

Clinical Laboratory Workers CLIAC Meeting, September 12, 2002

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National Center for Health Workforce Information and Analysis

Bureau of Health Professions

Health Resources and Services Administration

Bureau of Health Professions

Mission and Functions

Mission: To increase health care access by assuring a health professions workforce that meets the needs of the public.

Functions

- Develop the health professions workforce through research, analysis, and planning
- Improve distribution and diversity of health professionals to rural/urban underserved areas
- Improve the quality of health professions practice and education
- Focus on key 21st century health professions issues (geriatrics, genetics, diversity/distribution)

Assuring an Adequate Health Care Workforce Requires:

Workforce Planning and Analyses-----→ **To Train the Right People**

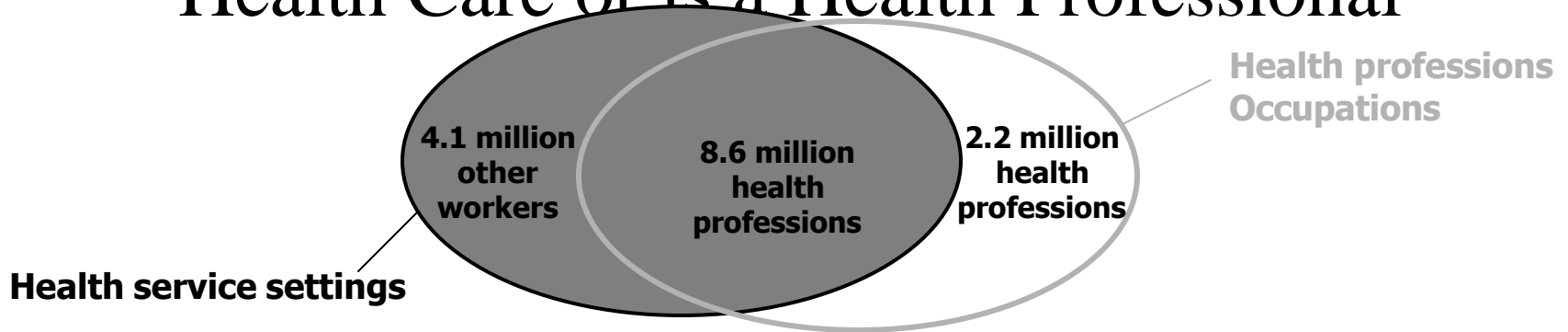
High Quality Education----→ **The Right Skills**

Equitable Distribution----→ **The Right places**

National Center for Health Workforce Information and Analysis

- **Mission: Collect, analyze, and disseminate health workforce information and facilitate national, State, and local workforce planning efforts.**
 - Collect health professions-related data
 - Assist State and local workforce planning efforts
 - Conduct issues-related analyses
 - Conduct evaluations of health professions training programs
 - Develop tools and conduct research on the health workforce

More Than 1 in 10 Americans Works in Health Care or is a Health Professional



	Health Professionals	Other Workers	Total
Health service setting	8,642,749	4,098,331	12,741,080
Other work settings	2,167,418	126,649,685	128,817,103
Total	10,810,167	130,748,016	141,558,183

Health professionals working in health service settings	8,642,749	6.1%
Health professionals working in other settings	2,167,418	1.5%
Other workers in health service settings	4,098,498	2.9%
US health workforce	14,908,498	10.5%
US civilian labor force	141,558,183	100.0%

National Center for Health Workforce Analysis

Recent Products

- ▶ *State Health Workforce Profiles*
- ▶ *Pharmacist Shortage Study*
- ▶ *GME Primer*
- ▶ *Comprehensive Health Workforce Profiles Pilot Project: 10 States*

National Center for Health Workforce Analysis

▶ Activities

- ▶ *State Health Workforce Profiles* 2nd Edition
- ▶ Health Workforce: Trends, Issues, and Supply and Demand Projections
- ▶ Supply, Demand, and Shortages of RNs
- ▶ Comprehensive Health Workforce Profiles
Pilot Project: 8 Additional States

National Center for Health Workforce Analysis

▶ Activities

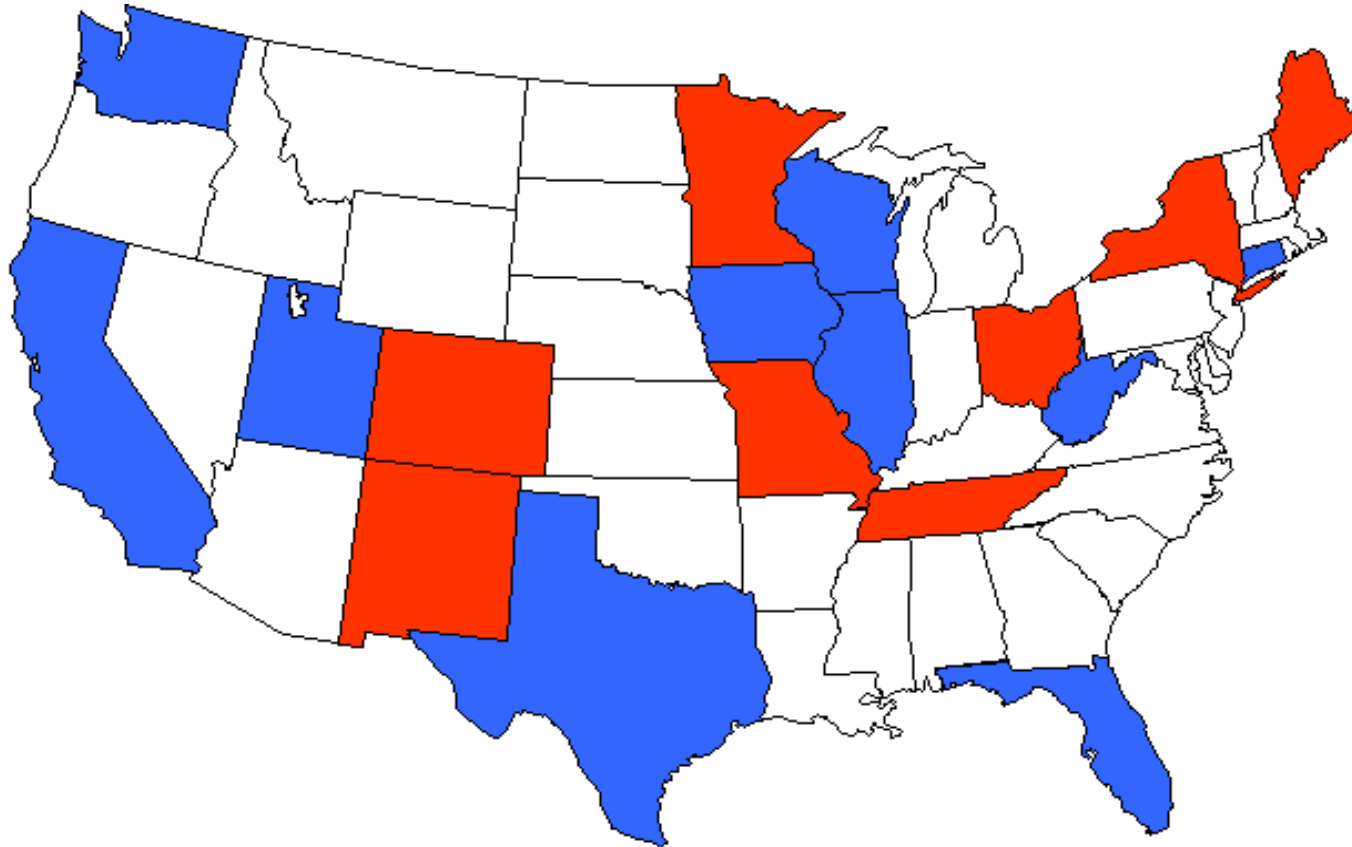
- ▶ Supply and Demand for Nursing Aides and Home Health Care Aides
- ▶ Scope of Practice Laws and Effect on Access
- ▶ State GME Financing and Health Workforce Goals
- ▶ The Impact of Changing Demographics on Requirements for Health Care Providers

National Center for Health Workforce Analysis

Regional Centers for Health Workforce Studies

- **University of California/San Francisco (UCSF)**
(<http://futurehealth.ucsf.edu/cchws.html>)
- **State University of NY Albany (SUNY/Albany)**
(<http://chws.albany.edu>)
- **University of Illinois Chicago (UIC)**
(<http://www.uic.edu/sph/ichws>)
- **University of Washington Seattle (UW)**
(<http://www.fammed.washington.edu/CHWS/index.html>)
- **University of Texas Health Sciences Center at San Antonio** (Coming Soon!)

Comprehensive Health Workforce Profiles Pilot Project: 18 States



In 2001 = CA, CT, FL, IL, IA, TX, UT, WA, WV, WI

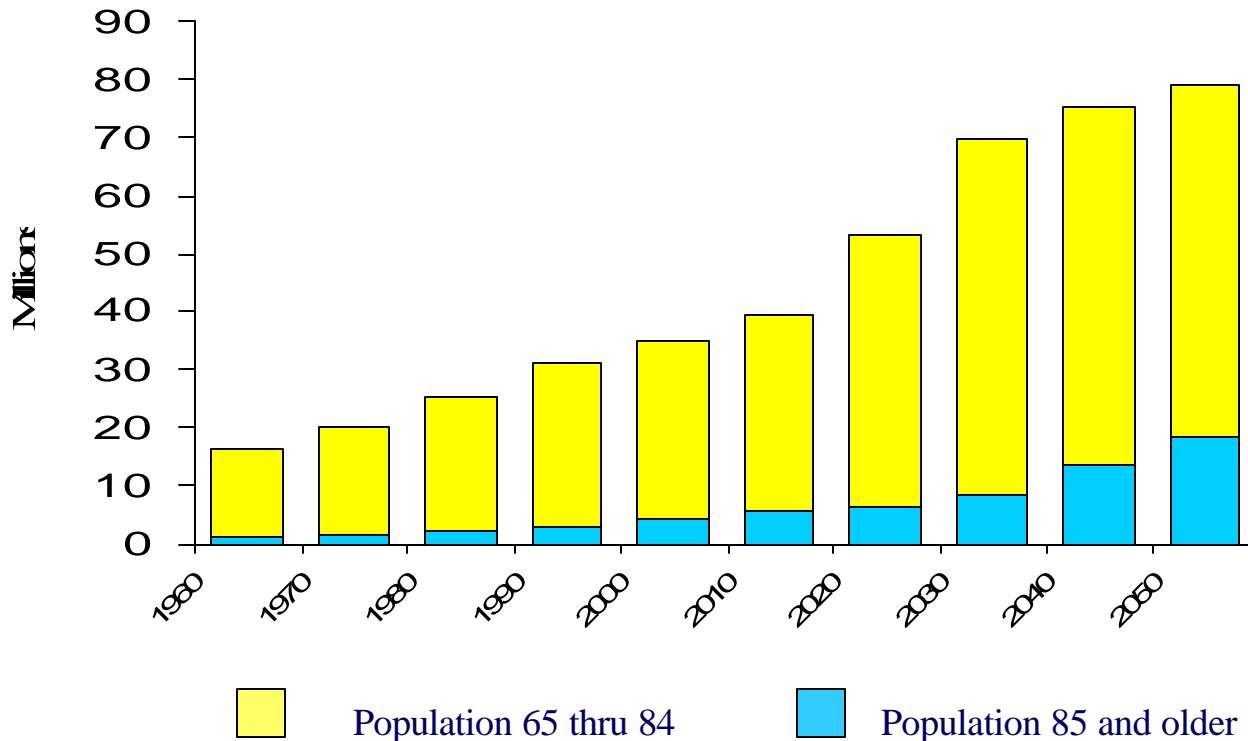
In 2002 = CO, ME, MO, MN, NM, NY, OH, TN

