

Assessing the Effectiveness of Alternative Options to Address the Nursing Shortage

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by

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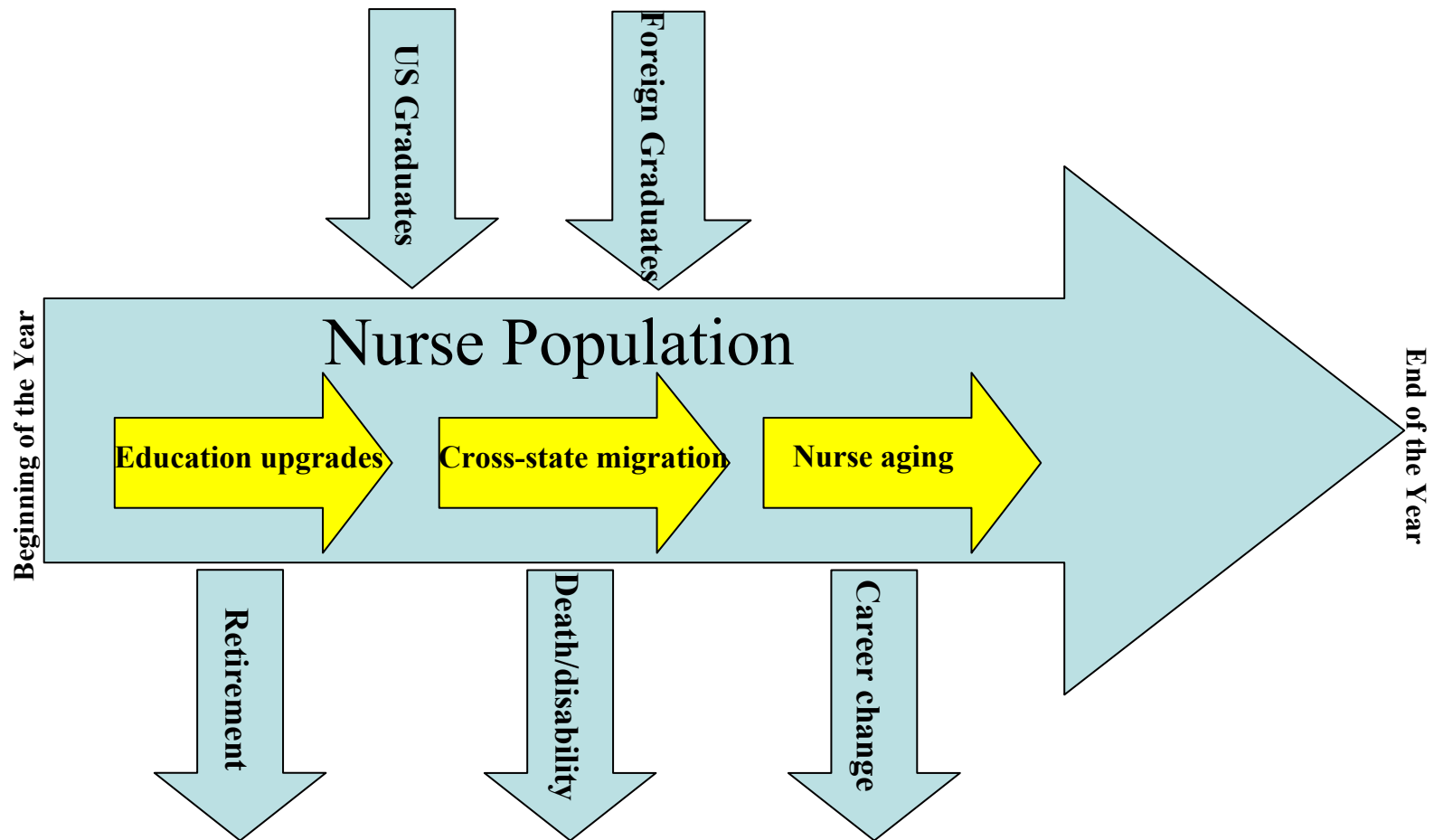
National Center for Health Workforce Analysis, BHPPr, HRSA

