Nurse Practitioners: A Solution to America’s Primary Care Crises

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Agenda

1. Overview of primary care and nurse practitioners (NPs)
2. How the primary care public and private policy environments are changing
3. The evidence: Recent research on contributions of NPs providing primary care
4. Recommendations
Disclosure

Past and current funders, board of directors

• Gordon & Betty Moore Foundation (current)
• Montana State University Institute for Applied Regulatory Economic Analysis (current)
• Johnson & Johnson (past)
• Robert Wood Johnson Foundation (past)
• American Association of Nurse Practitioners (past)
• Board of directors: AcademyHealth, Bozeman Health
Disclosure

The data and views expressed in this presentation are mine, and are not the views of the (still unfunded) National Health Care Workforce Commission established by the Affordable Care Act in 2010!

1. Overview of primary care and nurse practitioners

**Primary Care:** “The provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community”

**Conditions:** Hypertension, angina, diabetes, asthma, depression and anxiety, back pain, arthritis, thyroid dysfunction, chronic obstructive pulmonary disease, and basic maternal and child health care services, including family planning, vaccinations, mgt. of chronic conditions, etc.

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Value of primary care

Lowers cost, decreases hospital and emergency room use, improves health, prevents illness, lowers mortality¹

“Primary care is the most affordable safety net we can offer our citizens” ... wrote Gordon Moore, MD, in The Journal of the American Medical Association, in 1991²


Primary care delivered mainly by physicians, nurse practitioners and physician assistants

**Physicians:** Allopathic (MD) or osteopathic (DO),
Internist, family physician, GP (general practice),
OB/GYN, geriatrician, pediatrician

**Nurse practitioners (NP)s:** Registered nurse who has completed a master's or doctoral degree program to acquire advanced clinical training beyond their initial professional registered nurse preparation. Didactic and clinical courses prepare nurses with specialized knowledge and clinical competency to practice in primary care, acute care, long-term health care and other settings
NPs have been providing primary, acute and specialty healthcare to people of all ages and walks of life for decades.

- Shortages of primary care physicians in 1960s led to development of NPs at University of Colorado.

- NPs assess patients, order and interpret diagnostic tests, make diagnoses, and initiate and manage treatment plans – including prescribing medications.
Over the decades

- Steady growth in number of NPs from 1970s to 2000
  - Stronger growth in the 2000s
  - Explosive growth since 2010

- 248,000 NPs in 2018 ... provide estimated 1 billion visits annually\(^1\)
  - Primary care NPs: 61% family, 21% adult and geriatric, 3% women’s health, 5% pediatrics

American Association of Nurse Practitioners  https://www.aanp.org/all-about-nps/np-fact-sheet
Pivotal Publications

- 1986 Congress of the United States, Office of Technology Assessment
  First major policy analysis of NPs, Certified Nurse Midwives, and Physician Assistants (PAs)

- 1992 Yale law school associate dean Barbara Safriet’s landmark analysis of scope of practice limits placed on NPs and their consequences


2. How primary care public and private policy environments are changing, briefly
Increasing concern over inadequate access to primary care, and shortages of physician workforce

• In 2018 an estimated 84 million people have inadequate access to primary care, 7,181 health professional shortage areas in the US\(^1\)

• Yet, by 2030, shortages projected of up to 49,300 primary care physicians and 72,700 non-primary care physicians\(^2\)


Growing concern over uneven geographic distribution of physician workforce

- Particularly in rural areas
- Persistent problem despite billions in spending, decades of policy, doubling of the number of physicians, and numerous private and public sector programs

Growing *public* policy support for expanding the use of NPs

- ACA-related insurance expansions
- Health Resources and Services Administration
- 2012 National Governors Association Report
- Veterans Administration
- Federal Trade Commission
Growing *private* policy support for expanding the use of NPs

- 2010 National Academy of Medicine Report
- Researchers
- Bipartisan Policy Center
- Numerous “Think Tanks”
- American Association of Retired Persons
- Providers – hospitals, ACOs, retail health
  
  CVS (2016) 9,700 stores, 1,100 minute clinics in 33 states, over 37M visits majority by NPs, PAs as well, w 95% reporting high quality
- Insurers
Addressing the Nation’s Primary Care Shortage: Advanced Practice Clinicians and Innovative Care Delivery Models
Yet, NPs face state imposed limitations on their practice and autonomy

Full practice – 23 states
Reduced practice – 16 states
Restricted practice – 12 states

Why do states impose restrictions?

