National and Regional Projections of Supply and Demand for Women's Health Service Providers: 2013-2025

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Overview

The Health Resources and Services Administration (HRSA) and other agencies of the U.S. Department of Health and Human Services are committed to supporting comprehensive, culturally sensitive, and high quality health care for medically underserved women and girls.[1,2] Achieving this vision is dependent on the availability of a well distributed, well-trained group of women's health providers to meet the needs of women. This report presents national and regional projections of the U.S. supply of and demand for women's health service providers, namely obstetricians/gynecologists (OB/GYNs), certified nurse midwives (CNMs), and nurse practitioners (NPs) and physician assistants (PAs) practicing in women's health. Projections were developed using HRSA's Health Workforce Simulation Model (HWSM). Results presented in this report are for 2025, with 2013 data serving as the baseline.

The HWSM is an integrated microsimulation model that estimates current and future supply and demand for health care workers in multiple professions and care settings.[3] Assuming the continuation of current national patterns of labor supply and service demand, the supply projections account for new entrants to the workforce as well as changing workforce decisions (e.g., retirement and hours worked) arising from the changing characteristics of the workforce. The demand projections account for changing population size and composition, and increased insurance coverage. The service use pattern and the proportion of services delivered by each

[1] U.S. Department of Health and Human Services, Health Resources and Services Administration, Office of Women's Health. About the Office of Women's Health. Available at About the Office of Women's Health.
[2] Women's Health.
[3] For additional information about the HWSM, please see the technical documentation at Technical Documentation for Health Resources Service Administration's Health Workforce Simulation Model.

type of provider are assumed to remain constant over time. Consistent with standard workforce research methodology for workforce projections where data on base year shortages or surpluses are unavailable, baseline demand for all women's health practitioners was assumed to be equal to the baseline supply.

Important limitations for these workforce projections include: an underlying model assumption that health care delivery in the future (projected until 2025) will not change substantially from the way care was delivered in the base year (2013); and current rates of workforce participation and retirement will continue similarly into the future, as well as current patterns of health care utilization. Changes in any of these factors may significantly impact both the supply and demand projections for the women's health service providers included in this report. Additional discussion of the modeled projections is presented later in this report, together with a discussion of implications suggested by these projections.

Key Findings

Based on current utilization patterns, demand for OB/GYNs is projected to exceed supply, resulting in a national shortage of 4,930 FTEs in 2025.

- The number of OB/GYNs is expected to decrease from 41,720 FTEs to 40,230 FTEs, a 4 percent decrease.
- The total demand for OB/GYNs is projected to grow from 41,720 FTEs to 45,160 FTEs, an 8 percent increase.

However, supplies of CNMs, women's health NPs, and women's health PAs are expected to exceed demand, resulting in national surpluses for all three of these women's health providers in 2025.

- The supply of CNMs is expected to grow by 27 percent (from 11,100 FTEs to 14,070 FTEs) while the demand is expected to grow by only 8 percent (from 11,100 FTEs to 12,010 FTEs), resulting in an oversupply of 2,060 FTEs nationwide.

- The supply of women's health NPs is projected to grow by 22 percent (from 11,960 FTEs to 14,590 FTEs) while the demand is projected to grow by only 8 percent (from 11,960 FTEs to 12,940 FTEs), resulting in a surplus of 1,650 FTEs.
- The supply of women's health PAs is projected to grow by 67 percent (from 1,960 FTEs to 3,270 FTEs) while the demand is projected to grow by only 8 percent (from 1,960 FTEs to 2,120 FTEs), resulting in an oversupply of 1,150 FTEs.

All regions are projected to have a 2025 surplus of CNMs and PAs. The adequacy of supply of women's health NPs and OB/GYNs varies across regions.

