

## Health Workforce Assessment of Hawaii Physicians: Analysis of data from the DHHS Health Resources and Services Area Resource File, 2001

Megan Inada, Kelley Withy, January Andaya, Allen Hixon

*University of Hawaii, John A. Burns School of Medicine*

### Abstract

Rural Americans suffer significant health disparities compared to their urban counterparts. One of the explanations for this is lack of adequate workforce. Rural communities in the State of Hawai'i are no exception. Although there is an adequate supply of providers in the state, the disproportionate distribution leaves rural areas lacking. The PowerPoint prepared provides a cross sectional picture of the number of practicing physicians, a description of their specialties, age distribution, and location of training by county based on data collected by the federal government. We hope that this will help highlight current and future physician needs for medical and non-medical professionals working to provide Hawaii's rural communities with adequate health care.

© 2005 Californian Journal of Health Promotion. All rights reserved.

*Keywords: rural health, Hawaii, urban-rural, health disparities*

### Introduction

Access to high quality health care services for rural Americans continues to be hindered (Beachler, Holloman, & Herman, 2003, Lundeen, Tenopir, & Wermager, 1994) due to a shortage of medical doctors in rural areas (LaRavia, Clavert, Zavala, Smith, Talley, Gingrich et al., 2002). In this situation, people living a country that spent \$1.7 trillion on health care in 2003 (National Coalition on Health Care, 2004) are deprived of basic health care services. Persistence of rural-urban physician disparities are a result of doctors' affinities to practice in affluent non rural areas (LaRavia et al., 2002).

An estimated 20 percent of America's population lives in rural areas. However, only 9 percent of the nation's physicians practice in rural communities (LaRavia et al., 2002). The Hawaiian Islands of Maui, Kauai, Lanai, Molokai, and Hawaii, federally designated as rural areas (Lundeen et al., 1994), are no exception to this trend of health care inequality (The Department of Business, Economic Development & Tourism, 2005). In 1989 the Hawaii State Department of Health reported that rural areas in the State do not receive the same

quality of health care and social services that are provided in urban areas (Lundeen et al., 1994).

### Instructions

One of the first steps to resolving a problem is to clearly understand the situation. In 2000, the U.S. Department of Health and Human Services reported that Hawaii had 19 more physicians and 15 more primary care doctors per 100,000 persons than the national average. When this data remains aggregated, it hides the numerous areas within the State suffering from disproportionately low doctor to population ratios.

The intent of creating this Power Point presentation is to provide a cross sectional picture of the number of practicing physicians and a description of their specialties in each county. In turn this will highlight State physician shortage areas to medical and non-medical professionals working to provide Hawaii's rural communities with adequate health care.

### Methods

All data presented on non-federal medical doctors was obtained from the 2000 American

Medical Association (AMA) Physician Masterfiles. This survey is sent out every three years to all physicians known to the AMA via records of medical schools, state registries, local AMA chapters, other professional societies, residency programs, and AMA membership rosters.

### **Evaluation**

This presentation was given at Hawaii Health Workforce Collaborative meetings and Hawaii's October 2005 Primary Care Roundtable, where efforts are underway locally to develop a health workforce database that can be regularly updated and can provide guidance in training and planning for future needs.

### **Outline of PowerPoint Presentation**

1. Title Page
2. Statement of the Problem
3. Objectives of Presentation – to provide a cross sectional picture of the number of active non-federal patient care physicians and their specialties in each of Hawaii's counties.
4. Overview of Hawaii's MD Workforce Composition – In 2001 there were 4044 total practicing physicians in Hawai'i, 3593 of them reported to work more that 50%, and 3343 of these active MDs were non-federal.
5. 95% of active non-federal MDs reported patient care as their major professional activity.
6. Distribution of MDs by County – 20% of Hawaii's physicians practiced on neighbor islands.
7. Hawai'i MDs by Specialties.
8. MDs Specialty by county. Primary care doctors made up a larger percentage the MD population on the Neighbor islands than in the national average and Honolulu County.
9. This table illustrates the disparity in the neighbor islands' primary care, medical, and surgical specialists/ 100,000 persons compared to the national average and Honolulu County.
10. This slide displays the same information in a bar graph.
11. 23% of Hawaii's primary care MDs practiced on neighbor islands. This comes out to 78 primary care MDs/ 100,000 persons on the neighbor islands compared to Oahu's 104.
12. Medical specialist MDs by subspecialties highlights the lack of medical specialists on Kauai.
13. Medical Specialist MDs/ 100,000 person, 1995-2001 illustrates the disparity of the neighbor islands compared to the national average, but also that the rates are slowly increasing.
14. Surgical Specialist MDs by subspecialties highlights the lack of surgical specialists on Kauai.
15. Surgical Specialist MDs/ 100,000 person, 1995-2001 illustrates the disparity of the neighbor islands compared to the national average, but that the majority of rates are slowly increasing.
16. MD Age by County shows that neighbor islands have a proportionally older MD workforce than Honolulu County and the national average.
17. Graduation Location MDs, 1999.
18. This shows the same information in a bar graph.
19. Overview summary. Although Hawaii's total state physician/ population ratio is comparable to the national average, but when examined by County Maui County, Kauai, and the Big Island have fewer physician per capita rates especially in medical and surgical specialties.
20. For the Future -We found evidence of slowly increasing rates of medical and surgical specialists/ population on the majority of neighbor islands. The American Academy of Family Physicians (2004) suggest that to reduce the shortages of physicians in rural areas we must a) increase and strengthen recruitment and retention programs for physicians in rural and other underserved areas and b) promote to primary care and rural locations to medical graduates.

### **References**

- Beachler, M., Holloman, C., & Herman, J. (2003) Southern rural access program: an overview. *Journal of Rural Health*, 19, 301-7. Retrieved on November 15, 2005, from [http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=14526512&query\\_hl=4](http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14526512&query_hl=4)

- Hawaii State Government. (n.d.). State of Hawaii, Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Division. Retrieved July 25, 2005, from <http://www.hawaii.gov/>
- Health Resources and Services Administration. (2000). National center for health workforce profiles highlights Hawai'i. U.S. Department of Health and Human Services. Retrieved November 15, 2005, from <ftp://ftp.hrsa.gov/bhpr/workforce/summaries/Hawaii03.pdf>
- LaRavia, D., Clavert, J., Zavala, J., Smith, O. D., Talley, S., Gingrich, D., et al. (2002). Keeping physician in rural practice. American Academy of Family Physicians. Retrieved November 11, 2004, from <http://www.aafp.org/x16635.xml>
- Lundeen, G., Tenopir, C., & Wermager, P. (1994). Information needs of rural health care practitioners in Hawaii. *Bulletin of the Medical Library Association*, 82(2), 197-205.
- The National Coalition for Health Care. (2004) Health insurance costs. The National Coalition for Health Care. Retrieved November 14, 2005, from <http://www.nchc.org/facts/cost.shtml>
- The Department of Business, Economic Development & Tourism. (2005). Geographic report (current licenses) as of July 6, 2005. The State of Hawaii Data 2001. Retrieved July 25, 2005, from <http://www.state.hi.us/dbedt/>

#### Author Information

Megan Inada, MPH, BIOT Project Coordinator\*  
Hawaii and Pacific Basin AHEC Program  
University of Hawaii at Kakaako  
John A. Burns School of Medicine  
651 Ilalo Street, MEB, Ste 401  
Honolulu, HI 96813-5534  
Ph.: 808-692-1064  
Fax: 808-692-1258  
E-Mail: [megan@hawaii.edu](mailto:megan@hawaii.edu)

Kelley Withy, MD, MS, Executive Director  
Hawaii and Pacific Basin AHEC Program  
University of Hawaii at Kakaako  
John A. Burns School of Medicine

January May Andaya, Research Assistant  
Hawaii and Pacific Basin AHEC Program  
University of Hawaii at Kakaako  
John A. Burns School of Medicine

Allen Hixon, MD, Director  
University of Hawaii  
Department of Family Medicine and Community Health  
John A. Burns School of Medicine

\* corresponding author



## Health Workforce Assessment of Hawaii Physicians

**Analysis of data from the DHHS Health Resources and Services Area Resource File, 2001**

Created in August 2005 by Megan Inada, MPH  
Kelley Withy, MD, January Andaya, Allen Hixon, MD  
Hawaii Health Workforce Collaborative  
For Hawaii Health Workforce Collaborative





### The Problem:

- In the State Health Workforce Profiles, the Department of Health and Human Services reported that in 2000, Hawaii's rate of active primary care physicians was 10 more per 100,000 population than the national rate. When this data remains aggregated it hides the fact that:
  - There are numerous areas which suffer from disproportionately low doctor to population ratio.
  - There is a shortage of physicians in Maui, Kauai, and Hawaii counties when compared to Honolulu County.

(The Department of Business, Economic Development & Tourism & State of Hawaii, Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Division 2005 Figures)

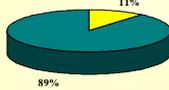
### Objectives:

- To provide a cross sectional picture of the number of physicians practicing and a description of their specialties in each of Hawaii's county.
- To highlight physician shortage areas to medical and non-medical professionals working to provide Hawaii's rural communities with adequate health care.