Demand for Health Professionals Will Grow at Twice the Rate of All Occupations Between 2000-2010

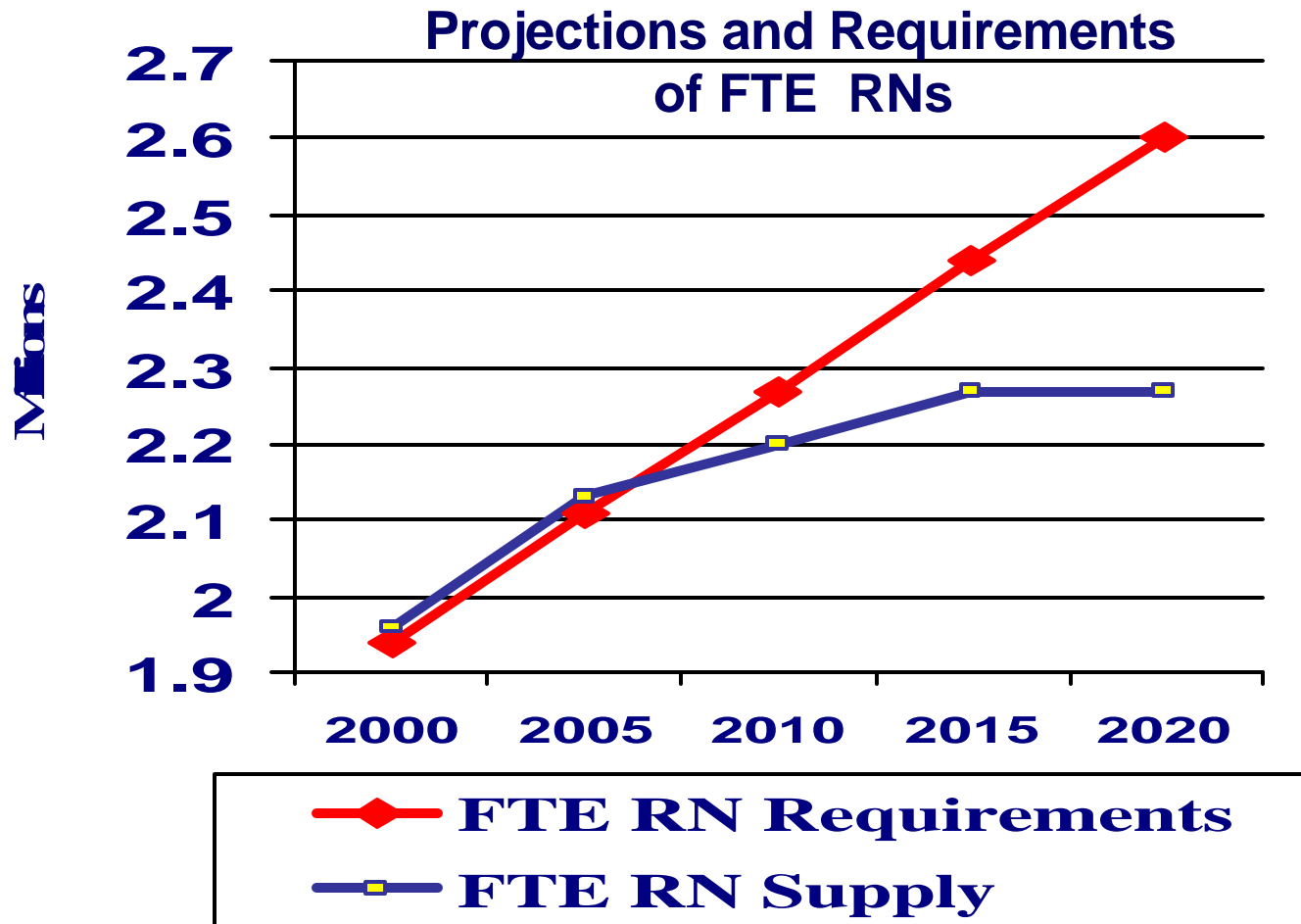
	2000 (000's)	2010 (000's)	Percent Change
Total U.S Employment	145,594	167,754	15%
Total Health Occupations	10,984	14,186	29%
Physicians	598	705	18%
Dentists	152	161	6%
Pharmacists	217	270	24%
Registered Nurses	2,194	2,755	26%
Mental and Behavioral Health Occupations	518	657	27%
Therapists	479	639	33%
Public and Environmental Health	241	302	25%
Health Technicians and Technologists	2,459	3,090	26%
Health Service Occupations	3,197	4,264	33%

The Growth in the Number of Elderly Citizens Will Increase Requirements for Health Care Providers