- “SoP laws are determined by state legislatures, who are very often informed and influenced by practitioner advocacy groups. There exists a misperception that the move to fully authorized SoP is a zero-sum game in which physicians lose when APRNS gain”

- “A second misperception is that the restrictions [on the SOP of NPs] are necessary to protect the public health”


Also see: Paul J. Feldstein, Health Care Economics (Clifton Park, NY: Delmar, 2005).
2. The evidence: Recent research on the contributions of NPs providing primary care

- Motivation and approach

- Key results: Access, costs, quality of primary care provided by NPs compared to MDs
Motivation: Congressional concerns and questions

1. Access to primary care
   - Physician shortages – how large, when and where?
   - Can uneven distribution of physicians be improved?
   - Physician willingness to accept Medicaid patients?
   - Do state level regulatory restrictions placed on nurse practitioners limit access to primary care?

2. Quality and cost
   - How does nurse practitioner quality of care compare to physicians?
   - Do nurse practitioners provide care at less cost than physicians?
Approach

Conduct studies on:

1. Factors affecting access to primary care (economics team)
   - Physician location decisions “Power Couples”
   - Geography of primary care workforce
   - Projections of growth of physicians and NP workforces

2. Contributions of nurse practitioner and physicians (NP outcomes analysis and survey research teams)
   - Studies using national Medicare data
   - National surveys of primary care NPs (PCNPs) and physicians (PCMDs)
Key study Results
Trends in proportion of married physicians whose spouse has a graduate degree (top) or whose spouse is a physician (bottom), 1960-2010

Trends in having a highly educated spouse by gender
(women grew from 4% to 31% of married physicians)

Are physicians with highly educated spouses less likely to work in rural shortage areas?

Logistic regression models of the likelihood of working in a rural shortage area

Main result: Compared to other married physicians, physicians that had a spouse with a graduate degree were significantly less likely (40%) to work in a rural shortage area

Significant demographic headwind

Geography of people newly eligible for health insurance, the primary care workforce, and impact of SoP

Objectives

1. Construct a detailed portrait of the geographic location of primary care workforce on the eve of the ACA’s insurance expansions in 2014

2. Determine whether geographic accessibility to primary care clinicians differed across urban and rural areas, and across states with more or less restrictive SoP laws

Main results

- Rural areas had 3-4 times the number of uninsured people per primary care clinician than urban areas (357 rural vs 131 urban areas)

- PCMDs were more accessible in urban areas whereas PCNPs were more accessible in rural areas

- State SoP restrictions associated with up to 40% fewer PCNPs
  - People living in restrictive and reduced SoP states had significantly less access to primary care

People living in restrictive and reduced practice states have significantly less access to primary care.

Projections of the physician and NP workforces
Masters and doctoral degrees in nursing awarded, 1984-2016
Number of full time physicians, NPs, and PAs historical and projected

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2010</th>
<th>2016</th>
<th>2030 (Proj)</th>
<th>Ave growth rate 2016 to 2030 (Proj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>711,357</td>
<td>862,698</td>
<td>920,397</td>
<td>1,076,360</td>
<td>1.1%</td>
</tr>
<tr>
<td>NPs</td>
<td>64,800</td>
<td>91,697</td>
<td>157,025</td>
<td>396,546</td>
<td>6.8%</td>
</tr>
<tr>
<td>PAs</td>
<td>44,282</td>
<td>88,097</td>
<td>102,084</td>
<td>183,991</td>
<td>4.3%</td>
</tr>
<tr>
<td>NPs &amp; PAs per 100 MDs</td>
<td>15.3</td>
<td>20.8</td>
<td>28.2</td>
<td>53.9</td>
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Summary, thus far

