RAND HEALTH

Primary Care workforce implications of new models of care

RAND Health
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Workforce Analysis as Usual

- Assume we want to continue today's production function for health care, more or less
  - Same number of providers of each type per unit population
- Look at the pipeline
  - Trainees
  - Providers exiting workforce
- Account for demographic trends
- Voila! Shortage, surplus, or just right

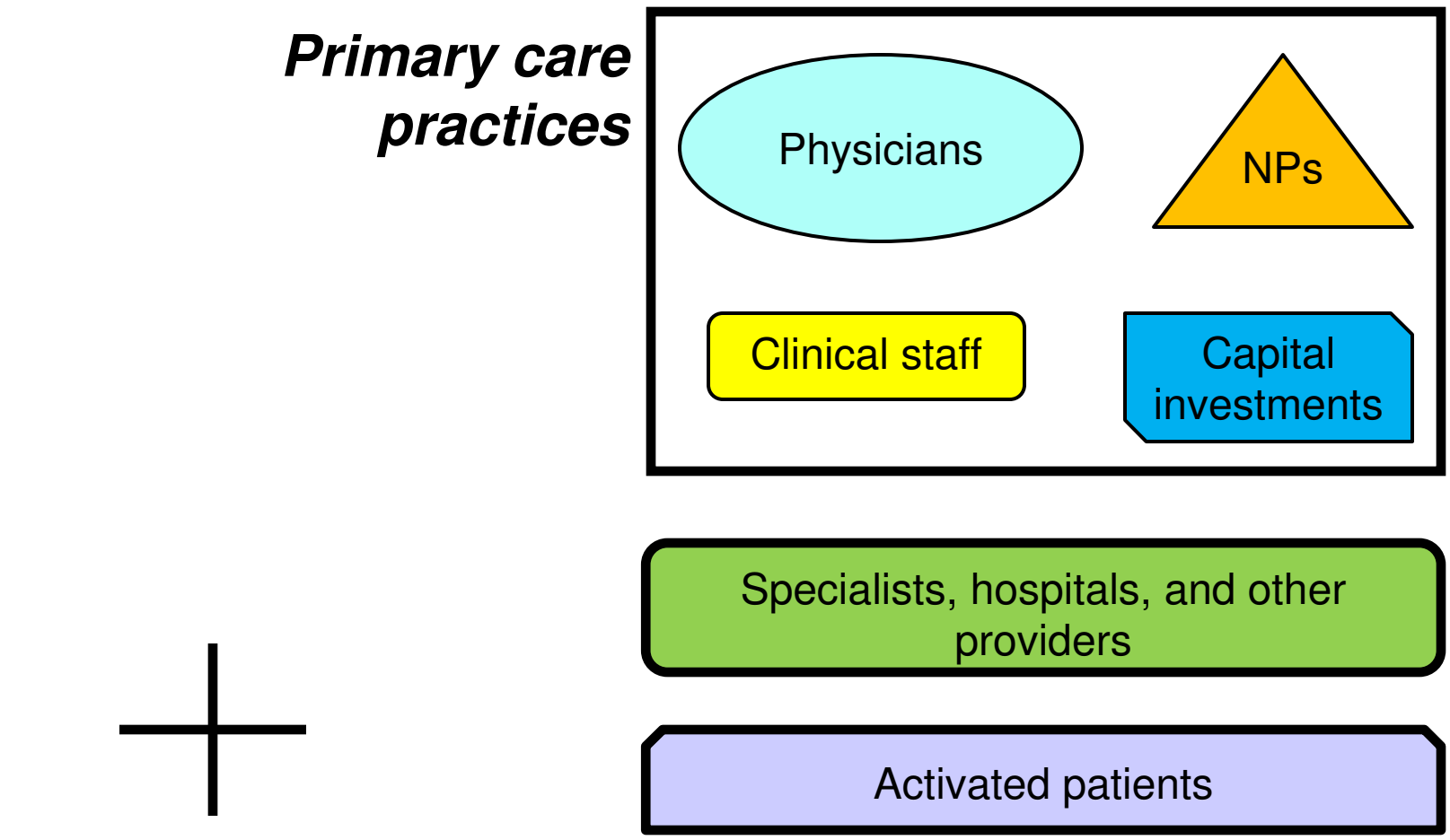
Medical Homes: Changing the Health Care Production Function

