TRENDS IN PHYSICIAN SUPPLY AND DEMAND

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TRENDS IN HEALTH EXPENDITURES
and the
DEMAND FOR ADVANCED CLINICAL SERVICES
MACRO-FORECASTING USING THE TREND MODEL

DEMAND

Economy
Population

FUTURE

Productivity
Relative

Demand

TRENDS

Substitution

Supply

SUPPLY

Sufficiency *
ECONOMIC GROWTH
↑~ 1.0%

4-5 year lag

MEDICAL CARE SPENDING
↑~ 1.5%

HEALTH CARE LABOR FORCE
↑~ 1.2%

10 year lag

PHYSICIAN SUPPLY
↑~ 0.75%
ECONOMIC DETERMINANTS OF HEALTH CARE SPENDING
AND THE DEMAND FOR PHYSICIANS

Infinite Possibilities

Financial Resources

GDP
ECONOMIC DETERMINANTS OF HEALTH CARE SPENDING AND THE DEMAND FOR PHYSICIANS

Infinite Possibilities

Infinite Desire

Social Equity

GDP
ECONOMIC CORRELATES RELATING TO THE DEMAND FOR PHYSICIANS
RELATIONSHIP BETWEEN PHYSICIAN SUPPLY and GROSS DOMESTIC PRODUCT 1929-2000

Active Physicians per 100,000 of Population


$0 → $10,000 → $20,000 → $30,000

GDP per Capita (1996 dollars)

Insufficient supply leading to medical school expansion in the 1970s.

Δ = 1.5%/capita/yr
STATE PER CAPITA INCOME vs. STATE PHYSICIAN SUPPLY
1996

Physicians per 100,000 of Population

State Per Capita Income (1996 $)

R² = 0.5273

States

Florida
STATE PER CAPITA INCOME vs. STATE PHYSICIAN SUPPLY
1970 and 1996

1970 data from Reinhardt, 1975
PHYSICIAN SPECIALTIES vs. STATE PER CAPITA INCOME
1995

Physicians Per 100,000 Population

Personal Income Per Capita

Medical Specialists
Surgical Specialists
Family/General Practice
PER CAPITA INCOME vs PHYSICIAN SUPPLY in Metropolitan Statistical Areas (MSAs)

Physicians per 100,000 of Population

Medical Specialists
Surgical Specialists
Family Practice

Per Capita Income

Residents included
PER CAPITA INCOME vs PHYSICIAN SUPPLY in Metropolitan Statistical Areas (MSAs)

- Per Capita Income
- Physicians per 100,000 of Population

- Miami
- West Palm

- Medical Specialists
- Surgical Specialists
- Family Practice

Residents included
PHYSICIAN DEMAND TREND
vs. GROSS DOMESTIC PRODUCT
1929-2000 and Projected to 2020

GDP ↑ 2.0% per capita per year

GDP ↑ 1.0%

Health spending ↑ ~1.5%

Health workforce ↑ ~1.2%

Physician workforce ↑ ~ 0.75%
PHYSICIAN DEMAND and SUPPLY
vs. GROSS DOMESTIC PRODUCT
1929-2000 and Projected to ~2020

Active Physicians per 100,000 Population

GDP per Capita (1996 dollars)

1929
1980
2000
Approximately 2020
Projected Supply
PHYSICIAN DEMAND and EFFECTIVE SUPPLY
1929-2000 and Projected to ~2020

GDP per Capita (1996 dollars)

Active Physicians per 100,000 of Population

1929
2000
Projected Supply
Effective Supply
Approximately 2020

Physician age
Female physicians
Lifestyle, Employment
Nonclinical careers
Early retirement
Resident hours
PHYSICIANS, NONPHYSICIAN CLINICIANS and OTHER HEALTH WORKERS
1850-2010

Adapted from Kendix and Getzen and the Bureau of Labor Statistics
OVERLAPPING RESPONSIBILITIES OF PHYSICIANS AND NONPHYSICIAN CLINICIANS

PHYSICIANS

- Complex Care
- Multisystem Disease Care
- Chronic Disease Management
- Minor and Self-Limited Disorders
- Symptom Control
- Wellness Care and Prevention
- Counseling and Education