### Composition of Hawaii's MD Workforce

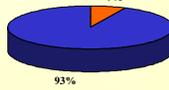
- 4044 total practicing physician in Hawaii'i
- 3593 reported working more than 50%
- 93% of these MDs were non-federal.

Hawaii'i Physicians' Activity Status



Activity Status	Percentage
Active	89%
Inactive	11%

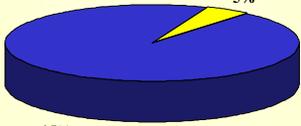
Hawaii'i Active Physicians' Federal/ Non-Fed Status



Federal/ Non-Fed Status	Percentage
Non-Fed	93%
Federal	7%

### Hawaii'i Physicians' Major Professional Activity

- "Other" includes Research, Administration, Teaching

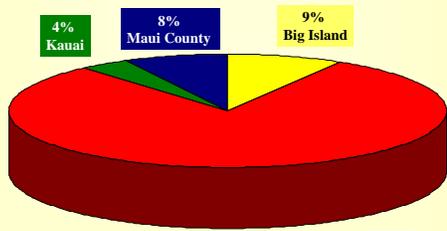


Professional Activity	Percentage
Patient Care	95%
Other	5%

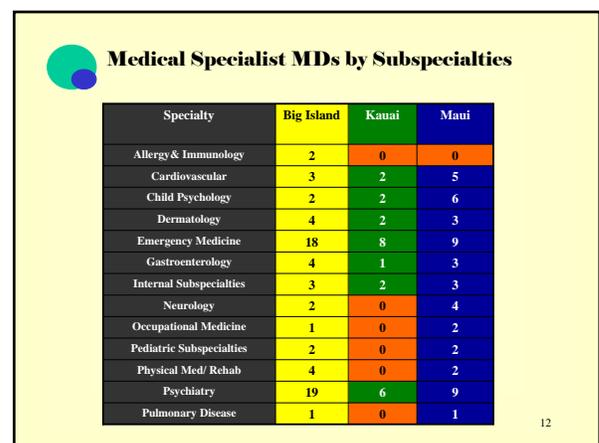
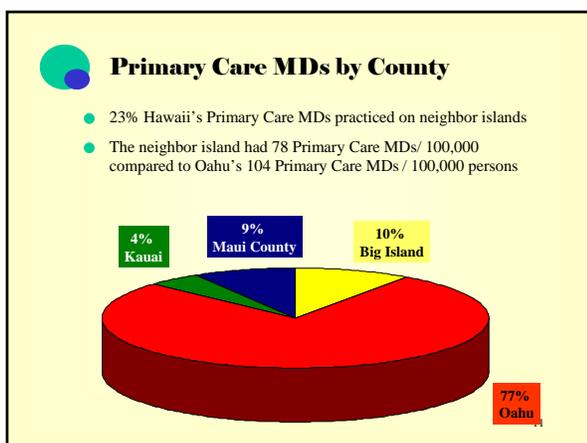
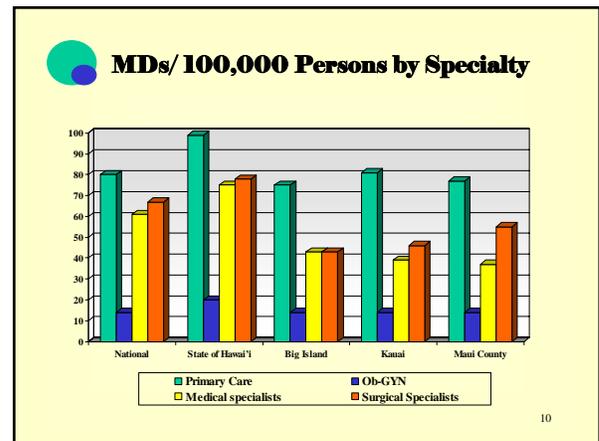
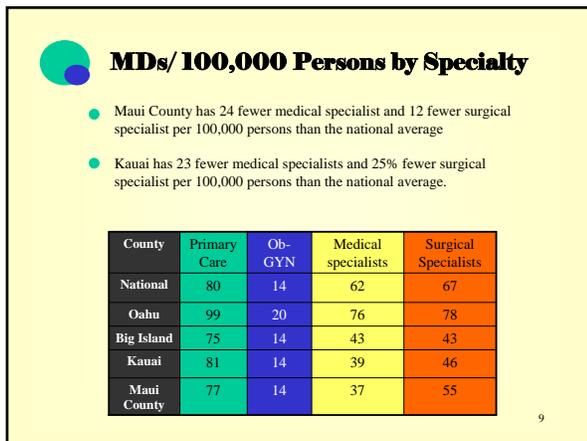
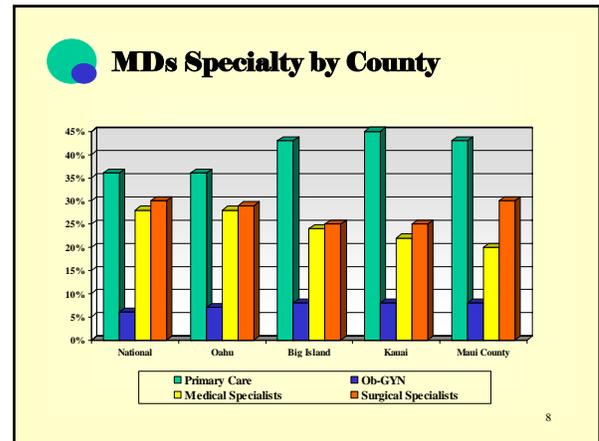
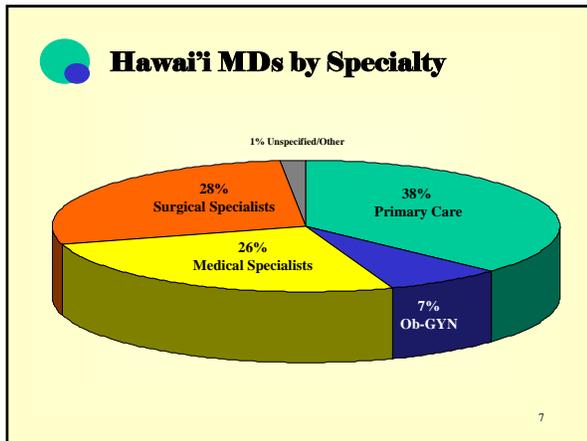
\*Major Professional activity of 117 MDs Unknown

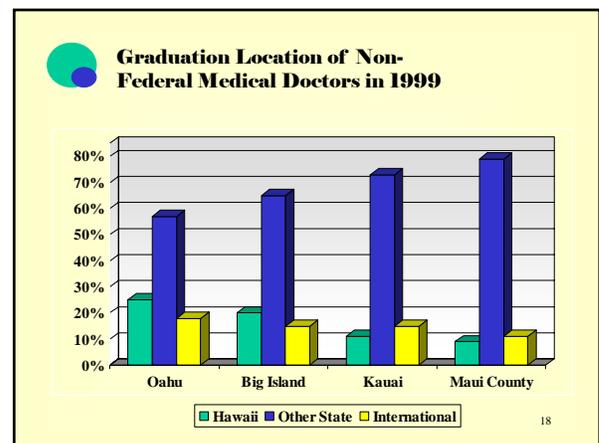
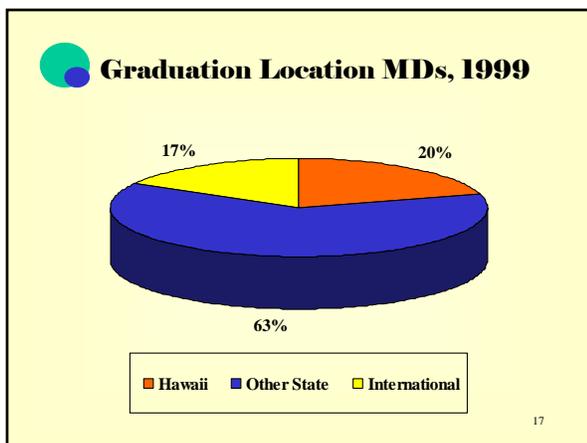
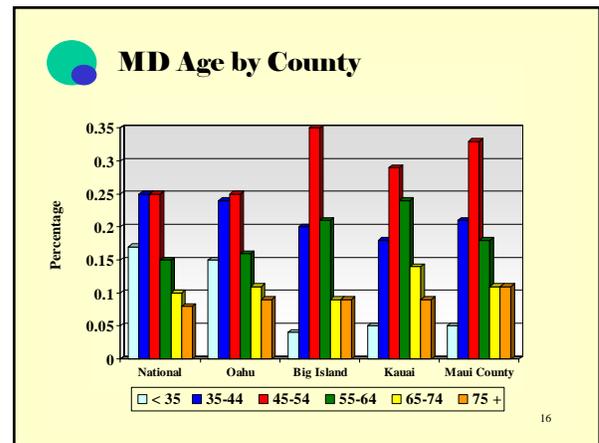
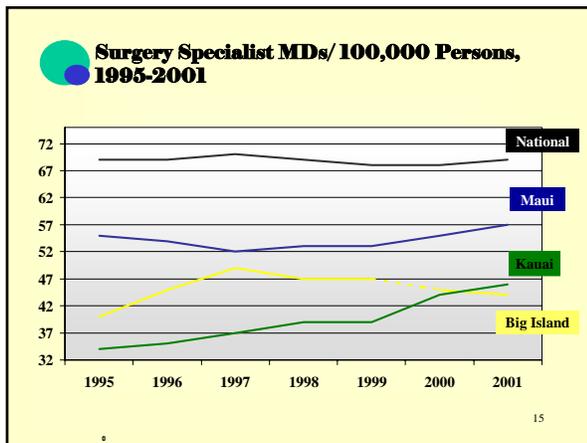
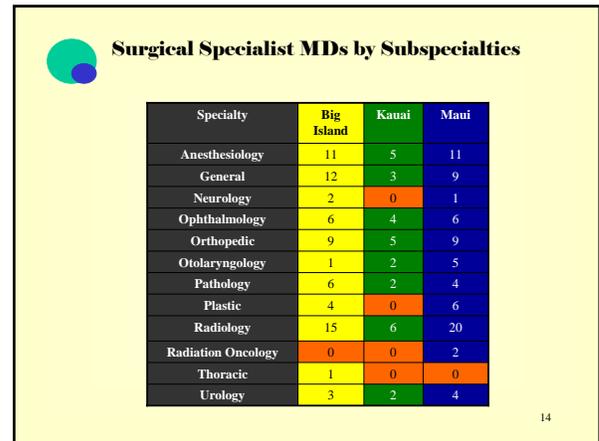
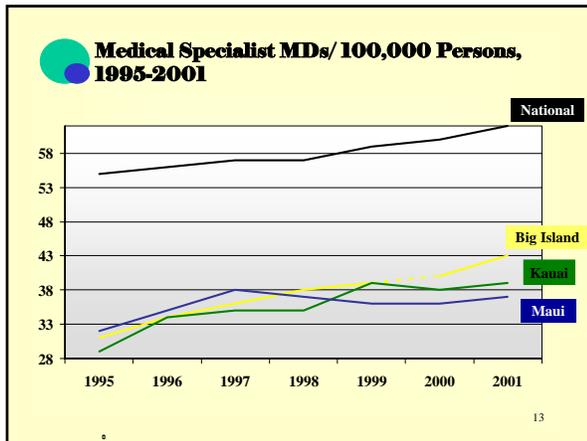
### Distribution of MDs by County