- Key medical home components:
  - Better teamwork within practices
  - Greater coordination in "medical neighborhood"
  - New capital investment
  - Reallocation of provider effort

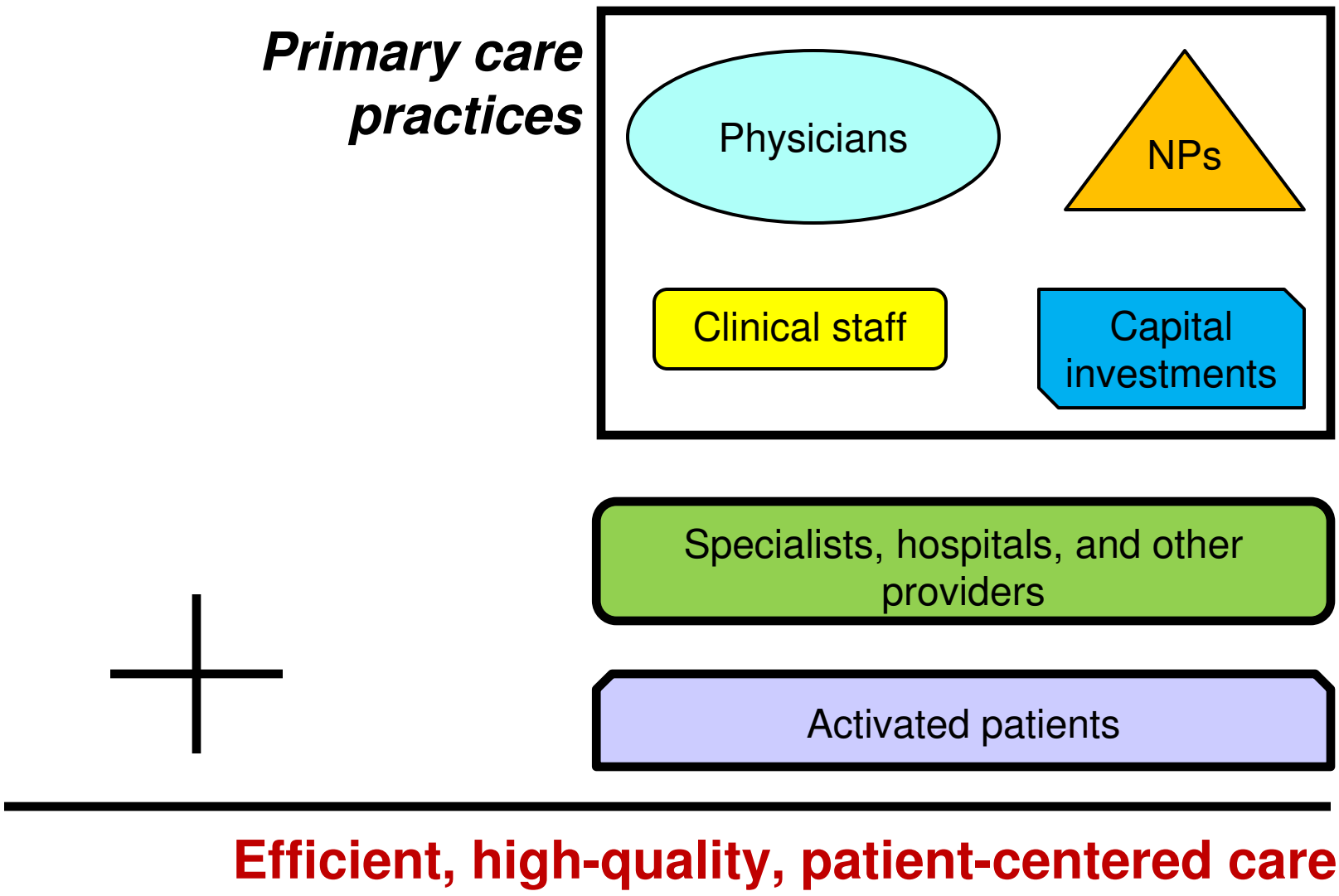
- Complex relationships possible between provider quantity, skills, and activities

