Achieving Optimal Health in Ohio: A National Perspective

Stan Kozakowski, MD, FAAFP
Attainment of the highest level of health for all people.
Bottom Line

- Generalist care saves lives (and money)
- Much of health is determined locally
- Health care delivery needs to match community needs
- Invest and create your own local workforce
- Resources & tools are readily available to understand & address local needs
Triple Aim

• Better Health
• Better Health Care
• Lower Cost
adding the goal of improving the work life of health care providers, including clinicians and staff
So How Are We Doing?

(The People of the U.S.)
Life Expectancy at Birth - 2014

https://data.oecd.org
Life Expectancy at 65 - 2014

https://data.oecd.org
Health Spending by Country 2015

https://data.oecd.org
Primary Care Strength and Premature Mortality in 18 OECD Countries

Macinko et al, Health Serv Res 2003; 38:831-65
Within the U.S.
Premature Death Trends Over a Decade
Percent Each Age Group Contributed to the Premature Death (PYLL) Increase 2014 - 2015

- <1 year 1%
- 1-14 years 6%
- 15-24 years 24%
- 25-34 years 39%
- 35-44 years 22%
- 55-64 years 5%
- 65-74 years 3%

* From 2014 to 2015, premature death decreased among ages 45-54 years.
Top Five Causes of Death Over a Decade (Ages 15-44)

- Unintentional Injuries
- Suicide
- Homicide
- Cancer
- Heart Disease
- HIV

*From 2005 to 2015, population size for these age groups did not change substantially. In 2008, homicide surpassed HIV to become among the top five causes of death for adults ages 35–44.*
Number of Injury Deaths & Share Each Cause Ages 15-24 in 2015
Premature Death by Racial/Ethnic Group & Community Type in 2015

Years of Potential Life Lost per 100,000

- American Indian/Alaskan Native: 10k
- Black: 9k
- White: 7k
- Asian/Pacific Islander: 4k
- Hispanic: 3k
- Rural: 10k
- Smaller Metro: 9k
- Large Suburban: 7k
- Metro: 6k
- Large Urban: 4k
- Metro: 3k
Life Expectancy at Birth by County, 2014
What Creates Health

### Determinants of Health

- **Genes and Biology**: 10%
- **Physical Environment**: 10%
- **Clinical Care**: 10%
- **Health Behaviors**: 30%
- **Social and Economic Factors**: 40%

### Necessary conditions for health (WHO)

- Peace
- Shelter
- Education
- Food
- Income
- Stable eco-system
- Sustainable resources
- Mobility
- Health Care
- Social justice and equity

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What is the National Workforce Data Show Us?
Workforce Can be Confusing
Reassessing the Evidence on Whether a Physician Shortage Exists

Does the United States have enough physicians?—Yes.

For decades, experts have bemoaned a lack of sufficient primary care physicians in the United States. These fears came to a head during debate over the Affordable Care Act (ACA), when critics suggested that millions of uninsured patients’ access to care under the ACA would further exacerbate the existing physician shortage. A 2011 American College of Surgeons report asserted that “even before [this health care reform], the nation was headed for a serious physician shortages and reforms have only made it worse.”2 According to the updated report of the Association of American Medical Colleges (AAMC), released March 14, 2017, the AAMC still predicts a shortage of between 40,800 to 104,900 physicians by 2030.2

Some have questioned the accuracy of these projections. Yet the ominous forecast of a physician shortage already motivates significant reforms. During the last 15 years, the numbers of medical schools in the United States—those with both graduate or undergraduate programs—has increased from 125 to 143. Concurrently, health care management enrollments has increased from 41,488 to 21,030 students, an increase of 82% since 2002, and is expected to increase further by 2018.2 Additionally, for Medicare beneficiaries, data suggest that appointment availability has improved under the ACA. A study of 295 primary care practices in Michigan found that appointment availability for new Medicaid patients increased from 40% to 55% after the state’s Medicaid expansion, probably due to improved Medicaid funding under the ACA.2 The study noted that even as more beneficiaries became eligible, “wait times for new Medicaid and new privately insured patients did not significantly increase.”2 Although US residents do wait a long time to get a physician appointment, this time has not increased since the ACA.1

If ACA expansion in coverage did not increase wait times for a physician appointment, the structural factors that might cause long wait times should be examined.2

Does the US Have Enough Physicians?—The US has enough physicians.