- 20% Hawaii's physicians practiced on neighbor islands (Maui County, Kauai, and The Big Island)



County	Percentage
Oahu	80%
Maui County	8%
Big Island	9%
Kauai	4%







## Overview Summary

- Although Hawaii's total state physician to population ratio is better than or equal to the national average, when examined by county we see the Maui County, Kauai, and the Big Island have fewer physician per capita rates especially in medical and surgical specialties.
- Kauai has no full time non-federal medical physicians specializing in Neurology, Occupational Medicine, Pediatric Subspecialties, Physical Med/ Rehab, or Psychiatry.
- The neighbor islands have a proportionally older MD workforce than Honolulu County and the national average.

19



## For the Future

- Although rural-urban physician disparities is a reoccurring feature of the American health system it can be remedied.
- We found evidence of slowly increasing rates of medical and surgical specialists per populations on the majority of neighbor islands.
- The American Academy of Family Physicians (2004) suggest that to reduce the shortages of physicians in rural areas we must:
  - Increase and strengthen recruitment and retention programs for physicians in rural and other underserved areas
  - Promote to primary care and rural locations to medical graduates

20



## References

- Beahler M., Holloman C., & Herman J.(2003) Southern rural access program: an overview. *Journal of Rural Health*, 19, 301-7. Retrieved on November 15, 2005, from [http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=14526512&query\\_hl=4](http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14526512&query_hl=4)
- Hawaii State Government. (n.d.) State of Hawaii, Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Division, Retrieved 7/25/05, from <http://www.hawaii.gov>
- Health Resources and Services Administration. (2000). National center for health workforce profiles highlights Hawai'i. U.S. Department of Health and Human Services. Retrieved November 15, 2005, from <http://fp.hrsa.gov/bhpr/workforce/summaries/Hawaii03.pdf>
- Kalihi-Palama Health Center (n.d.) Eye doctor Photo. Retrieved July 17, 2005, from [http://www7.hawaii.gov/dbedt/index.cfm?section=hawais\\_growth\\_industries911](http://www7.hawaii.gov/dbedt/index.cfm?section=hawais_growth_industries911)
- LaRavia, D., Clavert J., Zavala, J., Smith, O.D., Talley, S., Gingrich, D., & et al. (2002) Keeping physician in rural practice. *American Academy of Family Physicians*. Retrieved November 11, 2004, from <http://www.aafp.org/s16635.xml>
- Lundeen, G., Tenopir, C., & Wermager, P. (1994). Information needs of rural health care practitioners in Hawaii. *Bulletin of the Medical Library Association.*, 82(2), 197-205.

21



## References continued

- The Department of Business, Economic Development & Tourism. (2005). Geographic report (current licenses) as of July 6, 2005. The State of Hawaii Data 2001. Accessed 7/25/05, from <http://www.state.hi.us/dbedt/>
- The National Coalition for Health Care. (2004) Health insurance costs. The National Coalition for Health Care. Retrieved November 14, 2005, from <http://www.nchc.org/facts/cost.shtml>
- Respiratory Photo. (n.d.) Retrieved July 17, 2005, from <http://www.hawaiibusiness.cc/hb72003/default.cfm?articleid=14>
- University of Hawaii Department of Pediatrics and Hawaii Dyson Initiative. (n.d.) Teaching food pyramid Photo. Retrieved July 17, 2005, from <http://www.hawaii.edu/dyson>
- University of Iowa Hospitals and Clinics. (n.d.) X-ray Photo. Retrieved July 17, 2005, from <http://www.uihealthcare.com/news/news/2005.07.18uiandub.html>

22

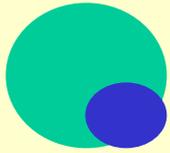
# Health Workforce Assessment of Hawaii Physicians

**Analysis of data from the DHHS Health Resources and  
Services Area Resource File, 2001**

**Created in August 2005 by Megan Inada, MPH  
Kelley Withy, MD, January Andaya, Allen Hixon, MD  
Hawai'i Health Workforce Collaborative**

**For Hawai'i Health Workforce Collaborative**

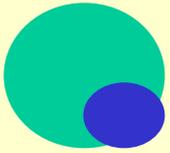




# The Problem:

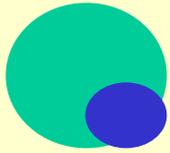
- **In the State Health Workforce Profiles, the Department of Health and Human Services reported that in 2000, Hawaii's rate of active primary care physicians was 10 more per 100,000 population than the national rate. When this data remains aggregated it hides the fact that:**
- **There are numerous areas which suffer from disproportionately low doctor to population ratio.**
- **There is a shortage of physicians in Maui, Kauai, and Hawaii counties when compared to Honolulu County.**

*(The Department of Business, Economic Development & Tourism & State of Hawaii, Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Division 2005 Figures)*



# **Objectives:**

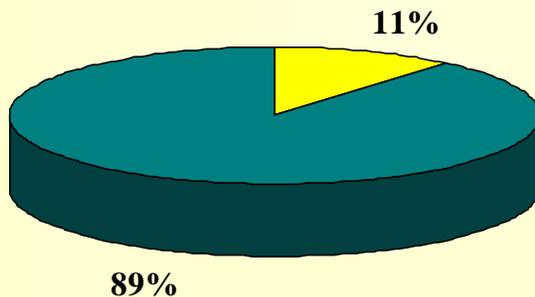
- **To provide a cross sectional picture of the number of physicians practicing and a description of their specialties in each of Hawaii's county.**
- **To highlight physician shortage areas to medical and non-medical professionals working to provide Hawaii's rural communities with adequate health care.**



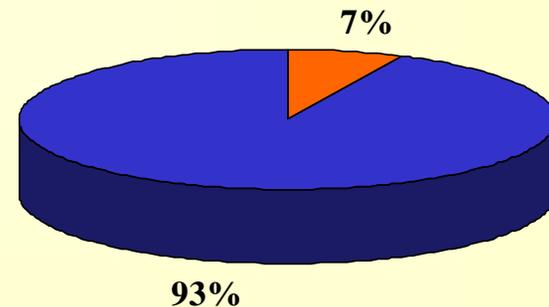
# Composition of Hawaii's MD Workforce

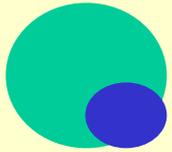
- **4044** total practicing physician in Hawai'i
- **3593** reported working more than 50%
- **93%** of these MDs were **non-federal**.