- Argues for a broader view of what "workforce analysis" might include

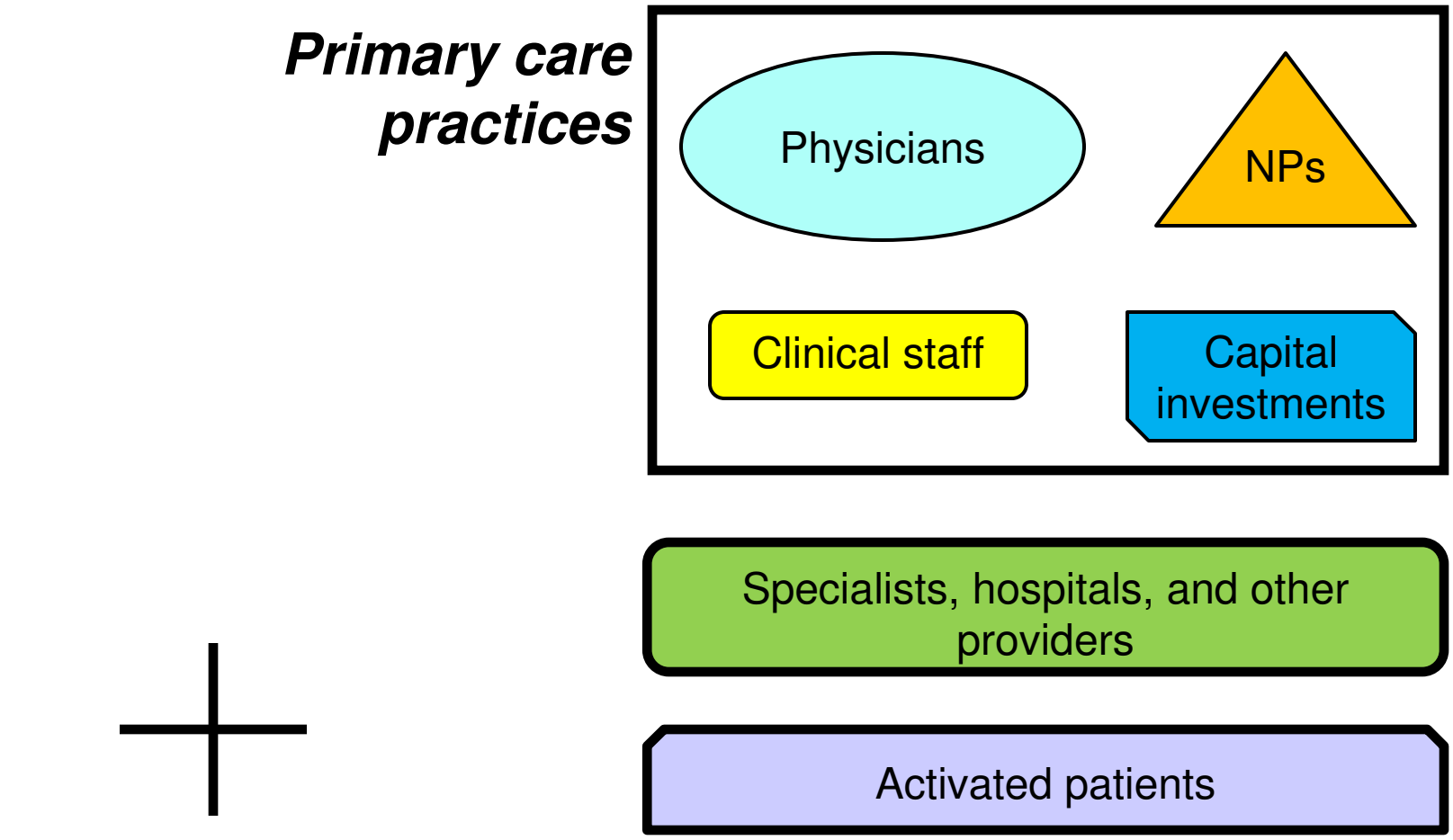
Medical Home Production Function