The Number of Elderly Citizens is Growing Steadily in the United States

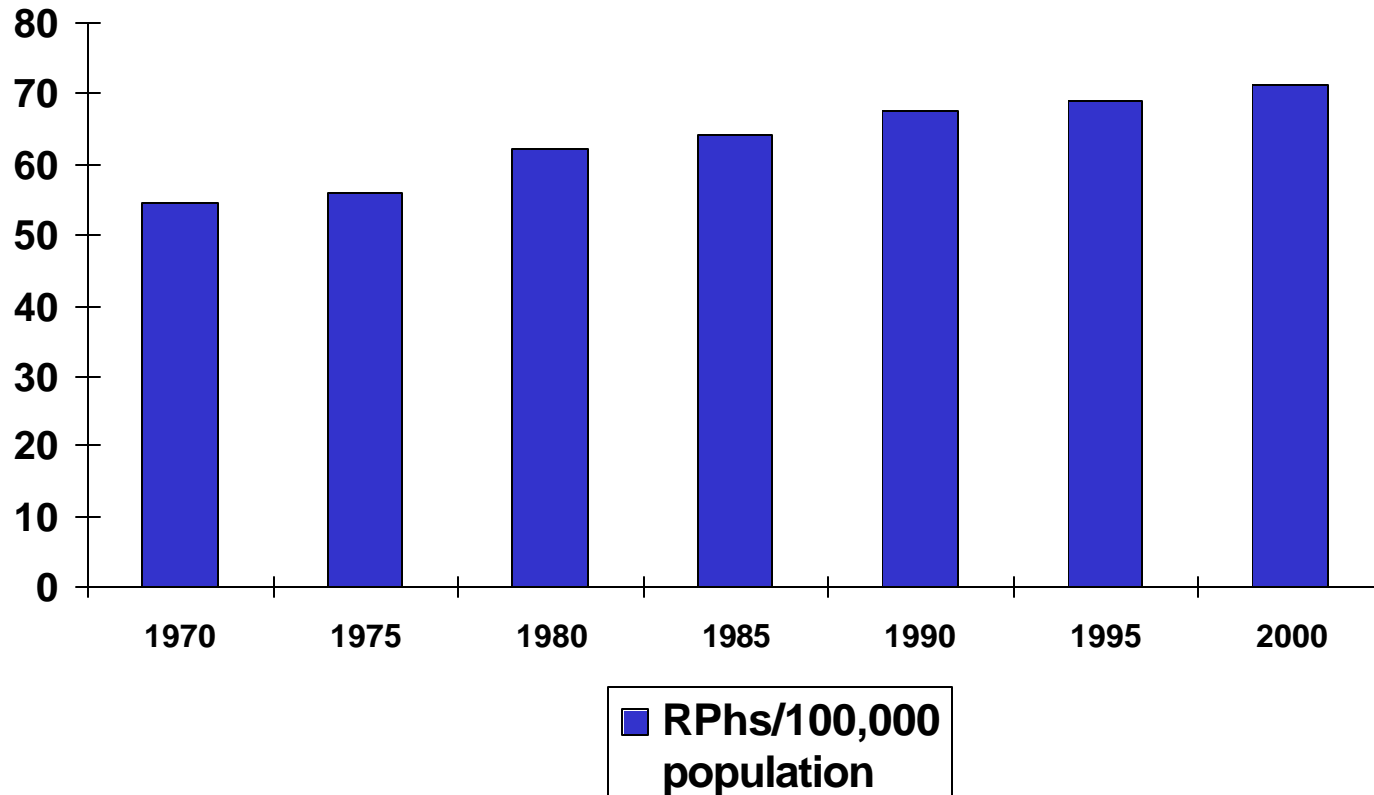


The Health Workforce: Trends, Issues, and Supply and Demand Projections



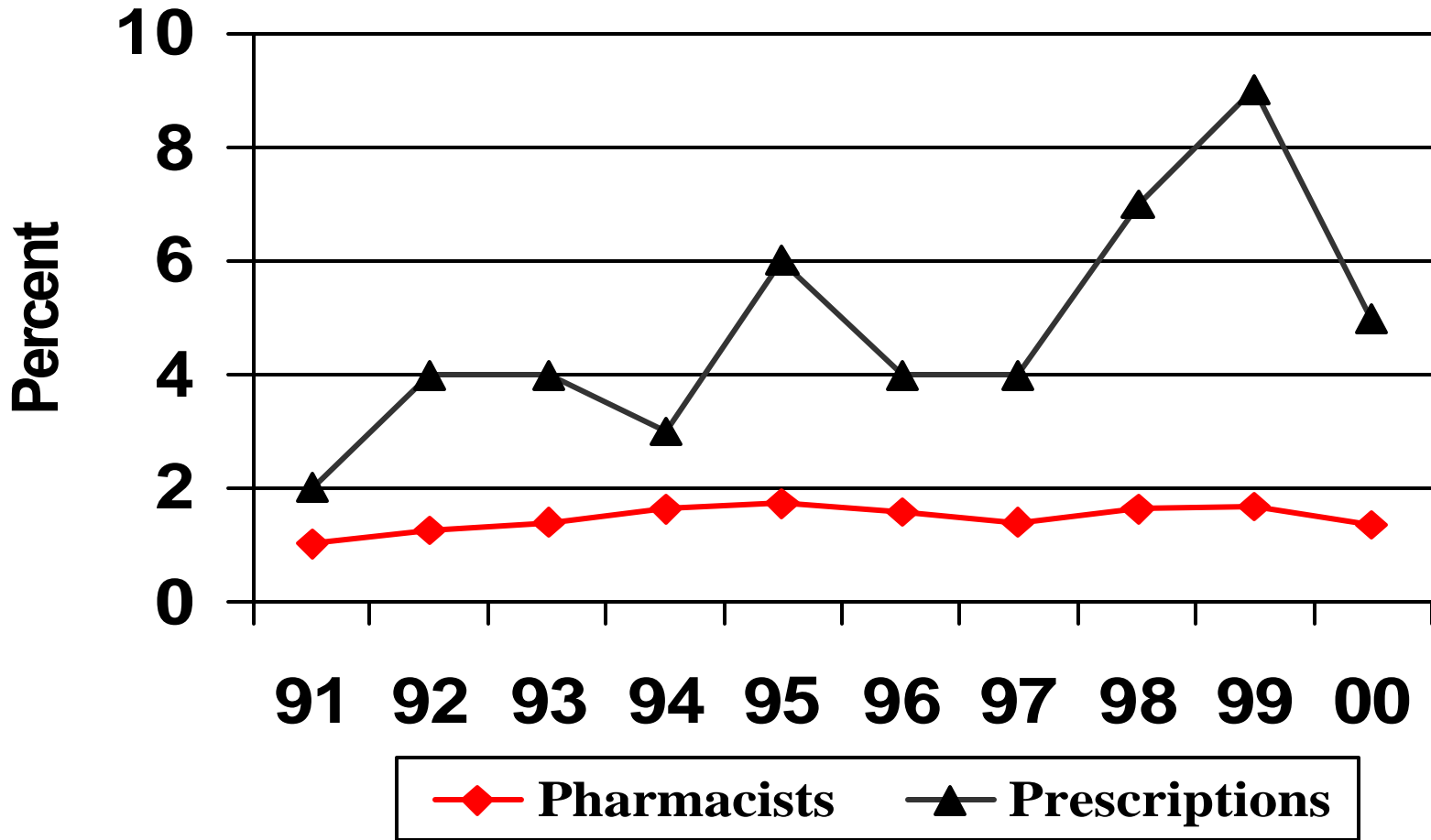
Pharmacists--Shortage?

Pharmacists per 100,000 Population: 1970-2000



Source: Bureau of the Census

Pharmacist Shortage—Rx Growth Rate



Health Care Worker Shortages

- Registered nurses
- Direct care workers
- Clinical lab technologists and technicians
- Radiology techs
- Pharmacists
- Dentists
- Information system specialists
- Medical coders

Clinical Laboratory Workers

- Generally, clinical laboratory *technologists* hold a bachelor's degree with a major in medical technology or in a life science
- Clinical laboratory *technicians* generally hold an associate's degree or certificate
- Employment for both categories expected to grow

Clinical Lab Worker Job Growth

- Lab technologists and technicians held 295,000 jobs in 2000
- Half working in hospitals, remainder in labs, offices, physician clinics (some in blood banks, research and testing)
- Employment expected to grow 15% through 2010 (equal to other occupations)

Job Growth Factors

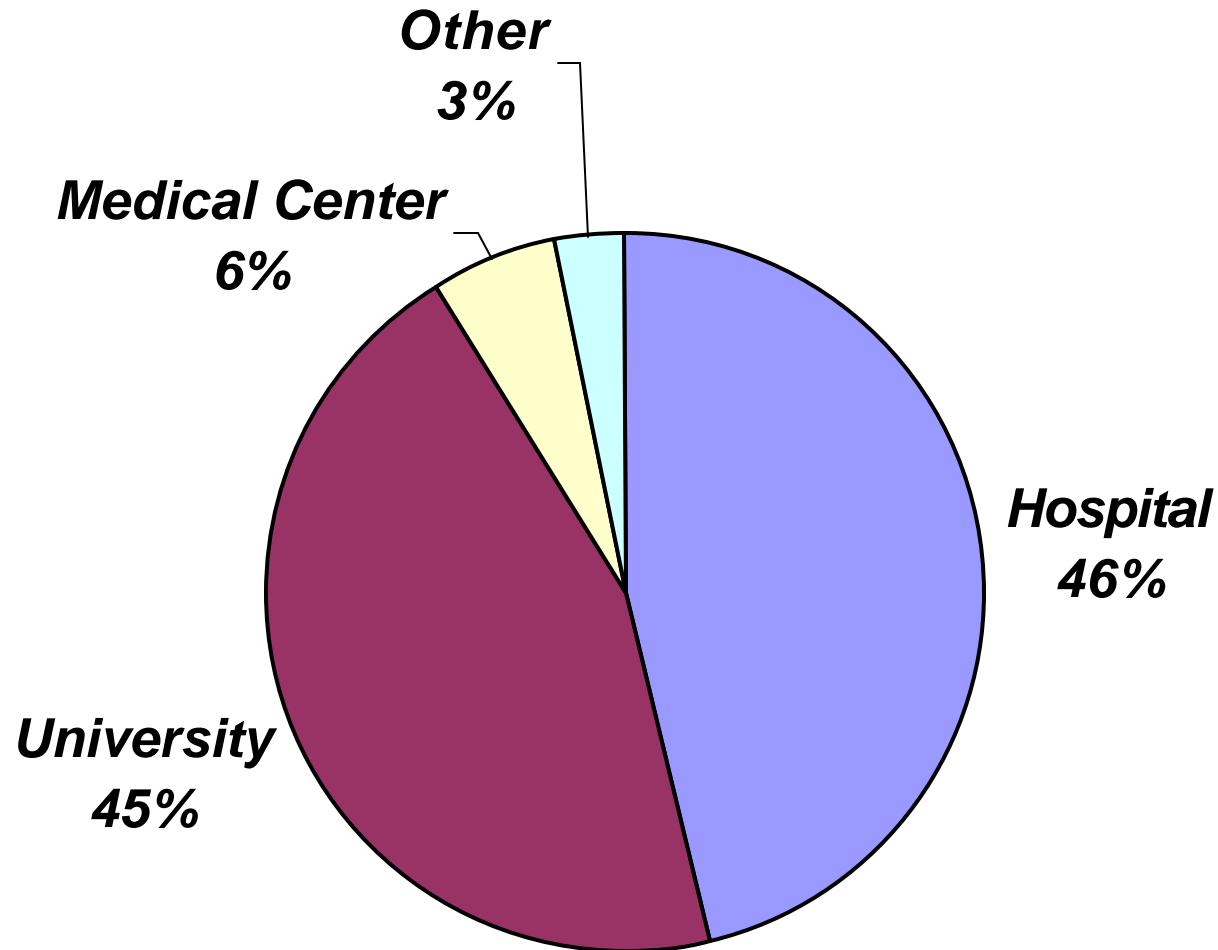
- Technological advances: Dual effects
 - Additional diagnostic tests developed to increase demand
 - R&D simplifying routine testing, allowing for movement out of the laboratory setting
- Aging population with increased needs
- Need to replace workers who retire, transition to other fields

Tasks of Medical Technologists

- Collect and prepare specimens
- Perform routine & specialized lab tests
- Recognize QC, instrument, data problems
- Train other lab personnel
- Communicate results to technical/lay people
- Participate in continuing education
- Recognize normal and abnormal values
- Correlate abnormal values with disease status

Training: Medical Technologists (MT)

Baccalaureate Degree in MT or Biological Sciences with Training

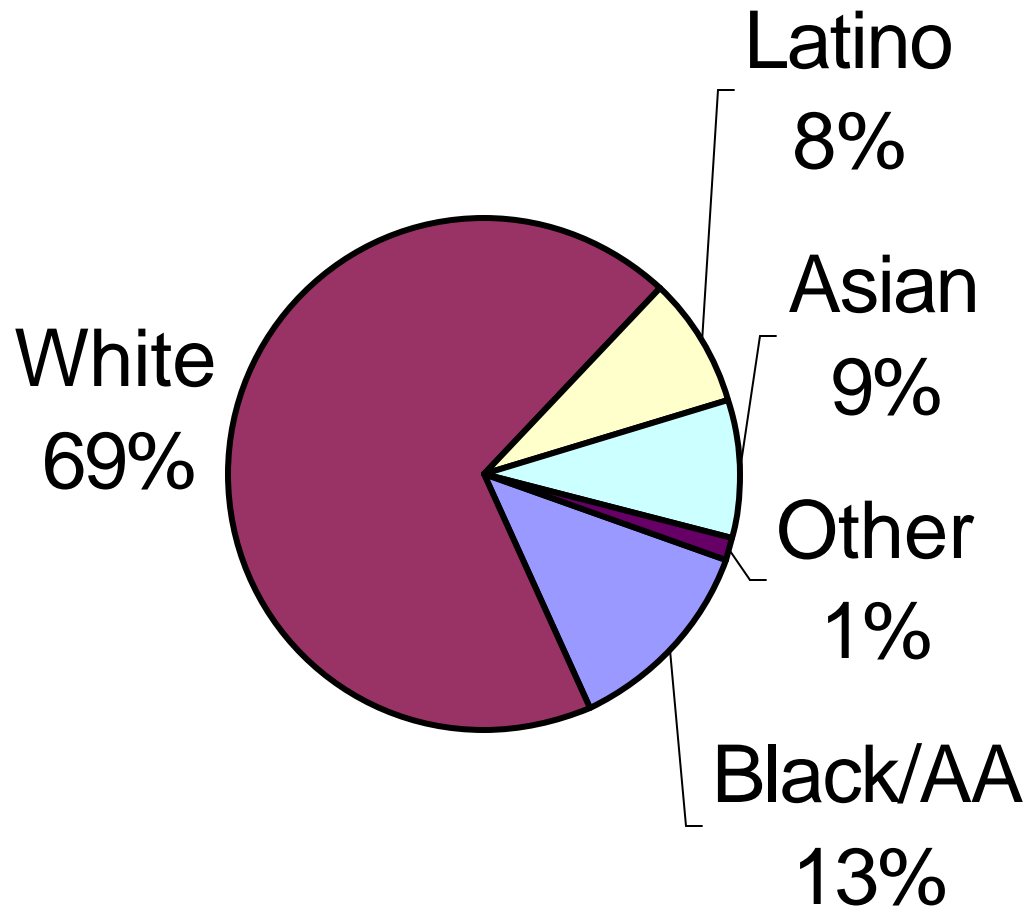


Demographics: Medical Technologists

- 76% Female
- 97% Baccalaureate degrees (3% Grad/other)
- 58% Urban, 24% Suburban, 18% Rural
- 46% Married