Addressing the Peril of Inequality

Does the United States have enough physicians?—No.

The United States faces a serious physician shortage that is likely to worsen in the coming decade without a multifaceted intervention. At the same time, the US health care system is in a period of marked uncertainty, and many questions are on the horizon—from the future of health insurance coverage to how scientific discoveries will revolutionize medicine in the coming decades. With multiple variables affecting the health needs of the United States will evolve in the next few years, physician workforce projections must consider this complex and dynamic landscape.

Demographic Changes

Of the many challenges that US health care faces, demographic change is foremost among factors contributing to workforce shortages. Arguably, it is also the variable about which the facts are clearest. The population of the United States both is increasing in number and aging. Current projections indicate that between 2015 and 2030, the US population will increase by 12% to 35 million, with the population aged 65 years and older expected to rise 50% to 70 million. This increase in the older population will place additional stress on physicians, who are already stretched thin. Some suggest that simply correcting maldistribution—too many physicians in urban and rural underserved areas is already feeling the effects of the shortage—wait times for physician visits are long, and the most vulnerable members of society are the most likely to access a physician when they need one. Some suggest that simply correcting maldistribution—too many physicians in urban and rural underserved areas is already feeling the effects of the shortage—wait times for physician visits are long, and the most vulnerable members of society are the most likely to access a physician when they need one. Some suggest that simply correcting maldistribution—too many physicians in urban and rural underserved areas is already feeling the effects of the shortage—wait times for physician visits are long, and the most vulnerable members of society are the most likely to access a physician when they need one.
Doctors Per 1,000

https://data.oecd.org
U.S. Family Physician Workforce Forecasts, 2005 to 2020 – Messy!
Increased Generalist Care = Higher Quality

EXHIBIT 8
Relationship Between Provider Workforce And Quality: General Practitioners Per 10,000 And Quality Rank In 2000

<table>
<thead>
<tr>
<th>Quality rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>26</td>
</tr>
<tr>
<td>51</td>
</tr>
</tbody>
</table>

General practitioners per 10,000

SOURCES: Medicare claims data; and Area Resource File, 2003.
NOTES: For quality ranking, smaller values indicate higher quality. Total physicians held constant.
Increased Generalist Care = Lower Costs

EXHIBIT 9
Relationship Between Provider Workforce And Medicare Spending: General Practitioners Per 10,000 And Spending Per Beneficiary In 2000

Spending per beneficiary (dollars)

8,000
7,000
6,000
5,000
4,000

General practitioners per 10,000

1 2 3 4 5

SOURCES: Medicare claims data; and Area Resource File, 2003.
NOTE: Total physicians held constant,
Increased Specialty Care = Worse Quality

EXHIBIT 6
Relationship Between Provider Workforce And Quality: Specialists Per 10,000 And Quality Rank In 2000

<table>
<thead>
<tr>
<th>Quality rank</th>
<th>1</th>
<th>26</th>
<th>51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialists per 10,000</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
</tbody>
</table>

**Sources:** Medicare claims data; and Area Resource File, 2003.
**Notes:** For quality ranking, smaller values indicate higher quality. Total physicians held constant.
Increased Specialty Care = Higher Cost

EXHIBIT 7
Relationship Between Provider Workforce And Medicare Spending: Specialists Per 10,000 And Spending Per Beneficiary In 2000

Spending per beneficiary (dollars)
8,000
7,000
6,000
5,000
4,000

18  19  20  21  22
Specialists per 10,000

SOURCES: Medicare claims data; and Area Resource File, 2003.
NOTE: Total physicians held constant.
Primary Care is a Matter of Life & Death!

• Primary care physicians: 1 per 10,000 more primary care physicians decreases mortality by 40 per 100,000 (5% fewer deaths).
• Family Physicians: 1 per 10,000 more family physicians results decreases mortality by 70 per 100,000 (9% fewer deaths).
• Specialists: 1 per 10,000 more specialists increases mortality by 16 per 100,000 (2% more deaths).

Shi et al, JABFM 2003; 16:412-422
Number of primary care and specialty physicians per 100,000 population: United States, 2002–2012
What is Shortage Designation?