**Hawai'i Physicians'  
Activity Status**



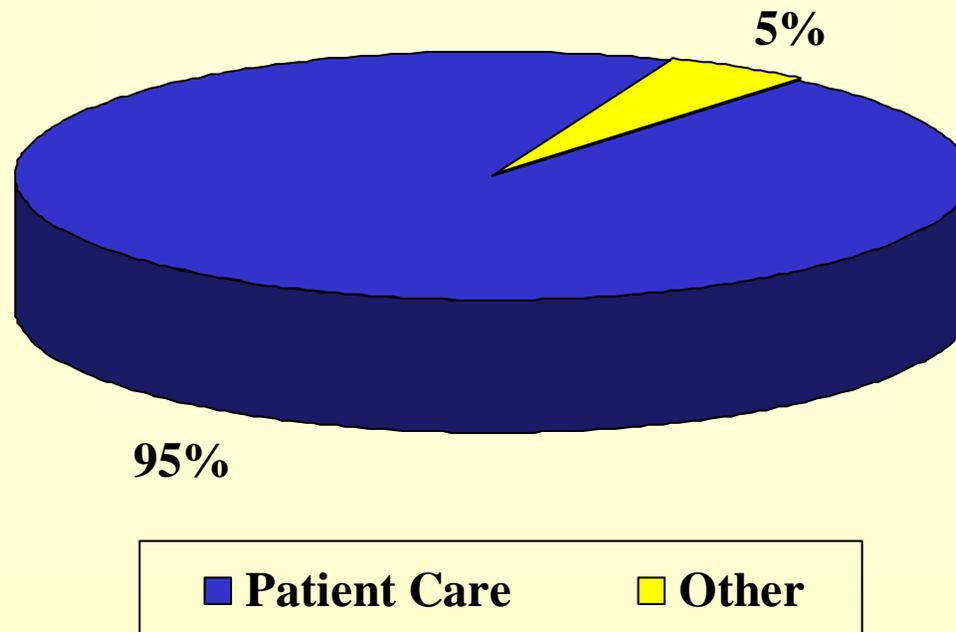
**Hawai'i Active Physicians'  
Federal/ Non-Fed Status**

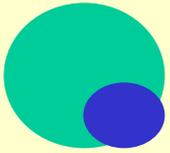




# Hawai'i Physicians' Major Professional Activity

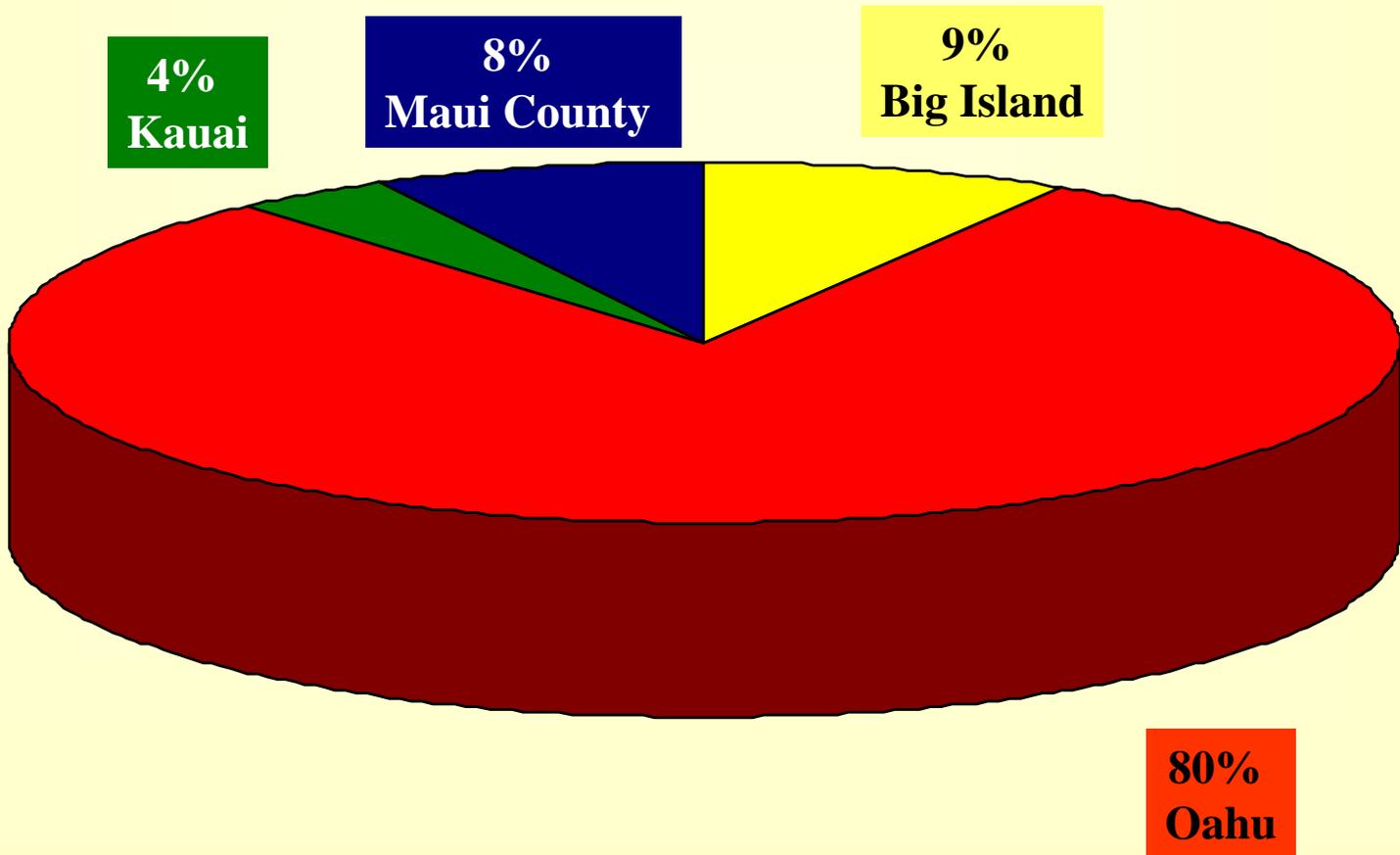
- **“Other” includes Research, Administration, Teaching**

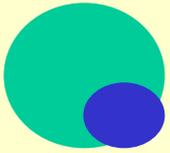




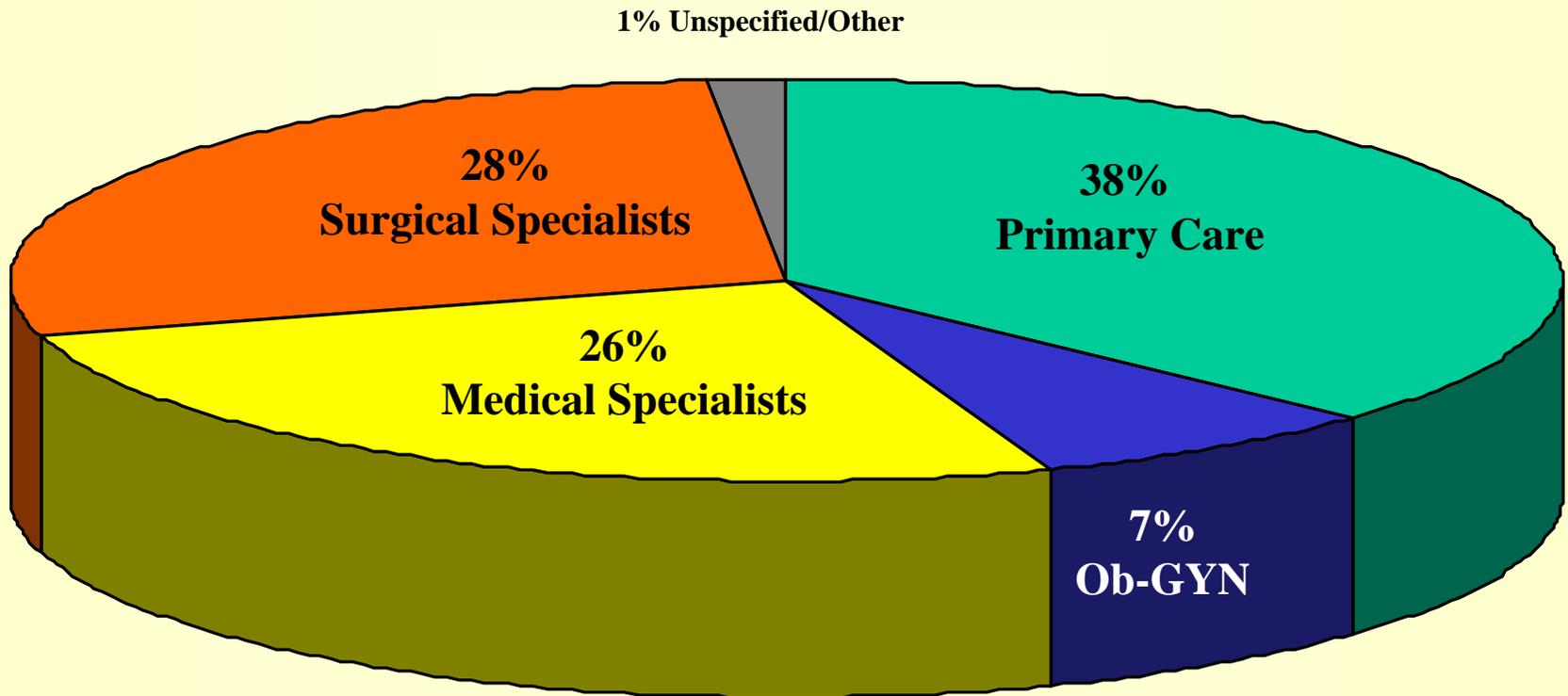
# Distribution of MDs by County

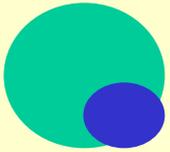
- **20%** Hawaii's physicians practiced on neighbor islands (Maui County, Kauai, and The Big Island)