Survey data from certified MT (ASCP) Lab Medicine, 31(7), July 2000

Demographics: Medical Technologists



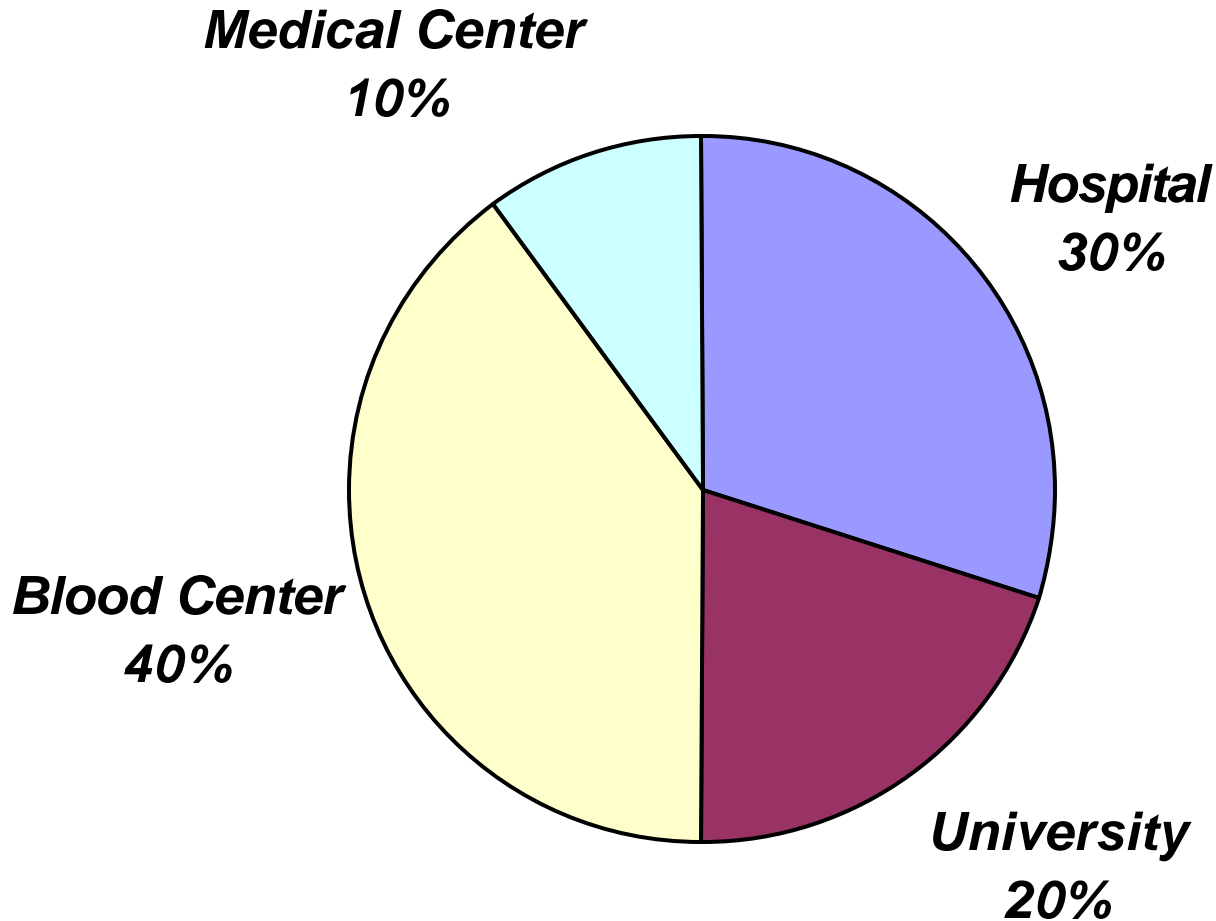
Survey data from certified MT (ASCP) Lab Medicine, 31(7), July 2000

Medical Technologists: Specialization

- Clinical chemistry technologists
- Microbiology technologists
- Blood bank (immunohematology) technologists
- Immunology technologists
- Cytotechnologists
- Molecular biology technologists

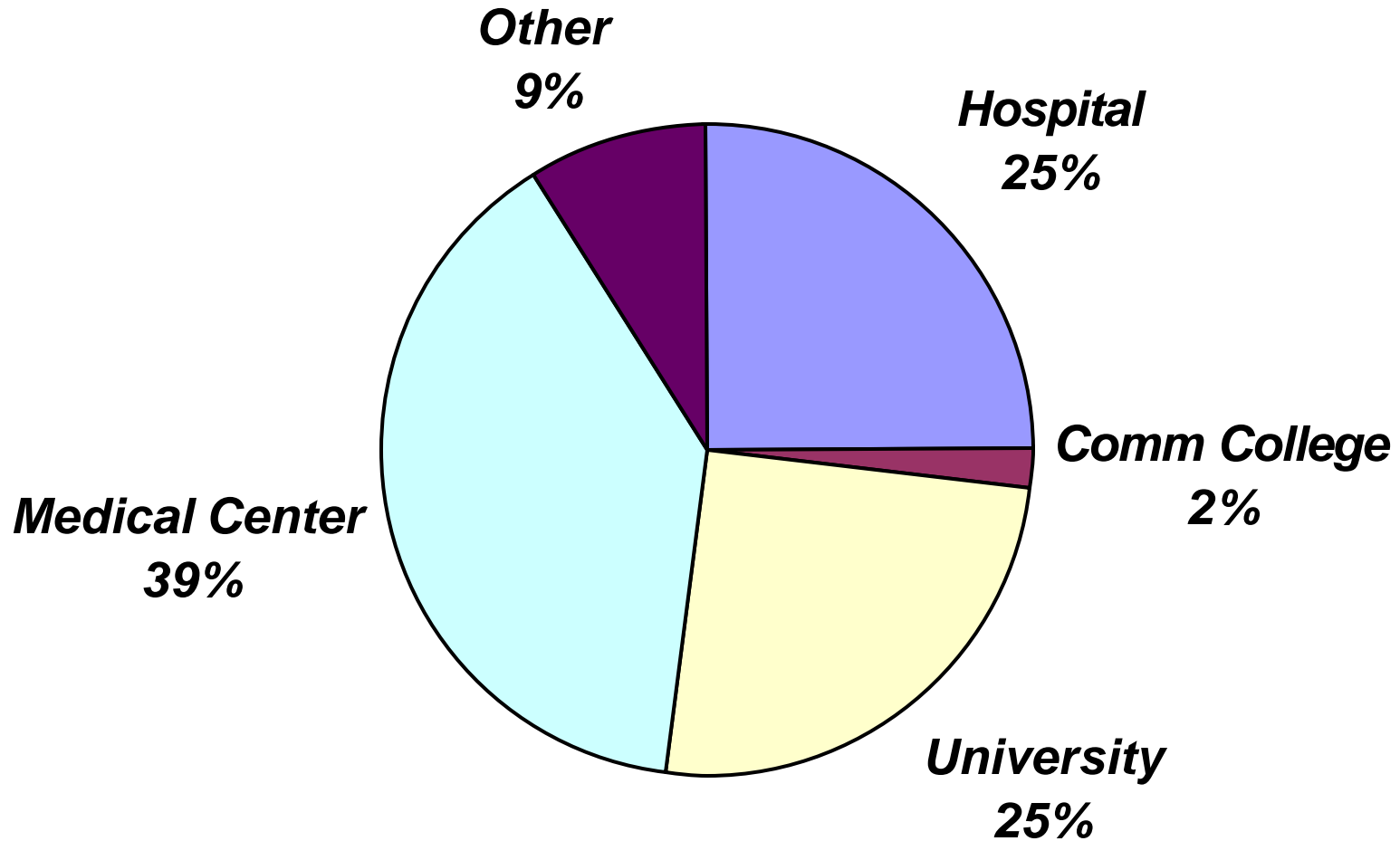
Training: Specialists in Blood Banking (SBB)

Baccalaureate Degree in Health Sciences, One Year Training Program



Training: Cytotechnologists (CT)