• Throughout the U.S., there are geographic areas, populations, and facilities with too few primary care, dental and mental health providers and services.
HPSA vs MUA/P

- Managed by the Bureau of Health Professions within HRSA
- Developed over 30 years ago
- Complex and messy
- Used to identify geographic areas—or populations within geographic areas—that are not adequately served by available health care resources
Medically Underserved Areas/Populations (MUA/P)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Mental Health–Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Dental Health - Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Primary Care Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Psychiatrists in U.S. Counties per 100,000 Population

http://ow.ly/ix6p30ban3U
Psychiatric Nurse Practitioners in U.S. Counties per 100,000 Population

http://ow.ly/ix6p30ban3U
Historical and Projected Dentists per 100,000 Population

ADA Health Policy Institute 2016 http://ow.ly/zlWk30bajpT
Number of U.S. Pharmacy School Graduates: 1960-2013

National Pharmacist Workforce Study 2014
http://ow.ly/oTTN30beiPn
Graduates From NP Programs: Master’s and Post-Master’s Graduates, 2002 Through 2012

Projecting the Supply and Demand for Primary Care Practitioners Through 2020 - HRSA
Annual Number of Newly Certified PAs, 2001 Through 2012

Projecting the Supply and Demand for Primary Care Practitioners Through 2020 - HRSA
Estimated number of NPs & PAs practicing primary care in the US, 2010

<table>
<thead>
<tr>
<th>Provider type</th>
<th>Total</th>
<th>Percent primary care</th>
<th>Practicing primary care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse practitioners</td>
<td>106,073</td>
<td>52.0%</td>
<td>55,625</td>
</tr>
<tr>
<td>Physician assistants</td>
<td>70,383</td>
<td>43.4%</td>
<td>30,402</td>
</tr>
</tbody>
</table>

Actual & Projected Growth
U.S. Med School Grads & GME Entrants

NRMP Match - PGY 1 Positions Offered
PC vs Total

Kozakowski et al
Geographic distribution of health care professionals, 2010

<table>
<thead>
<tr>
<th>Geography</th>
<th>All specialties</th>
<th>Primary care</th>
<th>U.S. population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NP</td>
<td>PA</td>
<td>Physicians</td>
</tr>
<tr>
<td>Urban</td>
<td>84.4%</td>
<td>84.4%</td>
<td>89.0%</td>
</tr>
<tr>
<td>Large rural</td>
<td>8.9%</td>
<td>8.8%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Small rural</td>
<td>3.9%</td>
<td>3.8%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Remote rural/frontier</td>
<td>2.8%</td>
<td>3.0%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
Life Expectancy at Birth by County, 2014
What is the Ohio Workforce Data Show Us?
Ohio & It’s Neighbors

JAMA Int Med Pub online 5/8/17
Medically Underserved Areas/Populations (MUA/P)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Mental Health–Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Dental Health - Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Primary Care Health Professional Shortage Areas (HPSA)

https://datawarehouse.hrsa.gov/tools/quickmaps.aspx
Zip code is a more powerful driver of health status than your genetic code

Neighborhood as a Driver of Health
How Healthy is Your Community?

The annual Rankings provide a revealing snapshot of how health is influenced by where we live, work, and play. They provide a starting point for change in communities.

Choose a state from the map or search below to begin.

Find your state or county  Search

http://www.countyhealthrankings.org/
Roadmap to the County Rankings

Health Outcomes
  - Length of Life (50%)
  - Quality of Life (50%)

Health Factors
  - Health Behaviors (30%)
  - Clinical Care (20%)
  - Social & Economic Factors (40%)
  - Physical Environment (10%)

Policies & Programs
  - Tobacco Use
  - Diet & Exercise
  - Alcohol & Drug Use
  - Sexual Activity
  - Access to Care
  - Quality of Care
  - Education
  - Employment
  - Income
  - Family & Social Support
  - Community Safety
  - Air & Water Quality
  - Housing & Transit

County Health Rankings model © 2016 UWPRII
County Health Rankings Logic Model

Population based data collected → County Health Rankings

Media attention → Community leaders use report → Broad community engagement → Evidence-informed health policies and programs implemented → Improved health outcomes
County Health Rankings: 2 Rankings

Health Outcomes - Today’s Health

Health Factors - Tomorrow’s Health
2017 Ohio Health Outcomes Map
## Delaware vs. Pike

