



Health Workforce Metrics: Evaluating Supply, Demand and Need for Health Workers

Community Health: The Foundation of Patient Centered Care

White Plains, NY

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Center for Health Workforce Studies
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The Center for Health Workforce Studies

- Based at the School of Public Health at SUNY Albany
- Our mission is to provide timely, accurate data, and conduct policy-relevant research about the health workforce
- Our goal is to inform public policies, the health and education sectors and the public



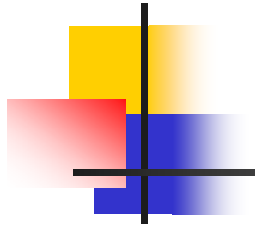
Health Workforce Research: Finding the Right Level of Analysis

- Workforce shortages are often **national** in scope
- But effects are **local** (e.g., limited access to primary care or limited ability to refer to specialty care)
- Health care organizations are often pressed to find solutions without outside assistance



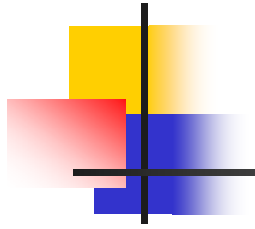
Influences on Health Workforce Shortages and Issues

- Health workforce shortages and issues are influenced by:
 - Salaries and other compensation
 - Educational opportunities
 - Population demographics and characteristics
 - Career opportunities
 - Changing demand, therapies, and technology



Why It Matters

- A health care system is only as good as its workforce
- The workforce directly impacts on:
 - Quality
 - Cost
 - Access
 - Outcomes



Health Workforce Measures

- Define problems
- Inform policy options
- Evaluate effectiveness of programs to address supply/demand imbalances in the health workforce
- Used in conjunction with other data to understand gaps in service



What Can We Measure?

- Supply
- Demand
- Need
- Requirements



Supply of Health Workers

- Represents the number of health personnel either working or available to work in health care
- Options for measuring supply:
 - Number of individuals
 - Number of jobs
 - Full time equivalents (FTEs)
 - Per capita ratios, e.g., FTEs/100,000



Measures of Supply are Not Equal

- Number of individuals
 - Does not indicate level of effort (hours worked)
 - May indicate maximum supply (licensure data)
 - Does not indicate reasonableness of supply
- Number of jobs
 - Does not indicate level of effort
 - Does not indicate number of individuals filling those jobs (BLS OES)
 - Does not indicate reasonableness of supply



Measures of Supply are Not Equal

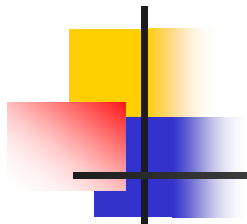
- FTEs
 - Does not indicate the number of individuals
 - Does not indicate maximum supply available
 - Does not indicate reasonableness of supply
- Per capita ratios
 - May not indicate level of effort
 - May not indicate the number of individuals filling those jobs
 - May not indicate the maximum supply available
 - Does indicate the reasonableness of supply (compared to other areas or to a standard)



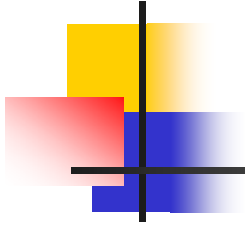
Turnover and Vacancy Rates also Measure Supply and Demand Issues

- Annual turnover rate – the number of individuals who leave employment within the year
(number who left/(number who left + number currently employed))
- Annual vacancy rate – the number of vacant (budgeted) slots
(number of vacant slots/total number of slots)

Questions from the 2006 Home Care Survey



		RNs	LPNs
Number of Filled Budgeted Positions on 9/30/04 (Do not include positions that were filled with temporary or contract staff)	Full Time		
	Part Time		
Number of Vacant Budgeted Positions on 9/30/04 for Which Active Recruitment was Underway	Full Time		
	Part Time		
Number of Budgeted Positions Filled with Temporary or Contract Staff on 9/30/04.	Full Time		
	Part Time		
Number of Employees on Payroll on 9/30/04 (Do not count temporary or contract staff)			
Number of Employees Whose Employment Ended Between January 1 st and December 31st, 2004.			
Average Time Needed to Fill a Vacant Position (in Months) in 2004.			
Recruiting Staff in this Title is: (1 = Very Easy – 5 = Very Difficult).		1 2 3 4 5	1 2 3 4 5
Retaining Staff in this Title is: (1 = Very Easy -- 5 = Very Difficult).		1 2 3 4 5	1 2 3 4 5



SUPPLY SIDE RESEARCH: The US Health Workforce Profile (the view from 50,000 feet)

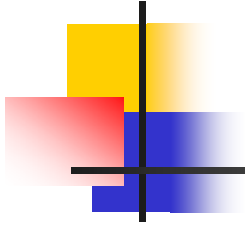


Source: American Medical Association; American Osteopathic Association; U.S. Census Bureau.



