HEALTH CARE CLUSTER WORKFORCE ANALYSIS-2013

Workforce Development Agency
State Of Michigan

Presentation to the

MICHIGAN SENATE COMMITTEE ON REFORMS, RESTRUCTURING AND REINVENTING

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PURE MICHIGAN

Michigan Industry Cluster Approach (MICA)

Michigan is reinventing itself to ensure that workers will find career opportunities in our state. Currently, employers report that it is a challenge to locate the right talent to fill job vacancies and job seekers struggle to find opportunities that leverage their skills. The result is what many call a "skills mismatch." As a result, Governor Snyder has called on the Workforce Development Agency (WDA) to move the workforce system to a demand-driven model, "To do a better job of matching supply and demand for jobs" and organize into industry clusters where talent needs are pronounced.

What is demand-driven? The purpose of a demand-driven workforce development system is to provide workforce training and services that meet the needs of targeted industry sectors and employers. A demand-driven system establishes employers – the *demand* side – as the primary customer of the workforce system. The employer creates a *pull* based on the need for skilled workers, covering training, recruitment, assessment, placement of job ready candidates, and long-term pipeline issues.

Michigan's Industry Cluster Approach (MICA) creates a framework in which many employers within a single industry engage with the workforce system to identify their demand. In this approach, talent issues may be handled more efficiently through industry job fairs and multi-company, industry-focused training programs. Based upon research, WDA selected five industry clusters likely to have the greatest impact on Michigan's economy in context of talent needs: Agriculture, Energy, Health Care, Information Technology and Media, and Manufacturing. Regionally, Michigan Works! Agencies (MWAs) convene employers along with community colleges, economic development organizations and other groups associated with workforce development to solve talent challenges. Local clusters are formed based on local needs and are led by industry.

How Industry Clusters Work

The hub of the cluster is an MWA service provider with in-depth knowledge on workforce issues for the industry. The MWA researches information about jobs in demand, skill gaps, training needs, jobseeker screening factors, and other related issues -- and then rallies employers to collaborate and develop an industry solution. It's common to uncover a number of workforce needs and identify a systematic approach to immediate and long-term needs.

"This is a much more efficient model than we've used in the past. By joining forces, we are able to meet workforce needs faster and more effectively than individual employers could do on their own. - Sean Newell, Dean of Ford Motor Co.'s College of Engineering in the July 2011 edition of "Workforce Management."

Activities of MICA

- Identification of occupational demand and vacancies.
- Assessment of underlying recruitment and training issues related to broader skills mismatches and gaps.
- Determination of hiring projections and training needs of employers, along with a commitment to hire participants completing pre-employment education and training.

- Re-design of educational program offerings to directly respond to the industry identified demand and curriculum to address occupational skill requirements.
- Locating or developing curriculum when relevant training programs cannot be found locally.
- Identification of emerging occupations and technology, and accompanying skill needs.
- Industry and career promotion activities directed to K-12 and higher education, providing teachers, career counselors, parents and students information and incentive to pursue a career in the industry cluster.
- Training funded by the local MWAs utilizing federal workforce programs.
- Training funded by competitive grants procured by WDA or the local MWA.

Benefits of MICA

- Job candidates trained to employer's specifications and turnover is reduced.
- Career ladders built to upskill entry level workers.
- Reduced training costs by utilizing economies of scale when multiple employers partner.
- Improved outcomes for federal training resources by meeting employer's needs.
- Industry-recognized training credentials developed.
- Recruitment programs to effectively meet industry's needs.
- Education providers develop curricula for new college, high school and/or technical programs as specified by employers.

"A cluster-based workforce training system, for example, will train workers to fill actual jobs in the cluster and meet the actual skill needs of these jobs. This demand-driven approach stands in stark contrast to today's supply-driven training system, organized heavily by training providers." - *Michael Porter, Clusters and Economic Policy: Aligning Public Policy with the New Economics of Competition*

Formal guidance on the demand-driven system and MICA was distributed to all 25 MWAs in July 2012. Although local areas vary on how quickly they will scale up to this new business model, as of January 2013, fifteen MWAs had formally committed to forming at least one industry cluster in their local region. These 15 MWAs were operating 25 local clusters, many of them in the developmental stage.