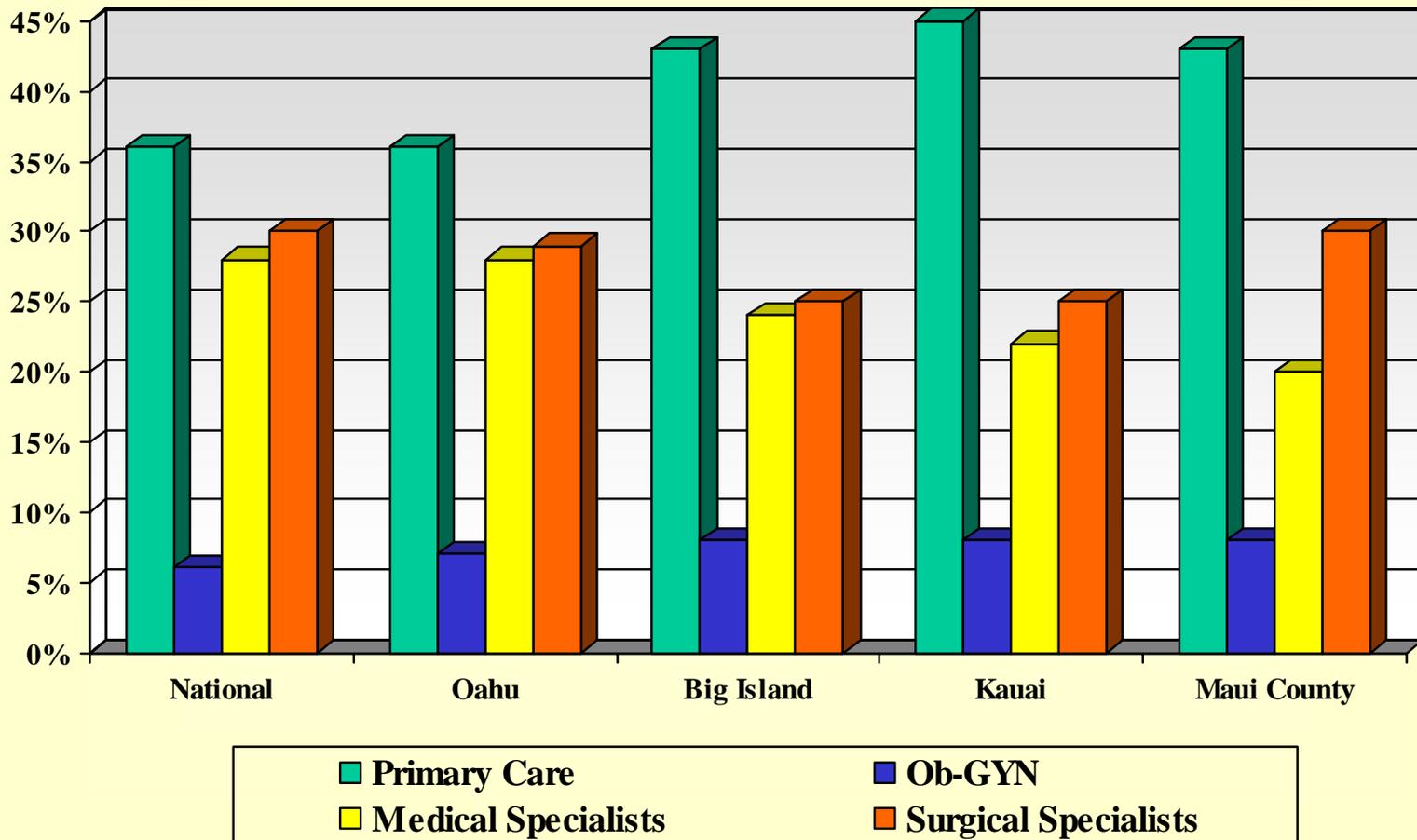


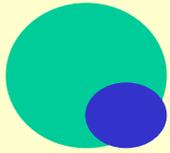
# Hawai'i MDs by Specialty





# MDs Specialty by County

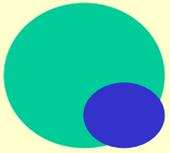




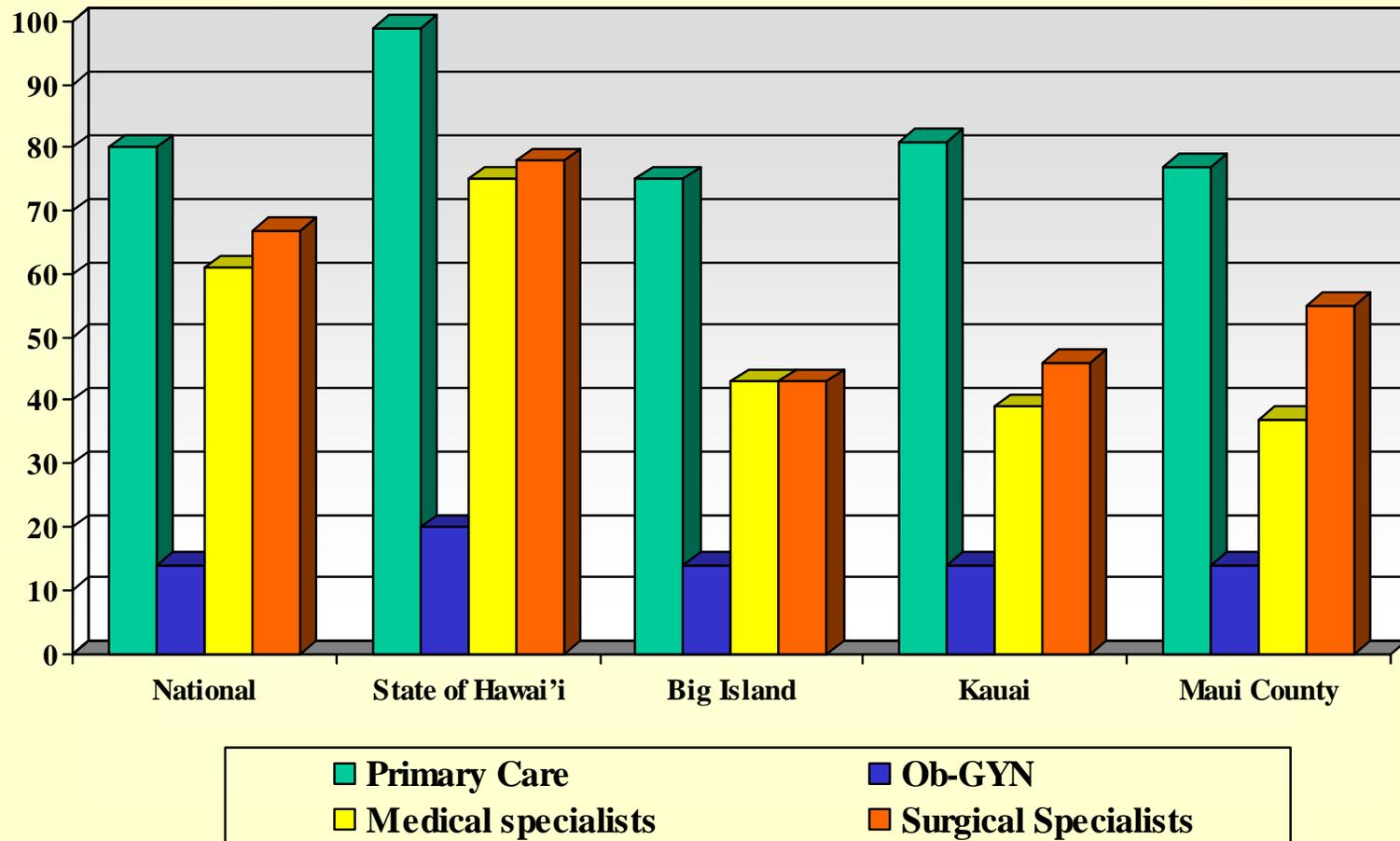
# MDs/ 100,000 Persons by Specialty

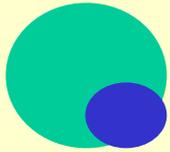
- Maui County has 24 fewer medical specialist and 12 fewer surgical specialist per 100,000 persons than the national average
- Kauai has 23 fewer medical specialists and 25% fewer surgical specialist per 100,000 persons than the national average.