<table>
<thead>
<tr>
<th></th>
<th>Ohio</th>
<th>Delaware (DL), OH X</th>
<th>Pike (PK), OH X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Length of Life</strong></td>
<td>1</td>
<td>1</td>
<td>88</td>
</tr>
<tr>
<td><strong>Premature death</strong></td>
<td></td>
<td></td>
<td>12,100</td>
</tr>
<tr>
<td><strong>Quality of Life</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Poor or fair health</strong></td>
<td>15%</td>
<td>10%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Poor physical health days</strong></td>
<td>3.7</td>
<td>2.7</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Poor mental health days</strong></td>
<td>4.0</td>
<td>3.2</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Low birthweight</strong></td>
<td>9%</td>
<td>7%</td>
<td>9%</td>
</tr>
</tbody>
</table>
## Delaware vs. Pike

<table>
<thead>
<tr>
<th>Health Factors</th>
<th>Delaware (DL), OH</th>
<th>Pike (PK), OH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health Behaviors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult smoking</td>
<td>22%</td>
<td>14%</td>
</tr>
<tr>
<td>Adult obesity</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Food environment index</td>
<td>7.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>25%</td>
<td>18%</td>
</tr>
<tr>
<td>Access to exercise opportunities</td>
<td>83%</td>
<td>89%</td>
</tr>
<tr>
<td>Excessive drinking</td>
<td>19%</td>
<td>20%</td>
</tr>
<tr>
<td>Alcohol-impaired driving deaths</td>
<td>34%</td>
<td>28%</td>
</tr>
<tr>
<td>Sexually transmitted infections</td>
<td>474.1</td>
<td>189.8</td>
</tr>
<tr>
<td>Teen births</td>
<td>32</td>
<td>11</td>
</tr>
</tbody>
</table>

Delaware vs. Pike

- **Health Factors**: 1
- **Health Behaviors**: 86

- Adult smoking: 23%
- Adult obesity: 36%
- Food environment index: 6.1
- Physical inactivity: 28%
- Access to exercise opportunities: 61%
- Excessive drinking: 16%
- Alcohol-impaired driving deaths: 12%
- Sexually transmitted infections: 313.7
- Teen births: 59
## Clinical Care

<table>
<thead>
<tr>
<th></th>
<th>Ohio</th>
<th>Delaware (DL), OH</th>
<th>Pike (PK), OH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uninsured</strong></td>
<td>10%</td>
<td>5%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Primary care physicians</strong></td>
<td>1,300:1</td>
<td>750:1</td>
<td>2,830:1</td>
</tr>
<tr>
<td><strong>Dentists</strong></td>
<td>1,690:1</td>
<td>1,770:1</td>
<td>2,570:1</td>
</tr>
<tr>
<td><strong>Mental health providers</strong></td>
<td>630:1</td>
<td>1,140:1</td>
<td>2,570:1</td>
</tr>
<tr>
<td><strong>Preventable hospital stays</strong></td>
<td>60</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td><strong>Diabetes monitoring</strong></td>
<td>85%</td>
<td>90%</td>
<td>87%</td>
</tr>
<tr>
<td><strong>Mammography screening</strong></td>
<td>61%</td>
<td>66%</td>
<td>58%</td>
</tr>
</tbody>
</table>
Delaware County PCP ratio is 750:1
or Pike County PCP ratio is 2,830:1
## Delaware vs. Pike

<table>
<thead>
<tr>
<th>Social &amp; Economic Factors</th>
<th>Ohio</th>
<th>Delaware (DL), OH</th>
<th>Pike (PK), OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school graduation</td>
<td>81%</td>
<td>96%</td>
<td>85%</td>
</tr>
<tr>
<td>Some college</td>
<td>64%</td>
<td>83%</td>
<td>43%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>4.9%</td>
<td>3.5%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Children in poverty</td>
<td>21%</td>
<td>5%</td>
<td>33%</td>
</tr>
<tr>
<td>Income inequality</td>
<td>4.8%</td>
<td>3.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Children in single-parent households</td>
<td>36%</td>
<td>18%</td>
<td>47%</td>
</tr>
<tr>
<td>Social associations</td>
<td>11.3</td>
<td>8.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Violent crime</td>
<td>290</td>
<td>81</td>
<td>54</td>
</tr>
<tr>
<td>Injury deaths</td>
<td>70</td>
<td>37</td>
<td>97</td>
</tr>
</tbody>
</table>
## Delaware vs. Pike

<table>
<thead>
<tr>
<th>Physical Environment</th>
<th>Ohio</th>
<th>Delaware (DL), OH</th>
<th>Pike (PK), OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollution - particulate matter</td>
<td>11.3</td>
<td>11.9</td>
<td>10.7</td>
</tr>
<tr>
<td>Drinking water violations</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Severe housing problems</td>
<td>15%</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Driving alone to work</td>
<td>83%</td>
<td>86%</td>
<td>85%</td>
</tr>
<tr>
<td>Long commute - driving alone</td>
<td>30%</td>
<td>42%</td>
<td>39%</td>
</tr>
</tbody>
</table>
Next Steps?
Insanity: doing the same thing over and over again and expecting different results.

