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# Health and Human Services Appropriations Committee

## Geographic Variation in Medical Practice

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Office of Financial Management, Forecasting Division

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# Context for today's conversation

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“The United States spends more of its wealth on health care than any other developed country, and that share is rising...(but we) do not deliver objectively better quality and access...”

“Accounting for the Cost of Health Care in the United States”. McKinsey Global Institute, 2007

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- Practice Variation – what is it and why do we care?
- Examples of national and local research
- Variation in hysterectomies - a symptom of potential system inefficiencies?
- Opportunities...where do we go from here?

# What is variation and why do we care?

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- What do we mean by variation?
  - Geographic differences in health care delivery and/or spending
- When we see variation we need to ask:
  - Can it be explained on the basis of illness severity, access to care, or informed patient preference?
  - Is it warranted?
  - Is it isolated (more readily actionable) or does it represent a more systemic issue of inefficient resource use?
- Bottom line:
  - Unwarranted variation suggests opportunities “to achieve significant savings in health care costs without compromising health care quality and outcomes”  
i.e., more efficient and effective use of existing health system resources

# How are we looking at variation?

## Overview of Washington State Health Care Utilization Analysis

INSURANCE SOURCE	TYPE OF CARE					(Percentage 2006 US Health Expenditure <sup>2</sup> )
	Inpatient Hospital (26%)	Outpatient Care <sup>1</sup> (48%)	Drugs/Nondurables (15%)	Durables (1%)	LTC/Home Care (10%)	
Commercial Group / Individual Insurance (62%) <sup>3</sup>	Washington Inpatient Atlas	Public Employees Benefits Board (PEBB) including Uniform Medical Plan (UMP) - <i>potential</i> data access for analysis of subgroups of public employees				
		Puget Sound Health Alliance analysis of select counties				Community Checkup Report (5 counties) by condition / facility
Medicare (14%)		Dartmouth Atlas ( <i>based on access to fee-for-service data</i> )				U.S. Regional Variation Analyses
Medicaid (14%)		Medicaid Fee for Service <i>potential</i> data access for statewide WA specific analysis of subgroups of Medicaid				
Uninsured (11%)						

CHARS data for OFM  
WA Regional Variation Analysis:

1. Selected surgeries (age-sex adjusted)
2. Hysterectomies (age-specific)
3. Other?

<sup>1</sup> Outpatient care includes physician and dental offices, same-day visits to hospitals including Emergency Departments, ambulatory surgery (ASC) and diagnostic imaging centers (DIC), and other same-day care facilities.

<sup>2</sup> Based on McKinsey Global Institute, *Accounting for the cost of US health care: A new look at why Americans spend more*, December 2008.

<sup>3</sup> Source: Washington State Population Survey 2008WSPSV2

# Our two primary bodies of work

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## Dartmouth Atlas (the Dartmouth Institute)

- National research – allows comparison of WA against other states
- National, regional, select local market differences in per capita spending and intensity of resource use
- Drawback: Data for all services, but only Medicare patients
- Findings:  
more care and spending don't equal better care

For more information:

<http://www.dartmouthatlas.org>

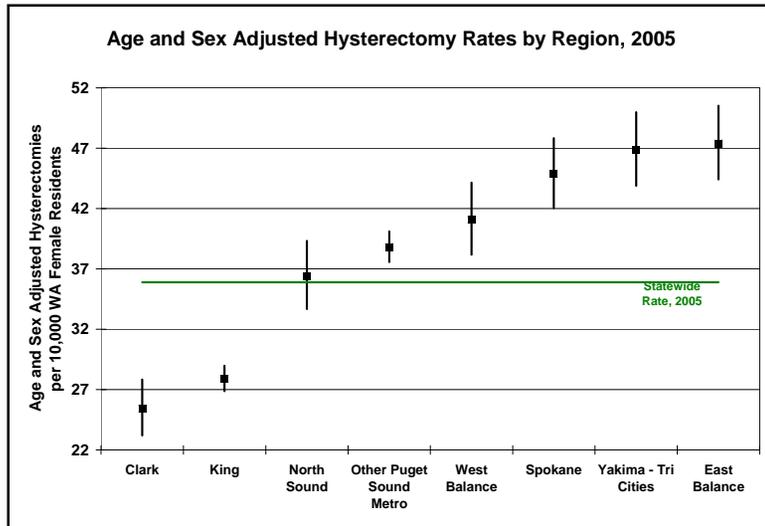
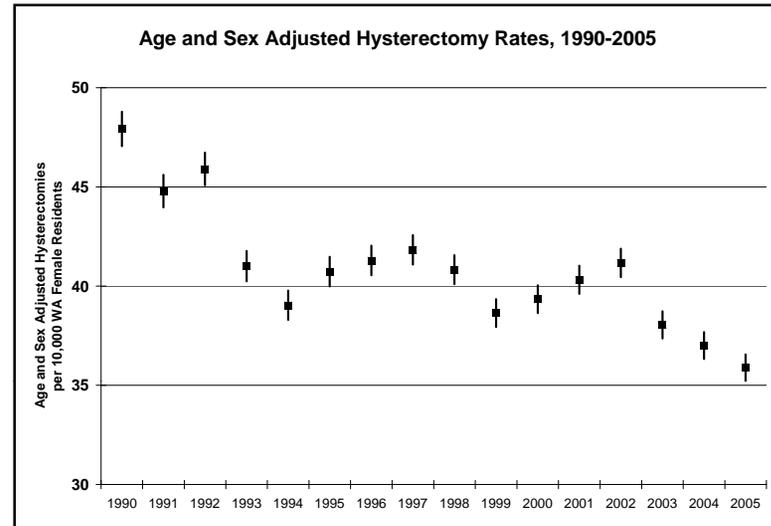
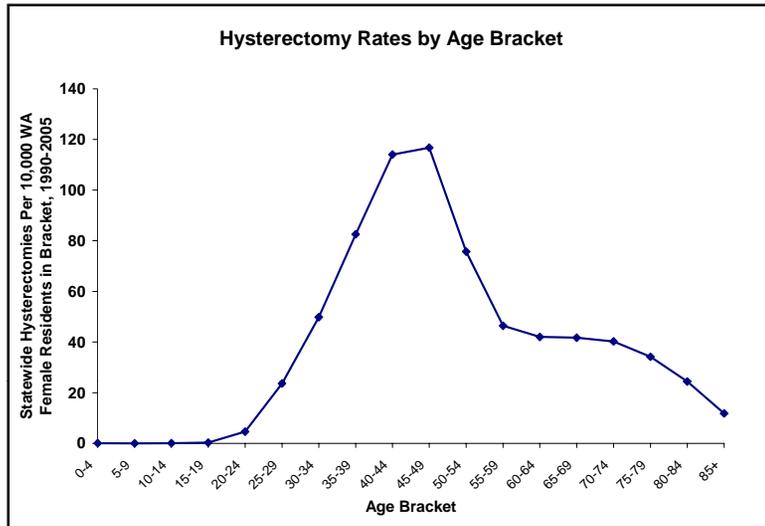
## Washington Inpatient Atlas (OFM)

- Washington only – allows comparison of regions within WA against each other
- Washington regional and historic differences in use of 8 surgical procedures (see appendices for details)
- Drawback: Data for all WA payers and patients, but only inpatient services
- Findings:  
regional disparities in surgery rates are evident

For more information:

<http://www.ofm.wa.gov/healthcare/wiap/default.asp>

# Regional Variation in Hysterectomies



**Extremal Quotient = 1.70**  
 (the ratio of the highest rate to the lowest rate  
 excluding Clark County)

# Where variation is substantial King County rates are lowest

Procedure	2005 Number of Discharges	Substantial Variation	Low Rate	High Rate	Ratio* High:Low	Low Region	High Region
Coronary Artery Bypass	4,339	YES	5.0	8.1	1.61	King	Spokane
Coronary Angioplasty	11,310	YES	13.5	20.9	1.55	King	North Sound
Total Knee Replacement	9,922	YES	12.8	19.2	1.50	King	East Balance
Total Hip Replacement	5,568	NO	7.3	9.0	1.24	Yakima	West Balance
Cholecystectomy	7,059	YES	8.4	13.6	1.62	King	West Balance
Hysterectomy	12,049	YES	27.9	47.4	1.70	King	East Balance
Appendectomy	7,929	Marginal	11.8	14.7	1.25	King	Yakima
Tonsillectomy	507	NO	0.6	1.1	1.68	East Balance	King

\* Ratio of the highest rate to the lowest excludes Clark County  
Rates are age-sex adjusted to 1990 Washington population, per 10,000 residents

# Why should King County rates be lower?

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- Reasons unknown but national research and opinions *suggest*:

**Lower rates in urban areas may be related to:**

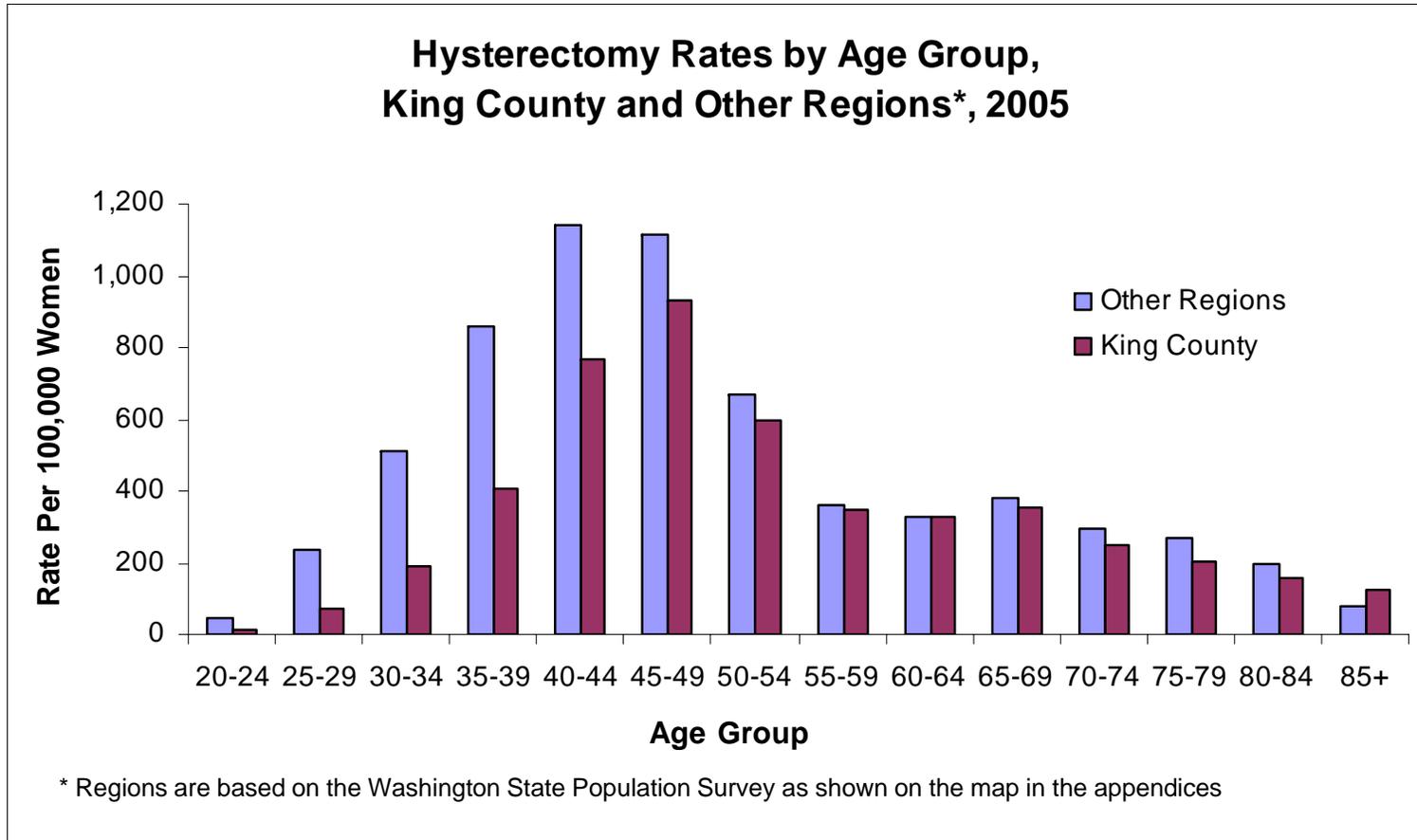
- Higher education and higher income
- Areas where a lower proportion of births (for example) covered by Medicaid
- Delay in age of first birth
- Urban residence

**Higher rates in rural areas may be related to:**

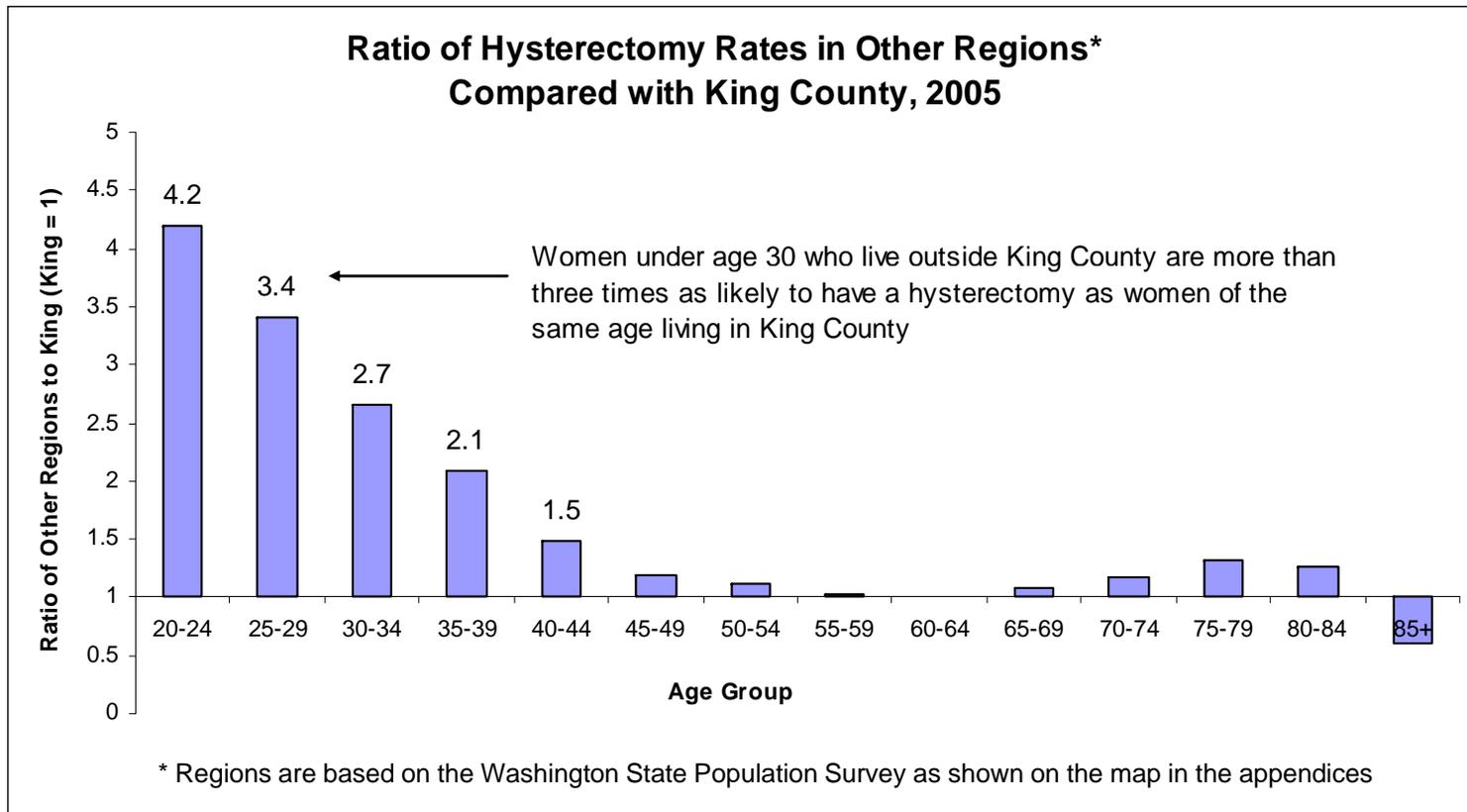
- Less coordinated infrastructure
- Payment incentives that support surgery over less invasive (but more time consuming) incremental treatment
- Excess hospital capacity
- Fewer physician office/ambulatory surgery center alternatives

