



Physician Supply and Requirements in California through 2015

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Overview of Presentation

1. Project goals
2. State demographics
3. Physician workforce
4. Forecasting methodology and assumptions
5. Findings



Project Goals

1. To create a demographic profile of California's population in 2002 and 2015
2. To compile a current profile of physicians practicing in California
3. To identify factors affecting the California's physician supply in the coming decade



Project Goals (cont.)

4. To identify factors affecting requirements for physician services in California through 2015
5. To forecast and compare future physician workforce supply and requirements (under multiple scenarios) in California through 2015
6. To advise the University of California on policy options to better ensure an adequate supply of physicians in California through 2015



California Demographics

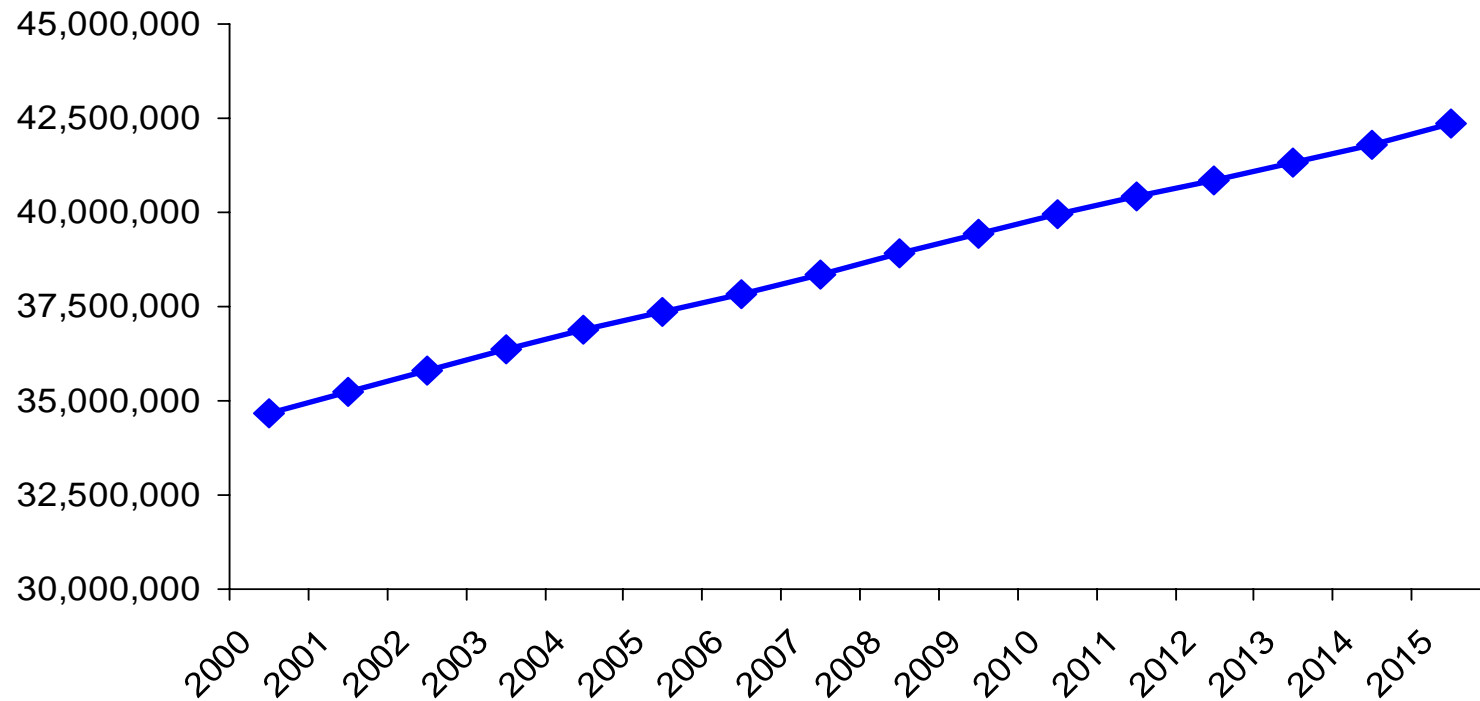


California Population

- 34.7 million (as of 2000)
- About 12% of Americans
- California population increased by 16% between 1990 and 2000 (compared to 13% for US).
- The population of California is projected to increase by 7.5 million (22%) between 2000 and 2015.



Projected Population Growth in California, 2000-2015



Source: California Department of Finance

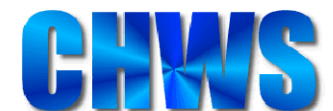




Projected Population Growth by Region, 2000-2015

<u>Region</u>	<u>2000 Population</u>	<u>2015 Population</u>	<u>% Change</u>
Bay Area	7,199,291	8,308,080	15%
Central Coast	1,874,448	2,370,148	26%
Central Valley/Sierra	1,149,033	1,591,237	39%
Inland Empire	3,298,337	4,859,820	47%
Los Angeles	8,838,861	10,978,502	12%
North Valley/Sierra	2,085,706	2,736,248	31%
Northern California	904,963	1,149,853	27%
Orange County	2,833,190	3,277,959	16%
San Diego	3,097,190	3,900,304	26%
South Valley/Sierra	2,372,133	3,198,748	35%
<i>Total</i>	34,653,395	42,370,899	22%

Source: California Department of Finance





Projected Population Change by Age Group, 2000-2015

<u>Age Group</u>	<u>Population Change</u>	<u>% Change</u>
Under 5 Years	653,131	24%
5 to 17 Years	1,040,259	15%
18 to 24 Years	1,394,232	44%
25 to 44 Years	- 117,247	- 1%
45 to 64 Years	3,188,320	44%
65 to 74 Years	1,144,704	59%
75 to 84 Years	195,247	15%
85 Years and Over	218,858	49%
<i>Total</i>	<i>7,717,504</i>	<i>22%</i>

Source: California Department of Finance



Racial/Ethnic Composition of California: 1990, 2000, and 2015

	<u>1990</u>	<u>2000</u>	<u>2015</u>
White (non-Hispanic)	57%	50%	42%
African American/Black (non Hispanic)	7%	7%	6%
Asian/Pacific Islander (non Hispanic)	9%	12%	14%
Native American/Alaskan Native (non-Hispanic)	0.6%	0.6%	0.6%
Hispanic/Latino	26%	31%	37%