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RN Supply Determinants

- New graduates from U.S. nursing schools
- Immigration of RNs from outside the U.S.
- Change in educational attainment
- Cross-state migration
- Labor force participation rates
- Attrition from the current RN population (e.g., due to career changes, retirement, death and disability)

Overview of the Nursing Supply Model (NSM)



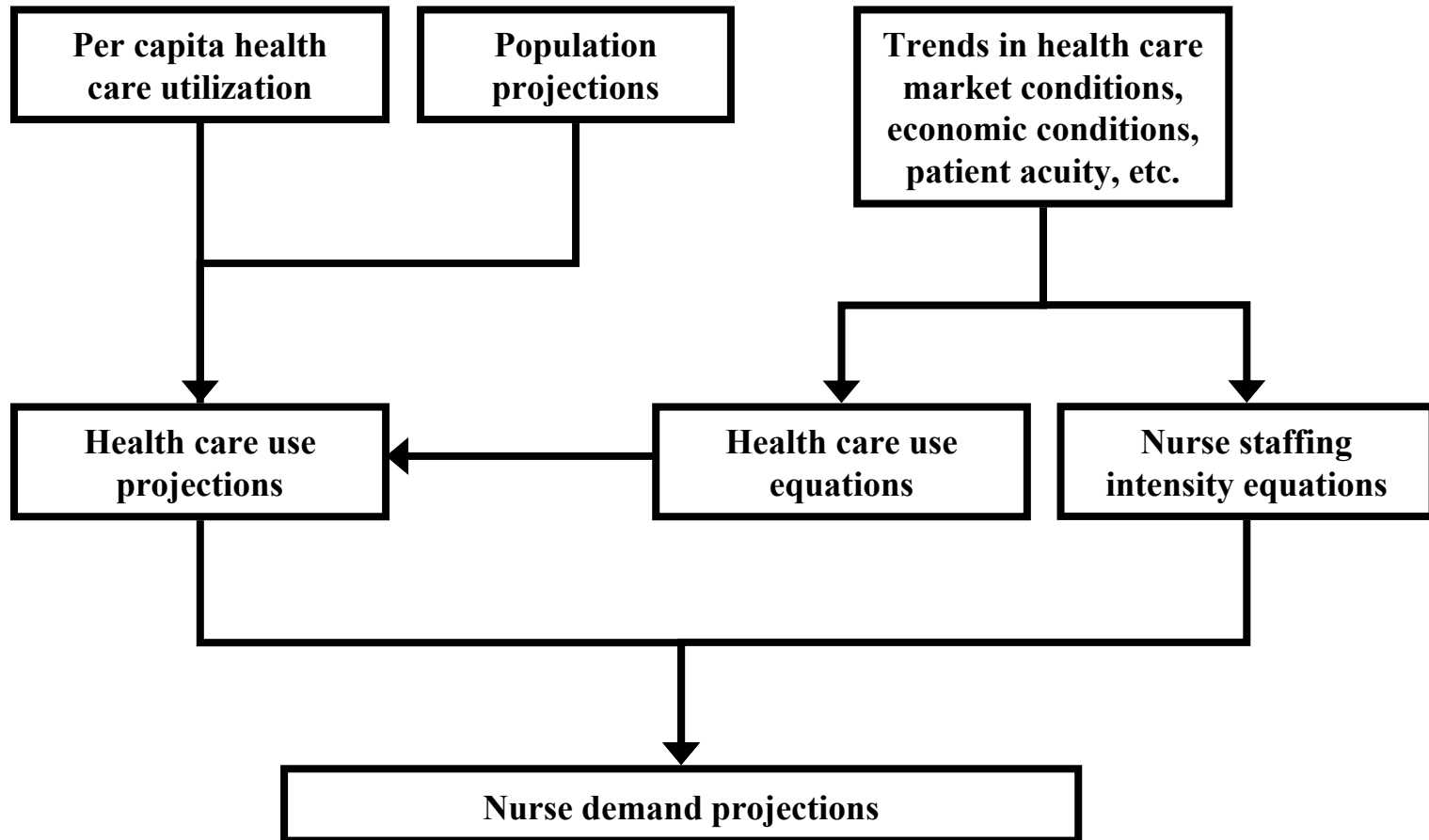
RN Supply Projection Dimensions

- Three supply measures
 - Licensed RNs
 - RNs employed or seeing employment,
 - Full-time-equivalent (FTE) RNs employed
- 50 States plus the District of Columbia
- Three education levels
 - Diploma and associates degree
 - Baccalaureate degree
 - Masters or higher degree
- RN age
- Years 2000 to 2020

RN Demand Determinants

- Demographics and geographic location of population
- Economic factors
 - Nurse wages (e.g., ratio of RN to LPN hourly wages)
 - Medicare and Medicaid reimbursement rates
 - Per capita personal income
- Characteristics of the health care system
 - Shift from hospital inpatient to outpatient services
 - Percent uninsured
 - HMO saturation rate

Overview of the Nursing Demand Model (NDM)