- The proportion of physicians married to highly educated spouses has grown dramatically.
- These “Power Couples” are significantly less likely to practice in a rural shortage area.
- NPs, though fewer than MDs, are more likely to practice in rural areas.
  - Rural areas have highest uninsured, particularly in non Medicaid expanding states.
- Projections indicate slow growth in physician supply, declines in rural areas.
- SoP restrictions decrease access to care.
Studies Assessing the Contributions of Nurse Practitioners

Overall goal: Provide updated and more generalizable evidence on contributions of NPs and compare results to MDs

Two-part strategy

1. Analyze national samples of Medicare beneficiaries using claims data (growing population of complex patients)

2. Conduct national surveys of NPs and MDs (both primary care and specialty care) to provide a more comprehensive understanding of contributions and issues/obstacles
Studies Using Medicare Claims Data (2008-2013)

- Medicare beneficiaries
  - Growing numbers, chronic and complicated conditions
- Large samples of NPs & MDs
- Constructed 16 measures of quality, 4 domains
- Advanced statistical methods to control for socio-demographic characteristics and severity of illness
- Tested quality of care over a 12 month period
- Greater generalizability
Who receives care from PCNPs?

Across studies and different data, PCNPs significantly more likely than PCMDs to care for

- Non-whites, American Indians
- Younger
- Female
- Disabled
- Dually eligible for M&M
- Living in rural areas

Are there differences in the types of primary care services provided by PCNPs and PCMDs?

<table>
<thead>
<tr>
<th>Service</th>
<th>Percent of PCNP billed payments</th>
<th>Percent of PCMD billed payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation and management a</td>
<td>80.1%</td>
<td>82.5%</td>
</tr>
<tr>
<td>Procedures</td>
<td>9.1%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Imaging studies</td>
<td>1.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Tests</td>
<td>4.8%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Durable medical equipment</td>
<td>.02%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>4.6%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Unclassified</td>
<td>0.2%</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

aE&M categories include: 1) Office visits (new and established patients) 2) Hospital visit (initial, subsequent, critical care), 3) Emergency department visit, 4) Home visit, 8) Nursing home visit

bDistribution of BETOS Categories differ significantly between the two groups of clinicians at the p .05 level.

How do costs of services provided by PCNPs to Medicare beneficiaries compare to PCMDs?

No matter how costs were measured, PCNPs consistently cost Medicare less than PCMDs*

<table>
<thead>
<tr>
<th>Cost Measures</th>
<th>Dollar Amount Less than PCMD</th>
<th>Percent Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total E&amp;M payments</td>
<td>-$207</td>
<td>29%</td>
</tr>
<tr>
<td>Inpatient stays</td>
<td>-$2,474</td>
<td>11%</td>
</tr>
<tr>
<td>Office visits</td>
<td>-$522</td>
<td>18%</td>
</tr>
<tr>
<td>Dollar adjusted work component of Resource Value Units (RVUs)</td>
<td>-$282</td>
<td>15%</td>
</tr>
<tr>
<td>E&amp;M RVUs</td>
<td>-$128</td>
<td>18%</td>
</tr>
</tbody>
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*Fully adjusted models, including propensity score weighted regression to help adjust for clinical and socio-economic differences between beneficiaries attributed to an NP versus a primary care physician.