Baccalaureate Degree and Completion of Accredited CT Program

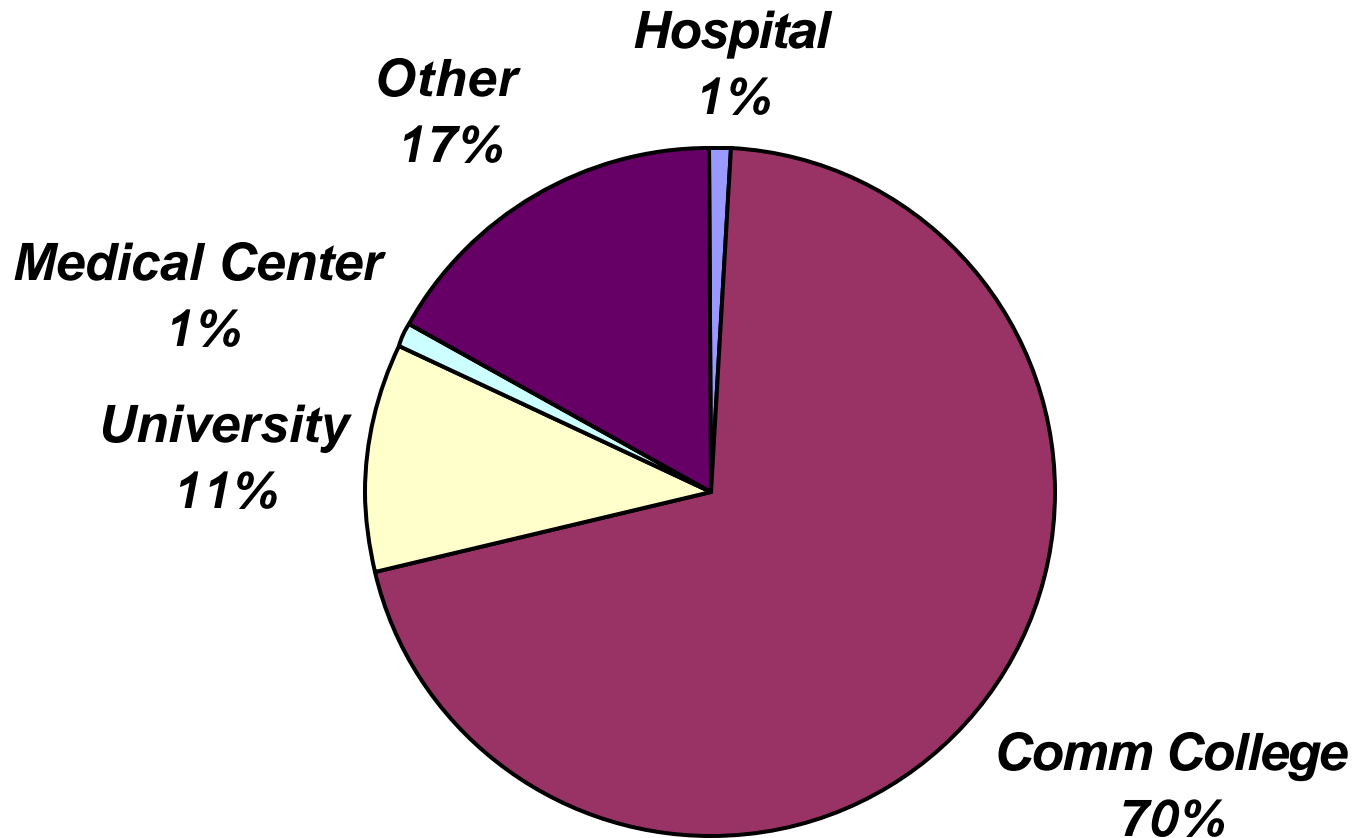


Medical and Clinical Laboratory Technicians

- Perform less complex tests than technologists
- May prepare specimens and operate automated analyzers
- May also specialize
 - Histology technicians
 - Phlebotomists

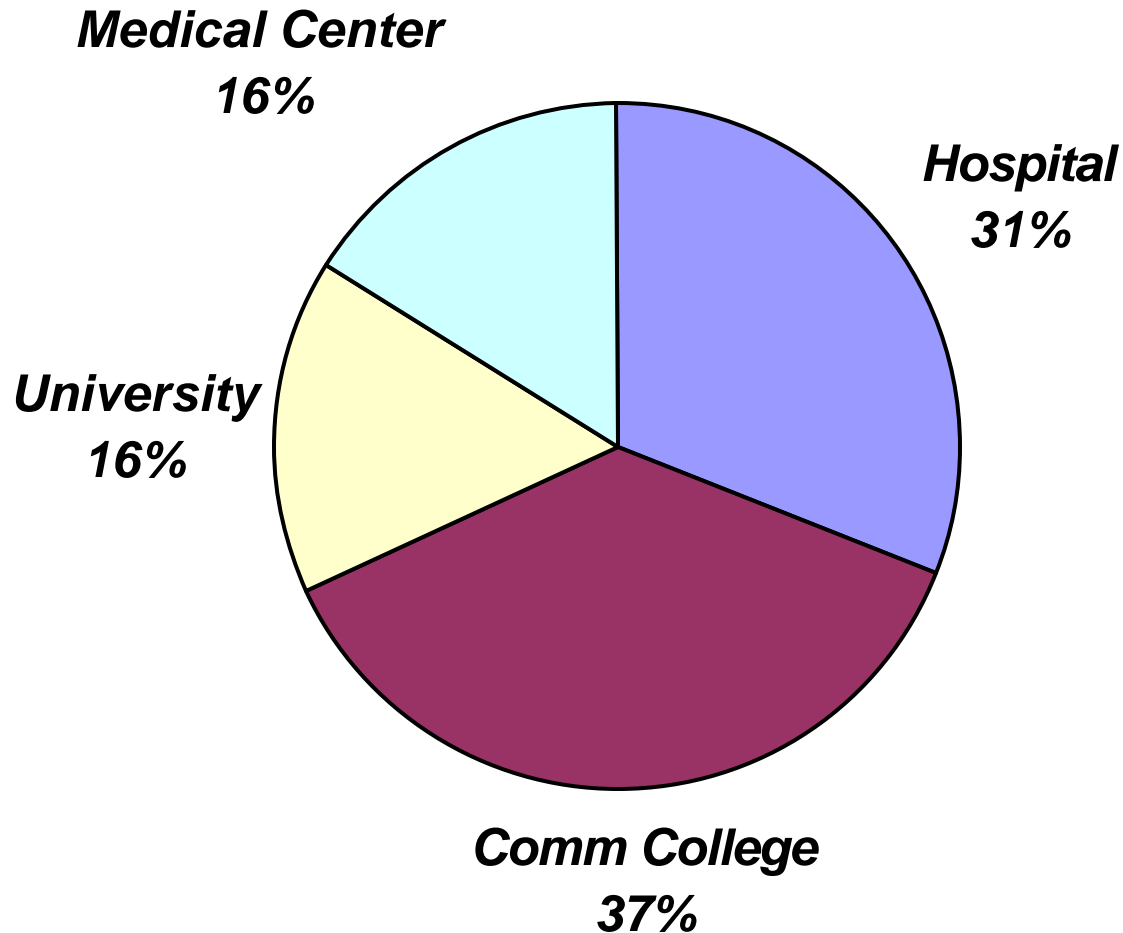
Training: Medical Laboratory Technicians (MLT)

Associate Degree, Completion of Accredited CLT/MLT or Certificate Program

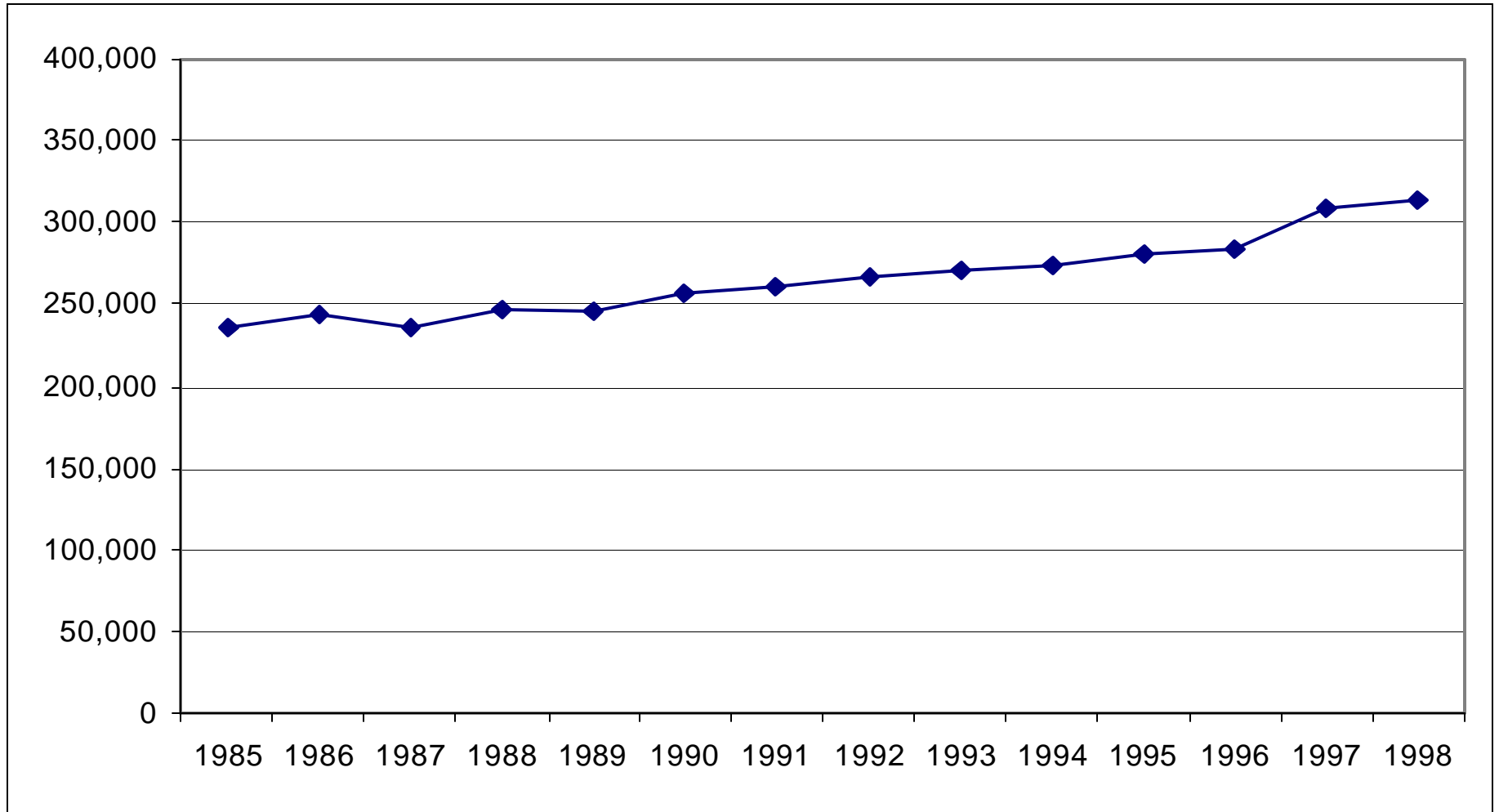


Training: Histologic Technician (HT)

Baccalaureate Degree, Completion of Accredited HLT Program



Total Number of US Medical Laboratory Technologists and Technicians



Source: BLS

Accreditation

- National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
 - Medical/clinical technologists, technicians, histologic technologists/technicians, pathologists assistants
 - Programs in phlebotomy, cytogenetic technology, molecular biology, clinical assisting
- Commission on Accreditation of Allied Health Education Programs (CAAHEP)
- Accrediting Bureau of Health Education Schools (ABHES)

Licensure

- Licensure requirements vary by state
- Certification is voluntary, though required by many employers
 - American Society of Clinical Pathologists Board of Registry
 - American Medical Technologists
 - National Credentialing Agency for Laboratory Personnel
 - Board of Registry of the American Association of Bioanalysts