Advanced Practice Nurses, 2004

State	<i>NPs per 100K</i>	<i>CRNAs per 100K</i>	<i>CNMs per 100K</i>
Alabama	22.07	0.95	31.59
Alaska	129.68	7.78	38.14
Arizona	45.74	2.75	5.50
Arkansas	52.39	0.84	22.27
California	34.94	2.44	4.82
Colorado	50.40	4.93	13.71
Connecticut	73.78	4.28	12.84
Delaware	97.55	2.77	0.00
District of Columbia	142.54	5.42	39.02
Florida	58.06	2.87	16.15
Georgia	35.82	3.73	15.57
Hawaii	31.67	2.85	0.87
Idaho	53.62	1.44	23.61
Illinois	19.83	2.31	0.00
Indiana	2.40	1.35	0.00
Iowa	49.45	2.03	13.20
Kansas	45.73	1.61	25.33
Kentucky	37.22	2.29	22.58
Louisiana	25.67	0.84	24.49
Maine	68.63	5.09	32.57



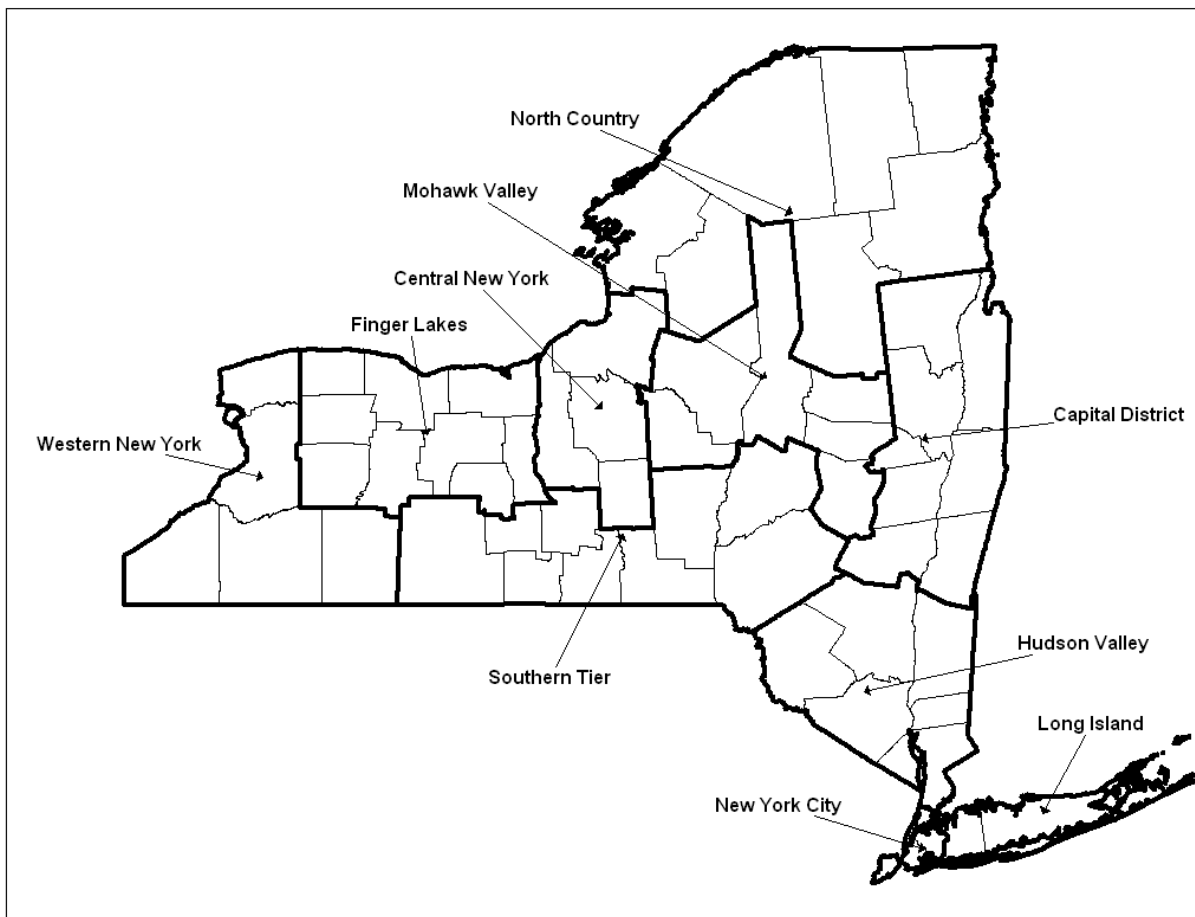
SUPPLY SIDE RESEARCH:

New York State Physician Profile

New York State 2006 Health Workforce Report

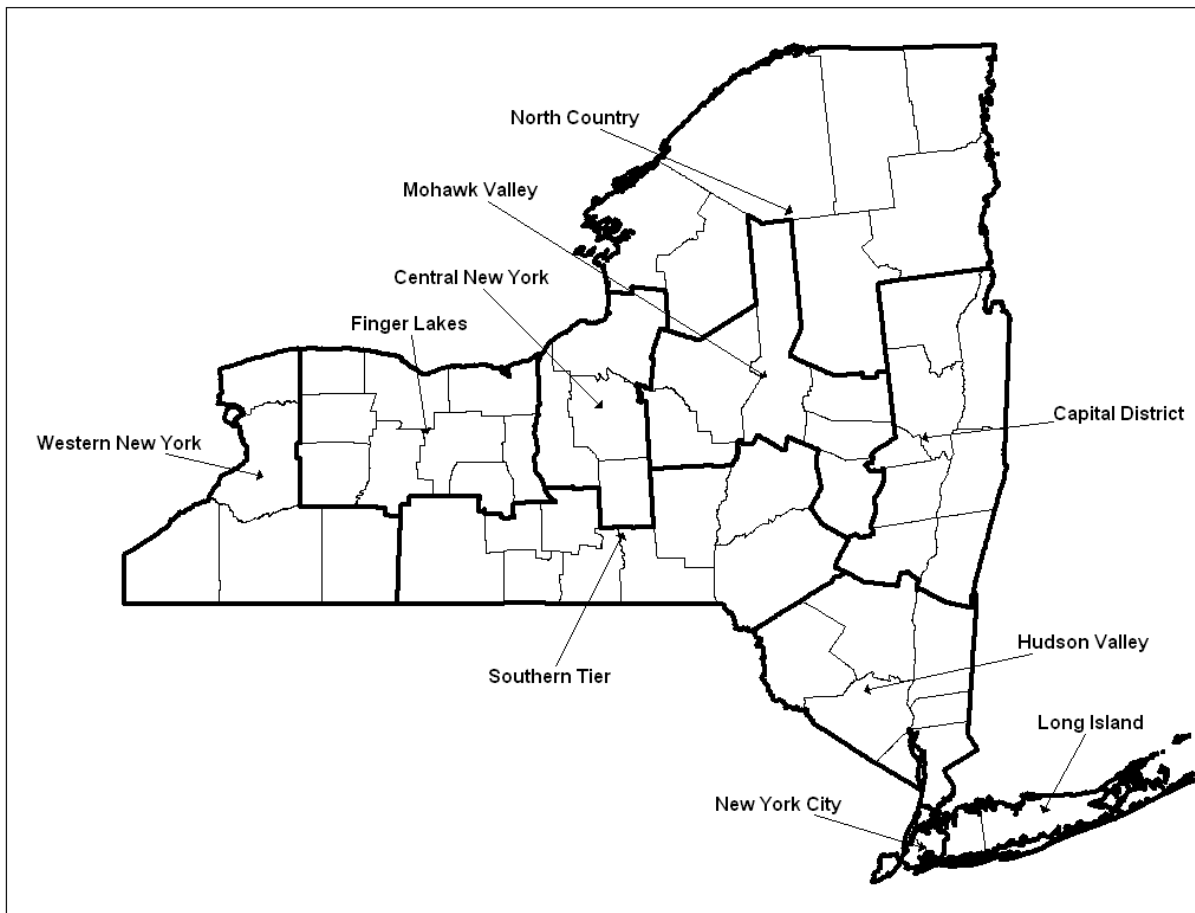
(the view from 10,000 feet)

Per Capita FTE Physician Supply and Change 2002 – 2006



Region	Supply	Change
Capital District	248	1%
Central NY	240	2%
Finger Lakes	238	1%
Hudson Valley	293	2%
Long Island	331	7%
Mohawk Valley	167	-7%
NYC	332	6%
North Country	184	1%
Southern Tier	241	4%
Western NY	224	0%

