Nurse Workforce Supply and Demand Projections: How Different Models and Source Data Influence Results

Nurse Supply Data and Methods

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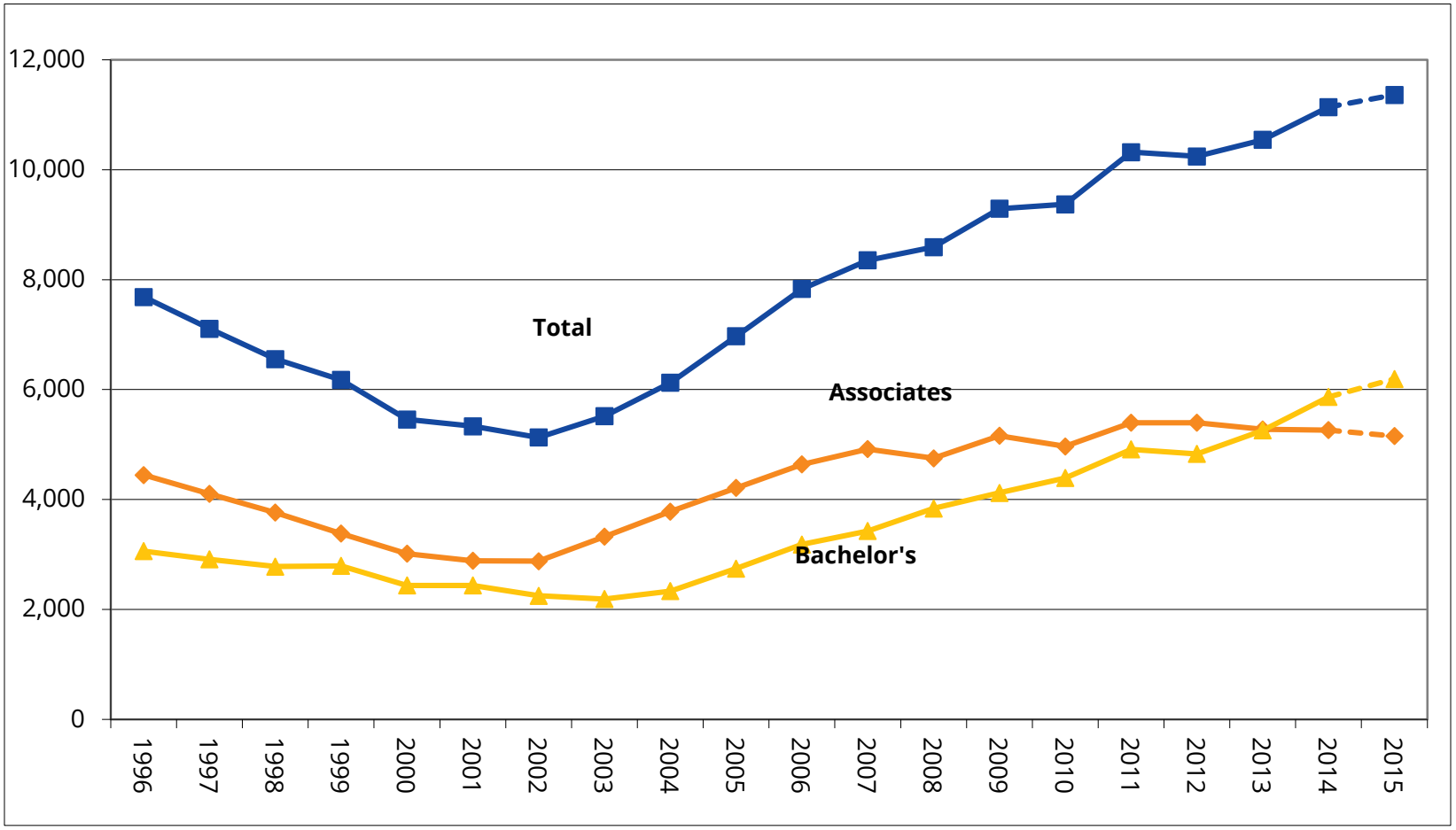
The Power of Projection Models.....