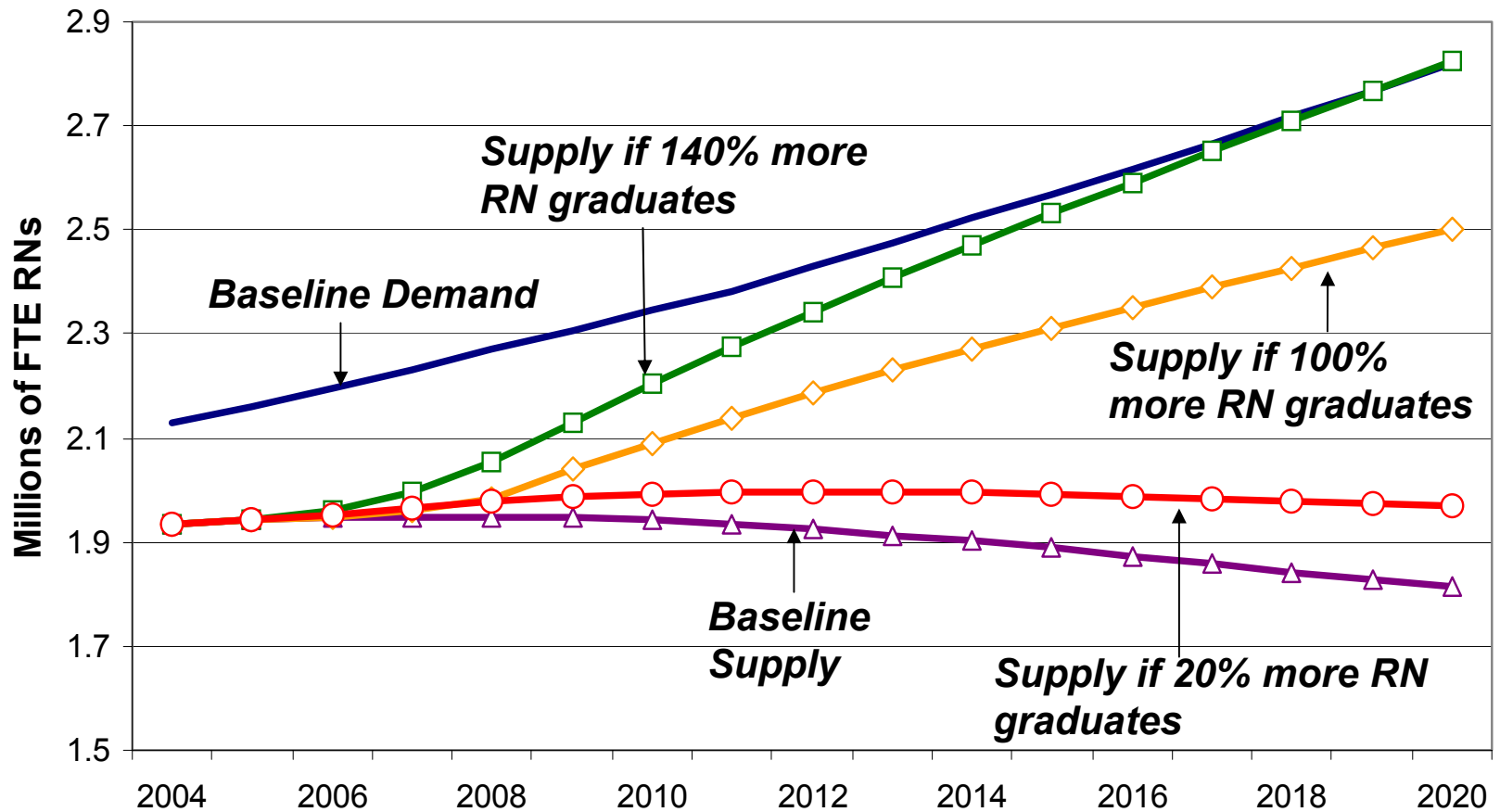
RN Demand Projection Dimensions

- Demand for RNs in 12 settings (e.g., hospitals, nursing homes, doctors offices)
- 50 States plus the District of Columbia
- Years 2000 to 2020

Supply Scenario #1

**Increase Graduates of
Registered Nurse Training
Programs**

Supply Implications of Increased RN Graduates



Supply Scenario #1—Results

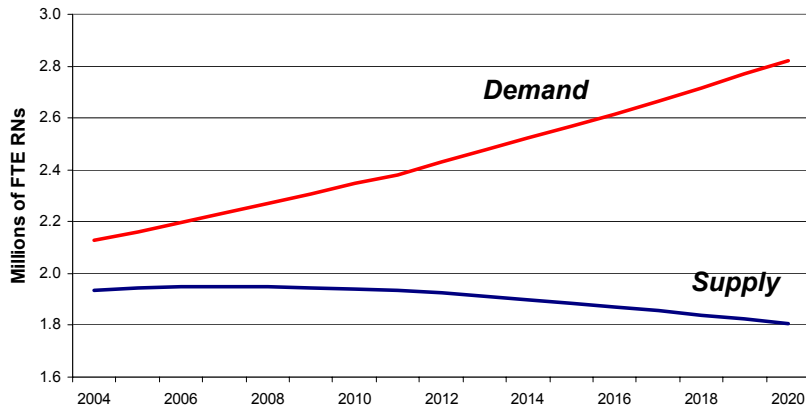
To meet projected growth in RN demand, the U.S. needs to more than double the number of RNs graduating from U.S. nursing programs