- Many hypotheses but further work needed

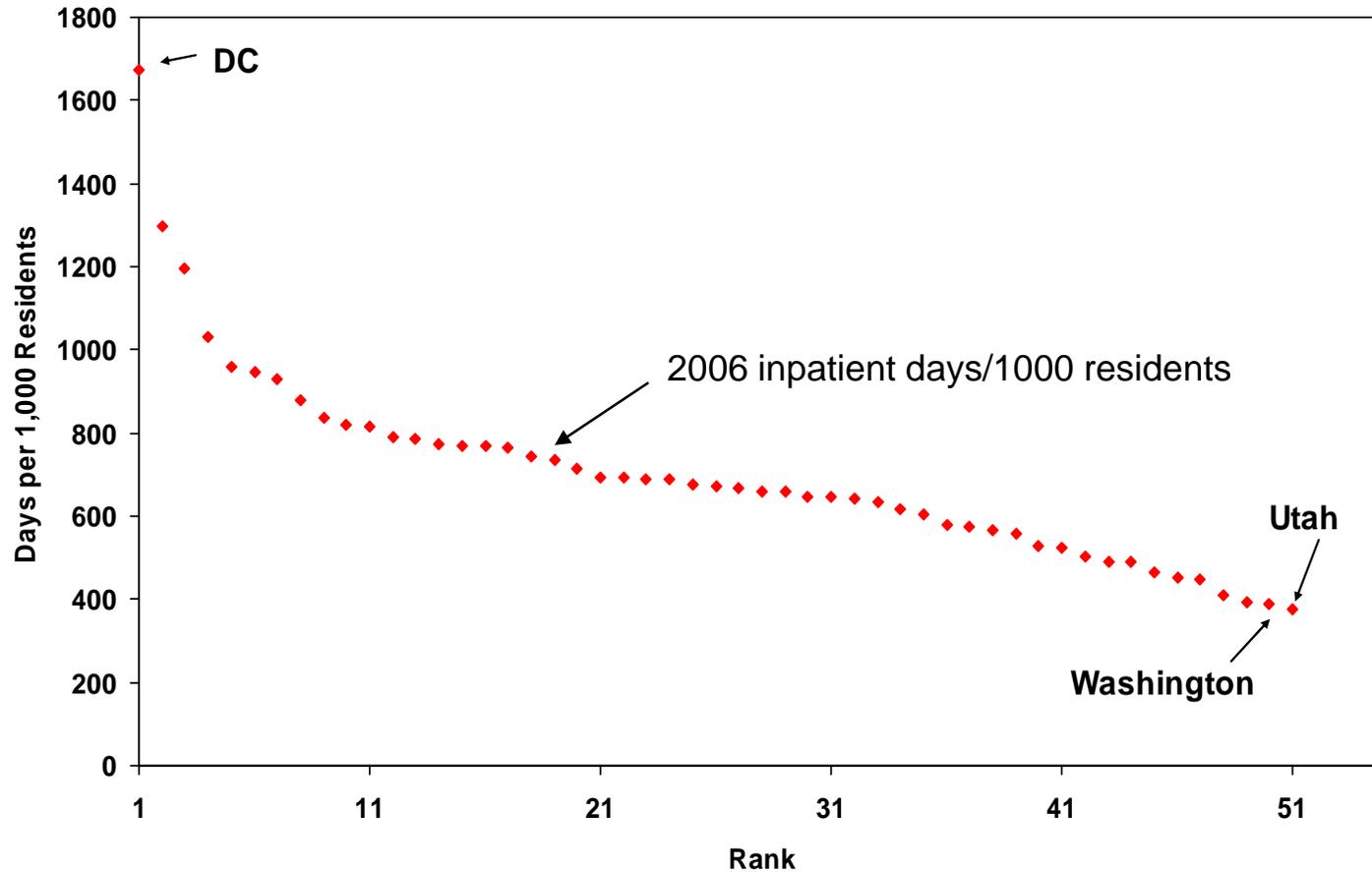
# Hysterectomy differences used to examine system performance – pt 1



# Hysterectomy differences used to examine system performance – pt 2



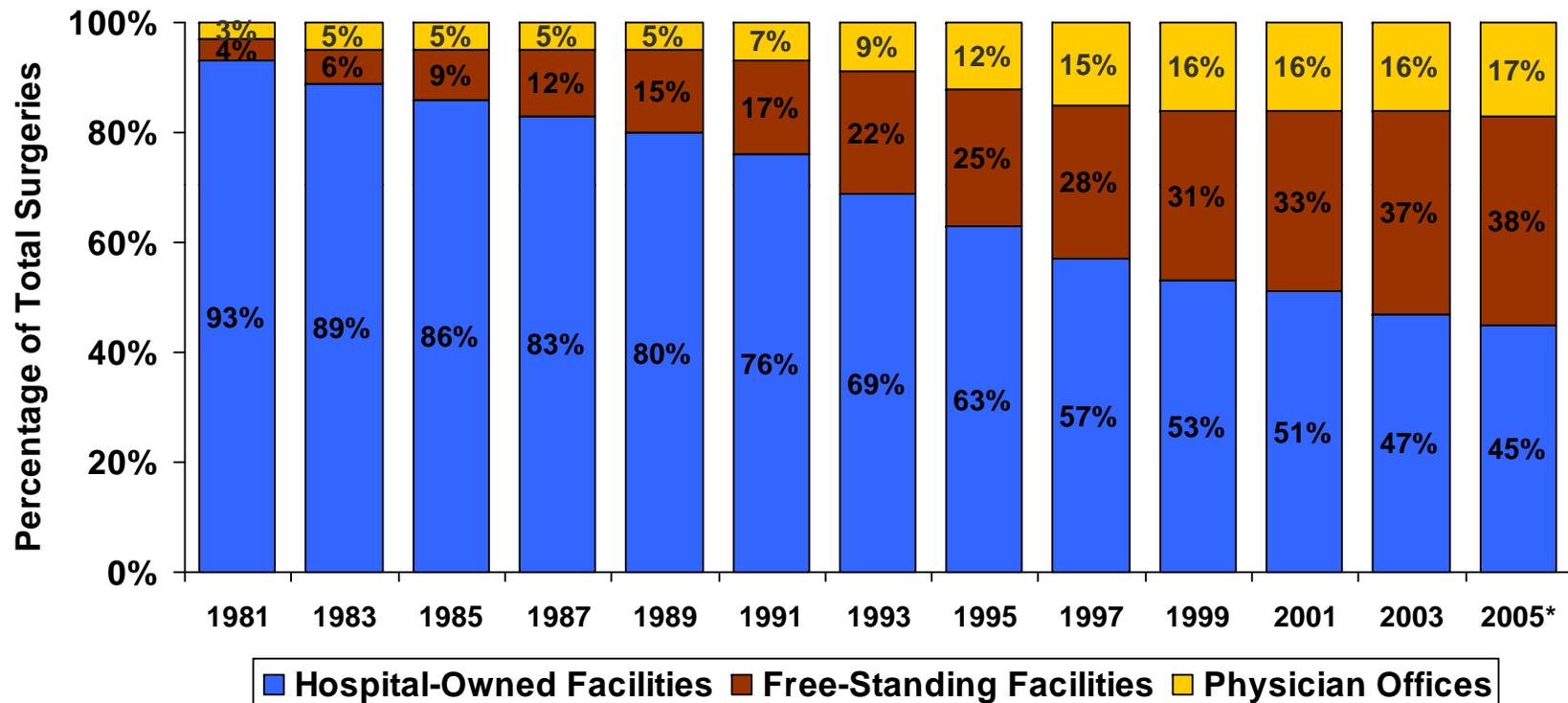
# Washington State's inpatient use is extremely low relative to other states