New York RN Graduations, by Degree Type, 1996-2015



Source: Center for Health Workforce Studies

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Historical Background on the Federally Supported Workforce Supply/Demand Models

- Siloed models (separate models for different occupations)
- Different contractors built different models using different platforms, methods and assumptions
- Static models—parameters constant over time and across states
- Separate supply and demand models
- Infrequently updated
- Limited capability to analyze policy or emerging care delivery models
- Limited ability to capture geographic variation in population risk factors

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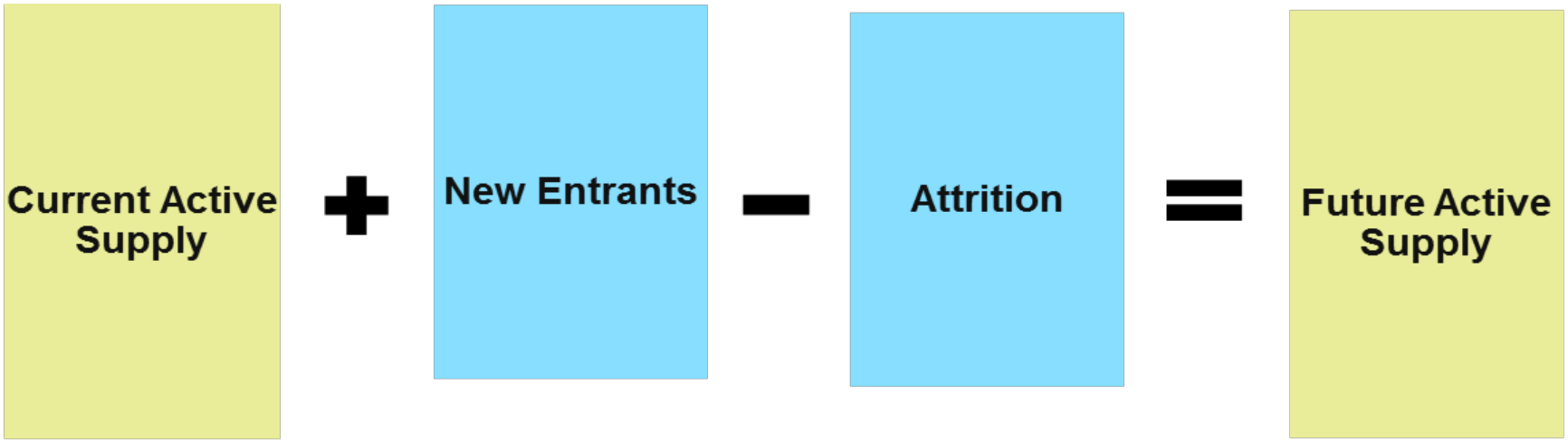
Microsimulation Approach to Workforce Supply Modeling

- Individuals are the unit of observation
- Modeling process
  - Starts with database containing starting year workforce supply
  - Each year to 2030, model:
    - New entrants to the workforce
    - Workforce attrition (retirement, mortality, out migration)
    - Other factors (labor force participation, hours worked, geographic mobility by occupation/specialty and provider demographics)
  - End of year supply = starting supply for subsequent year
- Influencing factors
  - Demographics of the workforce
  - Economic and policy factors (e.g., earnings, payment system)

Nursing Workforce Simulation Model: Supply Component

- Simulates likely career choices of individuals
  - Microsimulation models workforce decisions of individual clinicians, rather than stock-and-flow models that simulate groups of clinicians
- Dynamic modeling
  - Environmental and market factors—response to changes in the economy, health care operating environment, and policy
  - Shortages/surpluses affect clinician workforce decisions
- Workforce activities: what, where, how, when
  - What type of work will I do?
  - Where will I work (e.g., state of practice)?
  - How many hours will I work?
  - When will I retire?

Conceptual Model for Nurse Workforce Supply



Workforce Participation

Hours Worked

Change in Occupation, Specialty, or Education Level

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Scenario Modeling Capability

- What if….
  - Supply declines? (fewer new grads, early retirements)
  - Supply increases? (more new grads, delayed retirements)
- What if….
  - Demand changes
    - Increase in the number of people with health insurance
    - Improved chronic disease management
    - Used new technology supports better access to services (e.g., telehealth)
    - Reduced the number of unnecessary emergency room visits or hospitalizations
- Can model a wide range of scenarios—reflecting uncertainties in future trends in both supply and demand

Can This Be Used to Model Team Based Care?

- Can estimate demand across professions with similar clinical roles and responsibilities
  - physicians, nurse practitioners, physician assistants
  - dentists, dental therapists
- Can't easily track which team member provided which clinical service to a patient
- Can't account for non-licensed workers (i.e., community health workers, care coordinators) who provide non-clinical services

Issues/Challenges

- Few detailed data sources on RN supply
  - ACS
  - Licensure data
- Doesn't account for state-to-state variation
  - scope of practice
  - Medicaid policies
  - delivery system configurations
- National and state level assessments may fail to reveal local supply/demand imbalances

Making the Best Use of Model Findings

- Represents big picture
- Use in conjunction with surveillance data to understand local issues that impact supply/demand imbalances
  - e.g., BSN in 10 in NY
- Can effectively inform potential policy options
- Help stakeholders in your state to understand the value of the findings

Questions?

Contact jmoore@albany.edu

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