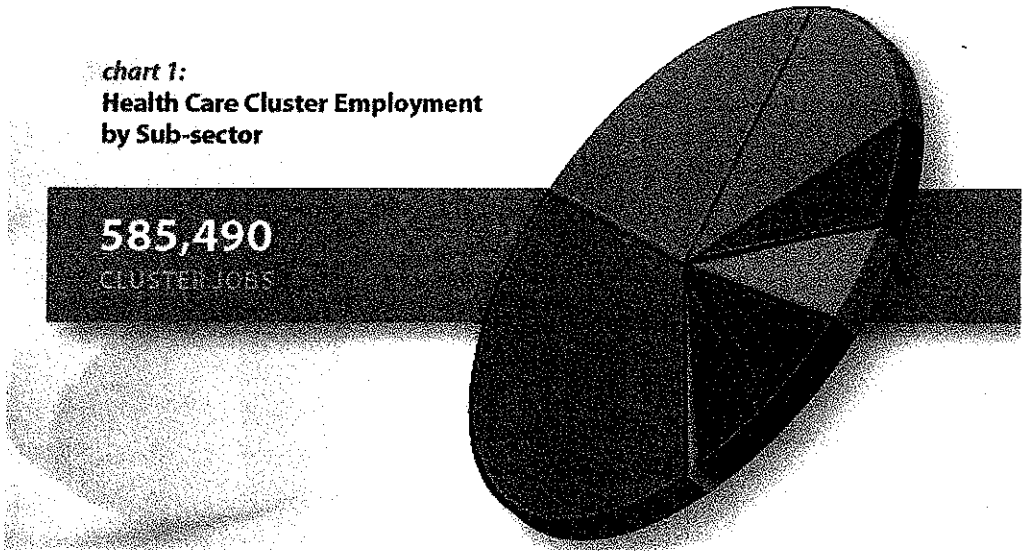
Questions regarding MICA should be directed to the appropriate Cluster Talent Director or Manager:

- **Marcia Black-Watson** Energy Talent Director 517.241.8221 black-watsonm@michigan.gov
- **Rey Guzman** Agriculture Talent Manager 517.335.6799 guzmanr1@michigan.gov
- **Jeanette Klemczak** Health Care Talent Director 517.335.7807 klemczakj@michigan.gov
- **Chris Knapp** IT & Media Talent Director 517.241.4399 knappc@michigan.gov
- **Bob Sherer** Mfg. Talent Director 517.241.6099 shererr@michigan.gov

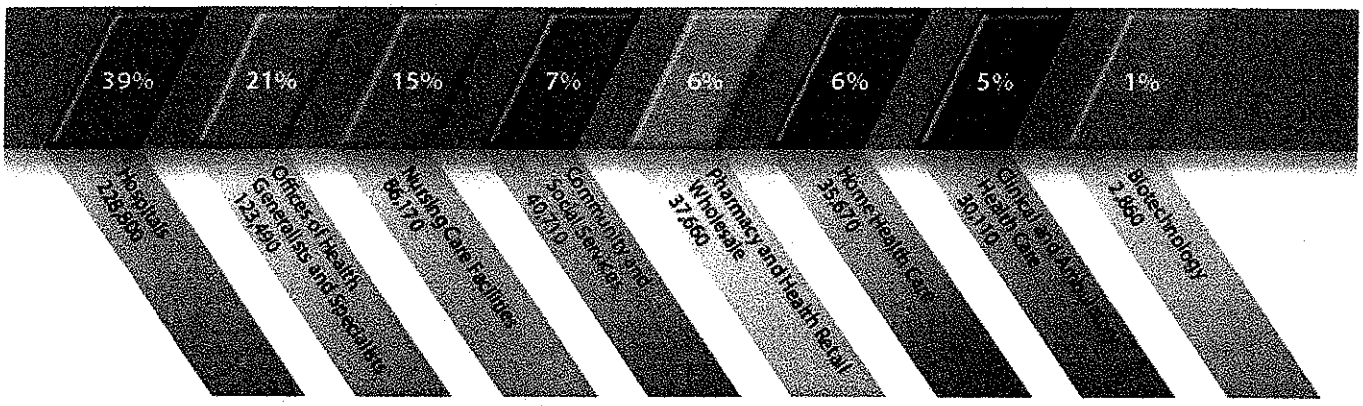
You may also contact your local MWA to inquire on their local and regional industry cluster activities.

Health Care Cluster Workforce Analysis

chart 1:
Health Care Cluster Employment by Sub-sector



Source: Bureau of Labor Market Information & Strategic Initiatives



Health Care Cluster Workforce Analysis

table 3:

KEY OCCUPATIONS IN HEALTH CARE

OCCUPATION	2008 JOBS	JOB OUTLOOK 2013	JOB OUTLOOK 2018	ANNUAL OPENINGS 2018	HOURLY WAGE RANGE ($)	MINIMUM TRAINING
HEALTH CARE PRACTITIONER OCCUPATIONS						
Registered Nurses	77,370	2.6%	21%	2,900	22 - 40	Associate's
Licensed Practical Nurses	15,830	0.9%	20%	800	15 - 27	Vocational
Dental Hygienists	8,650	1.5%	23%	400	23 - 35	Associate's
Pharmacy Technicians	8,290	1.7%	26%	400	9 - 18	Moderate OJT
Pharmacists	6,150	1.2%	15%	70	41 - 67	Professional
Physical Therapists	5,970	2.9%	30%	250	22 - 50	Master's
Family and General Practitioners	4,580	1.1%	21%	158	89.56 (Mean)	Professional
Respiratory Therapists	3,490	3.3%	22%	150	19 - 30	Associate's
General Dentists	3,480	0.7%	8%	22	73.50 (Mean)	Professional
Occupational Therapists	3,250	2.3%	29%	150	21 - 45	Master's
Physician Assistants	2,760	1.3%	30%	150	30 - 54	Master's
Cardiovascular Technologists and Techs.	2,380	3.2%	23%	100	14 - 34	Associate's
HEALTH CARE SUPPORT OCCUPATIONS						
Nursing Aides, Orderlies, and Attendants	43,740	0.9%	18%	1,200	9 - 16	Vocational
Home Health Aides	29,450	6.9%	49%	1,600	8 - 13	Short OJT
Medical Assistants	18,200	1.3%	26%	700	10 - 18	Moderate OJT
Dental Assistants	9,180	0.6%	24%	400	12 - 21	Moderate OJT
Physical Therapists Assistants	2,430	3.4%	31%	100	15 - 27	Associate's
Physical Therapists Aides	1,140	3.5%	33%	50	9 - 16	Short OJT

OJT = On the Job Training

Source: Bureau of Labor Market Information & Strategic Initiatives

table 4:

HIGH DEMAND, HIGH WAGE OCCUPATIONS BY EDUCATION AND TRAINING REQUIREMENTS

BACHELOR'S DEGREE OR HIGHER	ASSOCIATE'S DEGREE	ON-THE-JOB TRAINING
RNs /Advanced Practice RNs	Radiation Therapists	Dental Assistants
Physician Assistants	Registered Nurses	Physical Therapist Aides
Physical Therapists	Dental Hygienists	Medical Assistants
Family and General Practitioners	Occupational Therapist Assistants	Administrative Assistants
Pharmacists	Physical Therapist Assistants	Accounting and Auditing Clerks

Source: Bureau of Labor Market Information & Strategic Initiatives

table 5:

MAJOR HEALTH RELATED PROGRAMS (2010 COMPLETERS)

Medical Assistant, Certification (5,250)

Registered Nurse, Associate's (2,850)

Registered Nurse, Bachelor's (2,300)

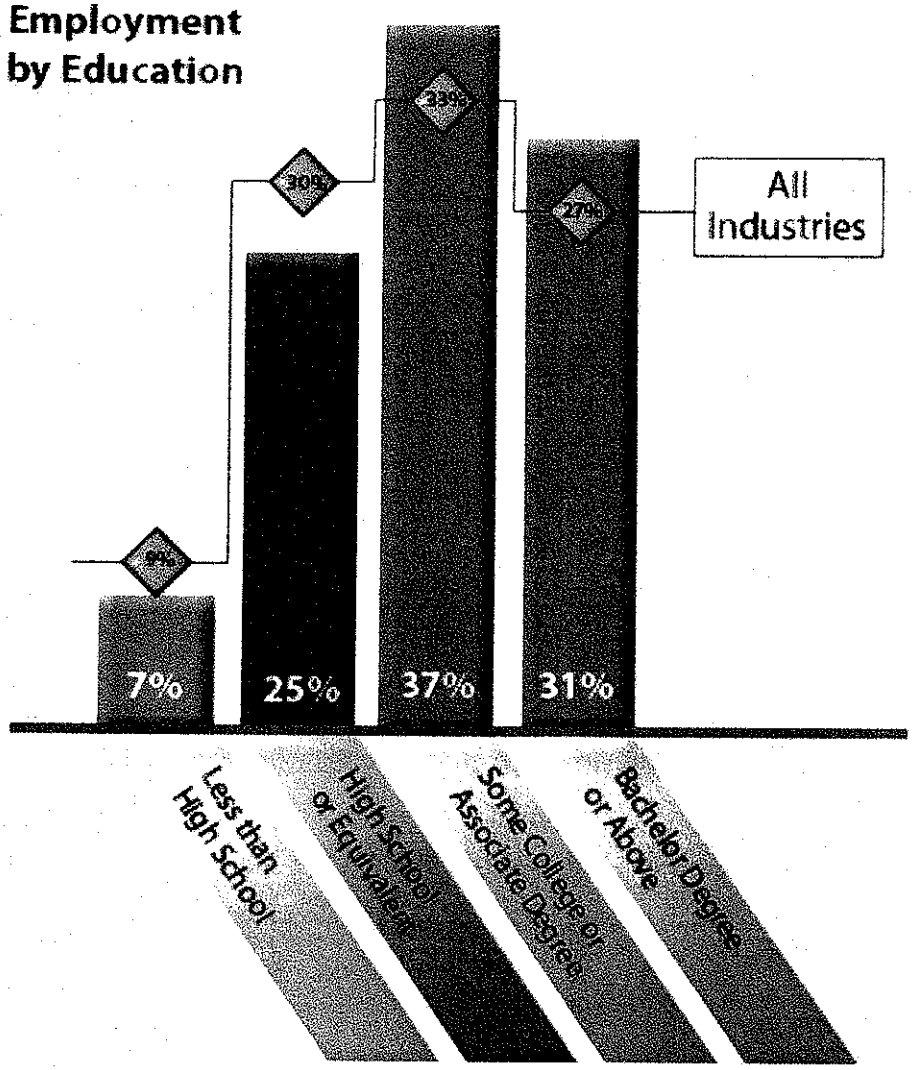
Licensed Practical Nurse, Certification (1,500)