-Albert Einstein
What are health gaps and why do they matter?

Giving everyone a fair chance to be healthy does not necessarily mean offering the same resources to all, rather offering resources necessary for their good health.
Migration After Family Medicine Residency: 56% of Graduates Practice Within 100 Miles of Training

Fagan B. Am Fam Physician. 2013;88(10)
Community Health Workers and Medicaid Managed Care in New Mexico

Diane Johnson • Patricia Suedor • Eugene Sun • Ann Nagan • Bodie Grovet • Charles Alfero • Carmen Mayuso • Betty Skipper • Wayne Powell • Arthur Kaufman

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Abstract We describe the impact of community health workers (CHWs) providing community-based support services to enrollees who are high consumers of health resources in a Medicaid managed care system. We conducted a retrospective study on a sample of 448 enrollees who were assigned to field-based CHWs in 11 of New Mexico’s 33 counties. The CHWs provided patients education, advocacy and social support for a period up to 6 months. Data was collected on services provided, and community resources accessed. Utilization and payments in the emergency department, inpatient service, non-narcotic and narcotic prescriptions as well as outpatient primary care and specialty care were collected on each patient for a 6 month period before, for 6 months during and for Medicaid managed care to provide supportive services to high resource-consuming enrollees can improve access to preventive and social services and may reduce resource utilization and cost.

Keywords Community health workers • Managed care

Introduction Community Health Workers (CHWs) are lay members of communities who serve for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language.

Impact of Community Health Workers on Use of Healthcare Services in the United States: A Systematic Review

Helleene E. Jack, BA;2, Sophia D. Aradastis, MSc;1, Lucy Sun, BA,2, Erin E. Sullivan, Ph.D., and Russell S. Phillips, MD1

1Center for Primary Care, Harvard Medical School, Boston, MA, USA; 2Department of Psychology, Psychology, and Neuroscience, King’s College London, London, UK; 3National Aeronautics and Space Administration, Houston, TX, USA.

BACKGROUND As the US transitions to value-based healthcare, physicians and payers are motivated to change healthcare delivery to improve quality of care while controlling costs. By assisting with the management of common chronic conditions, community health workers (CHWs) may improve healthcare quality, but physicians and payers who are making choices about care delivery also need to understand their effects on healthcare spending.

METHODS We searched PubMed, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, PsycINFO, Embase, and Web of Science from the inception of each database to 23 June 2013. We included US-based studies that evaluated a CHW intervention for patients with at least one chronic health condition and reported cost or healthcare utilization outcomes. We evaluated studies using tools specific to study design.

RESULTS Our search yielded 2,541 studies after removing duplicates. Thirty-four met inclusion and methodological criteria. Sixteen studies (47%) were randomized controlled trials (RCTs). RCTs typically had less positive

Introduction

Global and national evidence strongly points to a healthcare delivery. These payment models set up incentives for practices to reduce use of costly services, while maintaining or improving health outcomes. Relative to a fee-for-service model, global payments give hospitals and primary care providers more flexibility to find new ways of delivering care. Consequently, physicians and practice managers need to understand the evidence base on the value of care models. Community health workers (CHWs), who have minimal formal training in healthcare and are hired primarily for their connection to a community,已经被 extensively employed by community health systems, primary care practices, and public health departments.

AMERICAN ACADEMY OF FAMILY PHYSICIANS
FOUNDATION OF ROADMAPS

- It takes everyone
- Move from data to evidence-informed action
- Focus across the health factors—including social and economic factors
- Policy, systems, and environmental change
Additional Resources
Key Take Away Points

• Generalist care saves lives (and money)
• Much of health is determined locally
• Health care delivery needs to match community needs
• Invest and create your own local workforce
• Resources & tools are readily available to understand & address local needs
The wisdom is in this room
-Jay Fetter

If you can dream it, you can do it.
-Walt Disney