Reasons for Cost Difference - Preliminary

- PCNPs submitted fewer claims for payment to Medicare (quantity) and billed for lower cost procedures and tests (prices) compared to PCMDs.
How does quality of services provided to Medicare beneficiaries by PCNPs compare to PCMDs?
16 quality measures in 4 domains

1. Chronic disease management: spirometry for COPD, lipid screening, HEDIS comprehensive diabetes care measure set (Hemoglobin A1c testing, annual LDL screening, medical attention for nephropathy, annual eye exam) (PCMD+)

2. Preventable hospitalizations (PCNP++)

3. Adverse Outcomes: MRI for low back pain, all-cause 30 readmission, inappropriate ED visits (PCNP++)

4. Cancer screening – breast and colorectal (PCMD)

Care provided to vulnerable Medicare beneficiaries

*Disabled, dual eligibles, and both groups*

- In measures where PCMD beneficiaries had marginally higher quality of care than PCNP beneficiaries (chronic disease management and cancer screening), the gap *diminished substantially*

- Suggests PCNPs’ strengths as providers may be more pronounced with vulnerable subgroups of Medicare beneficiaries

Do scope of practice restrictions placed on NPs protect the public?

- Tested 6 alternative state-level SoP classifications
- No evidence SoP restrictions associated w quality of care provided by NPs
- But limits access to primary care
In Sum

- Unrealistic to rely on physician workforce alone to provide adequate access to primary care (power couples, uneven distribution, shortages now and future)

- PCNPs more likely to practice in rural areas – precisely where there are more uninsured and newly insured, and increasingly fewer physicians

- PCNPs more likely to take care of vulnerable populations – women, non-whites, American Indians, poor, disabled, and dual eligibles

- PCNPs cost Medicare less

- PCNPs quality significantly higher than PCMDs on utilization of services, marginally lower on chronic disease management and cancer screenings

- State-level SoP unrelated to quality of PCNP practice, but decreases access
4. Recommendations: Changing minds, changing policy, leadership
Policy makers (public and private) should develop forums to bring PCNPs and PCMDs and their respective professional organizations together to engage in meaningful dialogue
If we are going to make change

- Need opportunities for physicians and NPs to validate/understand respective wants, fears, feelings, behaviors
- Need a sustained process to allow for talking, listening, understanding, and providing factual information (e.g.)
  - Majority of primary care NPs (82%) work w physicians, only 13% work independently – economic fears are misguided
Recommendation Two

Physicians must understand that NPs provide quality health care to those in need

Not only vulnerable populations, and those in rural locations, but all people
For this to happen must recognize

• On the whole, physicians are not reading the NP literature ... disbelief, brace mentally
• Professional organizations (in contrast to individuals)
  – Preoccupied over control, protecting their members, experts, avoiding further loss
• Perpetuate unfounded/exaggerated beliefs and fears
• Leading the team ... a way to control and protect
Recommendation Three

Public policy makers should drop restrictions on PCNP scope of practice

Will help increase access
Will reinforce the need for discussions
Through sustained engagement, NP and physician leaders can reach the point where

• Rather than viewing the expansion of NPs as a struggle between NPs and physicians over autonomy and who is the team leader, etc., NPs and physicians can work together to better understand each other as a first step toward envisioning a different future built on relationship that allow
  – For the *evolution* of roles and practices that make sense to both clinicians
  – *Respects* each other’s strengths, and ultimately
  – Leads to a *reconfiguration of the workforce* that is more responsive to the health needs of the population/community served, particularly in rural areas and among vulnerable populations
Thank you
Summary: Comparative analyses of nurse practitioners and physicians

- PCNPs are not as ethnically diverse as PCMDs
- PCNPs are older and have 5 years less experience
- PCNPs work in a greater variety of settings than PCMDs
- Majority (83%) of PCNPs work w PCMDs while less than half (46%) of PCMDs work with PCNPs
- Majority of both clinicians believe increasing supply of PCNPs will result in greater collaboration and team practice
- PCNPs, alone and working w PCMDs, more likely to treat vulnerable populations, including Medicaid population, and accept new patients

Summary: Comparative analyses of nurse practitioners and physicians

- Both clinicians spend their time in nearly identical ways and provide similar services, but
- PCNPs see fewer patients, work fewer hours and rarely have their salary adjusted for productivity and quality performance
- PCNPs site government and local regulations impeding ability to admit and round on pts, and write treatment orders in hospitals and LTC