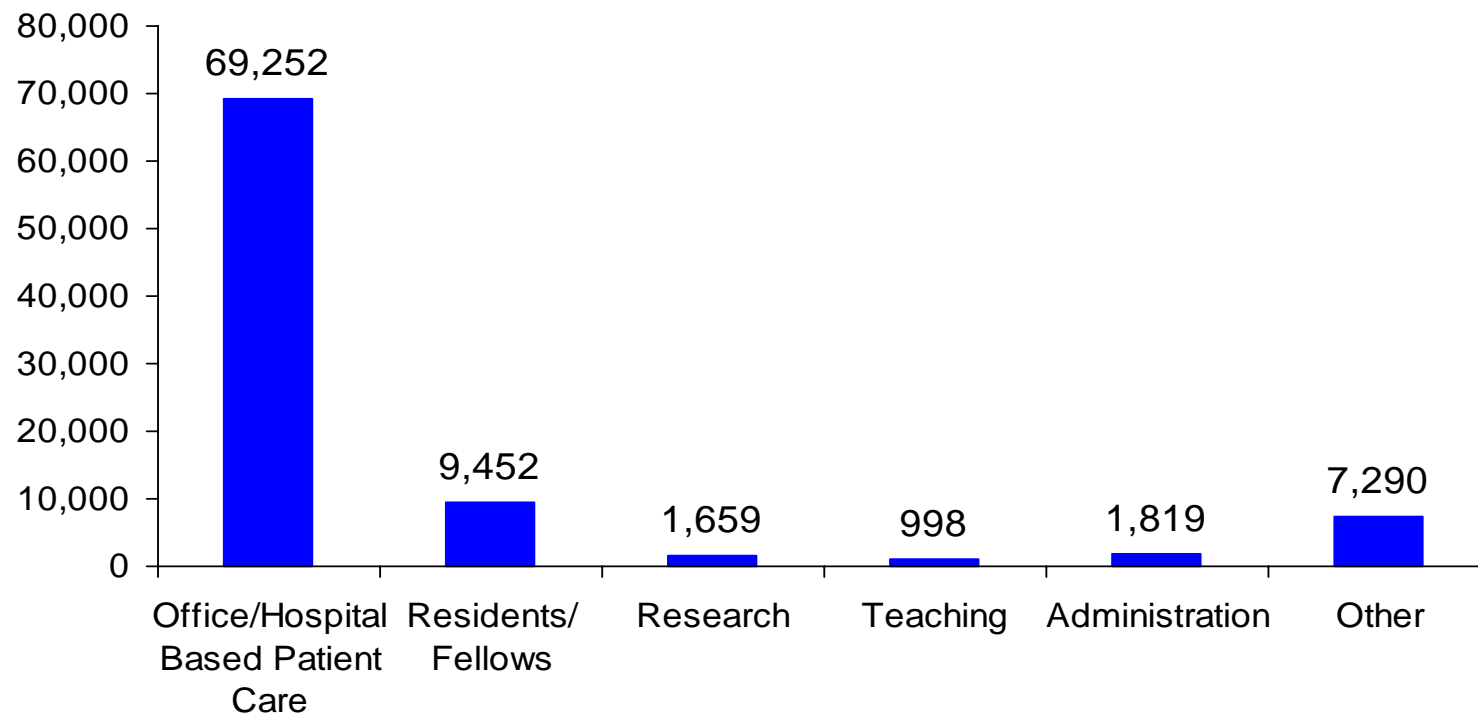
Source: California Department of Finance



California Physician Workforce



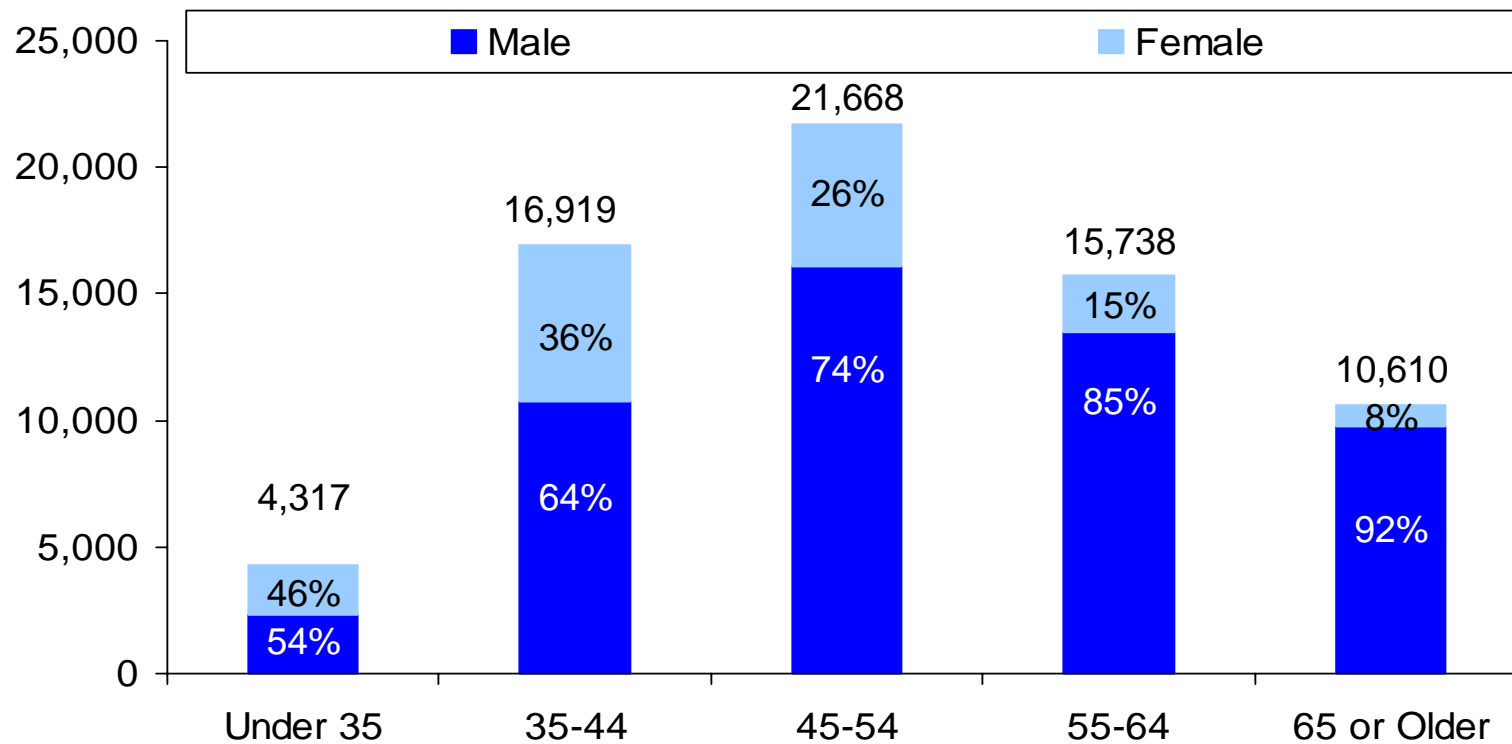
Number of Physicians in California by Activity, 2002