- Projections at the regional level reveal a maldistribution of OB/GYNs. The Northeast is projected to have a *surplus* of 390 FTEs, while the remaining regions are all projected to have deficits – 1,930 FTEs (West), 1,810 FTEs (South), and 1,570 FTEs (Midwest).
- Projections also show a regional maldistribution of women's health NPs. The Northeast is projected to have a *deficit* of 290 FTEs, while the remaining regions are projected to have a surplus – 800 FTEs (South), 640 FTEs (West), and 480 FTEs (Midwest).

Background

Women represent about 51 percent of the U.S. population[4] and have unique health care needs arising from biological and gender-related socio-economic factors.[5] This report discusses future provider supply and demand for OB/GYNs, CNMs, and NPs and PAs who have trained and practice in women's health. Each of these types of providers is briefly described below.

[4] U.S. Census Bureau. 2015. Quick Facts: United States. Accessed September 15, 2016 from: United States Census Quick Facts.
[5] Institute of Medicine. 2011. Clinical Preventive Services for Women: Closing the Gaps. Washington, DC: The National Academies Press. Accessed August 4, 2016 from: Clinical Preventive Services for Women: Closing the Gaps .

Obstetricians/Gynecologists

OB/GYNs are physicians with a medical license to practice in the area of medical and surgical care of women during maternity through childbirth, as well as to treat disorders of the female reproductive system. Typically, OB/GYNs complete a 4-year residency in obstetrics and gynecology following their graduation from an accredited medical school. They can serve as primary care physicians for women and they may also serve as consultants to other physicians. OB/GYNs usually provide care to patients in hospitals, clinics, and private doctors' offices. They also conduct research in a variety of women's health areas at universities or research organizations.[6]

Certified Nurse Midwives

CNMs are licensed health care providers who have graduated from a nurse-midwifery education program accredited by the Accreditation Commission for Midwifery Education (ACME). CNMs are required to hold an active registered nurse license and to pass a national certification examination administered by the American Midwifery Certification Board (AMCB).[7] They provide primary care; well-woman gynecological care; and care and counseling during preconception, pregnancy, childbirth, and the postpartum period, either independently or as part of a health care team.[8] Nurse midwifery care is typically available to women who have normal, healthy births and do not require surgical intervention. In addition, CNMs can legally prescribe

[6] American College of Surgeons. 2016. Obstetrics and Gynecology. Accessed August 24, 2016: American College of Surgeons: Obstetrics and Gynecology.
[7] American College of Nurse Midwives. 2016. The Credentials CNM and CM. Accessed September 15, 2016: American College of Nurse MidWives: The Credentials CNM and CM.
[8] American College of Nurse-Midwives. 2014. Comparison of Certified Nurse-Midwives, Certified Midwives, and Certified Professional Midwives. Accessed September 15, 2016 from: American College of Nurse-Midwives: Comparison of Certified Midwives, and Certified Profesional Midwives

medication; however, prescriptive authorities vary from state to state.[9] They work in a variety of settings, including hospitals, ambulatory care clinics, private offices, community and public health systems, birthing centers, and private homes.[10]

Women's Health Nurse Practitioners

Women's health NPs are registered nurses who have clinical experience in women's health services after completing advanced nursing education. To become an NP, a graduate degree is required (e.g., a Master's in Nursing or Science [MS, MN, or MSN] or a Doctor of Nursing Practice [DNP]).[11] After earning their degree, NPs may elect to become certified in a particular practice area. Certification for women's health is provided through the National Certification Corporation, which offers the Women's Health Care Nurse Practitioner Credential.[12]

Women's health NPs provide primary and specialty health care for women of all ages, with an emphasis on reproductive and gynecologic health care needs. They work in physician's offices, hospitals, long-term care facilities, community health centers, health departments, and free-standing birth centers. They may work independently or in collaboration with a physician, depending on state regulations. [13]