Source: Kaiser Family Foundation StateHealthFacts.org, based on American Hospital Association data

# Percent of surgeries performed outside a hospital continues to increase

Proportion of Total Surgeries by Site of Care, 1981-2005

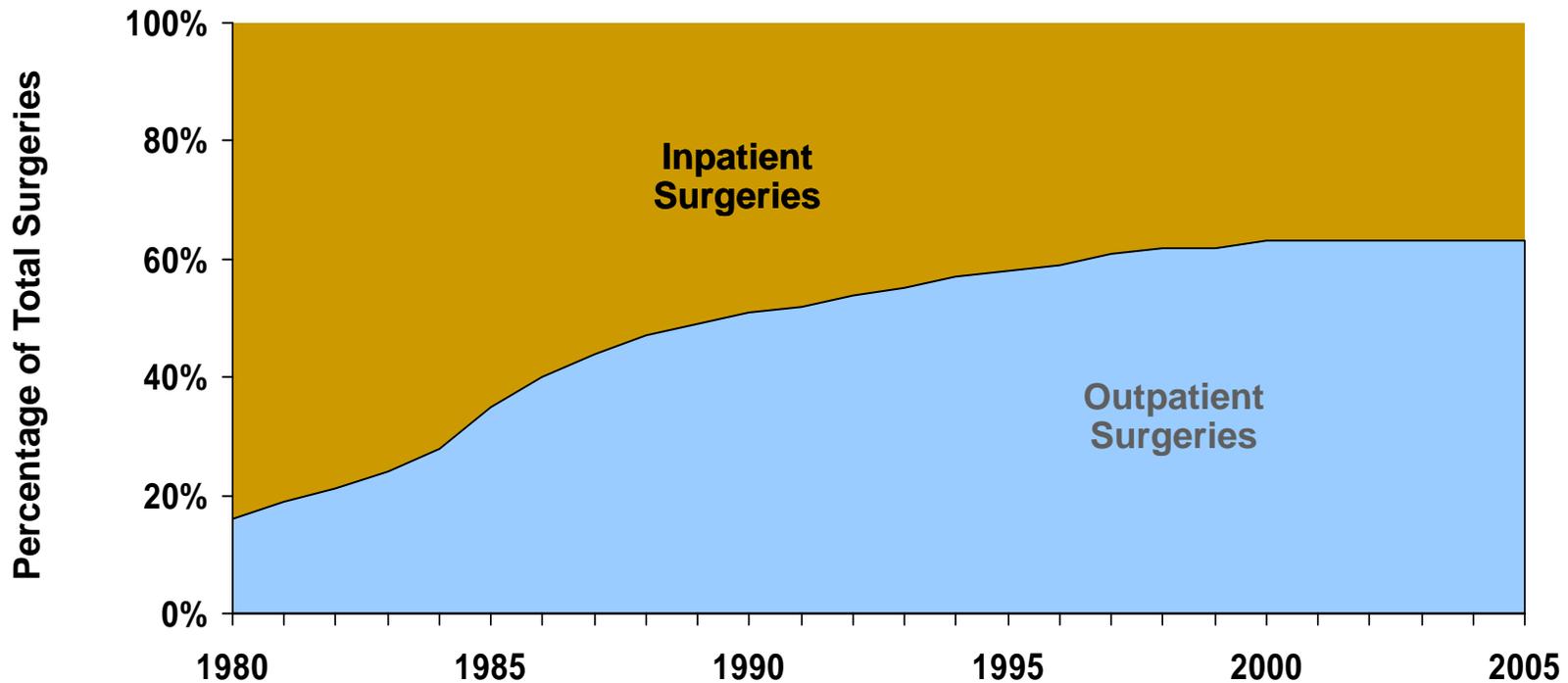


Source: Blue Cross/Blue Shield Medical Cost Reference Guide Adapted from the American Hospital Association and The Lewin Group

# And since the late 1990s, >60% hospital surgeries performed as outpatient

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**Proportion of Hospital Outpatient and Inpatient Surgeries, 1980-2005**



Source: Blue Cross/Blue Shield Medical Cost Reference Guide Adapted from the American Hospital Association and The Lewin Group

# Where to from here? Key challenges

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- Understanding WHY variation exists (and if it's warranted) will require analysis of more comprehensive data
- Analysis needs to stay focused on “applied” research
- Translating knowledge of variation into action (by payers, purchasers, providers, and consumers) towards more efficient and effective resource use takes time, patience, and sophisticated communication strategies

# Nonetheless WA *is* making progress

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For example:

- Patient Decision Aids to support shared-decision making
- Health technology assessments for increased attention to evidence-based care
- Practice redesign steps towards medical homes that support patient-centered care; chronic care management; administrative efficiencies
- Diagnostic tools essential to identify variation, and support public reporting and decision-making

# Appendices:

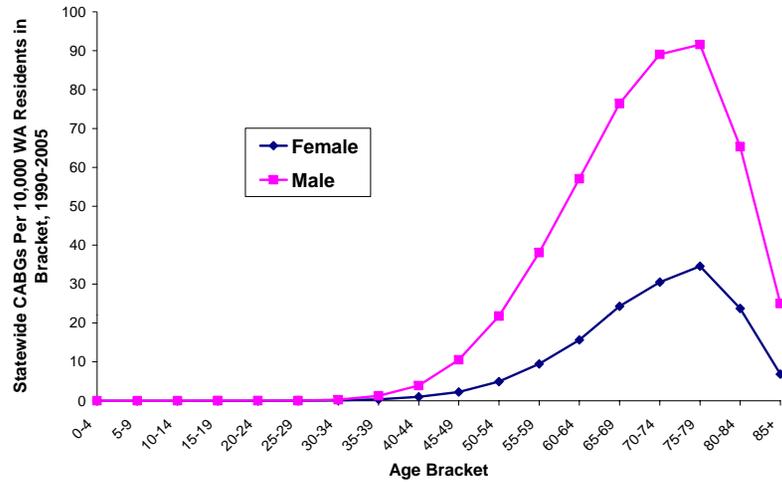
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- Regional breakdown for Washington's Inpatient Atlas
- Washington Inpatient Atlas results:
  - Heart surgery - coronary artery bypass graft (CABG) and percutaneous transluminal coronary angioplasty (PCTA)
  - Knee and hip replacement
  - Appendectomy and tonsillectomy
  - Gallbladder removal and hysterectomy