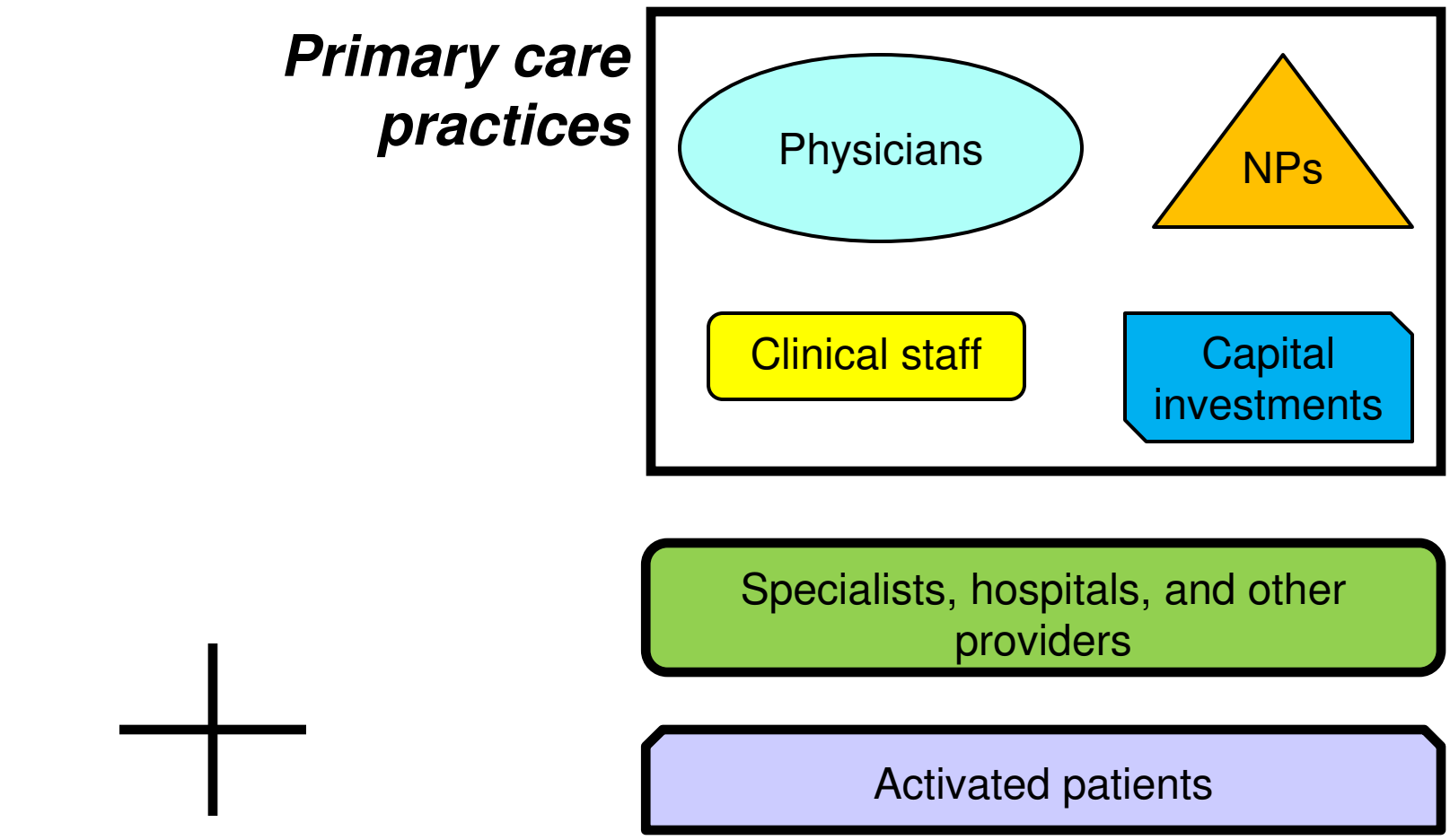
Better Teamwork May Change "Right Mix"



Better Coordination: Lesser Need for Specialist and Hospital Care?