NONPHYSICIAN CLINICIANS
PHYSICIAN DEMAND and SUPPLY of PHYSICIANS and NPCs
1929-2000 and Projected to ~2020

Active Physicians per 100,000 Population

GDP per Capita (1996 dollars)

Approximately 2020

Added Nonphysician clinicians

Nonphysician clinicians

NPs, PAs, Midwives
Psychologists, Clinical Soc. Workers
Chiropractors, Acupuncturists
Optometrists, Podiatrists
Nurse Anesthetists

1929

2000

100

$0

$10,000

$20,000

$30,000

$40,000

$50,000

$0

$10,000

$20,000

$30,000

$40,000

$50,000

$0

$10,000

$20,000

$30,000

$40,000

$50,000
TREND PROJECTIONS
OF THE DEMAND FOR PHYSICIANS
BUREAU OF LABOR STATISTICS
HEALTH SERVICES EMPLOYMENT
2000-2015

Trend Model
Health Care Employment

Employment x1,000

Year

Bureau of Labor Statistics
Health Care Employment
HEALTH RESOURCES AND SERVICES ADMINISTRATION
DEMAND FOR NURSES
2000-2020

Demand for Physicians and Nurses,
% of 2000

Trend Model
Physicians

HRSA Nurses
“The lagged impact of an improving economic environment (with an average lag of about three years) was the primary driver in the steady increase in the use and intensity of personal health care from 1999 to 2002.”

(CMS, 2004)
VARIOUS PHYSICIAN TREND PROJECTIONS

Physician Supply
Supply projections
Salsberg (COGME) 2003
Lewin (BHP) 2003
BLS 1982-2000
Schwartz 1988
Cooper 1994
Cooper 2002
PLANNING PARAGIGMS
TASK AND TIME MODELS

Appropriate Tasks \( \rightarrow \) Visits \( \times \) Time per Visit = FTEs Needed

\[ \text{Time per Doc} \]

Adjusted needs model (GMENAC)
\[ = >750 \text{ diseases} \]

Demand-utilization model (BHPPr)
Demographic (age/race/gender = 36) \( \times \) Insurance (3) \( \times \)
Specialties (18) \( \times \) NCHS Datasets (5)
\[ = 9,720 \text{ cells} \]

Managed care model (Weiner)
Count all the HMO docs
? Missed docs, different patient characteristics ?
40 hour doc = 1.0 FTEs.
PHYSICIAN SUPPLY and DEMAND

Physicians

Physician Supply
Supply projections
- Salsberg (COGME) 2003
- BLS 1982-2000
- Schwartz 1988
- Cooper 1995
- Cooper 2002

Demand Trend
Supply
Task and Time Models
THE SHAPE OF PHYSICIAN SUPPLY
NOW AND INTO THE FUTURE
DEFICIT WITH NO ADDITIONAL USMGS or IMGs

GDP per Capita (1996 dollars)

Active Physicians per 100,000 of Population

~2020-2025

Deficiency ~200,000 physicians (~20%)

You are Here
INDICATIONS OF CURRENT AND IMPENDING PHYSICIAN SHORTAGES

Waiting times for patients
Salaries, bonuses for new physicians
Refusal by physicians to accept Medicare patients
Boutique (VIP) practices
Recruiters and surveys
Resident exit surveys
Federal forecasters
  Bureau of Labor Statistics
  Health Care Financing Adm. (CMS)
State medical associations
  California, Massachusetts, Arizona, New Mexico, Oregon, Texas
Medical school deans
GREATEST CURRENT PHYSICIAN SHORTAGES

Anesthesiology
Radiology
Cardiology
Gastroenterology
Orthopedics
Dermatology
Oncology
Urology
Pulmonary/Critical Care
Emergency medicine
General surgery
Neurosurgery
Neurology
Ob/Gyn
Pediatric sub-specialties
Psychiatry

...and early signs of shortages in primary care
THE IMPERATIVE

The conditions that have led to the current physician shortages have been evolving for more than a decade.

To continue to do nothing invites public discontent and forces the profession of medicine to redefine itself in ever more narrow scientific and technological spheres.

Yet, the solutions are neither simple nor immediate.

These circumstances demand consensus building and thoughtful planning.
Thank you.