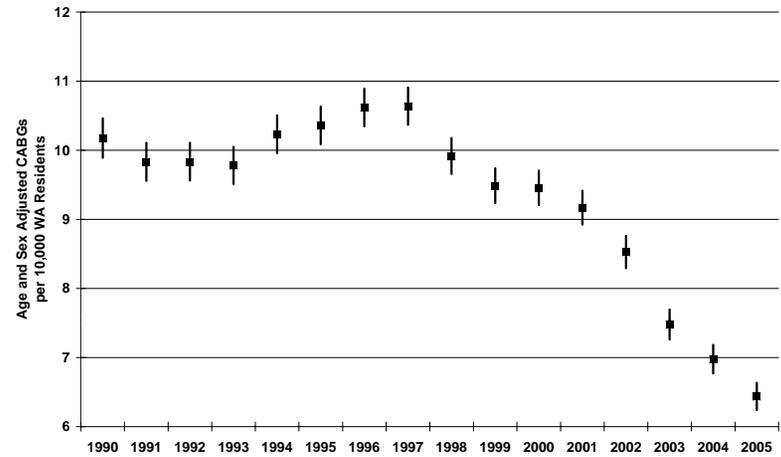


# Heart Surgery

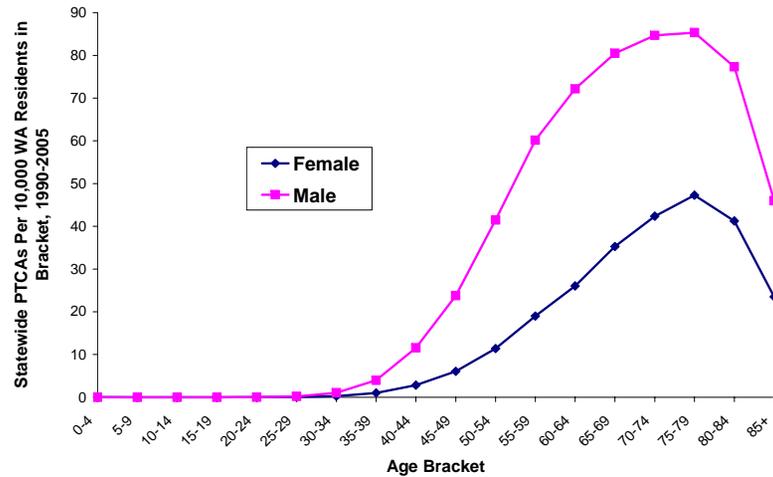
CABG Rates by Age Bracket



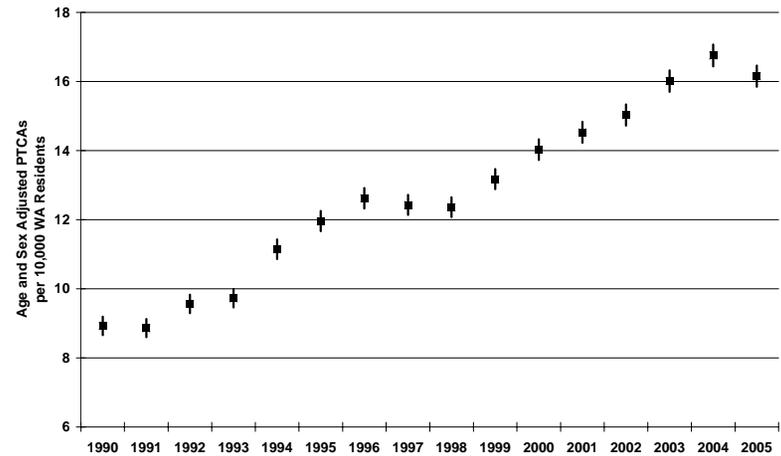
Age and Sex Adjusted Statewide CABG Rates, 1990-2005



PTCA Rates by Age Bracket

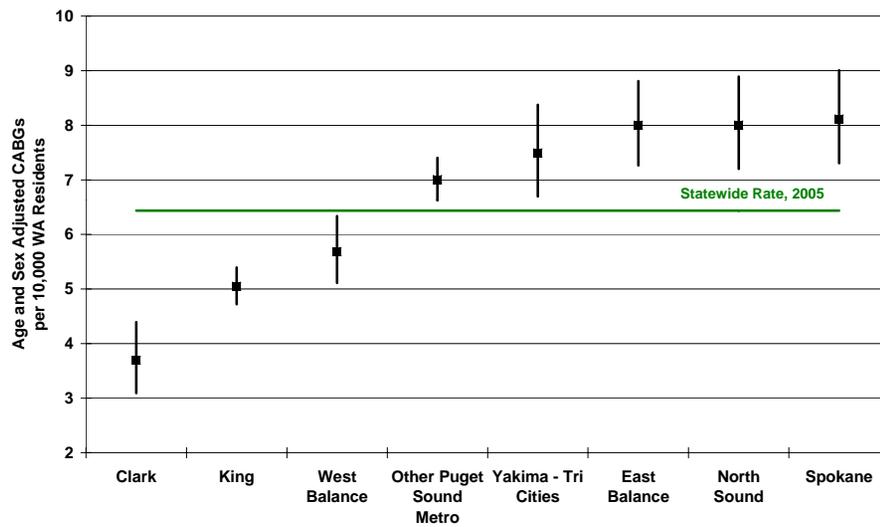


Age and Sex Adjusted Statewide PTCA Rates, 1990-2005

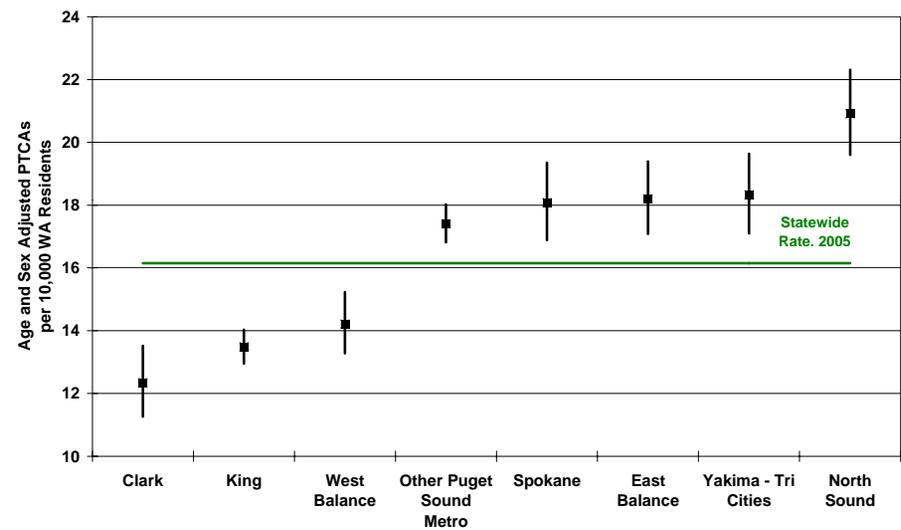


# Heart Surgery

Age and Sex Adjusted CABG Rates by Region, 2005



Age and Sex Adjusted PTCA Rates by Region, 2005



Extremal Quotient<sup>1</sup>s (excluding Clark)