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[9] National Council of State Boards of Nursing. 2016. CNM Independent Prescribing Map. Accessed September 15, 2016 from: NCSBN: CNM Independent Prescribing Map.
[10] American College of Nurse Midwives. 2011. Definition of Midwifery and Scope of Practice for Certified Nurse Midwives and Certified Midwives. Accessed September 15, 2016 from: Definition of Midwifery and Scope of Practice for Certified Nurse Midwives and Certified Midwives
[11] American Association of Nurse Practitioners. 2016. What's an NP? Accessed September 15, 2016 from: AANP: What's an NP?.
[12] National Certification Corporation. 2016. Women's Health Care Nurse Practitioner. Accessed September 15, 2016 from: NCC: Women's Health Care Nurse Practitioner.
[13] Nurse Practitioners in Women's Health. 2016. Nurse Practitioner and Women's Health Nurse Practitioner Practice Facts. Available at Nurse Practitioner & Women's Health Nurse Practitioner Practice Facts, accessed October 5, 2016.

Women's Health Physician Assistants

Women's health PAs are health professionals licensed to practice medicine under the supervision of an OB/GYN. These PAs provide a broad range of obstetrical and gynecological services including annual pelvic and breast exams, family planning, menopause management, and prenatal care. They also provide patient education and counseling on obstetrical and gynecological issues. [14]

Like NPs, PAs are state-licensed and nationally certified. PAs are required to be licensed in the states where they practice. All 50 states and the District of Columbia issue PA licenses and allow PAs to prescribe at least some medications.[15] PA certification requires that PAs pass the Physician Assistant National Certifying Examination (PANCE), following completion of an accredited training program. The PANCE, administered by the National Commission on Certification of Physician Assistants, evaluates fundamental medical and surgical comprehension of the candidates.[16] Candidates who pass the PANCE may use the Physician Assistant-Certified designation.[17]

[14] American Academy of Physician Assistants. 2010. Specialty Practice Issue Brief: Physician Assistants in Obstetrics and Gynecology. Accessed September 15, 2016 from: AAPA: Specialty Practice.
[15] American Academy of Physician Assistants. 2016. PA Prescribing Authority, by State. Accessed September 15, 2016 from: AAPA: PA Prescribing Authority by State.
[16] National Commission on Certification of Physician Assistants. 2016. Becoming Certified. Accessed September 15, 2016 from: NCCPA: Becoming Certified.
[17] American Academy of Physician Assistants. 2014. Become a PA. Accessed September 15, 2016 from: AAPA: Become a PA.

Results

Future supply and demand for women's health services will likely be affected by a host of factors, including population growth and aging, changes in birth rates, overall economic conditions, changes in health care delivery, and availability of the health workforce. In developing the projections presented here, baseline demands for OB/GYNs, CNMs, NPs, and PAs were assumed to be equal to 2013 supplies at the national level. The assumption of equality between demand and supply at baseline is consistent with standard workforce research methodology.[18] Trending forward, supply projections reflect the estimated number of new entrants to each profession and the number of practitioners lost due to changing work patterns, retirement, and mortality. Demand projections reflect impacts associated with both changes in population demographics and increased insurance coverage. All supply and demand projections are reported as full time equivalents (FTEs).

Regional trends in supply and demand were assessed using the U.S. Census Bureau definitions for the Northeast, Midwest, South, and West regions (Appendix A, Exhibit A-1). Baseline supplies for the regions were estimated directly from provider databases, while baseline demands were estimated from the regional demographics, health status, health care use, and insurance status, using state national staffing ratios.

Obstetricians/Gynecologists

Approximately 41,720 OB/GYNs were active in the nation in 2013. Trending forward to 2025 and assuming new physicians continue to be trained at current levels, approximately 14,630 FTE OB/GYNs will enter the workforce. An estimated 16,120 FTE OB/GYNs will be lost due to retirement, mortality, and changing work patterns. Because of the shrinkage in the supply of

[18] Ono T, Lafortune G, Schoenstein M. "Health workforce planning in OECD countries: a review of 26 projection models from 18 countries." *OECD Health Working Papers, No. 62*. France: OECD Publishing; 2013:8-11.