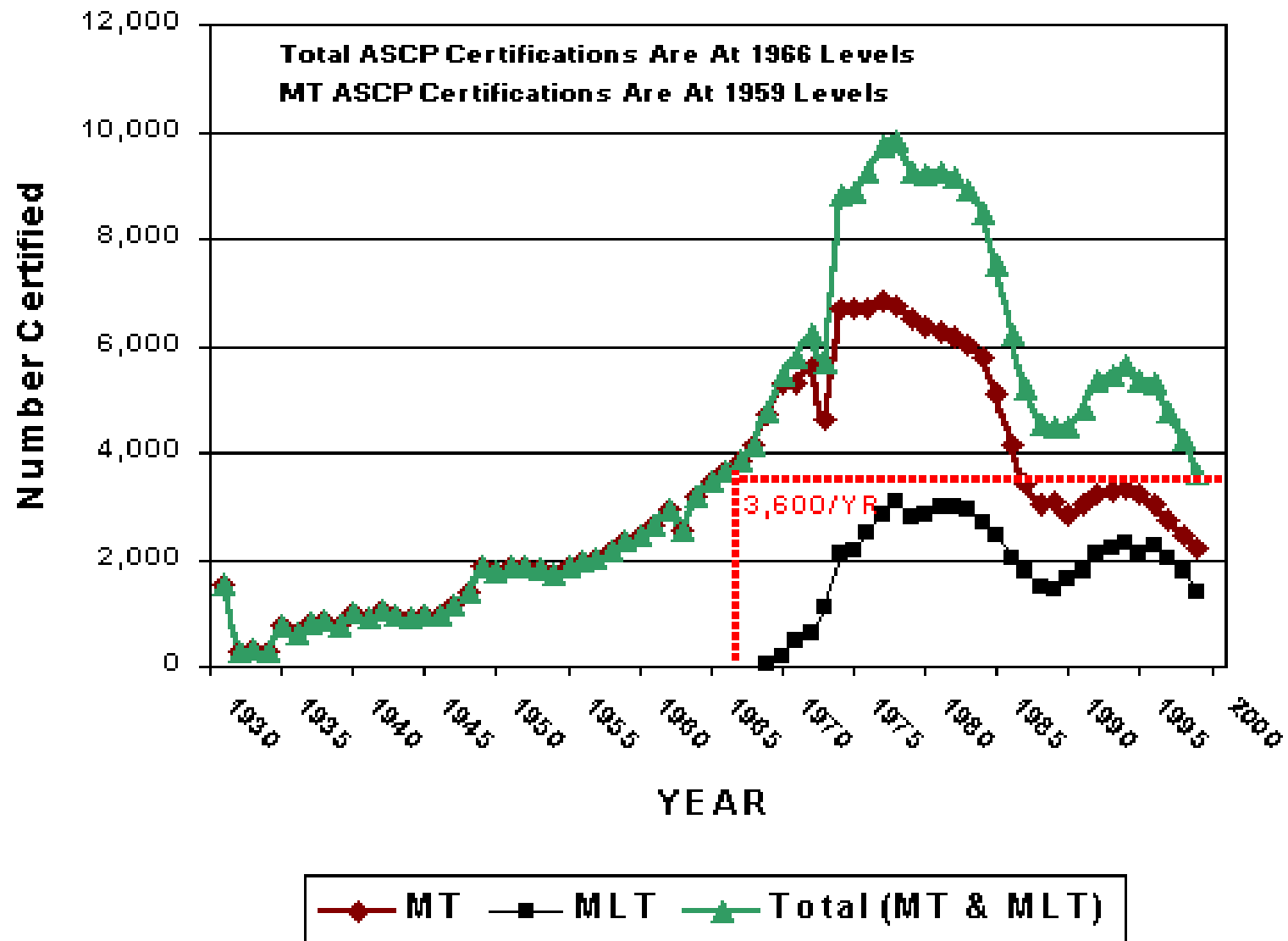
ASCP Certification--- Technicians and Technologists

	Medical Technologists	Medical Laboratory Technicians
1980	6,340	2,865
1985	5,085	2,447
1990	2,849	1,647
1995	3,217	2,120
1996	3,051	2,263
1997	2,760	2,001
1998	2,476	1,766
1999	2,216	1,395

What Has Happened to All the Techs ? *Pennell C. Painter, Ph.D .*

<http://www.ivdtrials.com/TechStaff.htm>

ASCP MT & MLT Certifications Per Year



What Has Happened to All the Techs ? *Pennell C. Painter, Ph.D.*

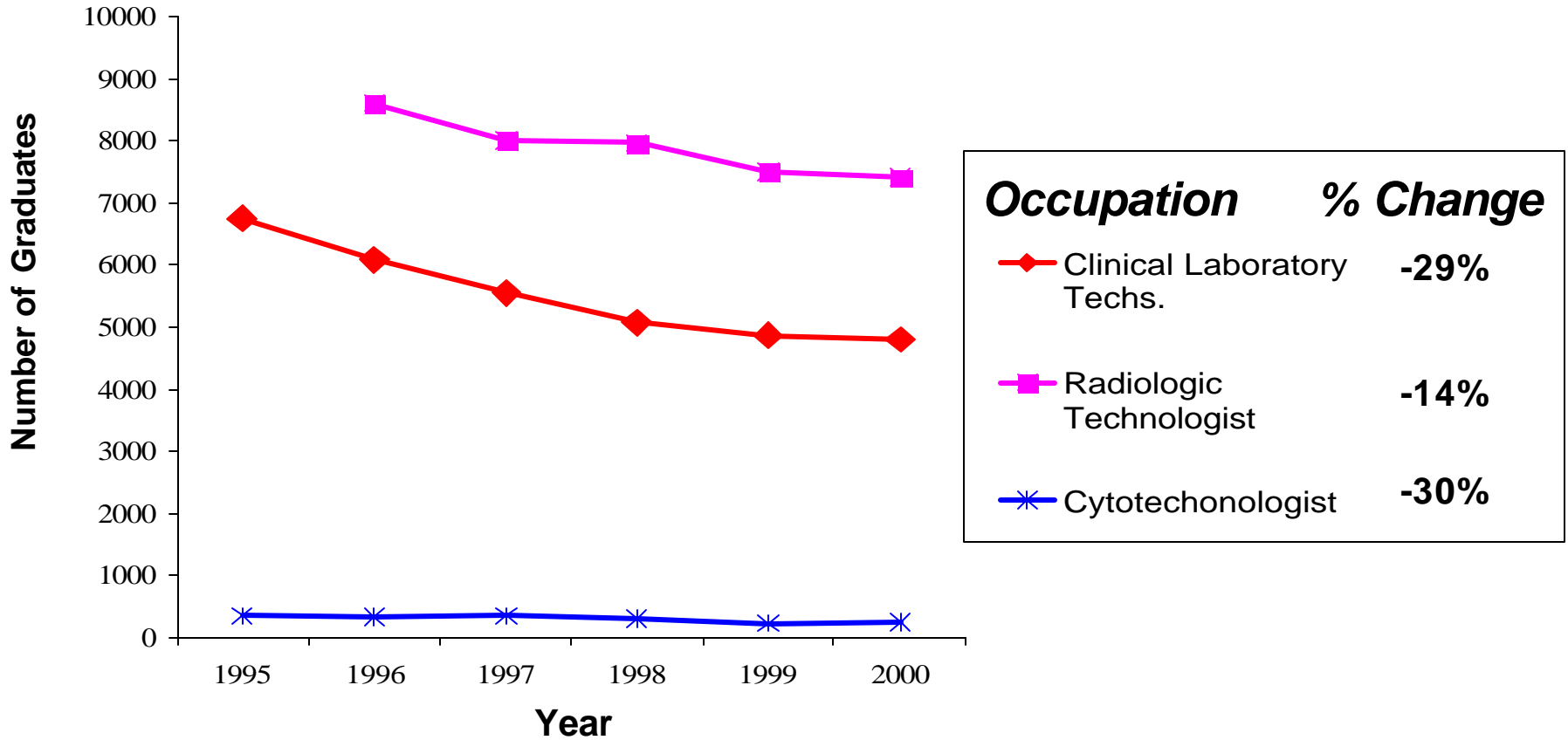
<http://www.ivdtrials.com/TechStaff.htm>

Medical Laboratory Technician and Techologist Training Program Declines.

Health Professions Education Programs: 1985-2000

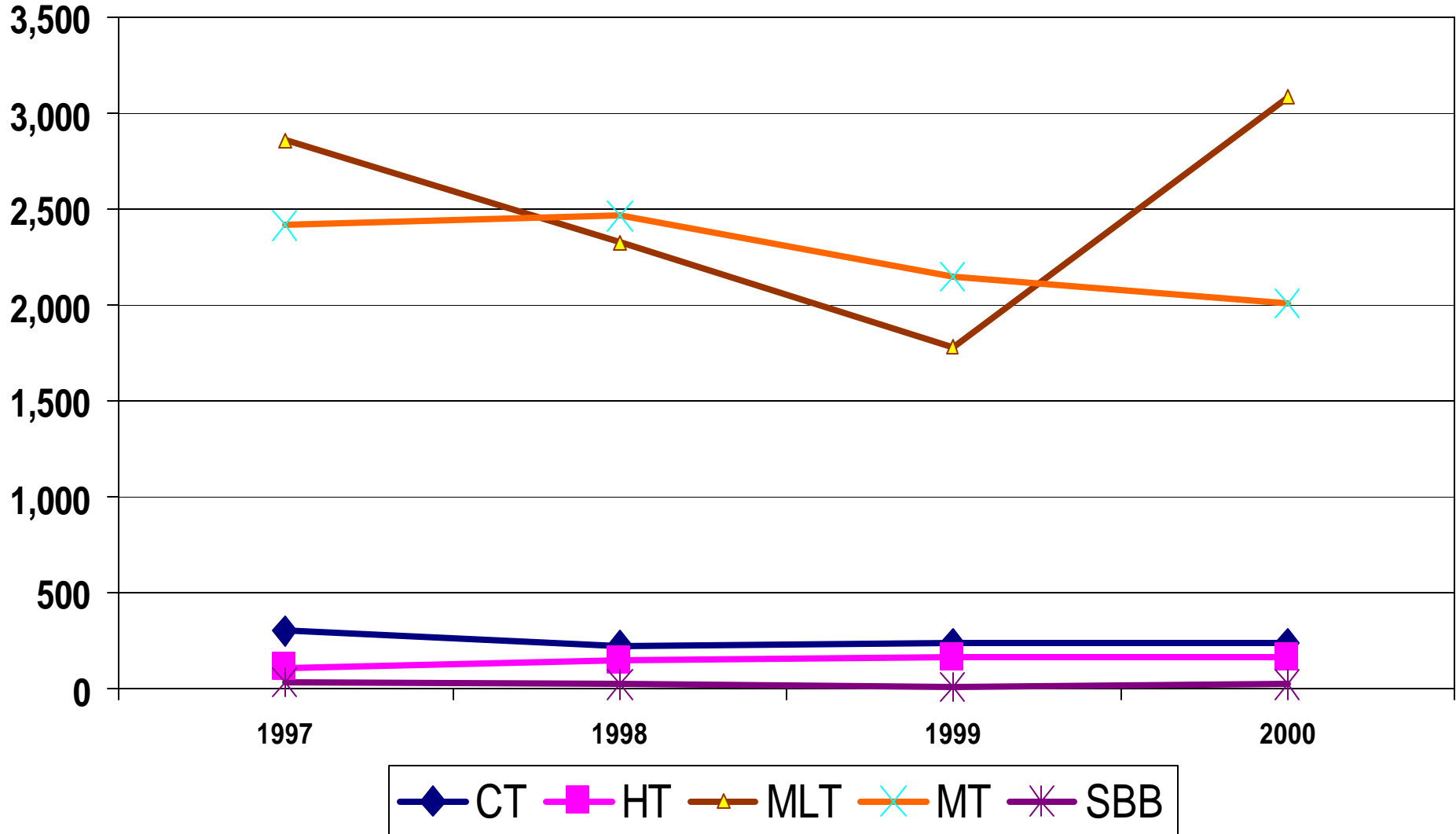
	1985	1990	1995	2000	Change 1985-2000
Medical Laboratory Technologists	584	420	357	255	-56.3%
Medical Laboratory Technicians	281	256	260	242	-13.9%
Total	865	676	617	497	-42.5%