Supply Scenario #2: Increase RN Wages Relative to Alternative Occupations

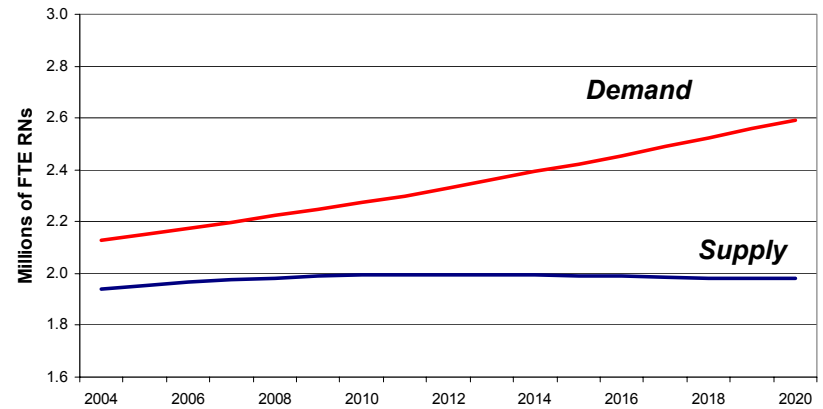
- Short-term supply pay elasticity
 - Assumes each 1% real increase in RN wages increases FTE activity rates by 0.3%
- Long-term supply pay elasticity
 - Includes short-term pay elasticity effects
 - Also assumes each 1% real increase in RN wages increases the number of new RN graduates by 0.8% (assumes no training capacity constraints)
- Demand assumptions: Higher RN wages result in some substitution of LPNs (and other health workers) for RNs, the rate of substitution differs by employment setting