OB/GYNs by 1,490 FTEs, the projected supply of OB/GYNs will drop to 40,230 FTEs by 2025 (Exhibit 1).

Overall, demand for OB/GYNs will increase by 3,440 FTEs between 2013 and 2025. The growth in the population of women will contribute to an increased demand of 1,510 FTEs (44 percent of the total 3,440 FTE increase in demand) in 2025, while expanded insurance coverage, including greater access to preventive care and other services, will increase demand by an additional 1,930 FTEs (56 percent of the total 3,440 FTE increase in demand). The total increase in demand (8 percent of 2013 demand), together with the reduced supply (4 percent of 2013 supply), will result in a projected deficit of 4,930 FTE OB/GYNs nationwide by 2025.

Exhibit 1: Baseline and Projected OB/GYN National Supply and Demand, 2013 and 2025

	Obstetricians/ Gynecologists (FTEs)
Supply	
Estimated supply, 2013	41,720
Estimated supply growth, 2013-2025:	-1,490
New entrants	*14,630*
Attrition[a]	*-15,740*
Change in average work hours[b]	*-380*
Projected supply, 2025	40,230
Demand	
Estimated demand, 2013[c]	41,720
Estimated demand growth, 2013-2025:	3,440
Changing demographics impact	*1,510*
Insurance coverage impact[d]	*1,930*
Projected demand, 2025	45,160
Projected supply (minus) demand, 2025	**-4,930**

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Includes retirements and mortality.
[b] This represents the change in OB/GYN FTEs resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked.
[c] The model assumes that national supply and demand are in approximate equilibrium in 2013.
[d] The model reflects increased insurance coverage associated with Medicaid expansion and Affordable Care Act marketplaces.

Regionally, the West will have the most severe OB/GYN shortage in 2025, with a deficit of 1,930 FTEs, followed by the South (1,810 FTEs), and the Midwest (1,570 FTEs) (Exhibit 2).

Exhibit 2: Baseline and Projected OB/GYN Supply and Demand, by Region, 2013 and 2025

Region	2013 Baseline Estimates (FTEs)			2025 Projections (FTEs)		
	Supply	Demand[a]	Difference[b]	Supply	Demand	Difference[b]
Northeast	8,950	7,760	1,190	8,080	7,690	390
Midwest	8,410	9,160	-750	7,490	9,060	-1,570
South	15,090	15,120	-30	14,930	16,740	-1,810
West	9,270	9,690	-420	9,740	11,670	-1,930

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Baseline supply and demand are not in equilibrium in the regions because regional demands were estimated by prorating national OB/GYN demand based on regional population characteristics (e.g., age, sex, household income, insurance status, health status, etc.).
[b] Difference = (supply-demand); a negative difference reflects a shortage (i.e., supply is less than demand), while a positive difference indicates a surplus (i.e., supply is greater than demand).

Certified Nurse Midwives

Approximately 11,100 CNMs were active in the U.S. workforce in 2013. Trending forward to 2025, approximately 6,470 FTE CNMs will enter the workforce and 3,500 FTE CNMs will leave the workforce. A net growth of 2,970 FTE CNMs will result in a projected national workforce of 14,070 FTE CNMs in 2025 (Exhibit 3).

Assuming the current national CNM demand equals the current supply of 11,100 FTEs, the demand for CNMs is projected to increase by 910 FTEs to reach 12,010 FTEs by 2025. This growth in demand is driven by both changes in demographics (400 FTEs; 44 percent) and expanded insurance coverage (510 FTEs; 56 percent).

The projected increase in CNM supply (27 percent) exceeds the growth in demand (8 percent) between 2013 and 2025, producing an estimated surplus of 2,060 FTE CNMs in 2025.