Number of Graduates Declining



Source: AMA, *Health Professions Career and Education Directory* (various eds.)

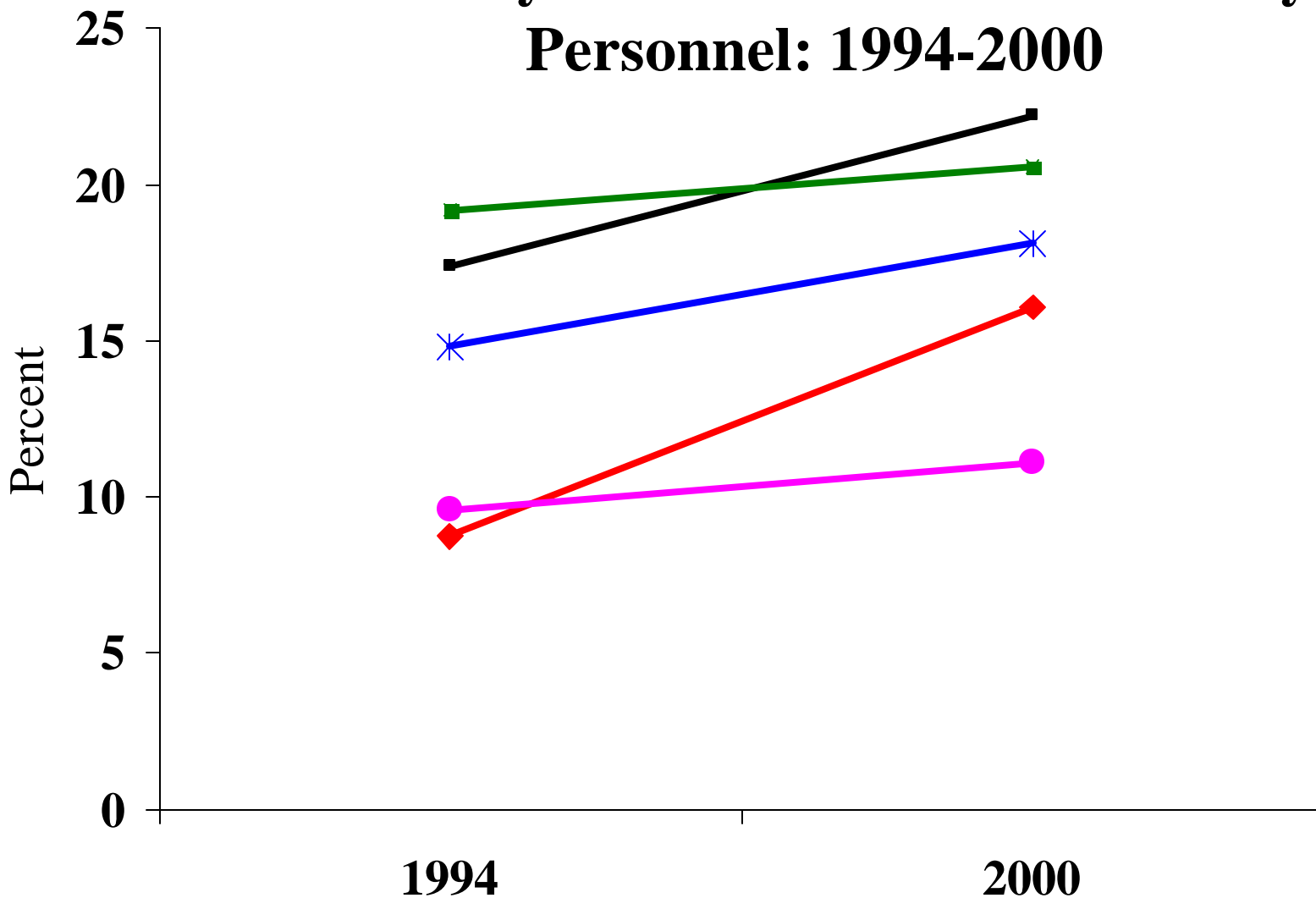
Total Enrollment in NAACLS and CAAHEP Accredited Programs



Vacancy rates—a good measure of shortages

- In 2000, the vacancy rates for these disciplines exceed the average unemployment rate—typically about 5% -- by two- to four-fold.
- Conversely, very high employment for new grads
 - **Cytotechnologists 98%**
 - **Histologic Technicians 96%**
 - **Medical Laboratory Technicians 96%**
 - **Medical Technologists 96%**
 - **Specialists in Blood Banking 100%**

Vacancy Rates for Select Laboratory Personnel: 1994-2000

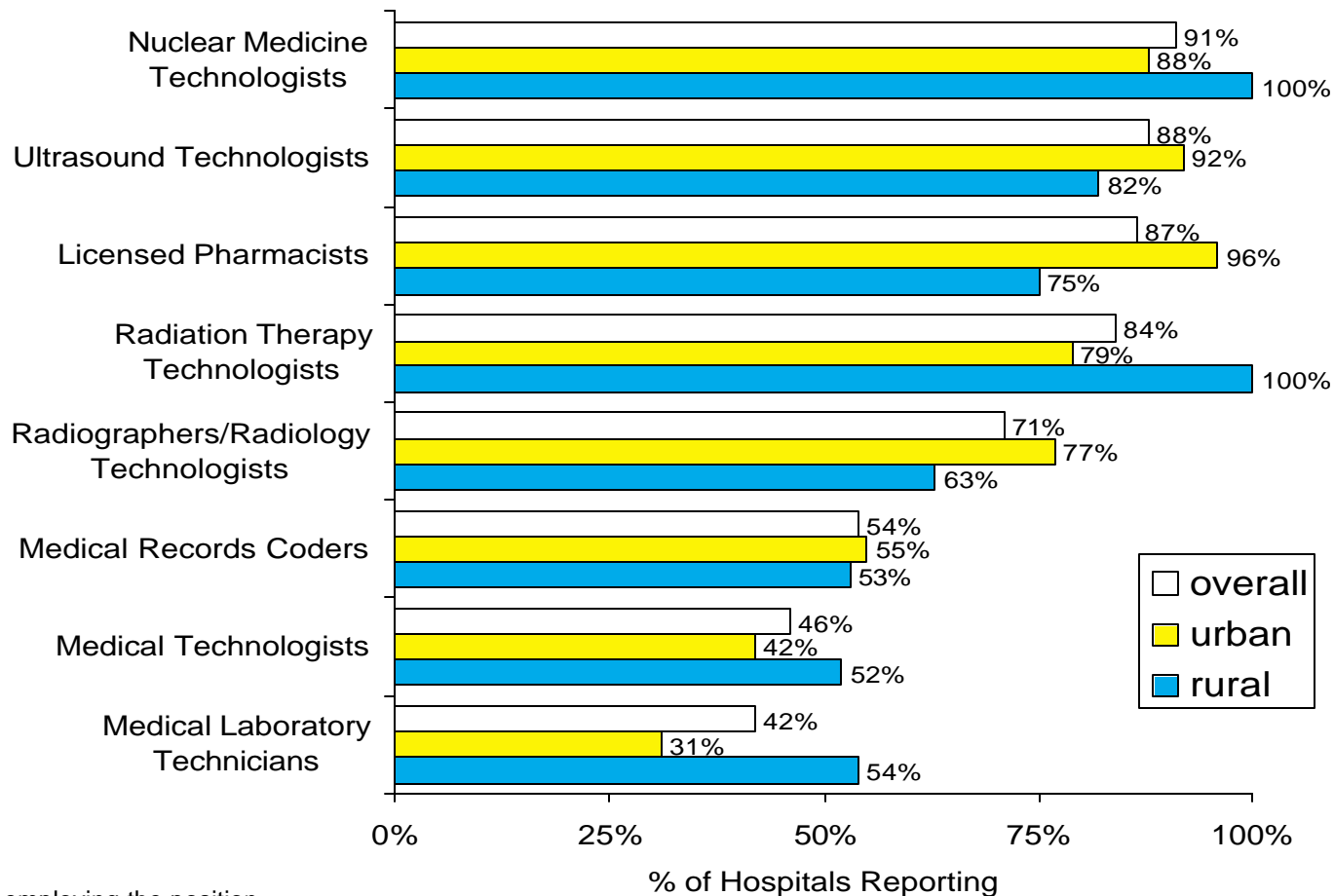


◆ Histo. Technicians
■ Cytotechnologist
● Medical Technologists

■ Histotechnologist
* Phlebotomizes

Washington State—Example of Shortages

Percent of Hospitals Reporting Difficulty Recruiting Personnel for Select Occupations



