Technological Change, Quality of Care and Worker Education

Health Tech New York

Borough of Manhattan Community College

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Overview of Presentation

❑   1199 study of health care technology

❑   What are we learning from this study

   ❑   The importance of technology in health care

   ❑   Who is affected by health care technology

   ❑   The key findings of this study

❑   The implications of these findings

The Center for Health Workforce Studies at the University at Albany

- Conducts studies of the supply, demand, use and education of the health workforce

- Committed to collecting and analyzing data to understand workforce dynamics and trends

- Goal to inform public policies, the health and education sectors and the public

- One of six regional centers with a cooperative agreement with HRSA/Bureau of Health Professions

Study of Innovative Technologies Used in NYC Hospitals

- Funded by the 1199 Training Fund

- Focus: What technologies are hospitals adopting and what are the implications for the NYC health workforce?

  - Add jobs?

  - Lose jobs?

  - Change jobs?

  - Training needs?

- Expected to be completed in the spring

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Three Components of the Study

- ## Literature Review
  - What are the most significant emerging technologies nationally?

- ## Site Visits
  - What are the technologies currently in use in NYC and how has it affected the health workforce?

- ## Facility Survey

There are many definitions of health care technology...

- the application of computer and communications technologies in health care (UC Davis Health System)

- an effort to harness the benefits available through convergence of the Internet and health care (Journal of Medical Internet Research)

- includes drugs, devices, medical and surgical procedures and interventions aimed at prevention and management of disease as well as organizational support systems (OECD)

How is Technology Used in Health Care?

- **Information technology**
  - Electronic medical record
  - Patient smart cards
  - Automated charting (digital pens, PDAs, bed-side laptops)
  - Patient identification: Radio-frequency, bar coding
  - Security fingerprint scanners
  - Text messaging appointment reminders
  - Wireless radiophone pagers

How is Technology Used in Health Care?

- ## Tele-health/home care
  - In-home computer- based patient monitoring systems
  - Clinical e-mail systems
  - On-line clinical consultations
  - Health education web-sites
  - On-line patient diaries (patient entry of health data)

How is Technology Used in Health Care?

- **Clinical Tools**
  - Robotic/automated pharmacy dispensing
  - Automated laboratory systems
  - On-line clinical decision support systems
  - Diagnostic imaging
  - Robotic surgery
- **Education, Training and Continuing Education**
  - Distance learning coursework or continuing education programs
  - Computer assisted learning modules
  - Clinical simulators

Health Care Technology Can Solve Problems and Save Money

- Improve patient safety

- Enhance the quality of patient care

- Improve productivity of the health workforce

- Stay competitive

Who Is Affected by Health Care Technology?

- Patients

- Health workers

- Health care delivery systems

- Government

- Health professions education programs

- Professional associations

- Health worker unions

Key Findings to Date

- Health care providers are adopting new technologies for a variety of different reasons

- The pace of adopting new technologies varied dramatically from provider to provider