County	Primary Care	Ob-GYN	Medical specialists	Surgical Specialists
National	80	14	62	67
Oahu	99	20	76	78
Big Island	75	14	43	43
Kauai	81	14	39	46
Maui County	77	14	37	55



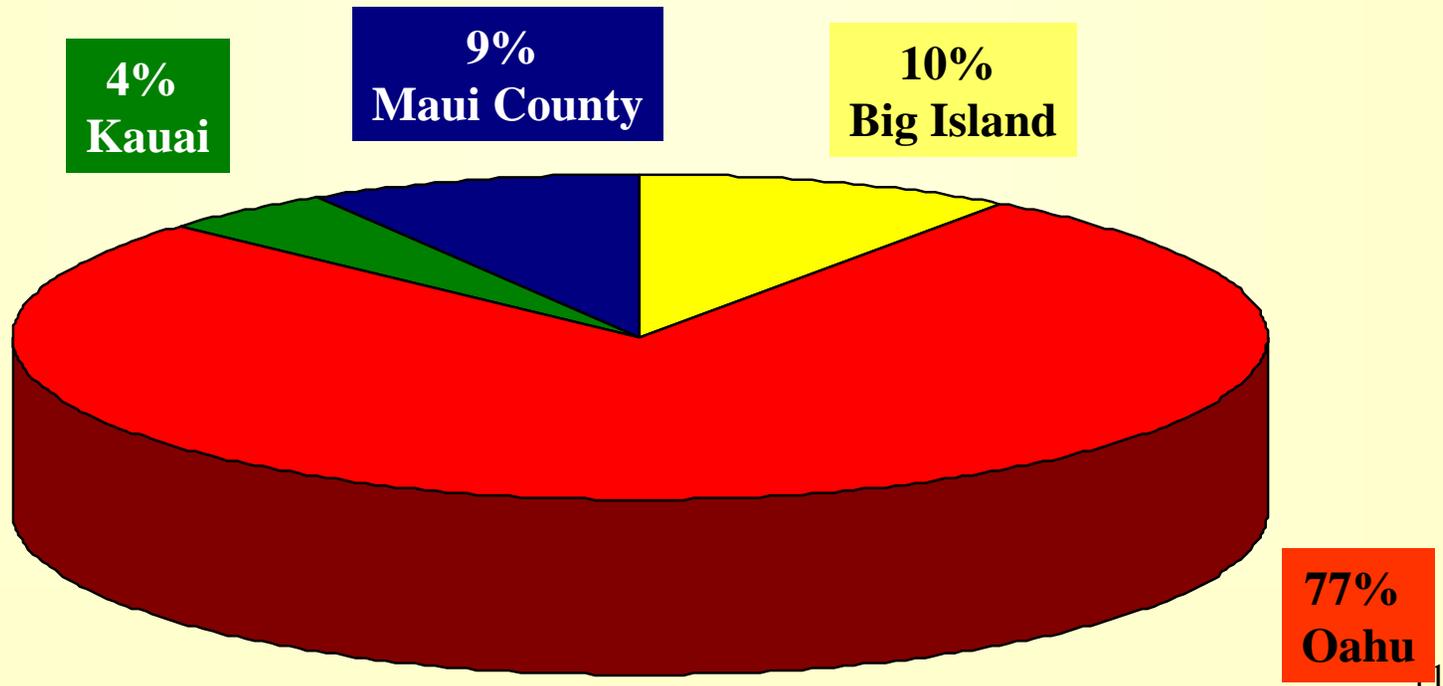
# MDs/ 100,000 Persons by Specialty

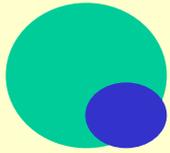




# Primary Care MDs by County

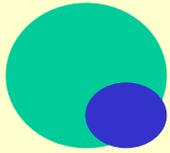
- 23% Hawaii's Primary Care MDs practiced on neighbor islands
- The neighbor island had 78 Primary Care MDs/ 100,000 compared to Oahu's 104 Primary Care MDs / 100,000 persons



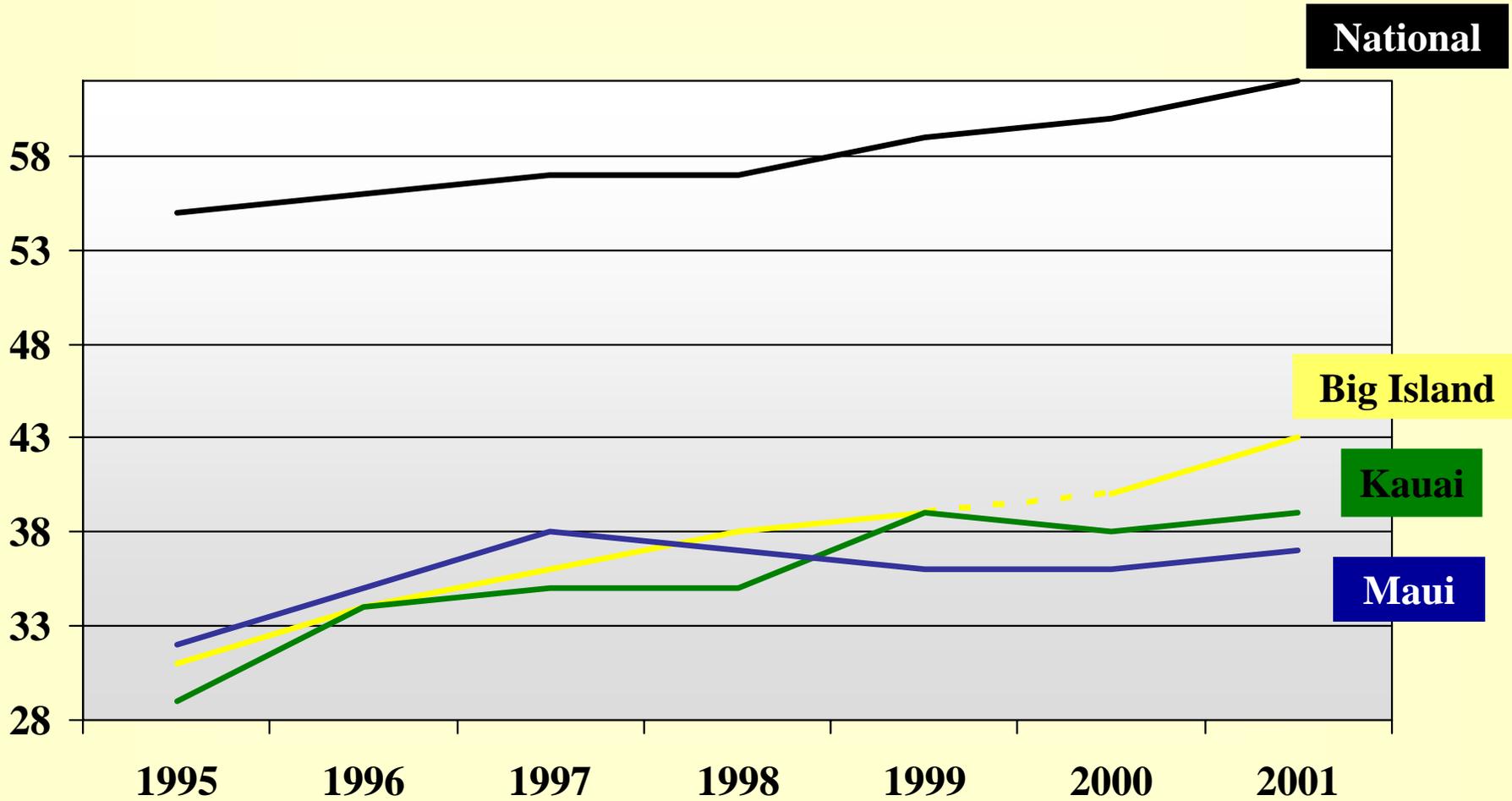


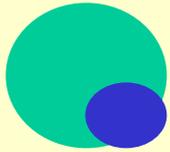
# Medical Specialist MDs by Subspecialties

Specialty	Big Island	Kauai	Maui
Allergy& Immunology	2	0	0
Cardiovascular	3	2	5
Child Psychology	2	2	6
Dermatology	4	2	3
Emergency Medicine	18	8	9
Gastroenterology	4	1	3
Internal Subspecialties	3	2	3
Neurology	2	0	4
Occupational Medicine	1	0	2
Pediatric Subspecialties	2	0	2
Physical Med/ Rehab	4	0	2
Psychiatry	19	6	9
Pulmonary Disease	1	0	1



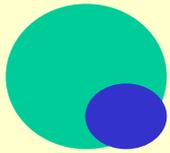
# Medical Specialist MDs/ 100,000 Persons, 1995-2001