Source: AMA Physician Masterfile, 12/2002

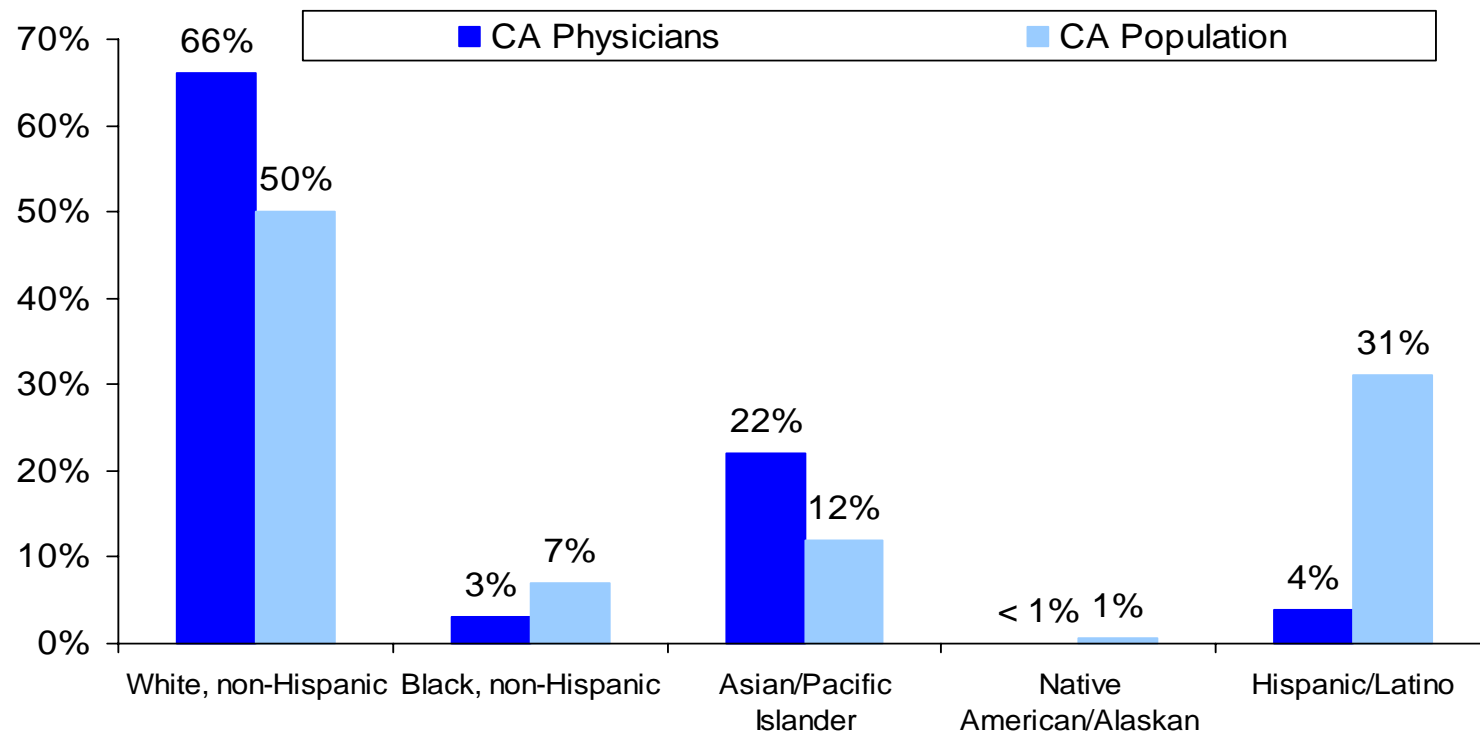


Gender of Active Patient Care Physicians in California by Age, 2002



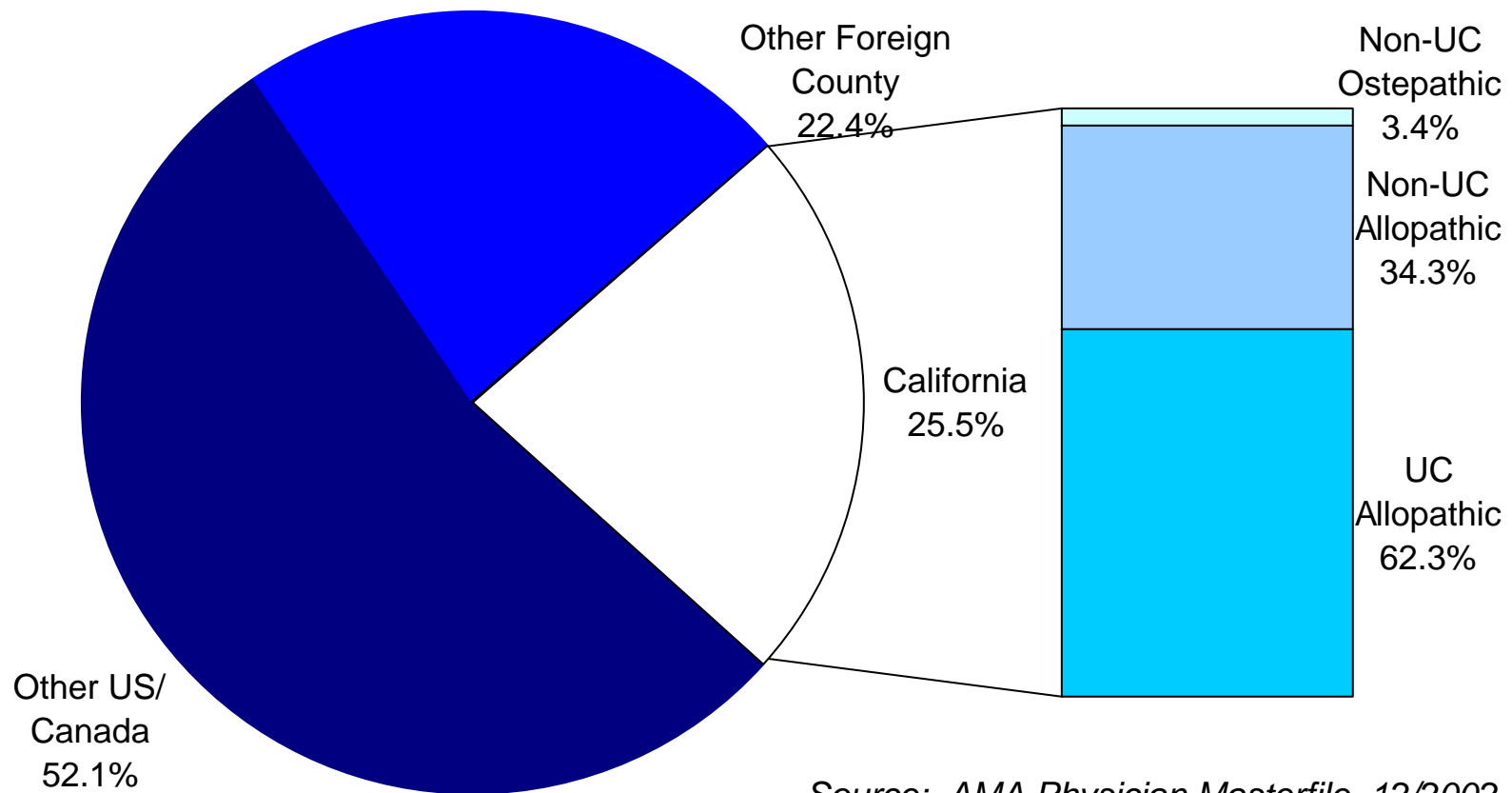
Source: AMA Physician Masterfile, 12/2002

Race/Ethnicity of Active Patient Care Physicians in California Compared to California Population, 2002



Sources: AMA Physician Masterfile, 12/2002; California Department of Finance

Location of Medical Education of Active Patient Care Physicians in California, 2002



Source: AMA Physician Masterfile, 12/2002



California Physician Supply and Requirements Forecasting



California Physician Supply and Requirements Forecasting: General Approach

- Develop simple forecasting model for physician supply
- Use existing forecasting model for physician demand
- Use historical data to inform forecasting models
- Develop alternative scenarios to supplement baseline forecasts
- Assumes supply equals requirements in base year



California Physician Supply Forecasting Model Details

Physician Supply Model Components

- Current active physicians
- New entrants
 - Graduate year 1 residents
 - In-flow from other states
- Separations
 - Retirements
 - Deaths



California Physician Supply Forecasting Model Details (cont.)