New Capital: Substitute for Labor?



Controversies in provider laborforce forecasting

- **Widely differing assumptions about…**
  - **Trends in specialty choice**
  - **Effect of growth in insurance coverage**
- **HRSA (2008): 7,000 PCP surplus in 2020**
- **AAMC (2013): 45,000 PCP shortage in 2020**

Most forecasting models have one major assumption in common:

The number of physicians required to care for a given population is fixed

What if new models change the numbers of providers needed to care for a population?

- **New models of care may use different staffing**
  - **Patient-Centered Medical Homes (PCMH)**
  - **Nurse Managed Health Centers (NMHC)**

Our approach:

1. **Estimate how new models are staffed**
   - **Physician (MD/DO), Nurse Practitioner (NP), Physician's Assistant (PA)**
2. **If different: project provider demand (use) if these models become more prominent**
3. **Compare implied provider demand to projected provider supply**

1. How does staffing of new models differ? Data sources

- **Patient-Centered Medical Home (PCMH)**
  - **Literature survey**
    - **Advisory board study**
  - **Data from Pennsylvania Chronic Care Initiative**
    - **>100 practices in PA (54 currently analyzed with complete data) received extra payments to improve NCQA medical home scores**
    - **RAND evaluation supported by Commonwealth Fund**
- **Nurse-Managed Health Center (NMHC)**
  - **Own survey of convenience sample of ~25 NMHCs**

Medical home staffing (provider mix and panel size)

- **Advisory Board survey**
  - **Self-designated medical homes use 20% more NPs per MD/DO and 10% more PAs, relative to control practices**
  - **Panel sizes similar but Medical Homes expect to grow 20%**
- **Other literature**
  - **Medical homes appear to have smaller panel size**
- **Pennsylvania survey**
  - **Define medical homes two ways (structure/process):**
    - **Quality tools index (e.g. reminders for chronic disease)**
    - **Access index (e.g. extended-hours care)**
  - **Compare staffing as a function of 'medical home-ness'**

Pennsylvania PCMH staffing mix

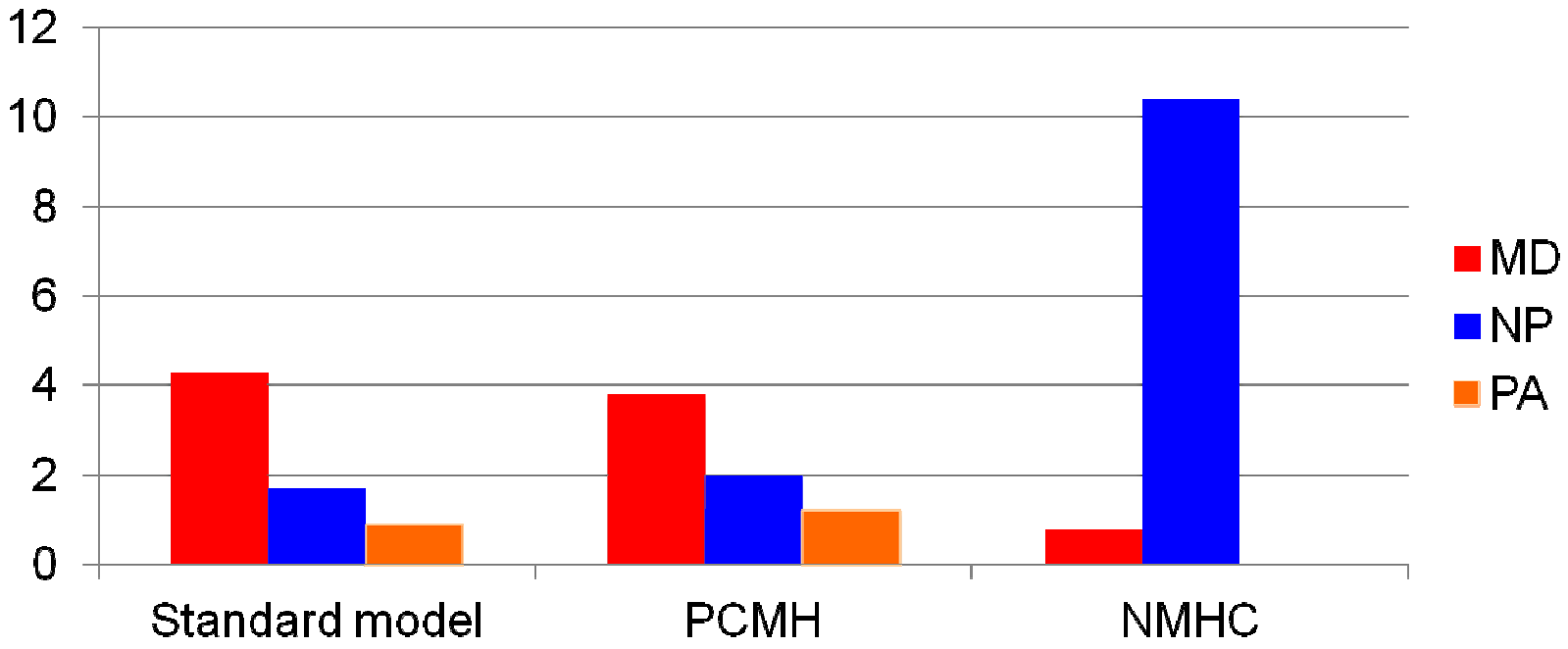
Internal staffing ratio	Number of sites	Initial (NP + PA) per MD/DO	Final (NP + PA) per MD/DO
Sites with a large improvement in medical home quality index	**33**	**0.39**	**0.57**
Sites with little or no improvement in medical home quality index	**21**	**0.39***	**0.45**
Sites with a large improvement in medical home access index	**33**	**0.24**	**0.33**
Sites with little or no improvement in medical home access index	**21**	**0.24***	**0.29**