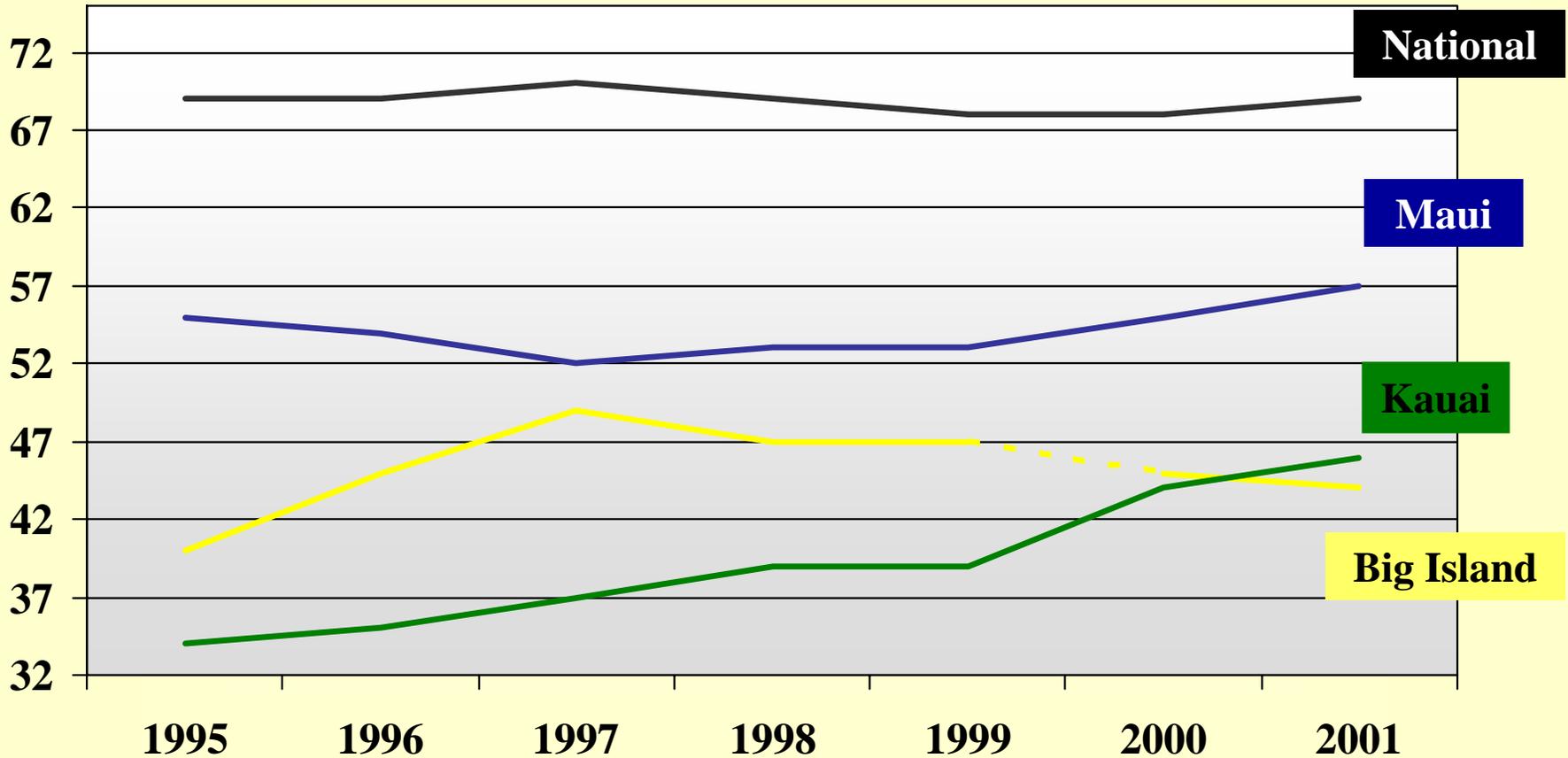


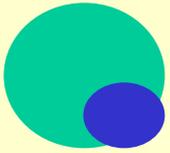
# Surgical Specialist MDs by Subspecialties

Specialty	Big Island	Kauai	Maui
Anesthesiology	11	5	11
General	12	3	9
Neurology	2	0	1
Ophthalmology	6	4	6
Orthopedic	9	5	9
Otolaryngology	1	2	5
Pathology	6	2	4
Plastic	4	0	6
Radiology	15	6	20
Radiation Oncology	0	0	2
Thoracic	1	0	0
Urology	3	2	4

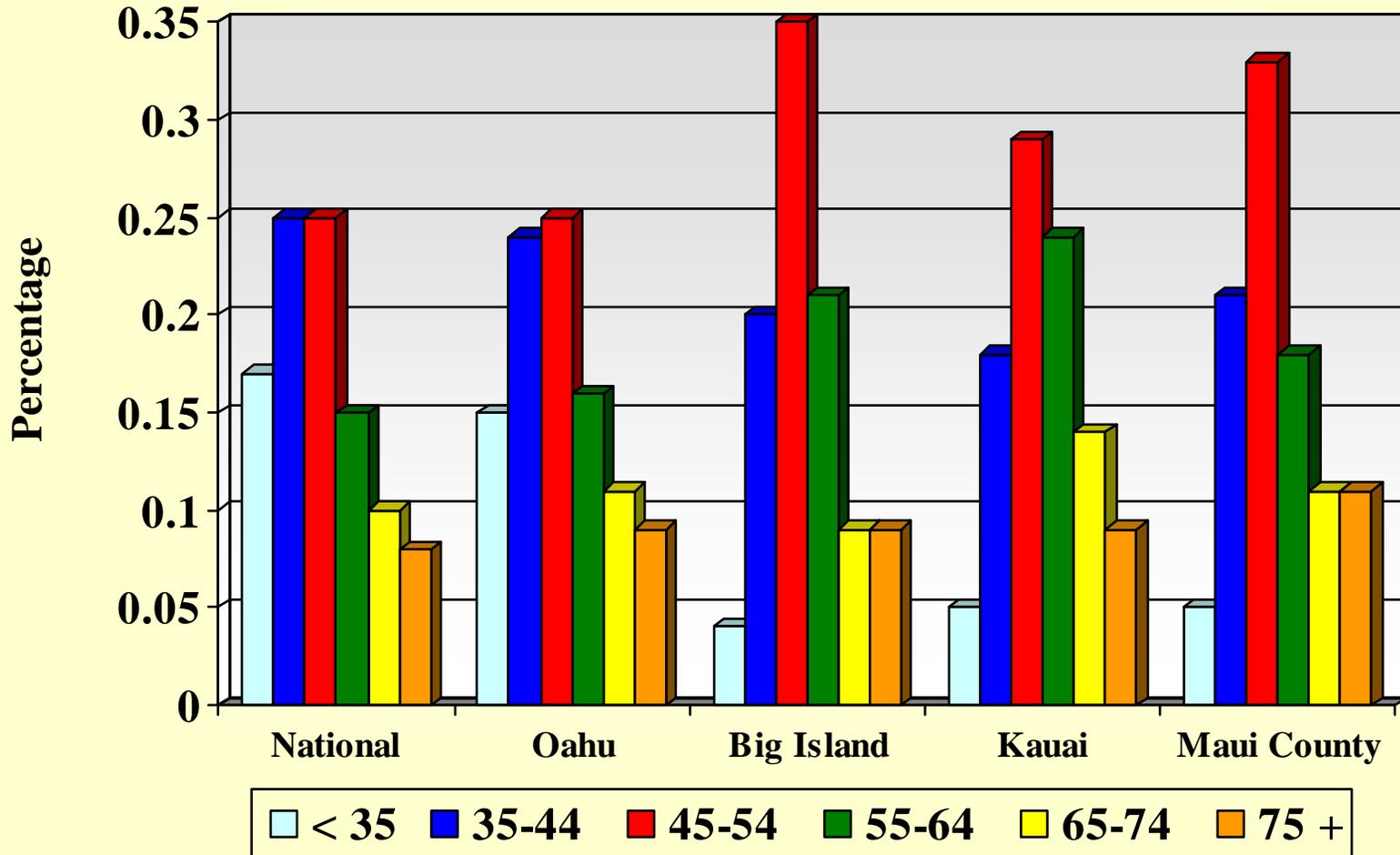


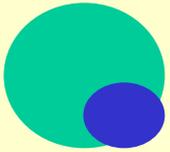
# Surgery Specialist MDs/ 100,000 Persons, 1995-2001