Per Capita FTE Primary Care Physician Supply and Change 2002 – 2006



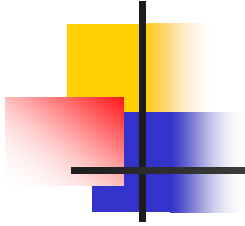
Region	Supply	Change
Capital District	79	7%
Central NY	67	-6%
Finger Lakes	81	0%
Hudson Valley	91	3%
Long Island	92	2%
Mohawk Valley	67	-2%
NYC	99	4%
North Country	67	-3%
Southern Tier	82	5%
Western NY	72	0%



Recruitment and Retention Difficulties for Nursing Homes in the Hudson Valley Region

Recruitment and Retention Difficulties for Nursing Homes for Selected Occupations in the Hudson Valley Region

Occupation	Average Assessment of Difficulty		Percent of Respondents who Indicated Reasons for Difficulties			
	Recruitment	Retention	Shortage of Workers	Competition for Workers	Salary Levels	Working Conditions
Certified Nurse Aides	3.0	3.3	36%	43%	36%	21%
Clerical	2.2	1.9	0%	0%	42%	17%
Dietitians/Nutritionists	3.2	2.3	22%	33%	33%	0%
Licensed Practical Nurses	3.9	3.6	43%	57%	43%	14%
Physical Therapists	3.7	2.7	42%	50%	33%	8%
Occupational Therapists	3.5	2.5	38%	46%	31%	8%
Registered Nurses Experienced	4.2	3.9	64%	79%	36%	29%
Newly Trained	3.6	3.7	55%	64%	27%	27%
Respiratory Therapists	2.0	1.5	0%	0%	0%	0%
Social Workers MSWs	3.0	2.6	11%	33%	22%	0%
BSWs	3.0	2.8	17%	17%	33%	0%



SUPPLY SIDE RESEARCH:
2002 CHC Study
2006 Home Care Study
(the view from next door)



Vacancy Rates from the 2002 CHC Survey

Vacancy Rates of CHC Workforce			
	Statewide	Downstate	Upstate
Nursing Staff			
Medical Assistants n=189	4.8	3.1	13.8
Registered Nurses n=144	14.6	12.8	18.4
Licensed Practical Nurses n=146	15.8	16.7	13.4
Mental and Behavioral Health Workers			
Case Managers n=73	5.5	1.9	15.8
Counselors n=42	16.7	21.9	0
Social Workers n=58	17.2	19.3	9
Outreach Workers n=55	19.2	19.5	18.5
Substance Abuse Counselors n=37	21.6	31.6	11.1
Mental Health Counselors n=23	21.7	33.3	0
HIV Counselors n=25	24.0	25.5	0
n=budgeted positions			



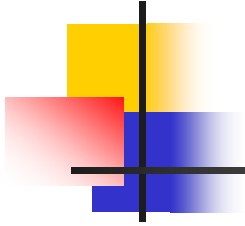
Turnover Rates by Occupation from 2006 Home Care Survey

Upstate New York Turnover Rates by Occupation

Occupation	Turnover Rates		
	Low	Medium	High
Home Health Aides	18.0%	6.0%	76.0%
Personal Care Aides	44.4%	0.0%	55.6%
Registered Nurses	33.3%	12.5%	54.2%
LPNs	67.6%	0.0%	33.4%
Social Workers	67.6%	2.9%	29.5%
Physical Therapists	72.7%	0.0%	27.3%

Downstate New York Turnover Rates by Occupation

Occupation	Turnover Rates		
	Low	Medium	High
Registered Nurses	40.2%	5.2%	54.6%
LPNs	48.1%	3.7%	48.2%
Home Health Aides	45.7%	8.7%	45.6%
Personal Care Aides	44.4%	14.8%	40.8%
Social Workers	70.6%	2.9%	26.5%
Physical Therapists	80.0%	0.0%	20.0%



DEMAND STUDY: NYS Resident Exit Survey: Trends in Demand for New Physicians



Demand for Health Workers

- **Demand** - willingness of employers (or individuals) to purchase the services of a health worker at a particular compensation level



Assessing Relative Demand for Physicians by Specialty

- Variables of interest:
 - Difficulty finding a practice position
 - Changing plans due to limited practice opportunities
 - Mean number of job offers
 - Assessment of regional job market
 - Assessment of national job market
 - Median starting income



Relative Demand was Stronger for Specialists and Weaker for Primary Care Physicians

Summary of Relative Demand by Specialty for 35 Specialties Based on Responses to the NYS Resident Exit Survey, March, 2008

