Modeling the Health Workforce and Characteristics of a High Performing Health Care System

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Modeling Workforce Supply and Demand

• Purpose: To inform strategies to train the right number and mix of health workers
• Supply modeling
  > Current supply + providers entering workforce – retirement = future supply
• Demand modeling
  > Model characteristics of current and future population (demographics, disease prevalence, lifestyle choices, insurance coverage)
  – Care delivery patterns can influence future disease prevalence and mortality
  > Model health care use patterns
  > Model health workforce staffing patterns

patterns evolve over time
The Role of the Health Care Workforce in Delivery System Reform

Projected Total Supply and Demand for Physicians, 2015-2030

IHS Markit, The Complexities of Physician Supply and Demand 2017 Update: Projections from 2015 to 2030, Exhibit 1
https://www.aamc.org/data/workforce/reports/439206/physicianshortageandprojections.html

Projected Total Physician Shortfall Range, 2015-2030

IHS Markit, The Complexities of Physician Supply and Demand 2017 Update: Projections from 2015 to 2030, Exhibit 2
https://www.aamc.org/data/workforce/reports/439206/physicianshortageandprojections.html
The Role of the Health Care Workforce in Delivery System Reform

Projected RN Supply Adequate to Meet Future Demand

- Supply (10\% increase in new graduates)
- Supply (5\% productivity increase)
- Supply (retire 2 yrs later)
- Supply (status quo)
- Supply (5\% productivity decrease)
- Supply (10\% decrease in new graduates)

Demand (population health)
Demand (changing demographics + ACA coverage)


Objectives of a High Performing Health Care (HPHC) System

- Organizing care to provide a **continuum of care** across care delivery settings and **coordinating multidisciplinary care**
- Using information technology and evidence-based strategies to identify and **manage high risk populations**
- Achieving **population health** goals
- Improving **efficiency** of care delivery—including reducing unnecessary or duplicative diagnostics and treatments
- Measuring and **improving quality** of care

Sample sources:
- The Commonwealth Fund:
Modeled Select Characteristics of a High Performing Health Care System

- Achieving select clinical outcomes (modeled outcomes)
  > Reduced excess body weight (5% weight loss among obese & overweight)
  > Improved blood pressure (achievements from published literature)
  > Improved cholesterol levels (achievements from published literature)
  > Improved blood glucose levels (achievements from published literature)
  > Smoking cessation (25% reduction, though high rate of recidivism)
- Changing care use and delivery patterns
  > Reduced hospitalization/re-hospitalization/length of stay
  > Reduced emergency department visits (redirected to community-based setting)
  > Improved integration of behavioral health into primary care
  > Shifting care from higher cost to lower cost providers

Published interventions used advanced practice providers, nurses, and other workers (e.g., home health providers, pharmacists) to implement intervention.

Achieving Modeled Population Health Goals = Additional 6.3 M People Living in 2030

- Higher utilization of care associated with 6.3 million additional people vs slightly lower utilization from improved health
  > Over 6 million additional hospital inpatient days
  > 1.7 million additional emergency visits
  > Increase is primarily among population age 65+
Implications of Achieving Modeled Population Health Goals: Net Difference in Physician Demand

- Intervention impact in 2030
  - +15,500 increase in total national demand
- Examples
  - 8% increase in demand for geriatricians
  - 9% decrease in demand for endocrinologists

Achieving Modeled Population Health Goals: Net Difference in Nurse Demand

In 2030, nurse demand would be higher
- RNs: 106,000
- LPNs: 70,000
- APRNs: 7,700

- 7,700 increase under current delivery patterns
- Physician demand would increase by 15,500 FTEs; portion of this increase could be provided by APRNs
Conclusions

• Improved health outcomes does not necessarily mean lower demand for health workers
  > Per capita demand for health care services might fall
  > Reduced mortality means people live longer; larger population of older people could increase demand for some types of services
    – Short term reduction in national demand for care
    – Long term increase, with shift in disease prevalence and type of care
• Growing body of literature demonstrates that some care can be diverted from
  > Higher cost settings to lower cost settings
  > Higher cost providers to lower cost providers
• Delivery system reform could reduce demand for some health occupations, but for many health occupations will increase demand for services