Exhibit 3: Baseline and Projected CNM National Supply and Demand, 2013 and 2025

	Certified Nurse Midwives (FTEs)
Supply	
Estimated supply, 2013	11,100
Estimated supply growth, 2013-2025:	2,970
New entrants	*6,470*
Attrition[a]	*-3,100*
Change in average work hours[b]	*-400*
Projected supply, 2025	14,070
Demand	
Estimated demand, 2013[c]	11,100
Estimated demand growth, 2013-2025:	910
Changing demographics impact	*400*
Insurance coverage impact[d]	*510*
Projected demand, 2025	12,010
Projected supply (minus) demand, 2025	**2,060**

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Includes retirements and mortality.
[b] This represents the change in CNM FTEs resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked.
[c] The model assumes that national supply and demand are in approximate equilibrium in 2013.
[d] The model reflects increased insurance coverage associated with Medicaid expansion and Affordable Care Act marketplaces.

Regionally, the supplies of CNMs in all four U.S. Census regions are projected to exceed demand in 2025. The oversupply of CNMs is projected to be highest in the Northeast (1,050 FTEs) and lowest in the Midwest region (50 FTEs). (Exhibit 4)

Exhibit 4: Baseline and Projected CNM Supply and Demand, by Region, 2013 and 2025

Region	2013 Baseline Estimates (FTEs)			2025 Projections (FTEs)		
	Supply	Demand[a]	Difference[b]	Supply	Demand	Difference[b]
Northeast	2,680	2,070	610	3,090	2,040	1,050
Midwest	2,270	2,430	-160	2,470	2,420	50
South	3,370	4,010	-640	4,830	4,450	380
West	2,800	2,580	220	3,950	3,110	840

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Baseline supply and demand are not in equilibrium in the regions because regional demands were estimated by prorating national CNM demand based on regional population characteristics (e.g., age, sex, household income, insurance status, health status, etc.).
[b] Difference = (supply-demand); a negative difference reflects a shortage (i.e., supply is less than demand), while a positive difference indicates a surplus (i.e., supply is greater than demand).

Women's Health Nurse Practitioners

Nationwide, approximately 11,960 women's health NPs were active in 2013. Trending forward, approximately 7,560 FTE NPs are projected to enter and 4,930 FTE NPs to leave the workforce. A net growth of 2,630 FTE NPs will result in a projected national workforce of 14,590 FTE women's health NPs by 2025 (Exhibit 5).

Assuming the current national women's health NP demand equals the current NP supply of 11,960 FTEs, the demand for women's health NPs is projected to be 12,940 FTEs by 2025, an increase of 980 FTEs. This growth in demand is driven by demographics (430 FTEs; 44 percent) and expansion of insurance coverage (550 FTEs; 56 percent).

The increase in women's health NP supply (22 percent) is expected to exceed the increase in demand (8 percent), resulting in a surplus of 1,650 FTE women's health NPs by 2025.

Exhibit 5: Baseline and Projected Women's Health NP National Supply and Demand, 2013 and 2025

	Women's Health Nurse Practitioners (FTEs)
Supply	
Estimated supply, 2013	11,960
Estimated supply growth, 2013-2025:	2,630
New entrants	*7,560*
Attrition[a]	*-4,630*
Change in average work hours[b]	*-300*
Projected supply, 2025	14,590
Demand	
Estimated demand, 2013[c]	11,960
Estimated demand growth, 2013-2025:	980
Changing demographics impact	*430*
Insurance coverage impact[d]	*550*
Projected demand, 2025	12,940
Projected supply (minus) demand, 2025	**1,650**

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Includes retirements and mortality.
[b] This represents the change in women's health NP FTEs resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked.
[c] The model assumes that national supply and demand are in approximate equilibrium in 2013.
[d] The model reflects increased insurance coverage associated with Medicaid expansion and Affordable Care Act marketplaces.

The projected supplies of women's health NPs in the Midwest, South and West regions are expected to be higher than the projected demand in 2025, leading to oversupplies of women's health NPs in these regions. In 2025, the largest oversupply of women's health NPs is expected to be in the South (800 FTEs), followed by the West (640 FTEs), and the Midwest (480 FTEs), while the Northeast will experience a shortage of women's health NPs (290 FTEs; Exhibit 6).