Strong Demand

Dermatology
Pulmonary Disease
Gastroenterology
Cardiology
Urology

Moderately Strong Demand

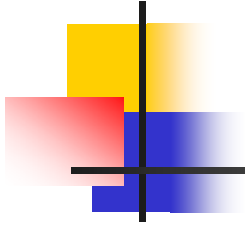
Psych-Child & Adol
Anesthesiology-Gen
Psychiatry-Adult
Orthopedic
Radiology

Moderately Weak Demand

Neurology
IM & Pediatrics (Combined)
Surgery-General
Family Medicine
Internal Med-General
Otolaryngology

Weak Relative Demand

Hematology/Oncology
Geriatrics
Pediatric Subspec
Pathology
Physical Med & Rehab
Pediatrics-General



NEED STUDY: Shortage Area Studies



Need for Health Workers

- **Need** - a normative judgment about the ideal number of health workers that should be available to “deliver safe, effective, or high quality care” in a particular area or population, regardless of ability to pay



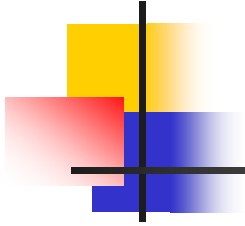
Health Professional Shortage Areas

- Health Professional Shortage Areas (HPSAs) assess
- Populations in need
 - Entire population
 - Special population group (homeless, low-income, etc.)
- Physicians available to treat the population being designated



Medically Underserved Areas/Populations

- Medically Underserved Areas/Populations (MUAs/Ps) assess
 - Populations in need
 - Entire population
 - Special population group (homeless, low-income, etc.)
 - Characteristics within the population being designated that demonstrate need
 - % below 100% of Federal Poverty Level
 - % 65 and older
 - Infant mortality rate
 - Physicians available to treat the population being designated

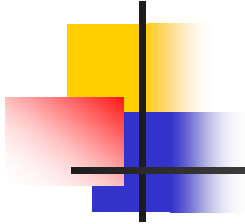


REQUIREMENTS STUDY: Supply/Demand & Need Forecasting Studies



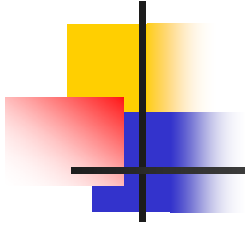
Requirements Studies

- Considers supply, demand, and need
 - Assesses educational supply
 - Estimates health personnel needed to achieve desired levels of health care for specific population groups or geographic regions
 - The estimates generally involve adjustments to actual or hypothetical evaluations of demand



Project Components

- Center is developing forecasting models for several health occupations looking at:
 - Current supply
 - Education and training pipeline and requirements
 - Population and demographic trends
 - Trends in health care delivery and technology
 - Future supply, need, and demand



What You Need to Consider When Conducting Your Own Workforce Analysis



Requirements for Effective Health Workforce Assessments

- **DATA** to answer to basic questions:
 - How many do we have?
 - When do they enter and leave practice?
 - Where do they practice?
 - What do they practice?
- **POLICY AND RESOURCES**
 - To support independent, longitudinal health workforce research



Resources for Effective Health Workforce Assessments

■ Sources of Workforce Data

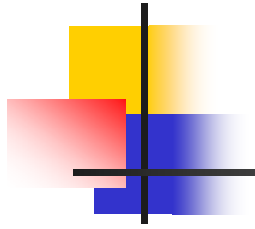
- U.S. Bureau of Labor Statistics: <http://www.bls.gov>
- U.S. Bureau of the Census: <http://www.census.gov>
- New York State Department of Labor:
www.labor.state.ny.us/workforceindustrydata/index.shtm
- New York State Education Department, Office of
Professions: www.op.nysed.gov/
- Occupation or provider surveys
- Professional associations
- Center for Health Workforce Studies
<http://chws.albany.edu>



Resources for Effective Health Workforce Assessments

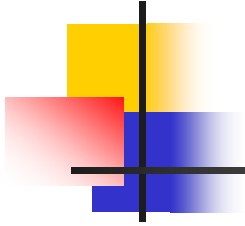
■ Sources of Supporting Data

- Individual utilization data
- U.S. Bureau of the Census: *<http://www.census.gov>*
- National Center for Health Statistics:
<http://www.cdc.gov/nchs/nhis.htm>
- NYS Department of Health County Health Indicator Profiles:
<http://www.health.state.ny.us/statistics/chip/index.htm>
- NYC Department of Health annual reports
- Local county community health assessments



Long Term Commitment

- Develop workforce monitoring systems
- Provide regular feedback
- Assess impacts of policies to address health workforce supply/demand (need) imbalances



*For more information about the Center
and our work, visit us at*

<http://chws.albany.edu>

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