* Of hospitals employing the position

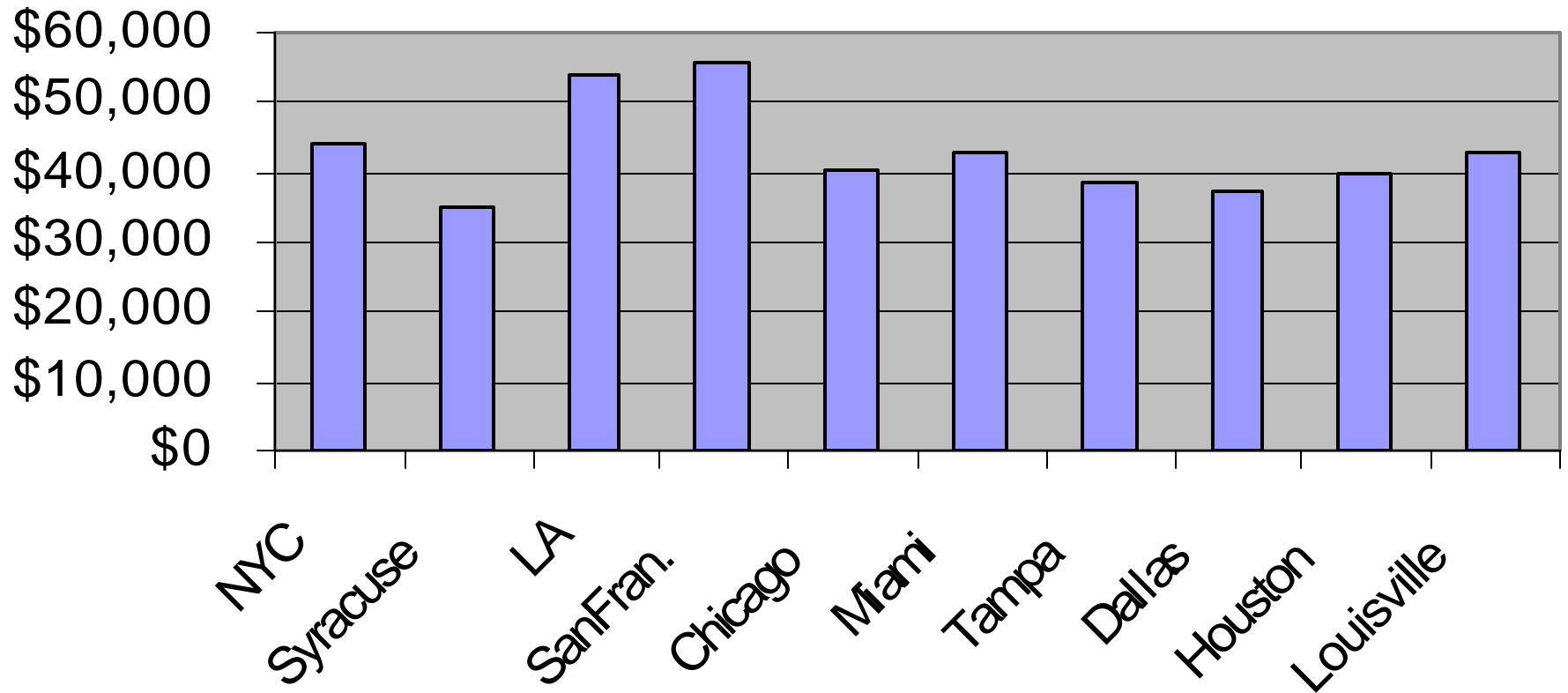
Medical Technologists and Medical Laboratory Technicians

Median Annual Salaries, 2000^[1]

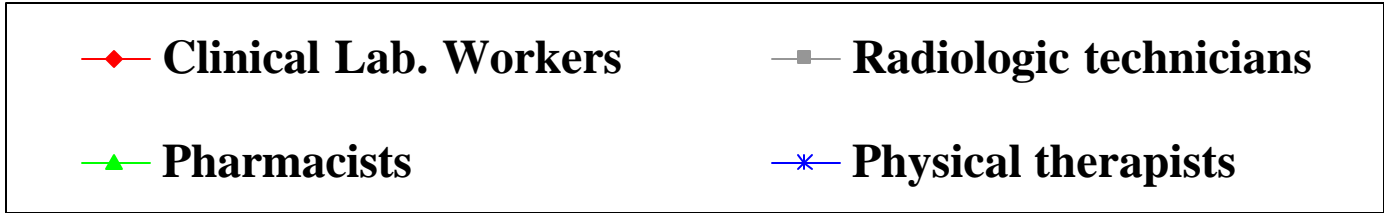
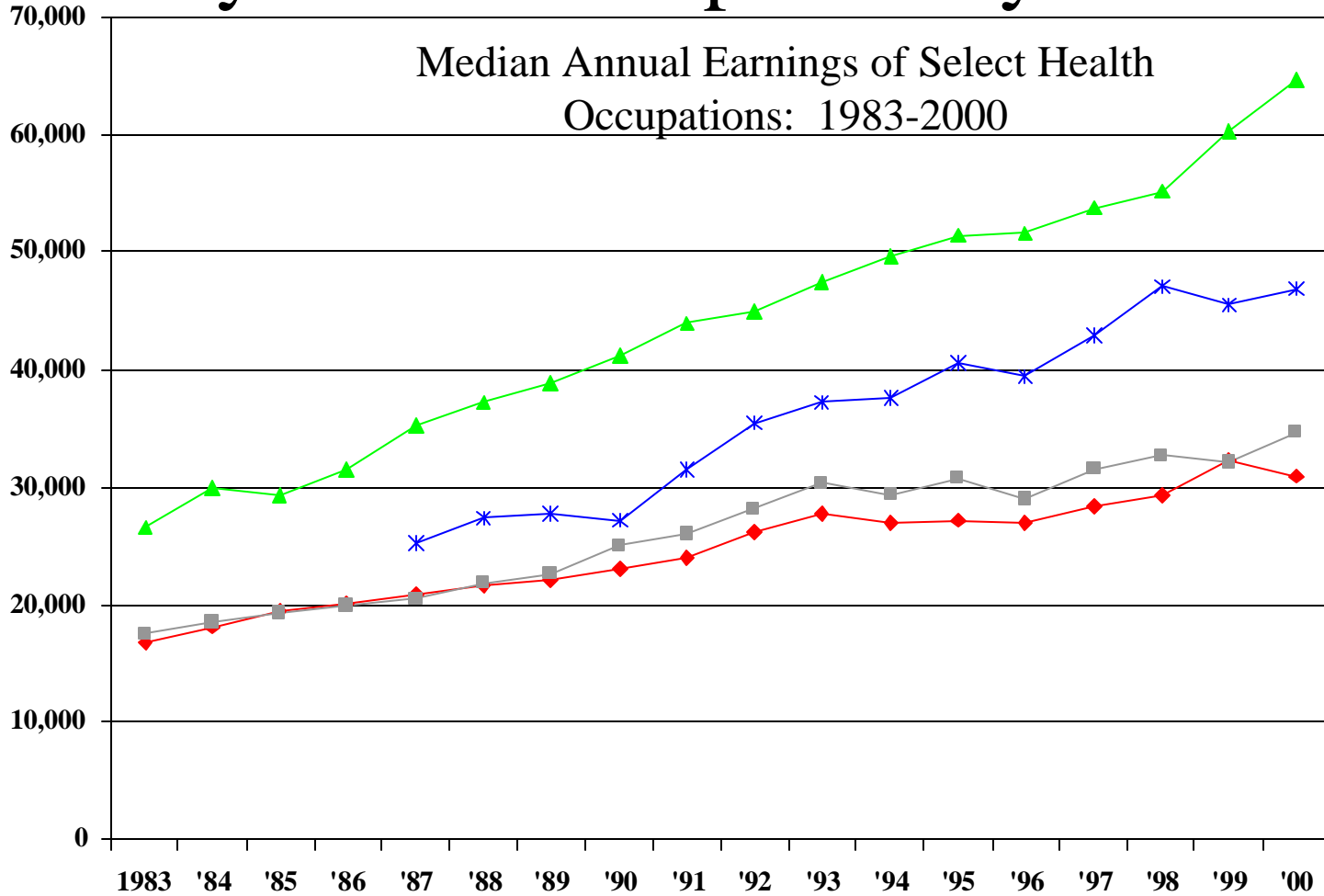
	Medical Technologists	Medical Laboratory Technicians
All Settings	\$40,518	\$27,539
Office and Clinics of Medical Doctors	\$38,854	\$27,186
Hospitals	\$40,851	\$28,870
Medical and Dental Laboratories	\$39,790	\$25,251

^[1] Occupational Employment Statistics, Bureau of Labor Statistics.

Mean Annual Salaries, Medical and Clinical Lab Technologists (2000)



Salary data can help identify a shortage.



Source: Bureau of Labor Statistics, Current Population Survey

Factors Affecting Labor Market

BLS predicts need for 120,000 new technicians and technologists between 2000-2010

Supply factors include

- Retirement of a large number of clinical laboratory technicians
- Individuals choosing more lucrative technical careers over clinical laboratory sciences
- Like nursing, which is also heavily a women dominated field, women now have more career opportunities and can choose better paying jobs

Increased Demand for Laboratorians

- Volume of tests expected to increase with population growth and the aging of population
- Technological advances and new tests
- Need to replace transitioning workers

Laboratorian Shortages: Reported Factors

- Salary levels
- Few opportunities for advancement
- Stressful working conditions
- Lack of visibility on the health care team
- Lack of a professional image
- Risk of infectious diseases
- Increased legal liabilities

Barriers to Addressing Lab Worker Shortages

- Diversity of professions and professional training, including training sites
- Lack of data on all laboratorians
- Difficulty in predicting technological changes
- Unknown usage of alternate workers (and ability to substitute)



Clinical Laboratory Sciences Personnel Shortage Study

2003

- Employment of clinical lab workers estimated at 295,000 in 2000
- Vacancies reported from 10% to 22%
- Employment projected to grow to 348,000 by 2010
- Study to assess supply, demand, and shortages of
 - Clinical Laboratory Scientists & Medical Laboratory Technologists
 - Histotechnologists
 - Histologic Technicians
 - Cytotechnologists
 - Pathologist Assistants

Key Questions to be Addressed

- How many lab workers will be needed, and where?
- How many will be formally trained?
- How many will come from alternate career paths/training?
- How are responsibilities affected by education/training?

Key Questions to be Addressed

- Where will supply fall short of demand?
- What are key factors influencing supply/demand now and in the future?
- What is the impact of a clinical lab worker shortage on the health care system?
- What are the recommendations of the clinical lab worker professions to address workforce?