Physician Supply Model Equation:

Current year's active physician supply

=

Prior year's active physician supply

+

New Entrants and Net Migration

-

Retirements and Deaths



California Physician Supply Forecasting Model Details (cont.)

Assumptions

- *Entrants*: 1,900 graduate year 1 physicians annually (based on actual average annual graduate year 1 physicians in CA between 1996 and 2002)
- *Migration*: 900 other physicians initiating practice in CA annually (based upon historical estimates of non graduate year 1 physicians initiating practice in CA between 1996 and 2002)



California Physician Supply Forecasting Model Details (cont.)

Assumptions (cont.)

- *Retirements:* CA physicians will retire at the same rate as physicians retired nationally in the past (estimated retirement rate grows from 0.87% to 1.22% between 2002 and 2015 due to aging of physician workforce)
- *Deaths:* Physician death rates in CA will mirror national physician death rates (estimated death rate grows from 0.37% to 0.45% between 2002 and 2015)



California Physician Supply Forecasting Scenarios

Supply Scenario

Assumptions

1. *Baseline*

Historical trends remain constant over period

2. *Lifestyle Changes*

10% reduction in work hours phased in over period

3. *Productivity
Increases*

5% increase in physician productivity phased in over period

4. *Lifestyle/Productivity
Hybrid*

10% reduction in work hours and 5% increase in physician productivity phased in over period



California Physician Requirements Forecasting Details

- Application of the HRSA Physician Demand Model (PDM)
- Forecasts consider:
 - Population distribution (CA Dept of Finance)
 - Trends in population demographics (CA Dept of Finance)
 - Insurance coverage (US Census; Baumgarten 2002; California Health Interview Survey 2001)
 - Utilization rates (by Gender/Age/Specialty) (PDM)
 - Contribution of non-physician clinicians (PDM)



California Physician Requirements Forecasting Details

Assumptions

- Use rates remain constant over time (baseline data derived from national data - 2003 update of the PDM) by age, gender, insurance status, and setting.
- Physician productivity (time spent with a patient) remains constant over time (baseline data from national 2003 update of physician requirements – PARM)
- Physician requirements equal supply in 2002



California Physician Requirements Forecasting Insurance Environments

Physician requirements were forecast in two distinct insurance environments:

1. *Constant Insurance Environment*: current levels of health insurance remain over forecast period
2. *Expanded Insurance Environment*: universal health insurance/other barriers to care removed; historically uninsured use physician services similarly as historically insured



California Physician Requirements Forecasting Scenarios

Requirements Scenario

Assumptions

1. Baseline

Historical trends remain constant over period

2. Economic Expansion

1% annual increase in the per capita GSP in CA; requirements increase 0.75% for every 1% increase in per capita GSP

3. Changing Physician Utilization Rates

Age-specific physician utilization rates in CA will change between 2002 and 2015 similarly to those observed nationally between 1990 and 2000

4. Elimination of Unnecessary/Marginally Beneficial Services

5% of physician services in CA eliminated over forecast period



California Physician Requirements Forecasting Scenarios (cont.)

Requirements Scenario

Assumptions

*5. Economic
Expansion/Unnecessary
Services Reduction
Hybrid*

Combines assumptions in Scenarios 2 and 4

*6. Changing Physician
Use Rates & Unnecessary
Services Reduction
Hybrid*

Combines assumptions in Scenarios 3 and 4



California Physician Supply and Requirements Forecasting: Findings



California Physician Supply: 2002-2015 ***Total Physicians per 100,000 Population***

	<u>2002</u>	<u>2015</u>	<u>% Change</u>
<i>1. Baseline</i>	252.7	253.6	0.4%
<i>2. Lifestyle Changes</i>	252.7	238.4	- 5.7%
<i>3. Productivity Increases</i>	252.7	266.7	5.6%
<i>4. Lifestyle- Productivity Hybrid</i>	252.7	249.9	- 1.1%



California Physician Requirements: 2002-2015 (Constant Insurance Environment)

Total Physicians per 100,000 Population

	<u>2002</u>	<u>2015</u>	<u>% Change</u>
<i>1. Baseline</i>	252.7	258.3	2.2%
<i>2. Economic Expansion</i>	252.7	282.8	11.9%
<i>3. Changing Physician Use Rates</i>	252.7	278.6	10.3%
<i>4. Eliminate Unnecessary – Marginally Beneficial Services</i>	251.8	245.4	- 2.5%
<i>5. Econ Expans & Unnecessary Services Reduction Hybrid</i>	251.8	268.7	6.7%
<i>6. Changing MD Use Rates & Unnecessary Services Reduction Hybrid</i>	251.8	264.7	5.1%



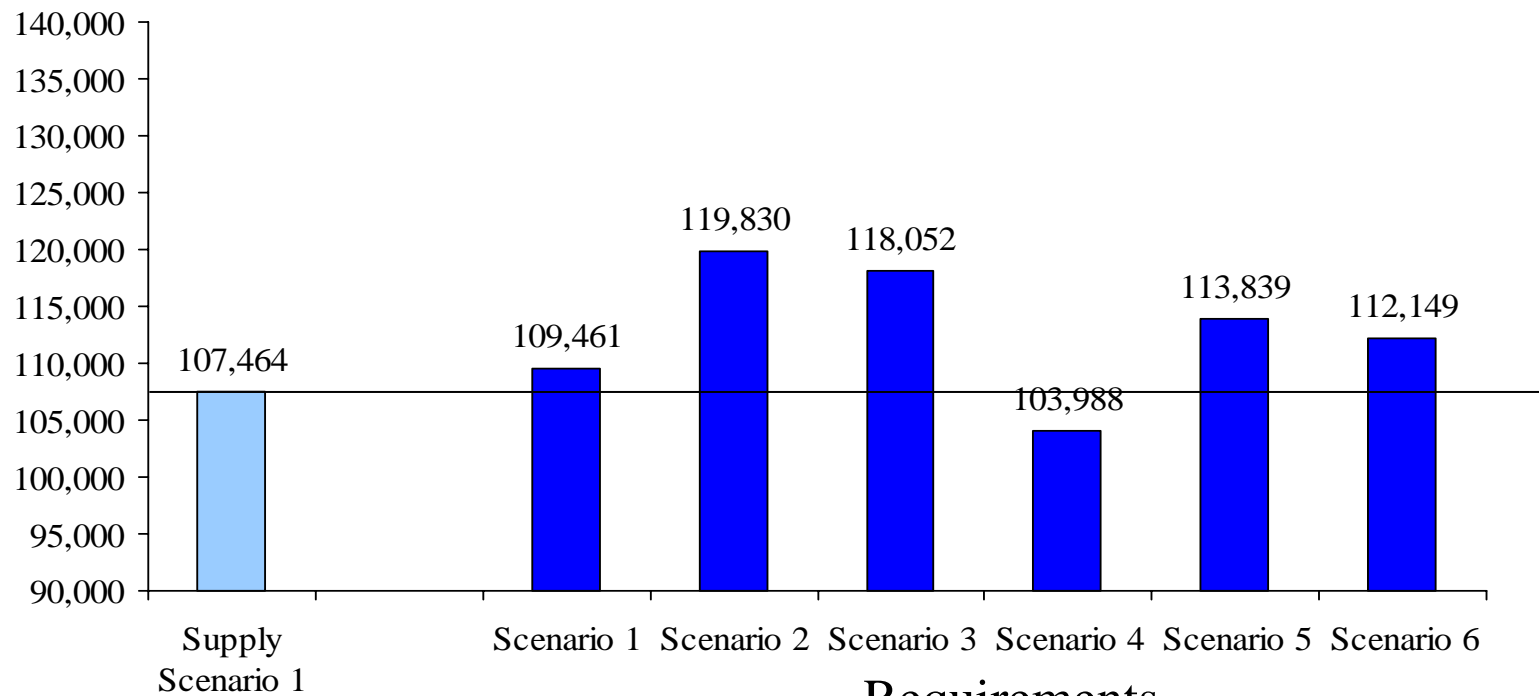
California Physician Requirements: 2002-2015 (Expanded Insurance Environment) Total Physicians per 100,000 Population