*The 'initial' number of NPs and PAs per MD/DO was renormalized (proportionally) to the same level as the other sites to make figures more comparable

NMHC staffing

- **Of 25 practices with complete data:**
  - **Typical NP panel sizes are ~1000**
  - **Staffing ratio: for a 10,000 patient panel:**
    - **10 NPs**
    - **1 MD**
    - **7 MAs**
    - **5 RNs**
    - **0 PAs**
  - **MDs appear more likely present in states with restrictive NP scope of practice**

Model staffing per 10,000 US residents



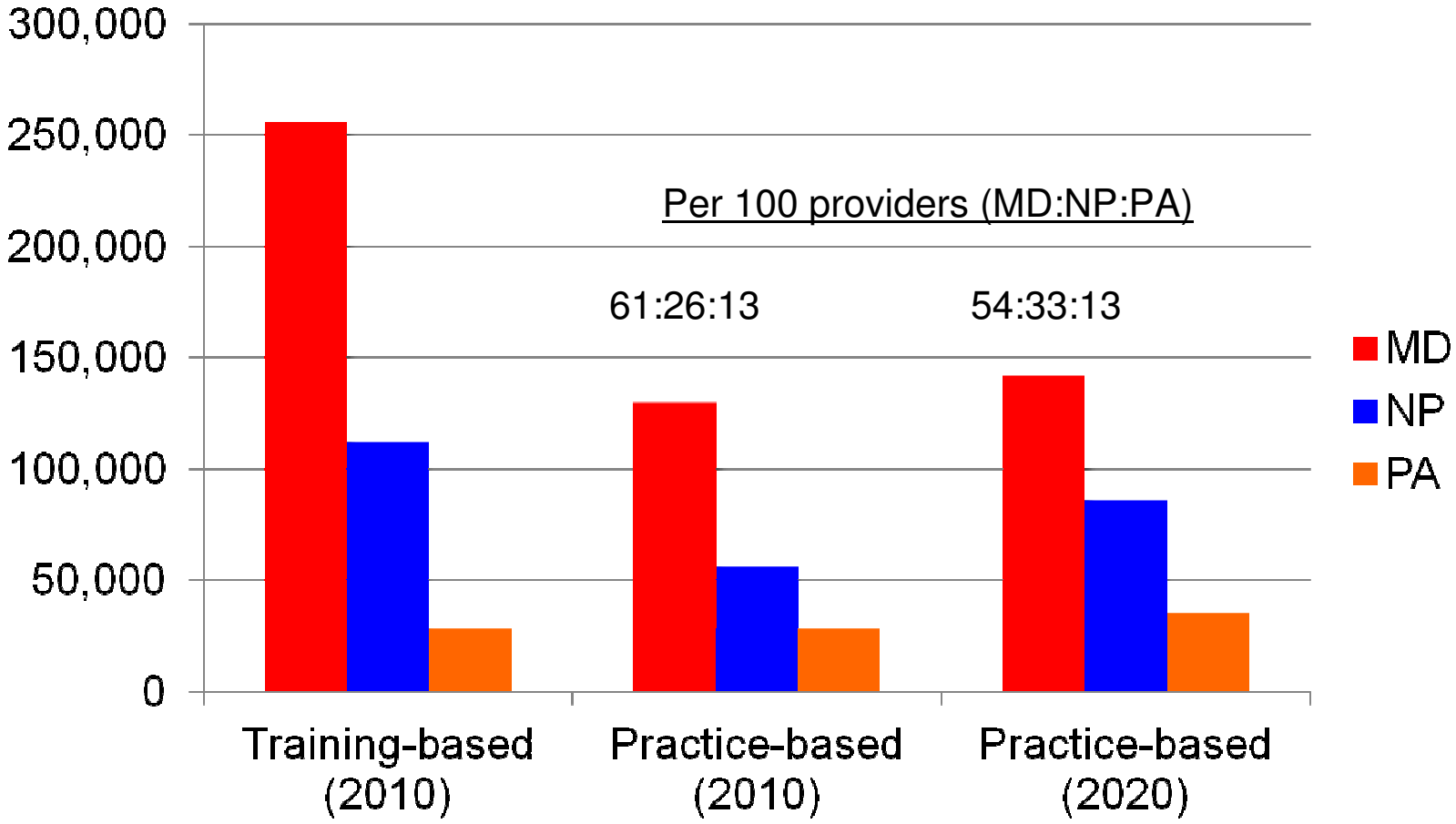
Assumptions:

- PCMH uses ~ 10% more NPs and PAs per MD/DO (medium uncertainty)
- PCMH panel sizes are roughly the same as non-PCMH (high uncertainty)

Supply vs demand projections

- **Demand for primary care providers increases 8%**
  - **Population aging (6%, Martini et al, HSR, 2007)**
  - **Affordable Care Act (2%, CBO "Key Issues…", 2008)**
- **Default modeling assumptions**
  - **Use staffing provider mix as shown**
  - **Vary (in alternative forecasts)**
    - **Growth of PCMH (~15% of primary care today)**
    - **Growth of NMHC (~0.5% of primary care today)**
    - **PCMH panel size (very uncertain)**
- **Compare demand to projected supply**

Current and projected primary care supply



PCP from HRSA, Colwill et al (2008); NP from Auerbach (2012); PA from recent enrollment trends

Shortage forecasts

- **Primary care provider supply and demand scenarios**

Website courtesy of Anna Mehrotra (@annamehrotra)

Conclusions/questions

- **Shortage projections are very sensitive to changes in primary care delivery models**
  - **Standard laborforce projections don't account for changing models of primary care delivery**
- **Growth of the PCMH and NHMC models would ameliorate projected provider imbalances**
- **Physician shortage/surplus projections are also highly dependent on PCMH panel size**
- **Physician shortages can be eliminated under various reasonable scenarios without modifying the current "training pipeline" for physicians**

Variation in PCMH panel sizes

- ***Altschuler et al (2012): Ideal panel sizes can vary between 1,387 and 1,947 per physician based on degree of delegation of tasks to non-clinicians***

- ***Group Health Cooperative: Medical home transformation reduced panel sizes 23%***

- ***Rushika Fernandopoulle: Lessons from Iora Health suggest panel sizes could be doubled by maximizing use of technology, etc.***