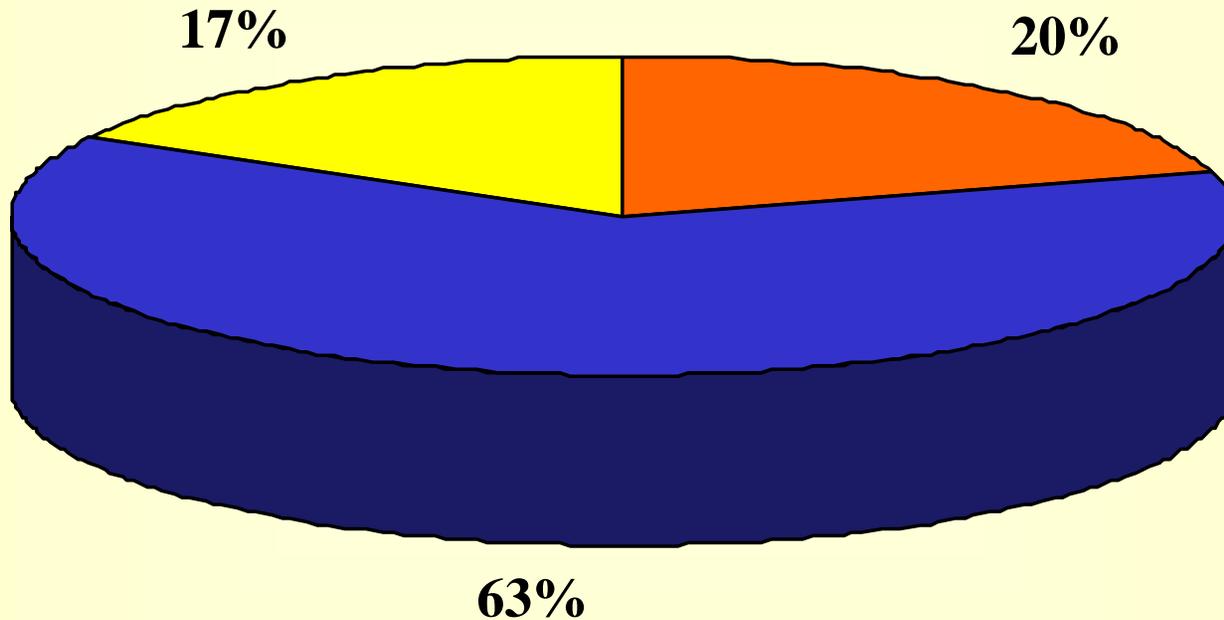


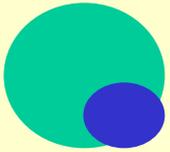
# MD Age by County



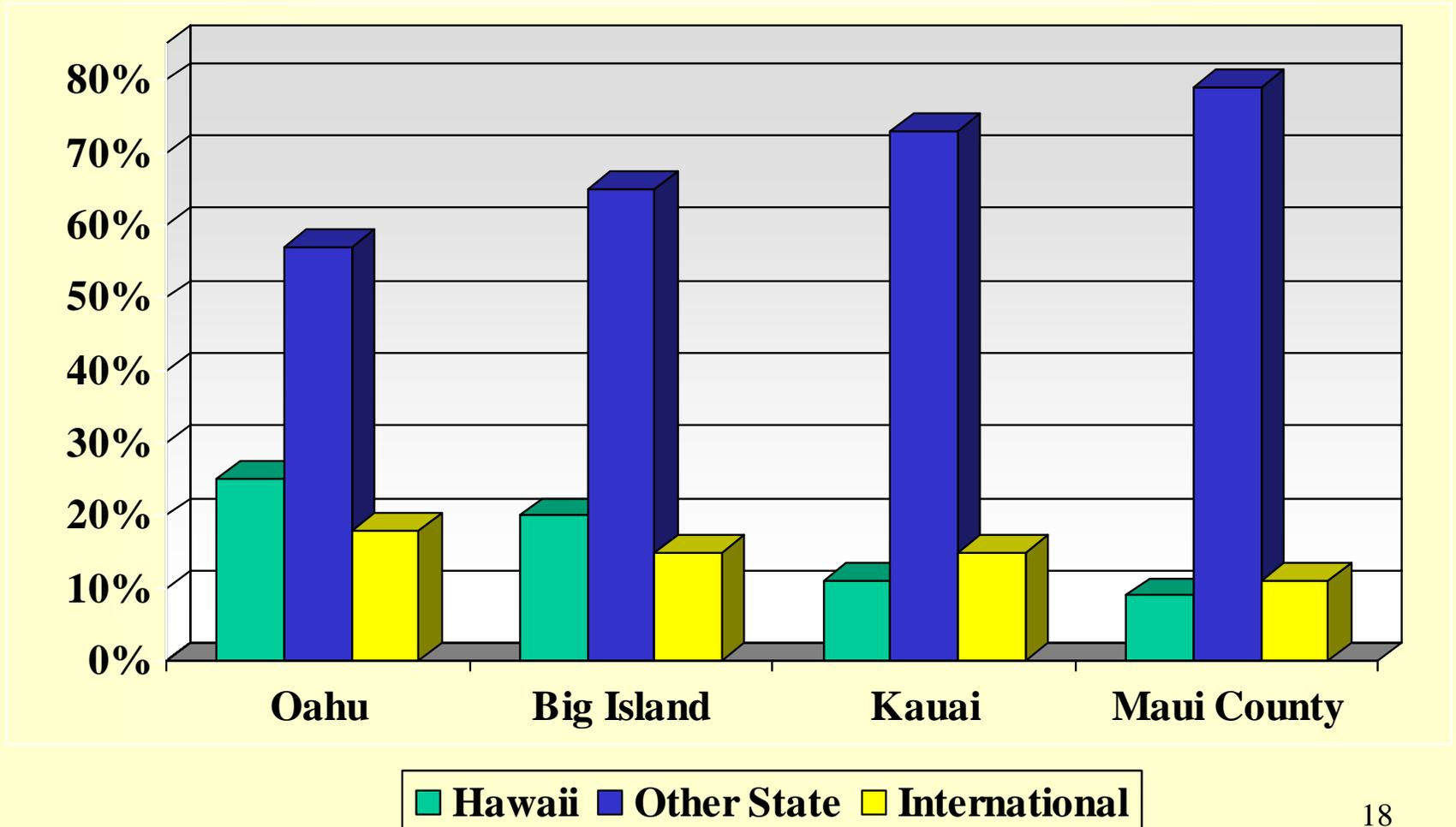


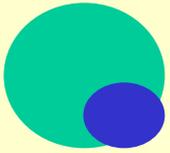
# Graduation Location MDs, 1999





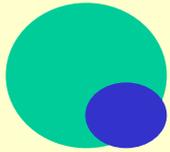
# Graduation Location of Non-Federal Medical Doctors in 1999





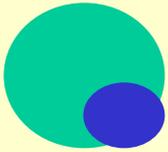
## **Overview Summary**

- **Although Hawaii's total state physician to population ratio is better than or equal to the national average, when examined by county we see the Maui County, Kauai, and the Big Island have fewer physician per capita rates especially in medical and surgical specialties.**
- **Kauai has no full time non-federal medical physicians specializing in Neurology, Occupational Medicine, Pediatric Subspecialties, Physical Med/ Rehab, or Psychiatry.**
- **The neighbor islands have a proportionally older MD workforce than Honolulu County and the national average.**



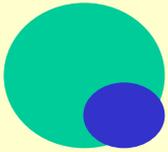
# For the Future

- **Although rural-urban physician disparities is a reoccurring feature of the American health system it can be remedied.**
- **We found evidence of slowly increasing rates of medical and surgical specialists per populations on the majority of neighbor islands.**
- **The American Academy of Family Physicians (2004) suggest that to reduce the shortages of physicians in rural areas we must:**
  - **Increase and strengthen recruitment and retention programs for physicians in rural and other underserved areas**
  - **Promote to primary care and rural locations to medical graduates**



# References

- Beachler M., Holloman C., & Herman J.(2003) Southern rural access program: an overview. Journal of Rural Health, 19, 301-7. Retrieved on November 15, 2005, from [http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=14526512&query\\_hl=4](http://micro189.lib3.hawaii.edu:2087/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14526512&query_hl=4)
- Hawaii State Government. (n.d.) State of Hawaii, Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Division, Retrieved 7/25/05, from <http://www.hawaii.gov>
- Health Resources and Services Administration. (2000). National center for health workforce profiles highlights Hawai'i. U.S. Department of Health and Human Services. Retrieved November 15, 2005, from <ftp://ftp.hrsa.gov/bhpr/workforce/summaries/Hawaii03.pdf>
- Kalihi-Palama Health Center (n.d.) Eye doctor Photo. Retrieved July 17, 2005, from [http://www3.hawaii.gov/dbedt/index.cfm?section=hawaiis\\_growth\\_industries911](http://www3.hawaii.gov/dbedt/index.cfm?section=hawaiis_growth_industries911)
- LaRavia, D., Clavert J., Zavala, J., Smith, O.D., Talley, S., Gingrich, D., & et al. (2002) Keeping physician in rural practice. American Academy of Family Physicians. Retrieved November 11, 2004. from <http://www.aafp.org/x16635.xml>
- Lundeen, G., Tenopir, C., & Wermager, P. (1994). Information needs of rural health care practitioners in Hawaii. Bulletin of the Medical Library Association., 82(2), 197-205.



## References continued

The Department of Business, Economic Development & Tourism. (2005). Geographic report (current licenses) as of July 6, 2005. The State of Hawaii Data 2001. Accessed 7/25/05, from <http://www.state.hi.us/dbedt>

The National Coalition for Health Care. (2004) Health insurance costs. The National Coalition for Health Care. Retrieved November 14, 2005, from <http://www.nchc.org/facts/cost.shtml>

Respiratory Photo. (n.d.) Retrieved July 17, 2005, from <http://www.hawaiibusiness.cc/hb72003/default.cfm?articleid=14>

University of Hawaii Department of Pediatrics and Hawaii Dyson Initiative. (n.d.) Teaching food pyramid Photo. Retrieved July 17, 2005, from <http://www.hawaii.edu/dyson>

University of Iowa Hospitals and Clinics. (n.d.) X-ray Photo. Retrieved July 17, 2005, from <http://www.uihealthcare.com/news/news/2005/03/18uianduh.html>