Insurance Specialist, Certification (1,000)

Social Work, Bachelor's (950)

Source: National Center for Educational Statistics

chart 7:
Health Care Cluster Employment by Education



Source: U.S. Census Bureau, Local Employment Household Dynamics

Health Care Cluster Workforce Analysis

table 6:

LONG-RUNNING, DIFFICULT-TO-FILL JOB ADS
Registered Nurses
Physician Internists, General
Physicians and Surgeons
Family and General Practitioners
Surgeons

table 7:

OCCUPATIONS WITH GROWING ADS
Physical Therapists
Home Health Aides
Physical Therapist Assistants
Radiologic Technologists
Speech-Language Pathologists

table 8:

KEY CERTIFICATIONS & TOOLS IN ONLINE ADS
Advanced Practice RN's (Nurse Practitioner / Clinical Nurse Specialist)
HIPPA Certification
Long Term Care Certification
Electronic Medical Records
Board Certified & Board Eligible

Source: Conference Board, Help Wanted Online® (HWOL)

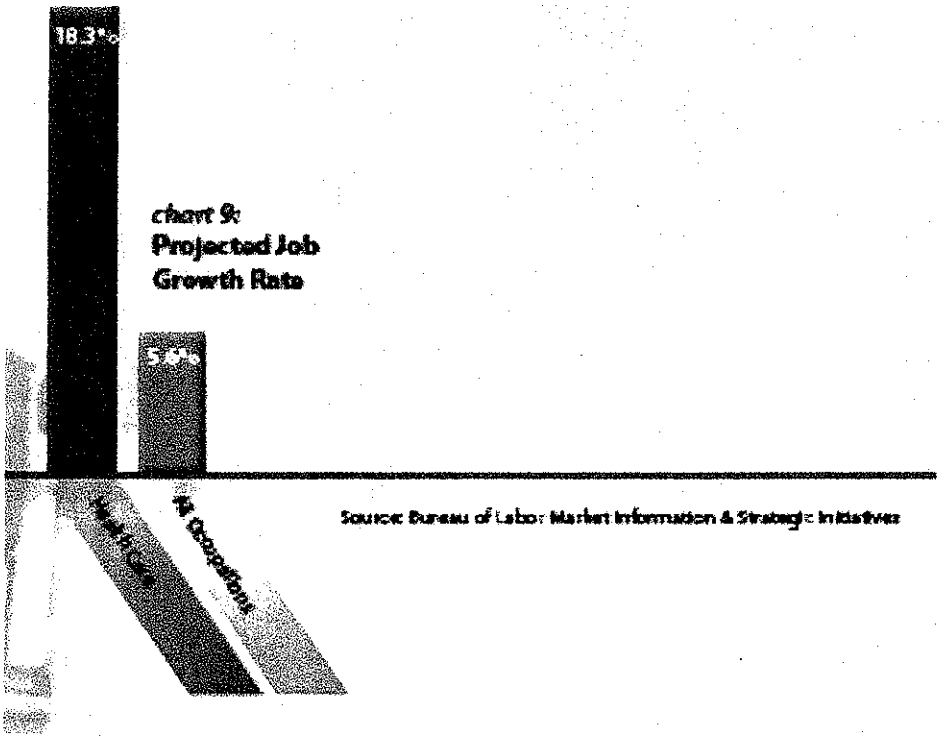


table 9:

FORECASTS OF OCCUPATIONAL JOB GROWTH AND ANNUAL JOB OPENINGS

HIGHEST GROWTH RATE (2008-2018)	
Home Health Aides	49%
Physical Therapist Aides	33%
Physical Therapist Assistants	31%
Physician Assistants	31%
Physical Therapists	30%
Personal and Home Care Aides	30%

MOST ANNUAL OPENINGS (2018)	
Registered Nurses	2,900
Home Health Aides	1,600
Nursing Aides, Orderlies, Attendants	1,200
Licensed Practical Nurses	800
Medical Assistants	700
Receptionists and Information Clerks	500
Pharmacy Technicians	400

Source: Bureau of Labor Market Information & Strategic Initiatives

Primary Care Coalition | 401 W 15th Street, Ste. 682, Austin, TX 78701 | (512) 370-1516

Compare the Education Gaps Between Primary Care Physicians and Nurse Practitioners

While nurse practitioners are trained to emphasize health promotion, patient education, and disease prevention, they lack the broader and deeper expertise needed to recognize cases in which multiple symptoms suggest more serious conditions. The primary care physician is trained to provide complex differential diagnosis, develop a treatment plan that addresses multiple organ systems, and order and interpret tests within the context of the patient's overall health condition.

This expertise is earned through the deep, rigorous study of medical science in the classroom and the thousands of hours of clinical study in the exam room that medical students and residents must complete before being allowed to practice medicine independently.

Because primary care physicians throughout the United States follow the same highly structured educational path, complete the same coursework, and pass the same licensure examination, you know what you're getting with a physician. There is no such standard to achieve nurse practitioner certification, as their educational requirements vary from program to program and from state to state.

DEGREES REQUIRED AND TIME TO COMPLETION

	Undergraduate degree	Entrance exam	Post-graduate schooling	Residency and duration	TOTAL TIME FOR COMPLETION
Family physician (M.D. or D.O.)	Standard 4-year BA/BS	Medical College Admissions Test (MCAT)	4 years, doctoral program (M.D. or D.O.)	REQUIRED, 3 years minimum	**11 years**
Nurse practitioner	Standard 4-year BA/BS*	Graduate Record Examination (GRE) & National Council Licensure Exam for Registered Nurses (NCLEX-RN) required for MSN programs	1.5 – 3 years, master's program (MSN)	NONE	**5.5 – 7 years**

MEDICAL/PROFESSIONAL SCHOOL AND RESIDENCY/POST-GRADUATE HOURS FOR COMPLETION

	Lecture hours (pre-clinical years)	Study hours (pre-clinical years)	Combined hours (clinical years)	Residency hours	TOTAL HOURS
Family physician	2,700	3,000**	6,000	9,000 – 10,000	**20,700 – 21,700**
Doctorate of Nursing Practice	800 – 1,600	1,500 – 2,250**	500 – 1,500	0	**2,800 – 5,350**
Difference between FP and NP hours of professional training	1,100 – 1,900 more for FPs	750 – 1,500 more for FPs	4,500 – 5,500 more for FPs	9,000 – 10,000 more for FPs	**15,350 – 18,900 more for FPs**

* While a standard 4-year degree, preferably a BSN, is recommended, alternate pathways exist for an RN without a bachelor's degree to enter some master's programs.

** Estimate based on 750 hours of study dedicated by a student per year.

Sources: Vanderbilt University Family Nurse Practitioner Program information, http://www.nursing.vanderbilt.edu/msn/fnp_plan.html, and the Vanderbilt University School of Nursing Handbook 2009-2010, http://www.nursing.vanderbilt.edu/current/handbook.pdf.
American Academy of Family Physicians, Primary Health Care Professionals: A Comparison, http://www.aafp.org/online/en/home/media/kits/fp-np.html.