	<u>2002</u>	<u>2015</u>	<u>% Change</u>
<i>1. Baseline</i>	252.7	282.9	11.9%
<i>2. Economic Expansion</i>	252.7	309.6	22.5%
<i>3. Changing Physician Use Rates</i>	252.7	298.9	18.3%
<i>4. Eliminate Unnecessary – Marginally Beneficial Services</i>	251.8	268.7	6.7%
<i>5. Econ Expans & Unnecessary Services Reduction Hybrid</i>	251.8	294.2	16.8%
<i>6. Changing MD Use Rates & Unnecessary Services Reduction Hybrid</i>	251.8	283.9	12.8%



Physician Supply and Requirements in California, 2015: Supply Scenario 1

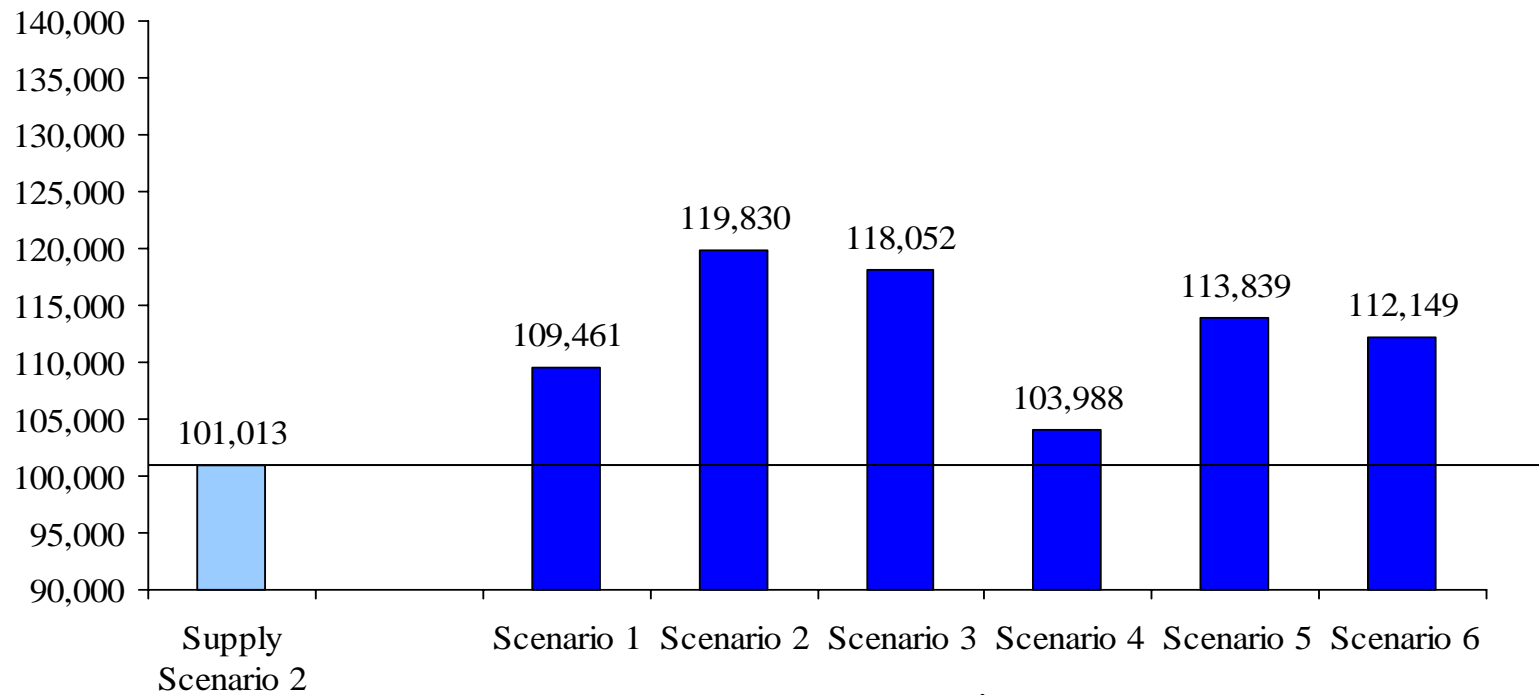
Baseline



Requirements
Constant Insurance Environment



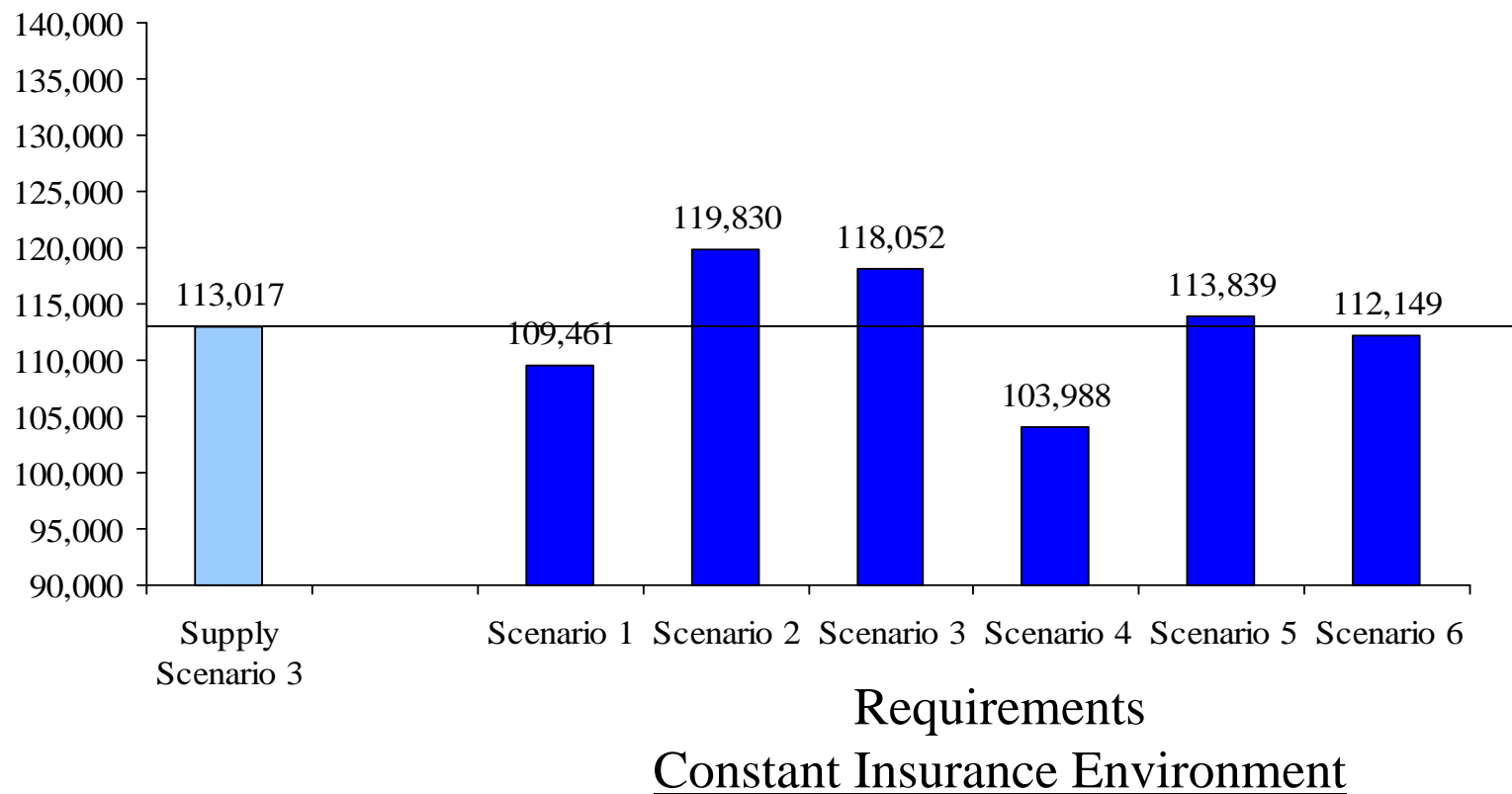
Physician Supply and Requirements in California, 2015: Supply Scenario 2 Lifestyle Changes



Requirements
Constant Insurance Environment

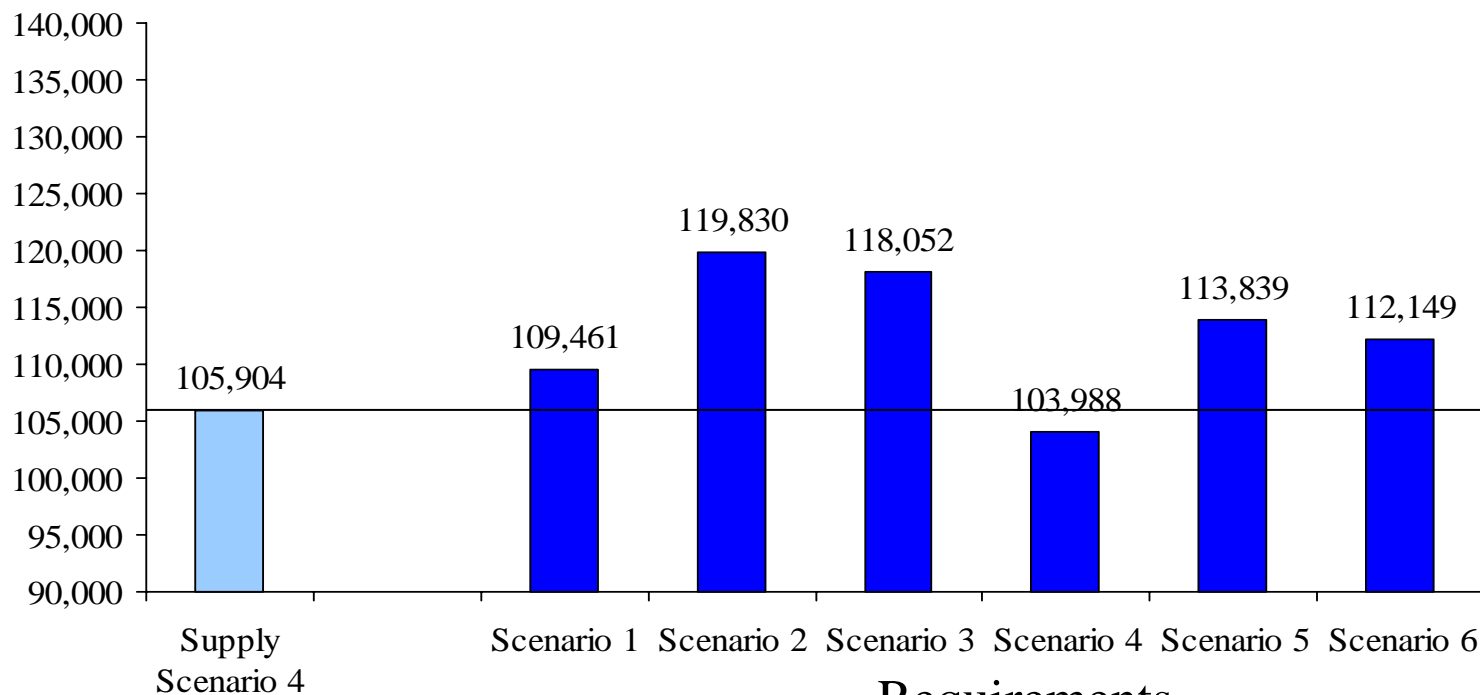


Physician Supply and Requirements in California, 2015: Supply Scenario 3 Productivity Increases