- EMR tended to be the base around which additional technologies were added
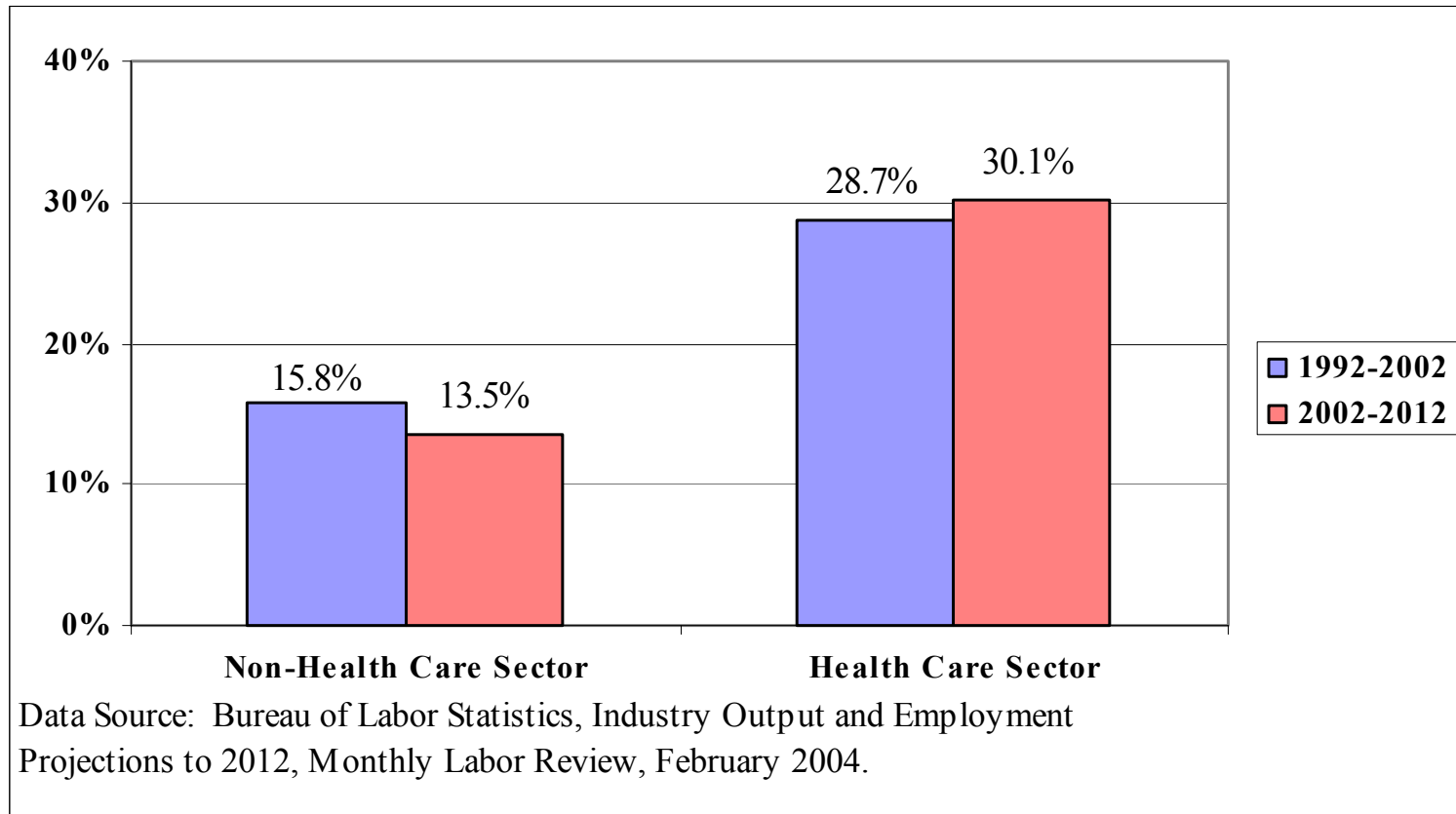
Key Findings to Date

- Typically, jobs weren't lost as technology was added, but job responsibilities changed

- Workers needed training for new and different roles, usually involving automation

- Providers recruiting new workers reported looking for individuals who possess basic computing skills

What are the implications for...

- Individuals interested in health care careers?

- Health professions students?

- Health professions educators?

- Health care professionals?

Health Sector Employment Continues to Be the Fastest Growing Employment Sector in the Country

Data Source: Bureau of Labor Statistics, Industry Output and Employment Projections to 2012, Monthly Labor Review, February 2004.

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Half of the fastest growing occupations in the US between 2002 and 2012 are projected to be in health care

- **Medical Assistants (59%)**
- **Physician assistants (49%);**
- **Home health aides (48%);**
- **Medical records and health information technicians (47%);**
- **Physical therapist aides (46%);**
- **Physical therapist assistants (45%);**
- **Dental hygienists (43%);**
- **Occupational therapist aides (43%);**
- **Dental assistants (42%);**
- **Personal and home care aides (40%);**

What Can We Do to Help Prepare Workers for New Technologies in Health Care?

- Promote computer literacy for everyone
  - Improve literacy <u>and</u> computer skills of existing workers through contextualized learning
- Expose health professions students to technologies used in health care in order to:
  - enhance their job prospects
  - help them to better understand the realities of careers in health care
- Encourage current health care professionals to be adaptable and open to new opportunities
  - With changing jobs, the existing health workforce will need to learn new skills

In Planning for the Future…

- Technology will continue to play an important role in health care

- If developed and implemented properly, health care technology can support a more responsive, accessible, and cost-effective health care delivery system

- It's success will clearly depend on:

  - the availability of a health care workforce trained to use these new technologies

  - The availability of resources to support new systems and needed training