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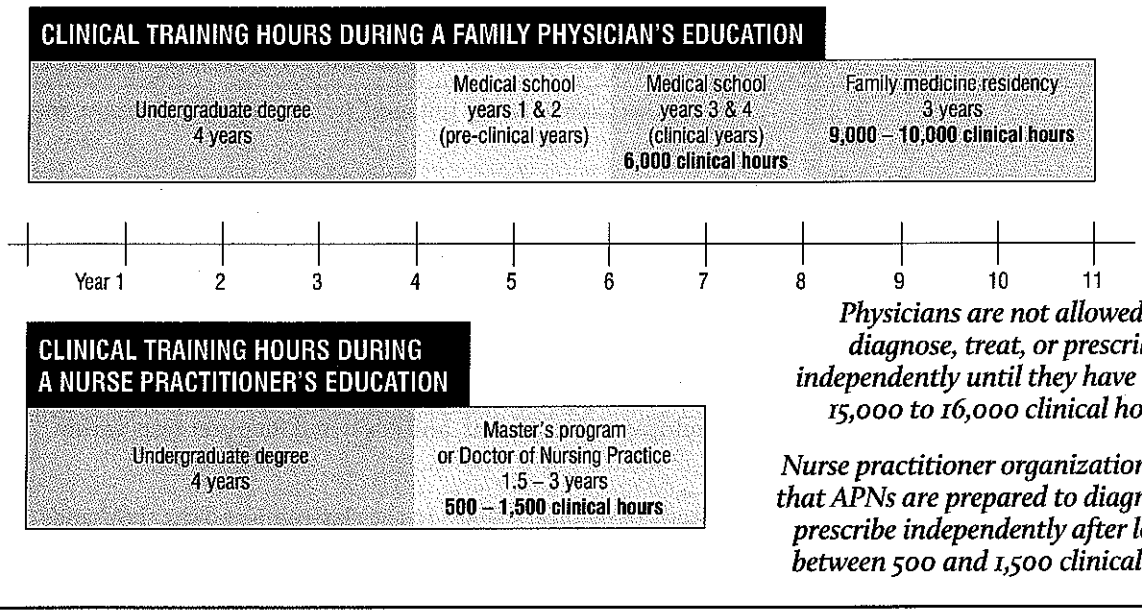


Nurse practitioners can achieve certification by completing an associate's degree program or nursing diploma program, and go directly into a master's degree program—some of which can be completed online—or they can complete their Bachelor of Science degree in nursing. At the point of certification, a new nurse practitioner has acquired between 500 and 1,500 hours of clinical training, fewer than a third-year medical student. A new family physician has acquired more than 15,000 hours of clinical training.

- A 2004 survey of practicing nurse practitioners published in the Journal of the American Academy of Nurse Practitioners reported that in the area of pharmacology, 46% reported they were not "generally or well prepared."[1]
- From the study: "In no uncertain terms, respondents indicated that they desired and needed more out of their clinical education, in terms of content, clinical experience, and competency testing."[1]
- Also from the study: "Our results indicate that formal NP education is not preparing new NPs to feel ready for practice and suggests several areas where NP educational programs need to be strengthened."[1]

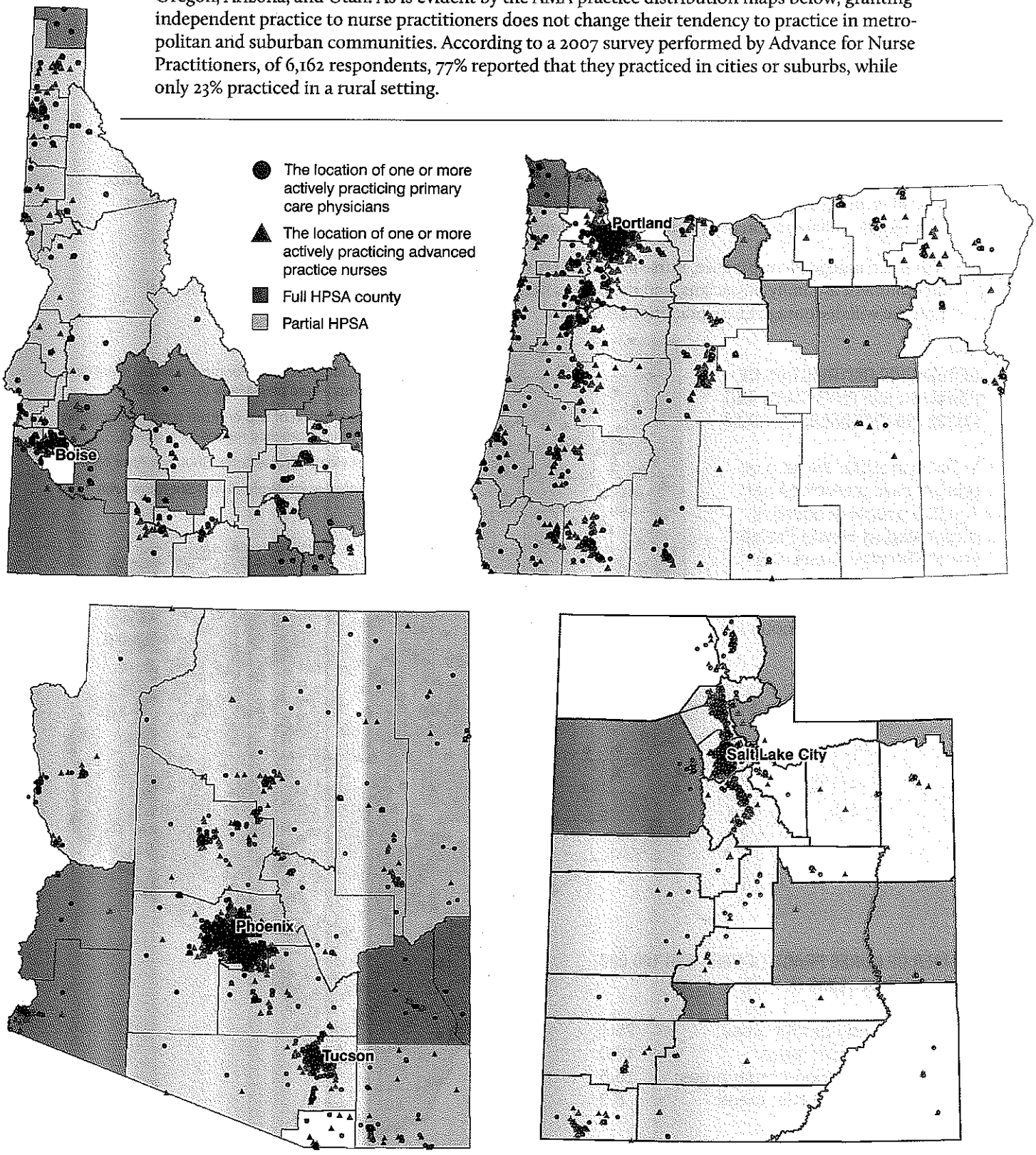
The complex chemistry and powerful therapeutics of modern pharmaceuticals require substantial expertise to carefully titrate dosages and account for the very real risks of toxicity, therapeutic failure, chemical dependency, adverse side effects from drug interactions, and simply wasting scarce health care resources through over- or under-prescribing. Pharmacology and pharmacotherapy are closely integrated into every aspect of medical training, providing an educational foundation that far exceeds the nominal exposure nurse practitioner programs offer.