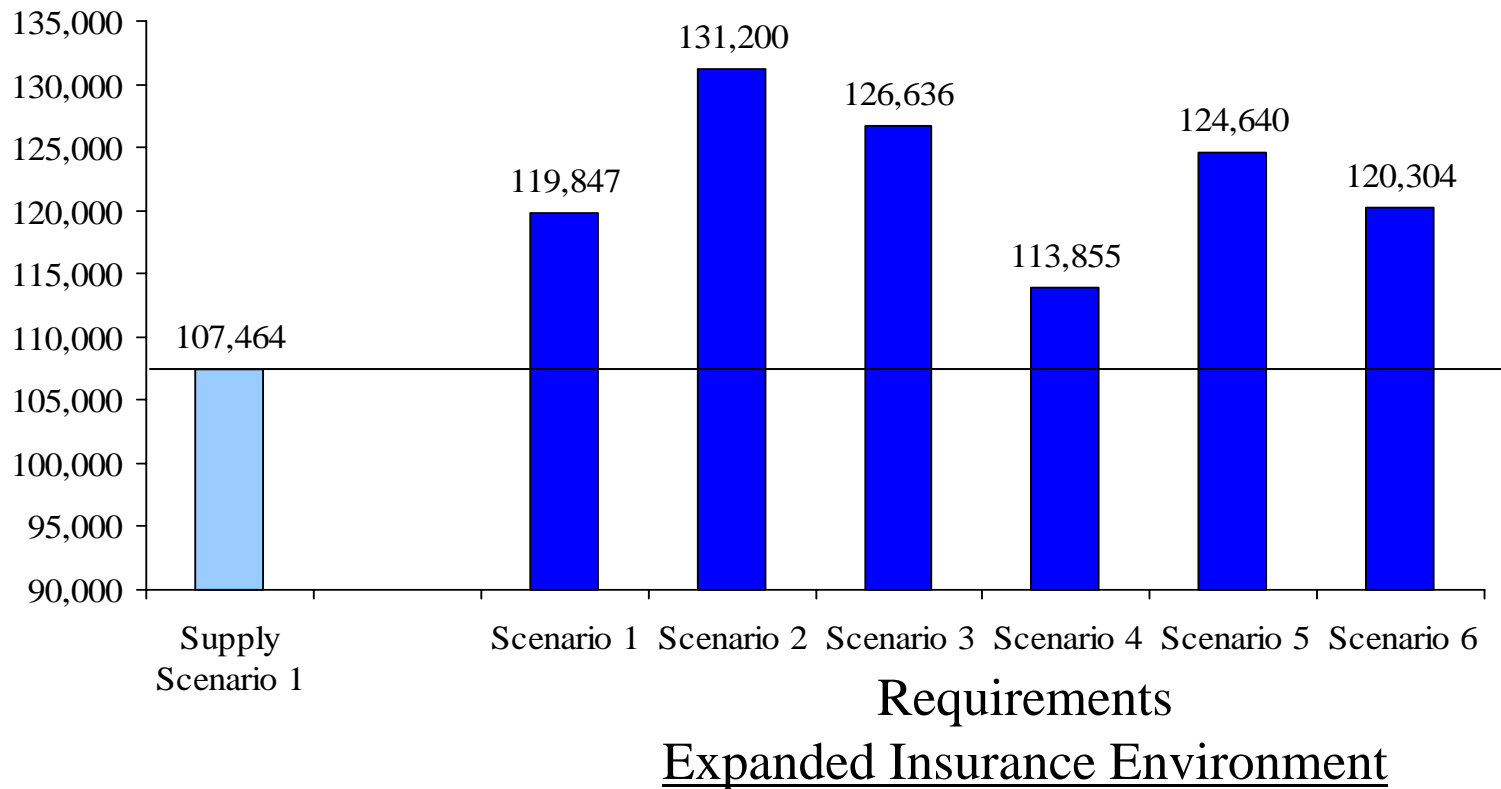
Physician Supply and Requirements in California, 2015: Supply Scenario 4 Lifestyle Changes/Productivity Increases Hybrid



Requirements
Constant Insurance Environment

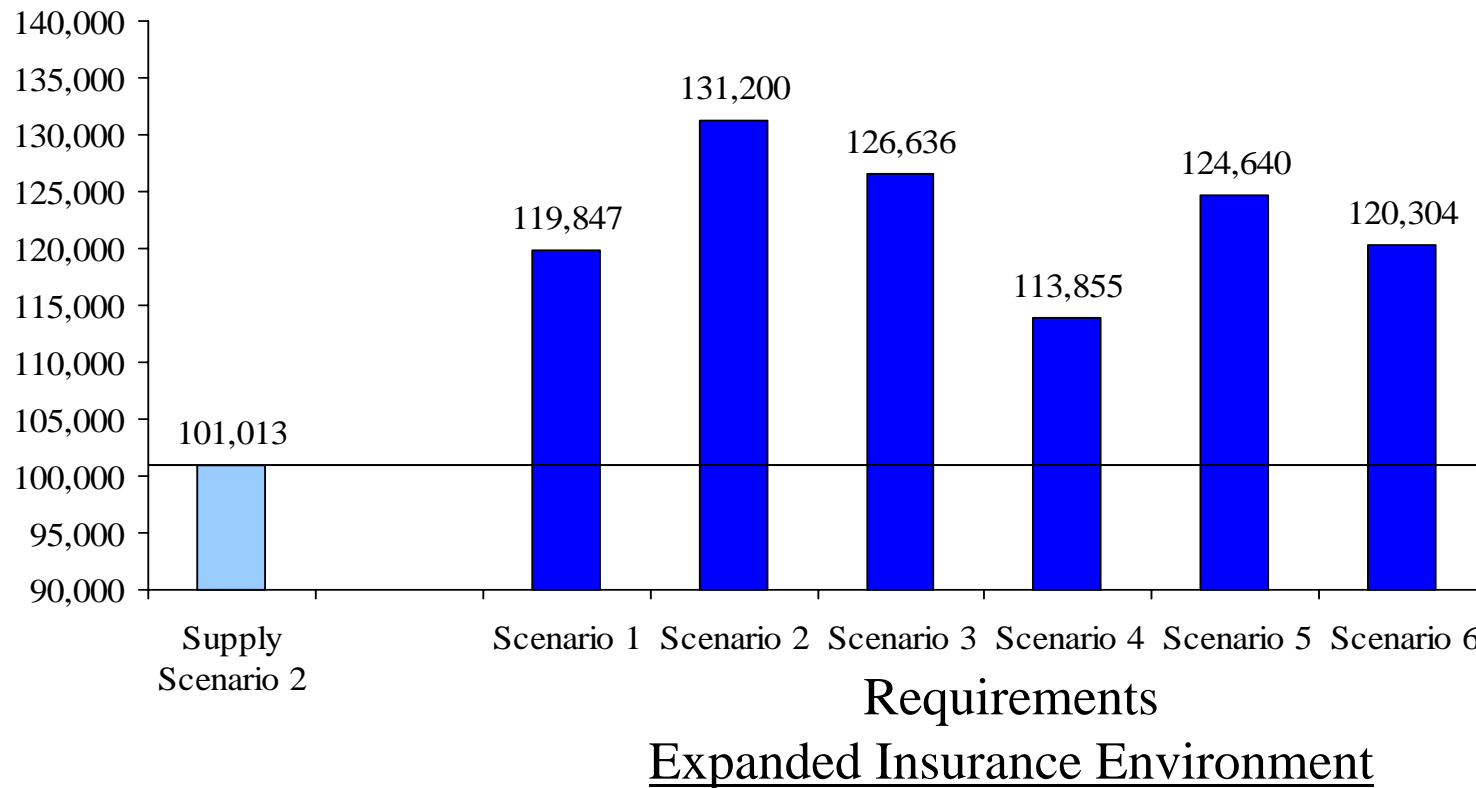


Physician Supply and Requirements in California, 2015: Supply Scenario 1 Baseline