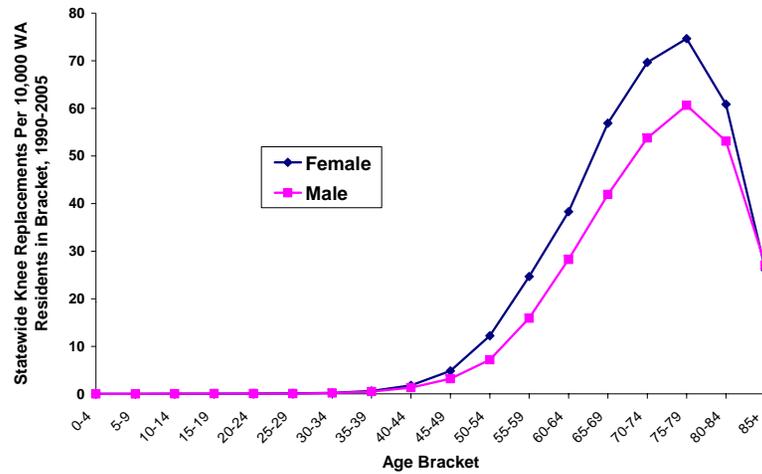
**CABG: 1.61**

**PTCA: 1.55**

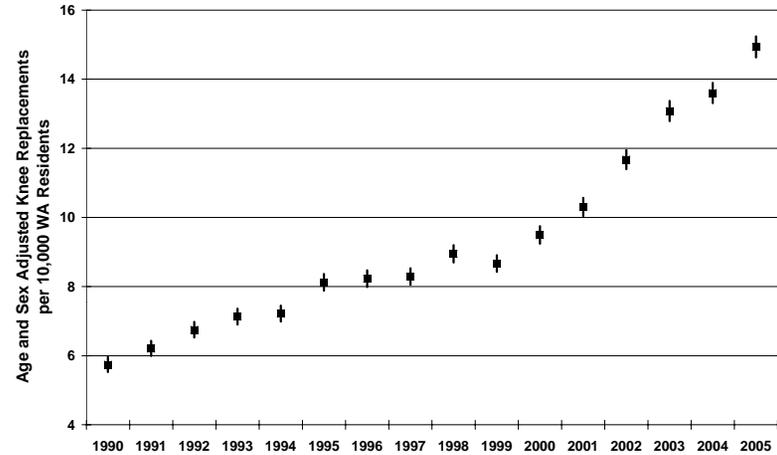
<sup>1</sup>Extremal quotient = ratio of the highest to the lowest regional rate

# Knee and Hip Replacement

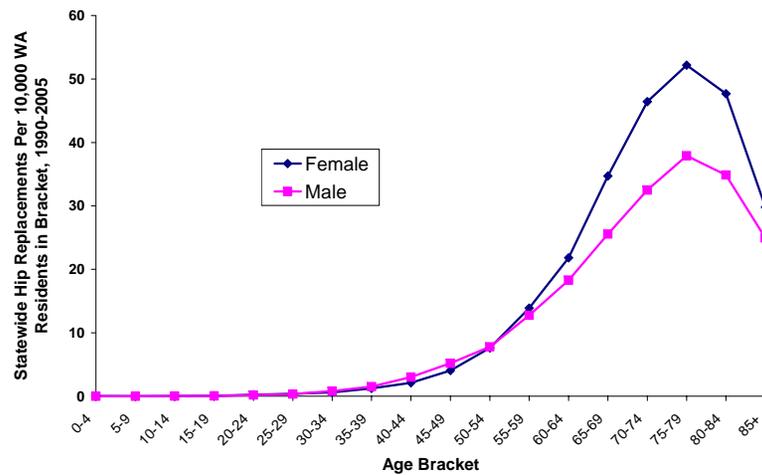
Knee Replacement Rates by Age Bracket



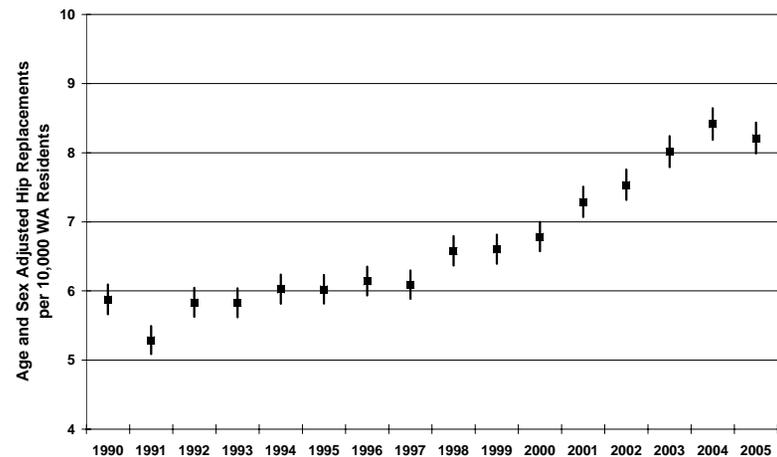
Age and Sex Adjusted Knee Replacement Rates, 1990-2005



Hip Replacement Rates by Age Bracket

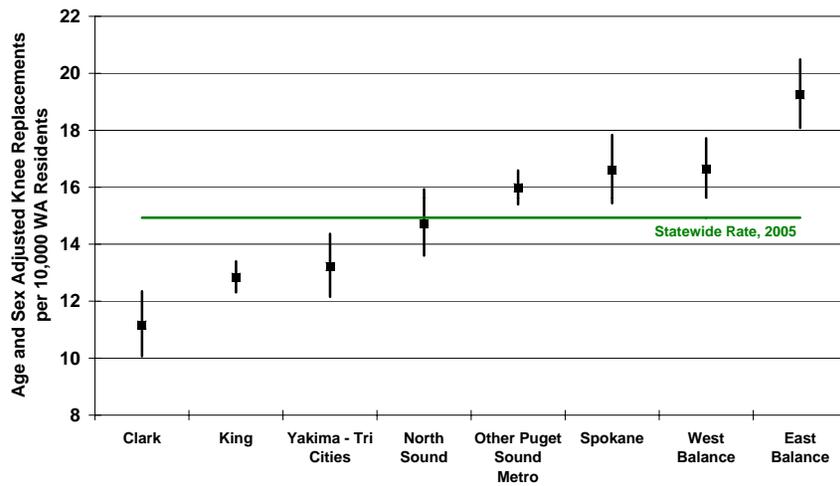


Age and Sex Adjusted Hip Replacement Rates, 1990-2005

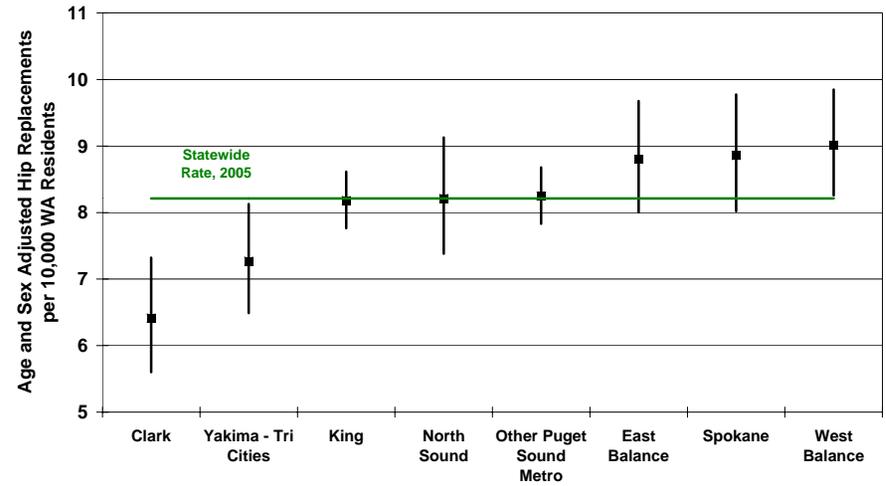


# Knee and Hip Replacement

Age and Sex Adjusted Knee Replacement Rates by Region, 2005



Age and Sex Adjusted Hip Replacement Rates by Region, 2005

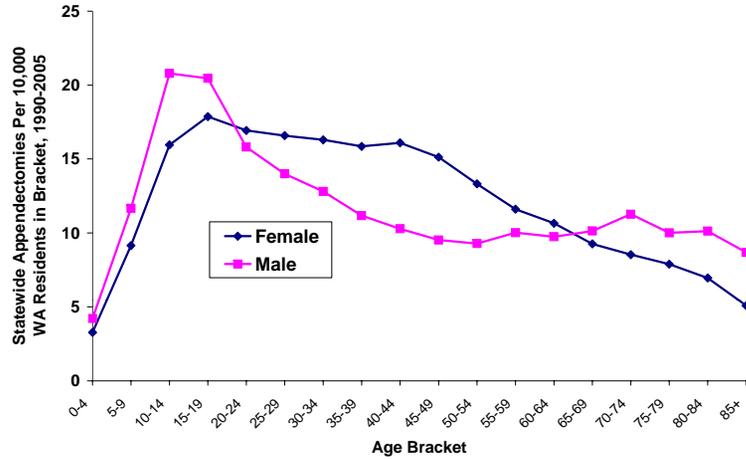


Extremal Quotients (excluding Clark)