- A study on antibiotic prescribing published in the American Journal of Medicine in 2005 found that non-physician clinicians were more likely to prescribe antibiotics than were practicing physicians (26.3% and 16.2%, respectively) in outpatient settings.[2]
- Another study suggested that many nurse practitioners had not received enough education in microbiology, knowledge integral to effective treatment for bacterial, fungal, as well as viral disease.[3]
- A six-year study published in 2006 found that rural nurse practitioners were writing more prescriptions than their urban nurse practitioner counterparts, physicians, and physician assistants.[4]

1. Hart A and Macnee C. "How well are nurse practitioners prepared for practice: results of a 2004 questionnaire study." Journal of the American Academy of Nurse Practitioners. 2007, Vol. 19, No. 1, p. 37.
2. Roumie C and Halasa N. "Differences in antibiotic prescribing among residents, physicians and non-physician clinicians." American Journal of Medicine. June 2005, Vol. 118, No. 6, pp. 641-648.
3. Sym D et al. "Characteristics of nurse practitioner curricula in the United States related to antimicrobial prescribing and resistance." Journal of the American Academy of Nurse Practitioners. September 2007, Vol. 19, No. 9, pp. 477-485.
4. Cipher D and Hooker R. "Prescribing trends by nurse practitioners and physician assistants in the United States." Journal of the Amercian Academy of Nurce Practitioners. June 2006, Vol. 18, No. 6, p.6.

Nurse Practitioners Will Not Be More Likely to Serve Rural and Border Areas Than Primary Care Physicians if Granted Independent Practice

Sixteen states allow nurse practitioners to diagnose and prescribe without any physician collaboration. Four of those that feature metropolitan areas and large, rural areas like Texas are Idaho, Oregon, Arizona, and Utah. As is evident by the AMA practice distribution maps below, granting independent practice to nurse practitioners does not change their tendency to practice in metropolitan and suburban communities. According to a 2007 survey performed by Advance for Nurse Practitioners, of 6,162 respondents, 77% reported that they practiced in cities or suburbs, while only 23% practiced in a rural setting.



The Primary Care Coalition is a partnership comprised of the Texas Academy of Family Physicians, the Texas Pediatric Society, and the Texas Chapter of the American College of Physicians.