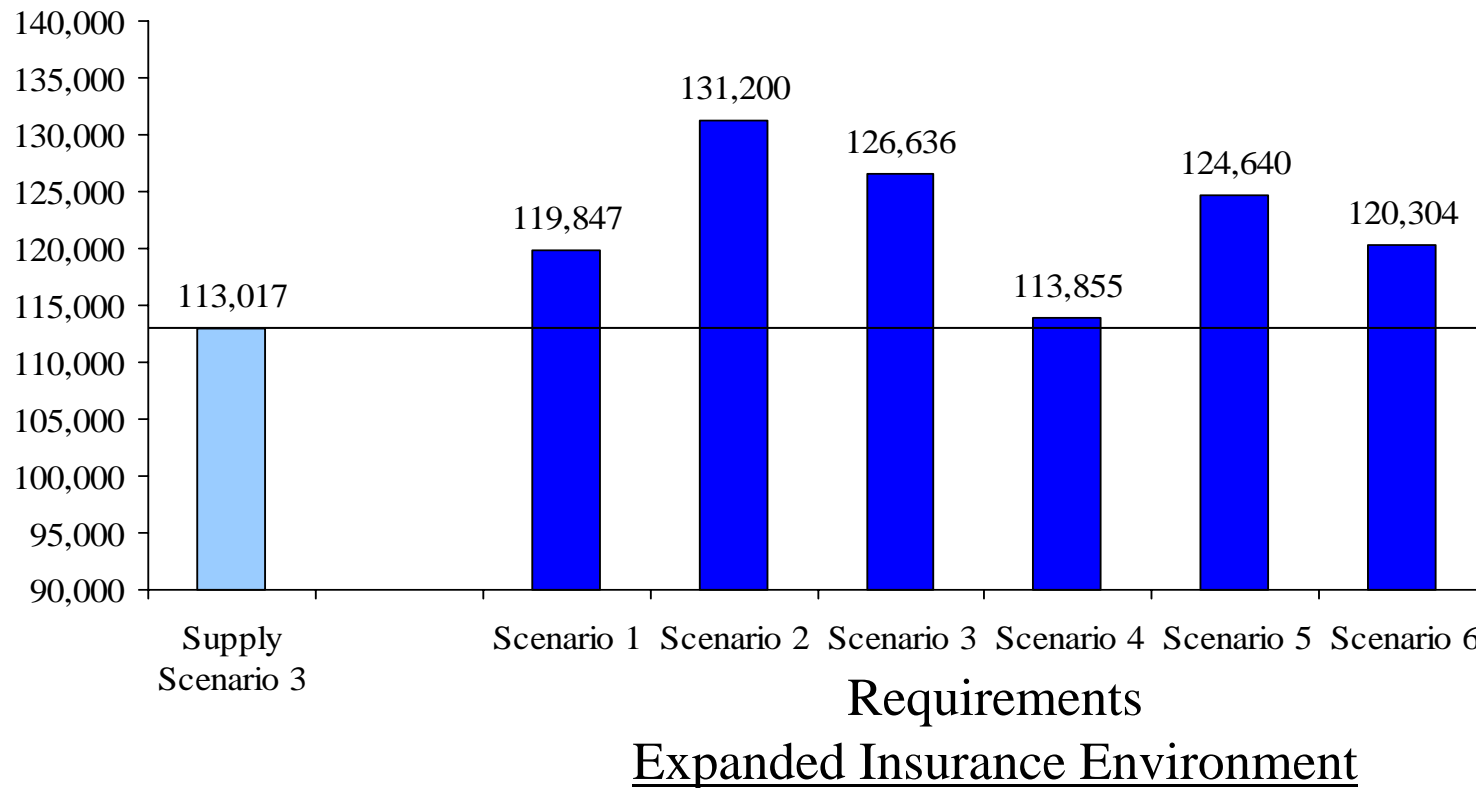


Physician Supply and Requirements in California, 2015: Supply Scenario 2 Lifestyle Changes



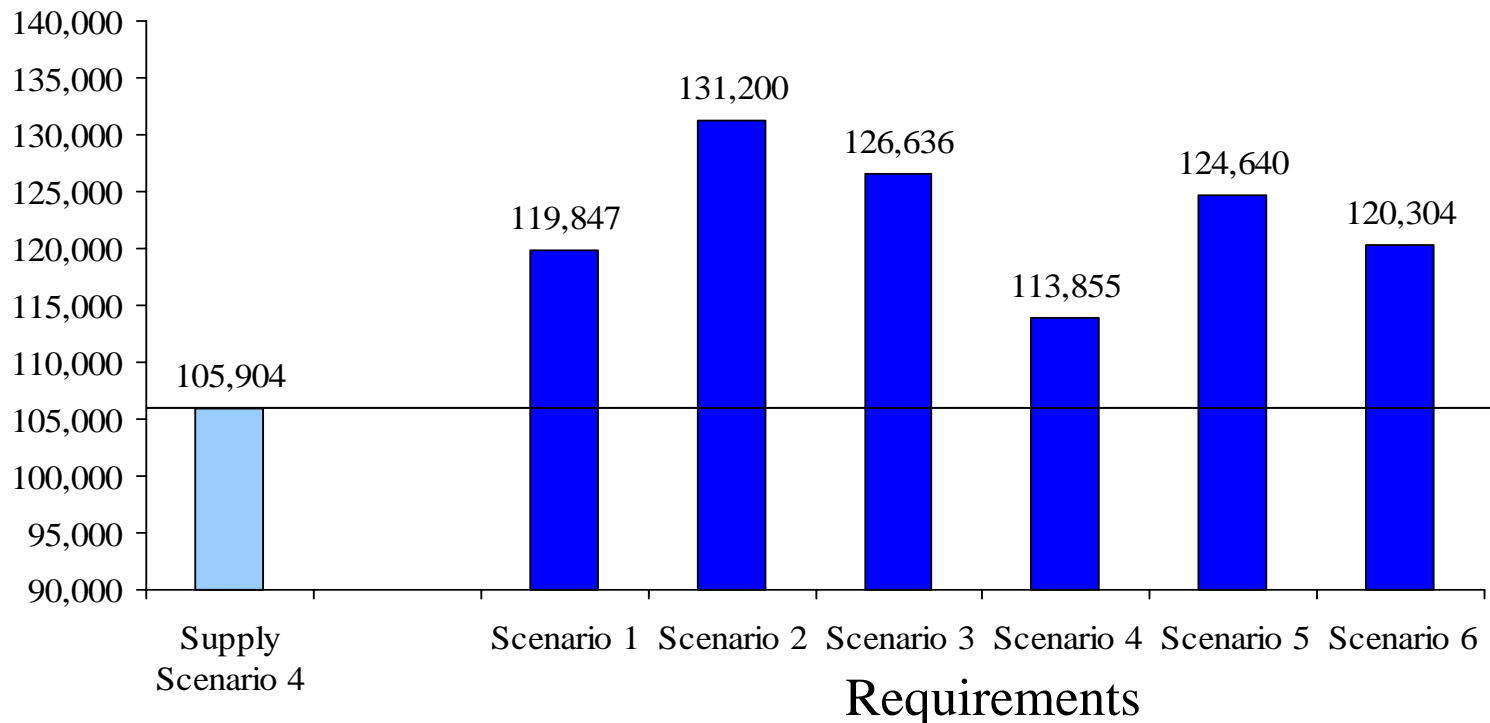


Physician Supply and Requirements in California, 2015: Supply Scenario 3 Productivity Increases





Physician Supply and Requirements in California, 2015: Supply Scenario 4 Lifestyle Changes/Productivity Increases Hybrid



Requirements
Expanded Insurance Environment



Mean Difference between Physician Requirements and Supply Growth, 2002-2015

	Supply Scenarios			
Mean Difference	1	2	3	4
Percent Difference	10%	16%	5%	11%
Absolute Difference	10,514	16,965	4,961	12,074



Conclusions

- California is likely to face a shortage of physicians in the next decade
- Even if these shortages are moderate statewide, they are likely to be severe in some communities and in some specialties
- There are a number of steps the state can take to increase the supply of physicians and to address the geographic mal-distribution of physicians
- Assessing physician supply and requirements combined with tools to address likely gaps are critical if California is to assure access to care for its citizens in the coming decades