Projected RN Supply Under Alternative Real Wage Growth Scenarios

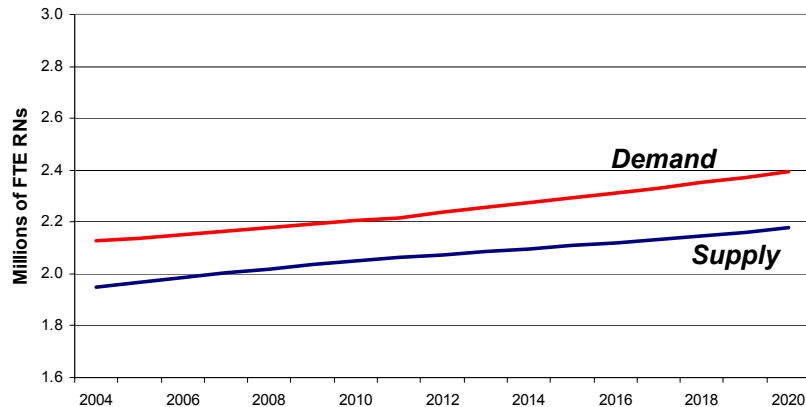
0% Growth (Baseline)



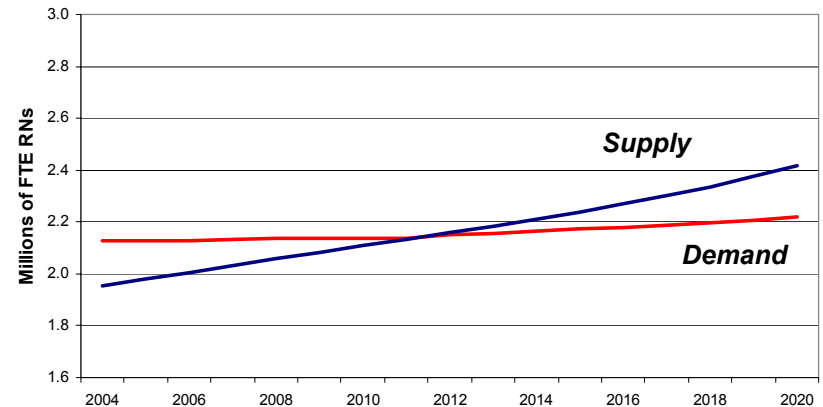
1% Annual Growth



2% Annual Growth



3% Annual Growth



Supply Scenario #2—Results