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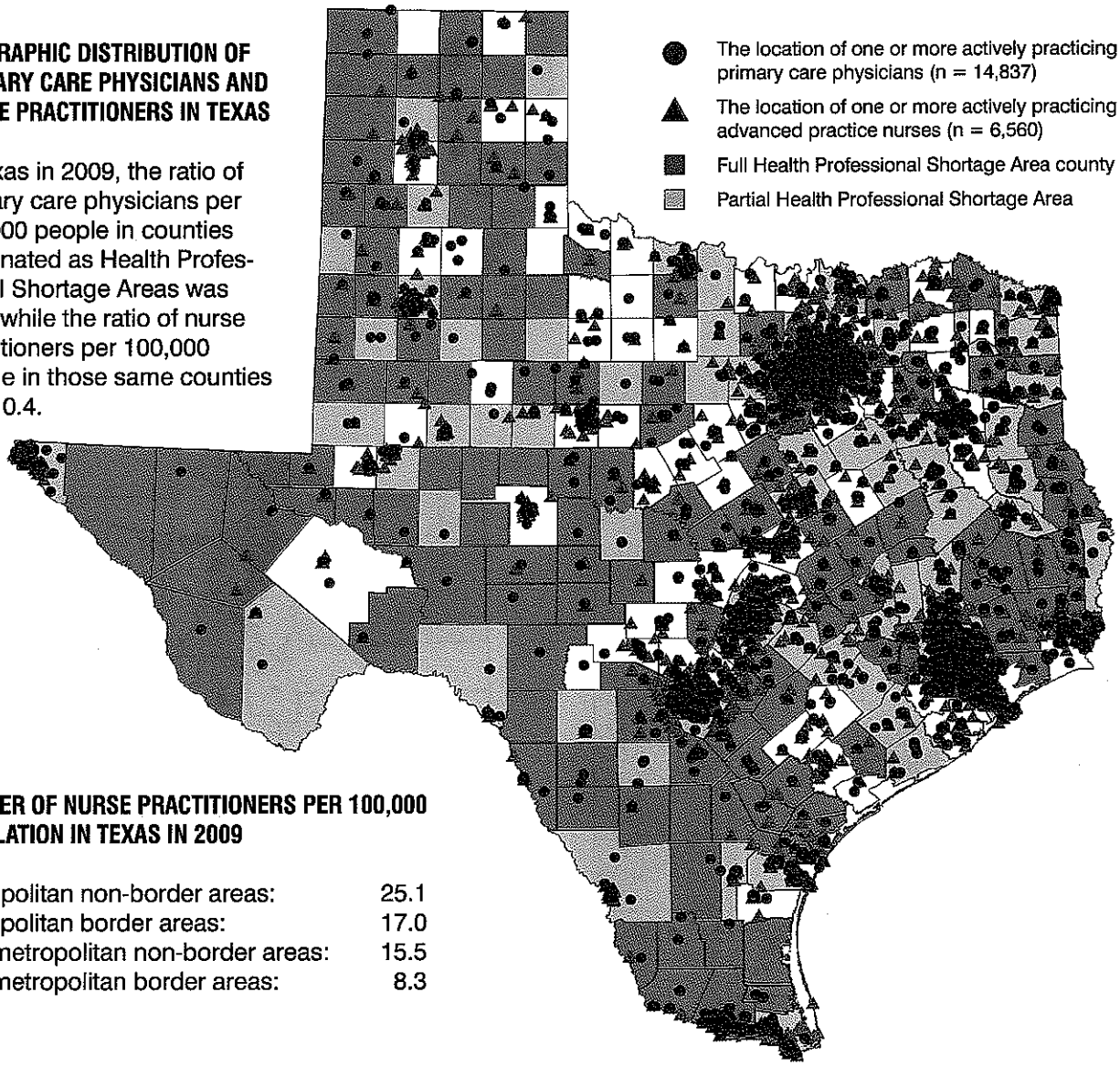
Primary Care Physicians Are the Most Likely Health Care Professionals to Practice in Rural and Underserved Areas

According to the Robert Graham Center, people in non-metropolitan areas, especially in rural areas, depend on family physicians more than any other specialty. Despite claims by nurse practitioners that they will practice in rural and underserved communities if granted the ability to diagnose and prescribe independently, the data suggest otherwise.

- Practice-mapping research conducted by the American Medical Association shows that patterns in practice locations for nurse practitioners in states with independent practice are no different from those in states that require collaboration between nurse practitioners and physicians.
- If granted independent practice, nurse practitioners would be practicing in the same economic environment as family physicians, and the factors that make opening and maintaining a rural medical practice will discourage nurse practitioners as well.

GEOGRAPHIC DISTRIBUTION OF PRIMARY CARE PHYSICIANS AND NURSE PRACTITIONERS IN TEXAS

In Texas in 2009, the ratio of primary care physicians per 100,000 people in counties designated as Health Professional Shortage Areas was 32.8, while the ratio of nurse practitioners per 100,000 people in those same counties was 10.4.



NUMBER OF NURSE PRACTITIONERS PER 100,000 POPULATION IN TEXAS IN 2009

Metropolitan non-border areas:	25.1
Metropolitan border areas:	17.0
Non-metropolitan non-border areas:	15.5
Non-metropolitan border areas:	8.3

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