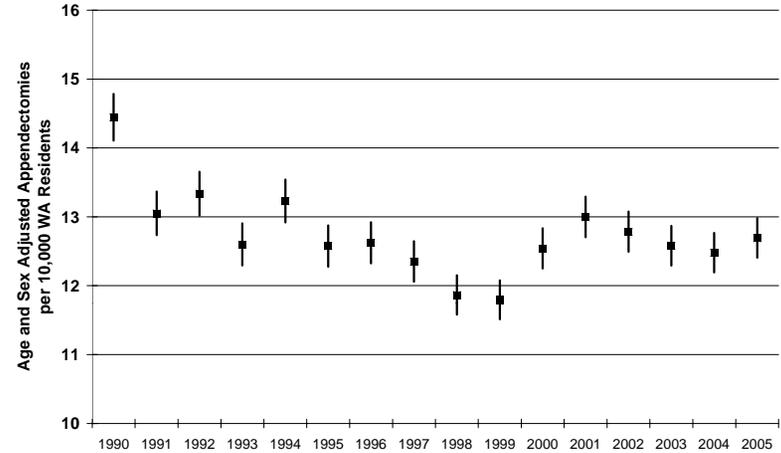
**Knee Replacement: 1.50**      **Hip Replacement: 1.24**

# Appendectomy and Tonsillectomy

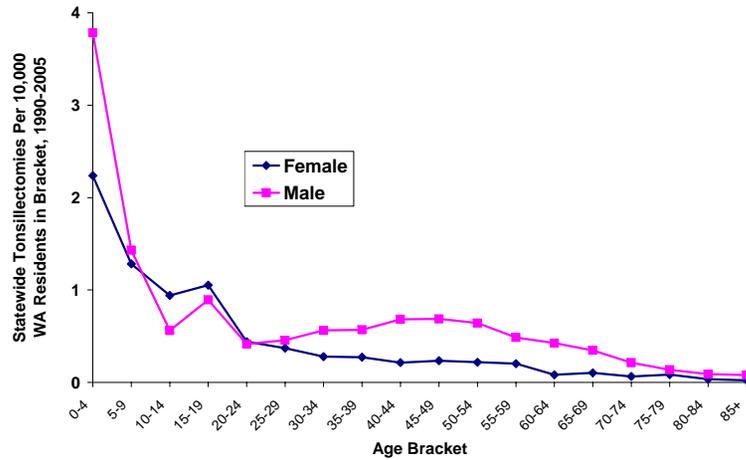
Appendectomy Rates by Age Bracket



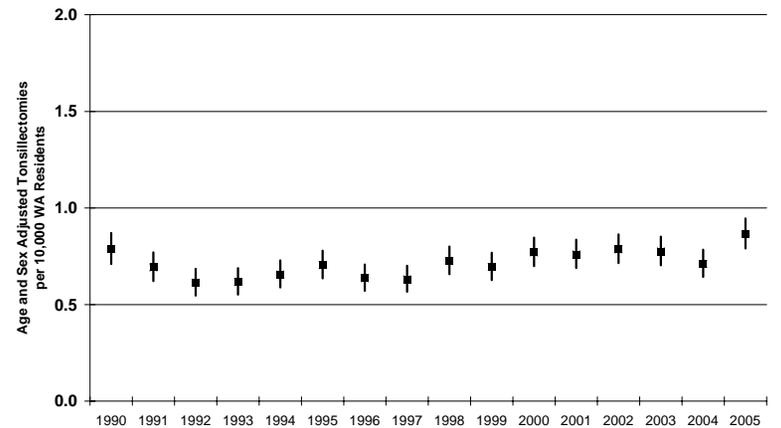
Age and Sex Adjusted Appendectomy Rates, 1990-2005



Tonsillectomy Rates by Age Bracket

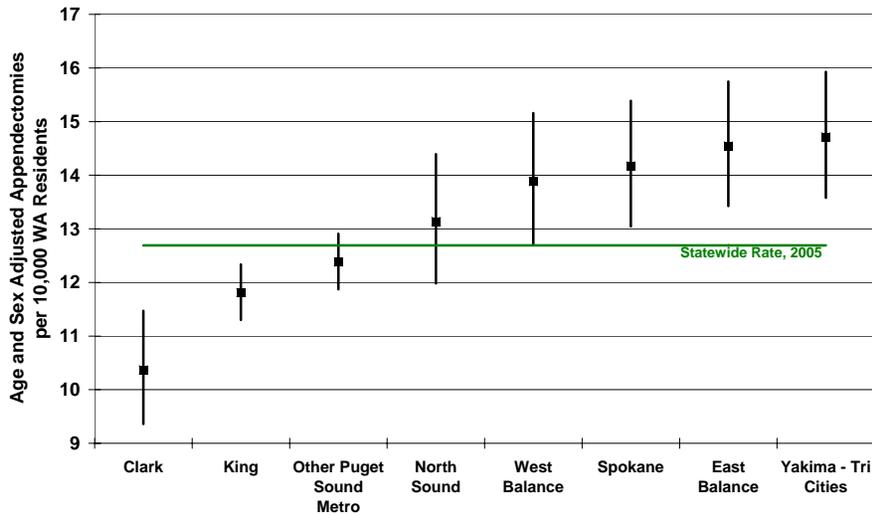


Age and Sex Adjusted Tonsillectomy Rates, 1990-2005

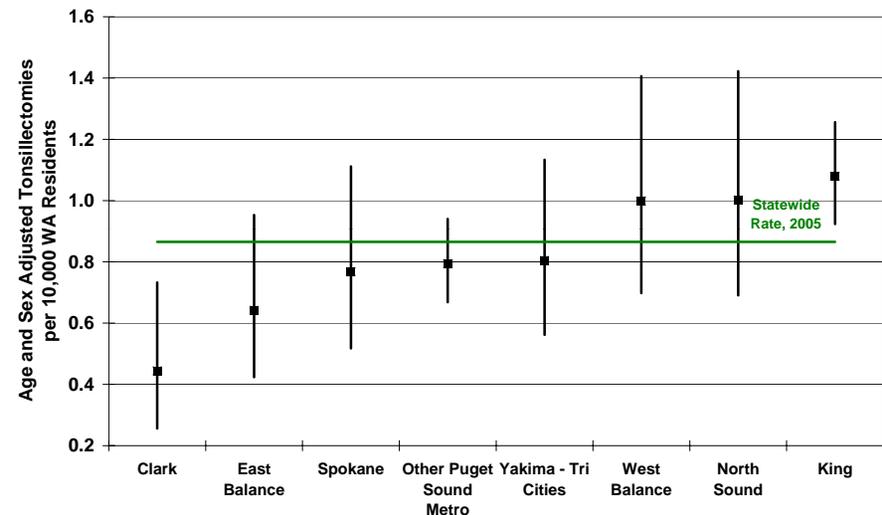


# Appendectomy and Tonsillectomy

Age and Sex Adjusted Appendectomy Rates by Region, 2005



Age and Sex Adjusted Tonsillectomy Rates by Region, 2005

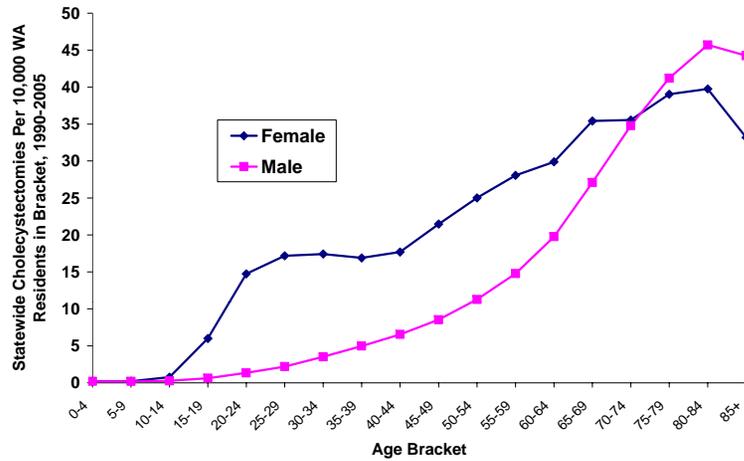


Extremal Quotients (excluding Clark)