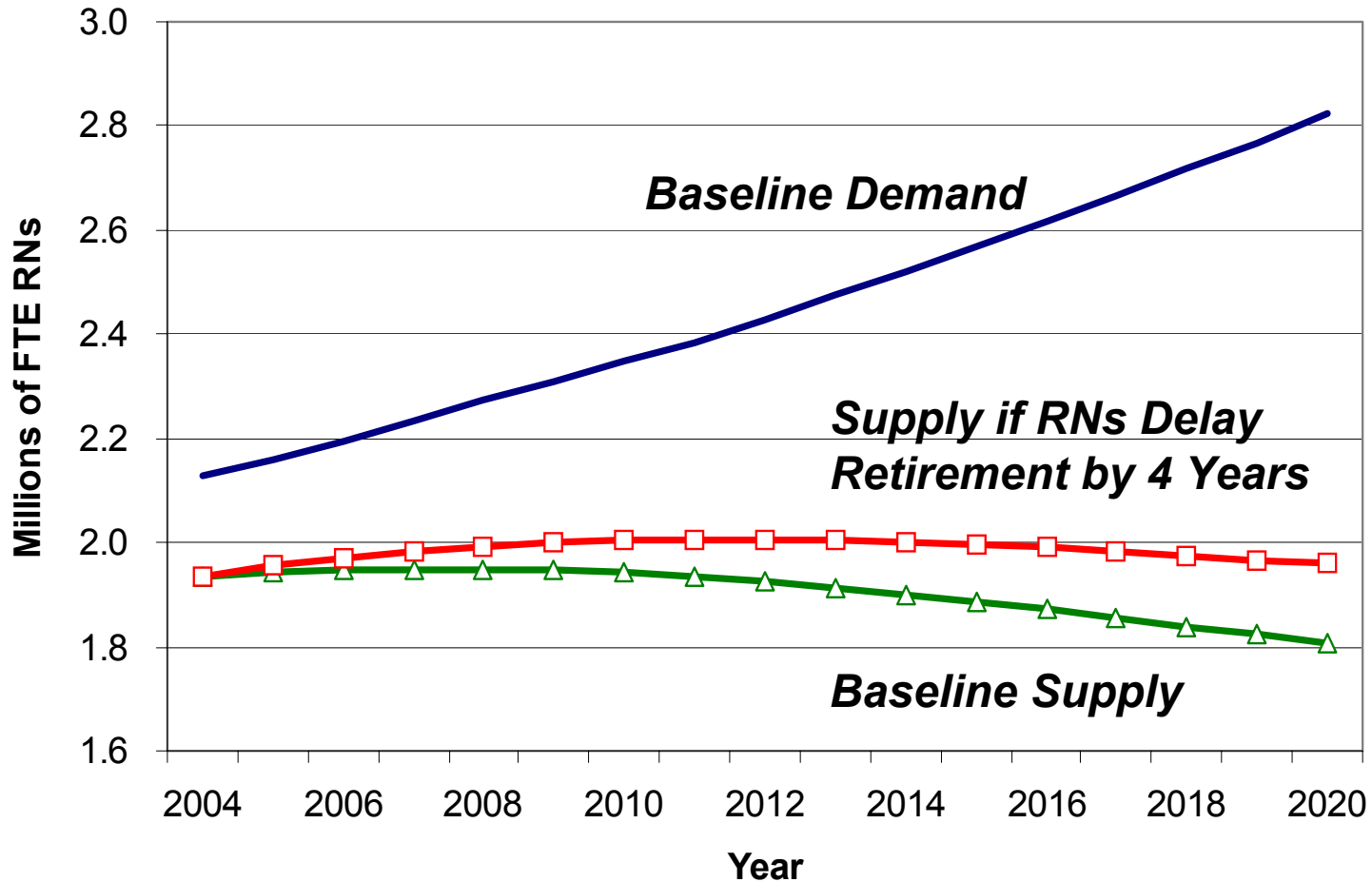
If compensation alone were used to eliminate the shortage, RN wages would need to increase between 2% and 3% annually, over a period of 8+ years (above any increases paid for other occupations)

