
 - Slightly higher in hospital mortality



What is behind the Big Island's high stroke death rate?

- Poverty?
 - Higher percent living below FPL
- Awareness of symptoms?
 - No differences seen between county and state
- These factors should influence both incidence and death rate

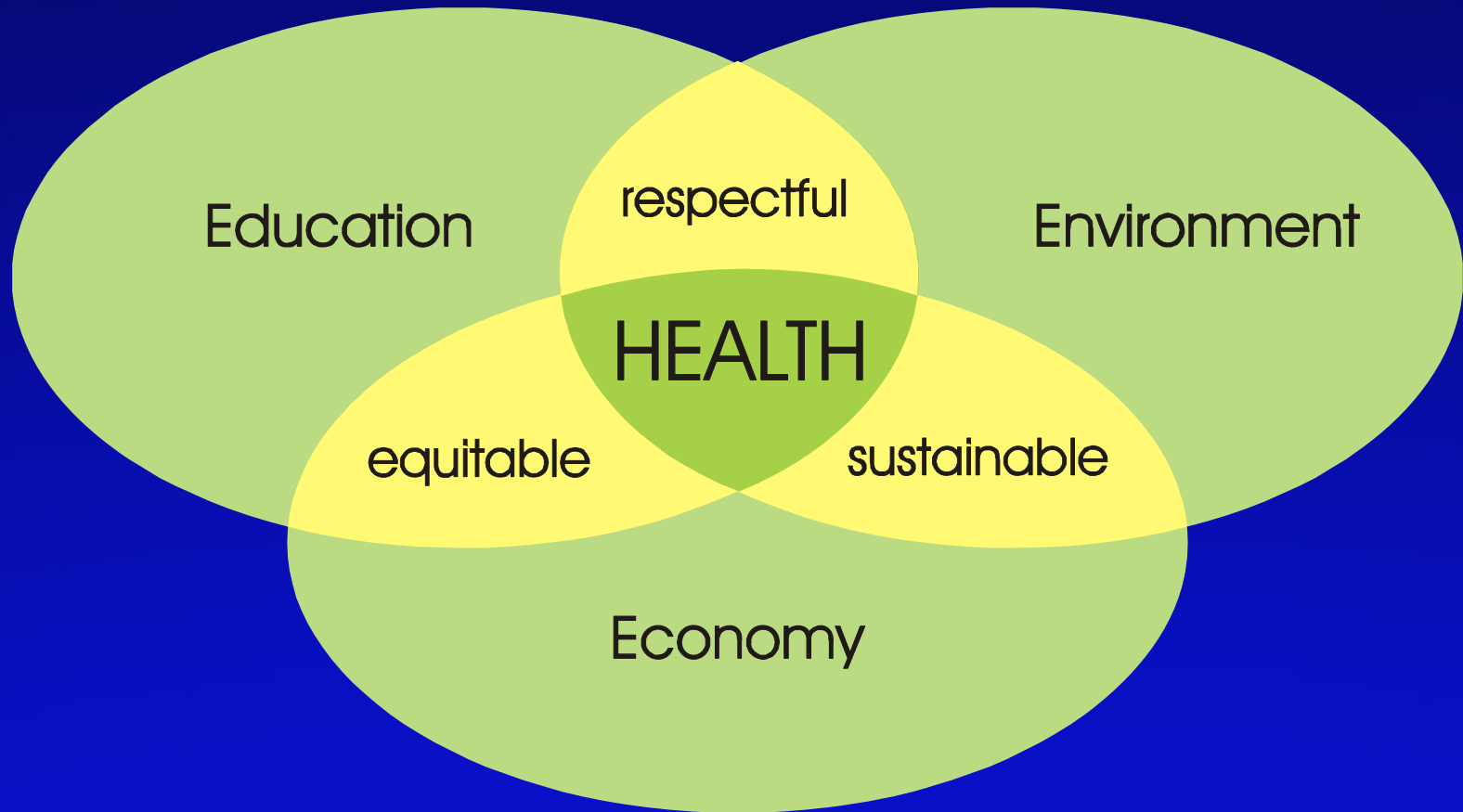


What is behind the Big Island's high stroke death rate?

- Access to care?
 - Could explain incidence vs death rates
 - Could explain risk factor statistics
 - Medication for HBP low in Hilo
 - Physician shortage areas in Hawaii county
 - Hawaii county's request to become federally designated MUA
 - Number of people Without PCP
 - Number of people traveling for primary care



Community Health Improvement Will Require Addressing:





Never doubt that a small group
of thoughtful, committed
citizens can change the world;

Indeed, it's the only thing
that ever has.



-Margaret Mead





Acknowledgements

- Dr. Jay Maddock, JABSOM Dept. Public Health Sciences and Epidemiology, Hawaii Outcomes Institute



References

1. Toward a Healthy Hawaii 2010 Checking the health of Hawaii County, Hawaii outcomes Institute www.hawaiioutcomes.org
2. National Center for Health Statistics. *Deaths: Preliminary data for 2000*. National Vital Statistics Reports, Oct 2001
3. Hawaii Department of Health, Office of Health Status Monitoring. As reported in *Toward a Healthy Hawaii 2010: Checking the Health of Hawaii County in 2000*.
4. Brownson, RC, RL Remington, and JR Davis, eds. *Chronic Disease Epidemiology and Control*. American Public Health Association, 1998.
5. National Center for Health Statistics. Fastats: Stroke. Available at www.cdc.gov/nchs/fastats/stroke.htm
6. JAMA Sept 18,2002 Straus, New Evidence for Stroke Prevention



References

7. Hawaii Department of Health, Office of Health Status Monitoring. 2001 Behavioral Risk Factor Surveillance Survey. Available at www.state.hi.us/doh/stats/surveys/brfss01t.html
8. U.S. Census Bureau. *Census 2000 Hawaii State and County Quick Facts*.
9. Hawaii Department of Health, Family Health Services Division. *2001 Primary Care Needs Assessment Databook*. Dec 2001.
10. Hawaii Health Information Corporation, Stroke Discharge Data for Hawaii State and County 2000-2001.
11. www.howsyourhealth.com



What is being done nationally and in the rest of the state?

Neurology Panel:

Cherylee Chang, MD,

Daniel Hanley, Jr.,

MD, Richard Macko, MD