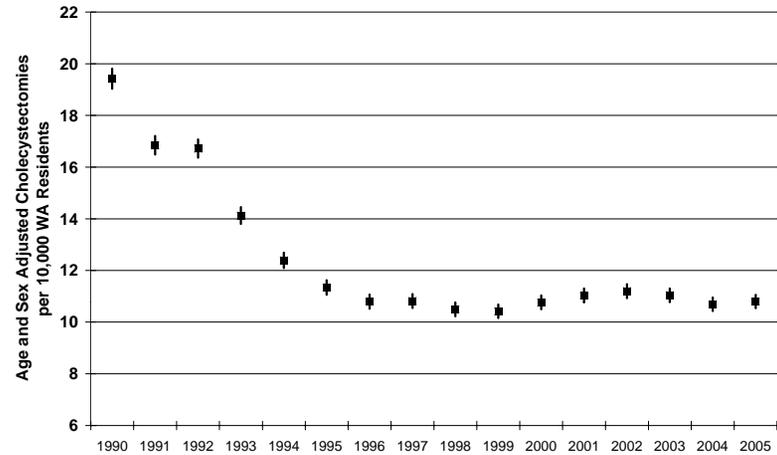
**Appendectomy: 1.25      Tonsillectomy: 1.68**

# Gallbladder Removal and Hysterectomy

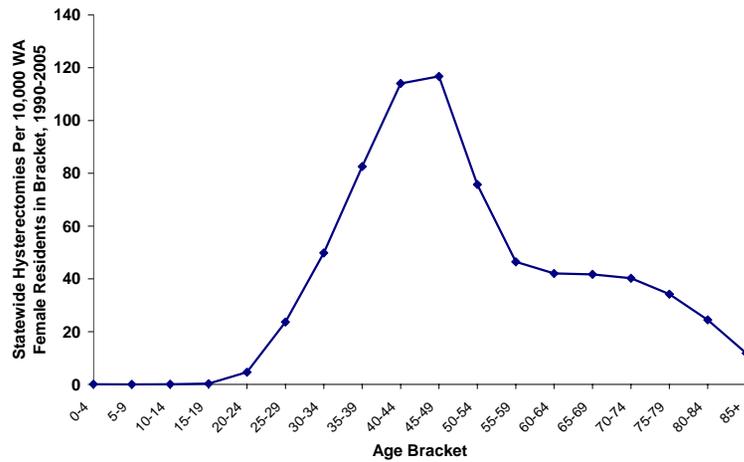
Gallbladder Removal Rates by Age Bracket



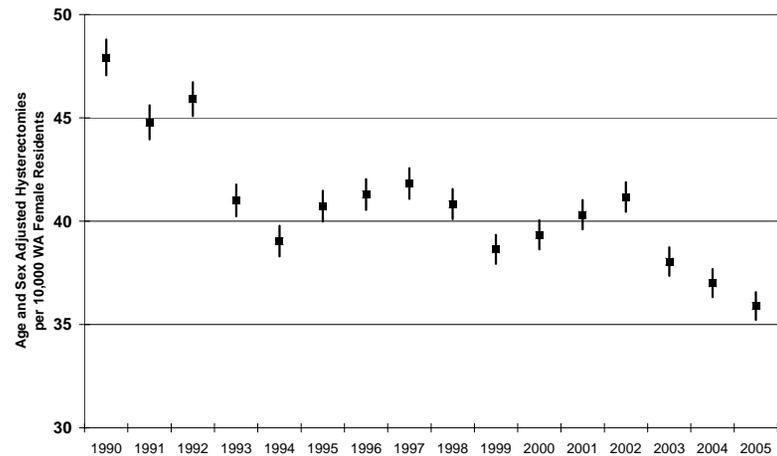
Age and Sex Adjusted Gallbladder Removal Rates, 1990-2005



Hysterectomy Rates by Age Bracket

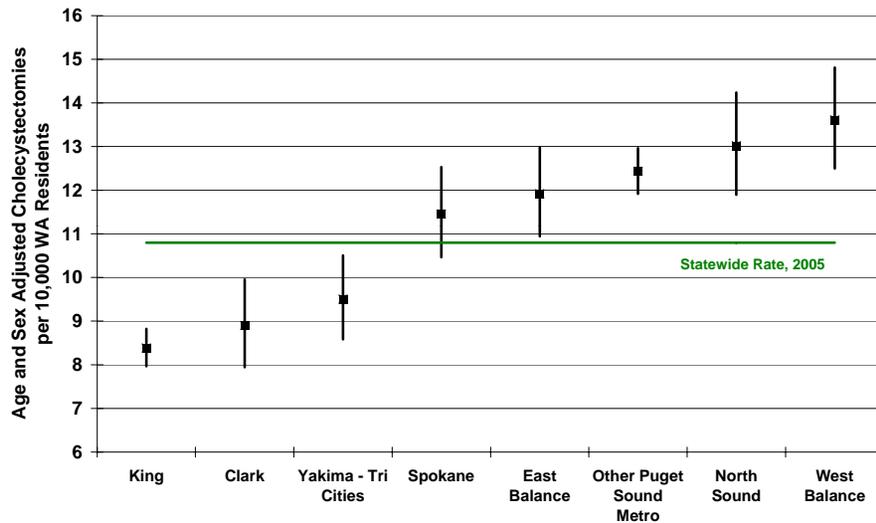


Age and Sex Adjusted Hysterectomy Rates, 1990-2005

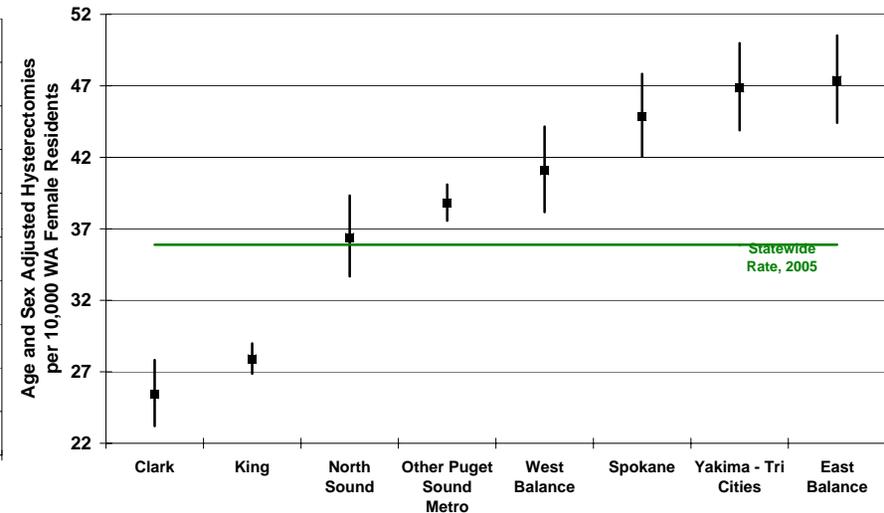


# Gallbladder Removal and Hysterectomy

Age and Sex Adj. Gallbladder Removal Rates by Region, 2005



Age and Sex Adjusted Hysterectomy Rates by Region, 2005



Extremal Quotients (excluding Clark)

**Gallbladder Removal: 1.62      Hysterectomy: 1.70**