3% annual growth through 2012 = cumulative growth of 27%

Supply Scenario #3: Encourage RNs to Delay Retirement

Delay Retirement by 4 Years

RN Supply Impact of Delaying Retirement



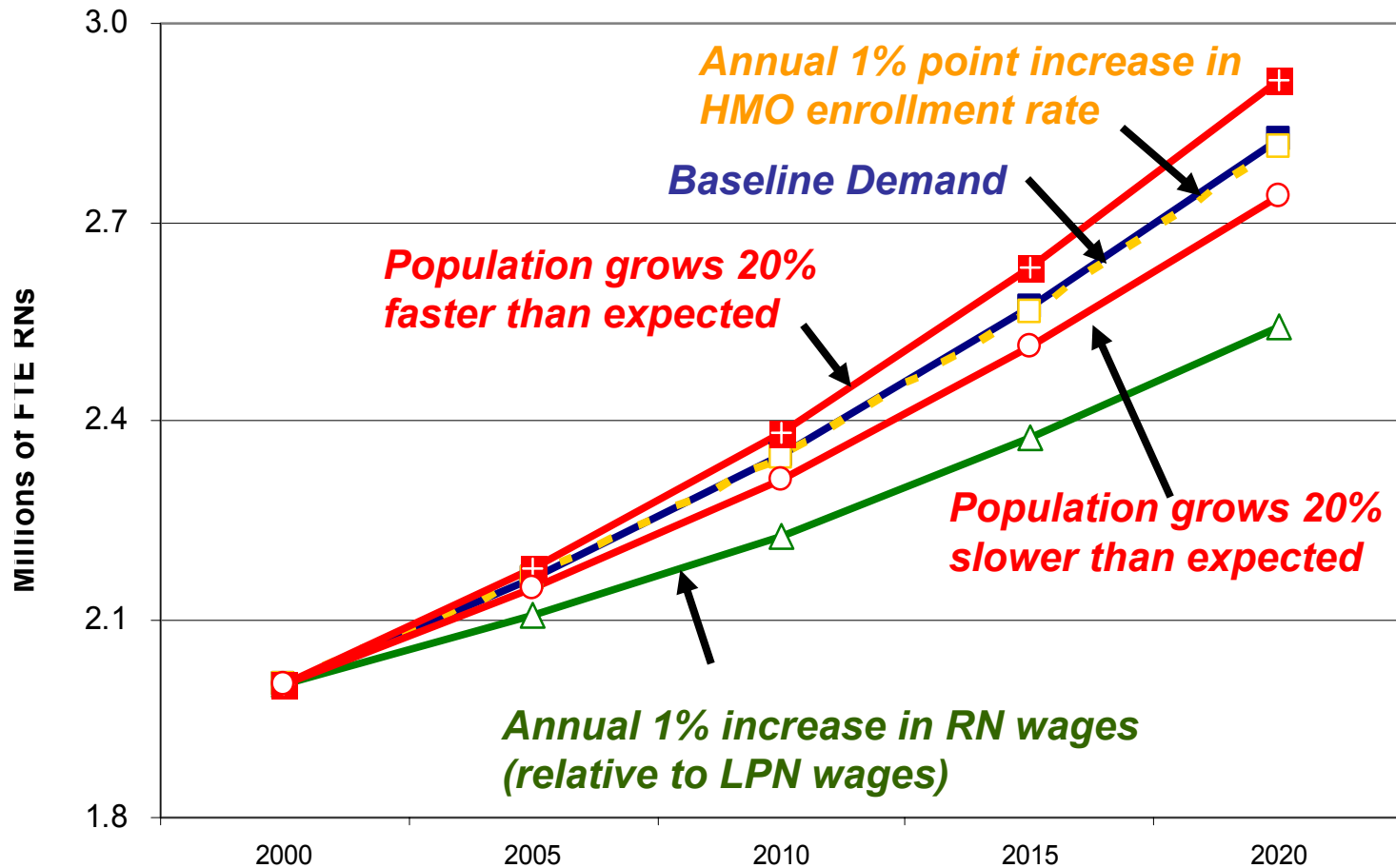
Supply Scenario #3—Results

Delaying retirement by an average of 4 years would increase the supply of FTE RNs by nearly 150,000 (8%) in 2020 (relative to baseline projections), but shortage persists

Demand Scenarios

- Scenario #1—1% annual increase in HMO saturation rate
- Scenario #2—1% annual increase in RN to LPN wage ratio
- Scenario #3—Population grows 20% faster than projected
- Scenario #4—Population grows 20% slower than projected

Projected Demand for RNs Under Alternative Scenarios



Demand Scenarios— Results in 2020

- Scenario #1—No change in demand
- Scenario #2—10% decrease in demand
- Scenario #3—88,000 more RNs needed
- Scenario #4—85,000 fewer nurses needed