Exhibit 6: Baseline and Projected Women's Health NP Supply and Demand, by Region, 2013 and 2025

Region	2013 Baseline Estimates (FTEs)			2025 Projections (FTEs)		
	Supply	Demand[a]	Difference[b]	Supply	Demand	Difference[b]
Northeast	2,020	2,220	-200	1,900	2,190	-290
Midwest	2,350	2,630	-280	3,110	2,630	480
South	4,280	4,330	-50	5,610	4,810	800
West	3,310	2,770	540	3,970	3,330	640

Note: Numbers might not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Baseline supply and demand are not in equilibrium in the regions because regional demands were estimated by prorating national women's health NP demand based on regional population characteristics (e.g., age, sex, household income, insurance status, health status, etc.).
[b] Difference = (supply-demand); a negative difference reflects a shortage (i.e., supply is less than demand), while a positive difference indicates a surplus (i.e., supply is greater than demand).

Women's Health Physician Assistants

In 2013 there were approximately 1,960 PAs specializing in women's health in the country. Between 2013 and 2025, approximately 1,600 FTE women's health PAs will enter the workforce and 290 FTE PAs will leave the workforce. A net growth of 1,310 FTE PAs will result in a projected national workforce of 3,270 FTE women's health PAs by 2025 (Exhibit 7).

Assuming the current demand for PAs in women's health equals the current PA supply, the demand for women's health PAs in 2025 is projected to be 2,120 FTEs, representing an increase of 160 FTEs from the 2013 demand. Forty-four percent of this is due to demographic changes and 56 percent due to expansion of insurance coverage. The expected increase in PA supply (67 percent) exceeds the expected increase in demand (8 percent), resulting in a surplus of 1,150 FTE women's health PAs by 2025.

Exhibit 7: Baseline and Projected Women's Health PA National Supply and Demand, 2013 and 2025

	Women's Health Physician Assistants (FTEs)
Supply	
Estimated supply, 2013	1,960
Estimated supply growth, 2013-2025:	1,310
New entrants	*1,600*
Attrition[a]	*-260*
Change in average work hours[b]	*-30*
Projected supply, 2025	3,270
Demand	
Estimated demand, 2013[c]	1,960
Estimated demand growth, 2013-2025:	160
Changing demographics impact	*70*
Insurance coverage impact[d]	*90*
Projected demand, 2025	2,120
Projected supply (minus) demand, 2025	**1,150**

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Includes retirements and mortality.
[b] This represents the change in women's health PA FTEs resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked.
[c] The model assumes that national supply and demand are in approximate equilibrium in 2013.
[d] The model reflects increased insurance coverage associated with Medicaid expansion and Affordable Care Act marketplaces.

All four U.S. Census regions are expected to have surpluses of women's health PAs in 2025. The projected oversupply of PAs is highest in the Northeast (510 FTEs) and lowest in the Midwest (40 FTEs). (Exhibit 8)

Exhibit 8: Baseline and Projected Women's Health PA Supply and Demand, by Region, 2013 and 2025

Region	2013 Baseline Estimates (FTEs)			2025 Projections (FTEs)		
	Supply	Demand[a]	Difference[b]	Supply	Demand	Difference[b]
Northeast	660	360	300	870	360	510
Midwest	350	430	-80	470	430	40
South	520	710	-190	1,000	790	210
West	430	460	-30	930	550	380

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10.
[a] Baseline supply and demand are not in equilibrium in the regions because regional demands were estimated by prorating the national women's health PA demand based on regional population characteristics (e.g., age, sex, household income, insurance status, health status, etc.).
[b] Difference = (supply-demand); a negative difference reflects a shortage (i.e., supply is less than demand), while a positive difference indicates a surplus (i.e., supply is greater than demand).

Strengths and Limitations

The HWSM, used to develop the supply and demand projections presented here, relies on a microsimulation approach that includes several linked, but separate components. Each component incorporates behavioral as well as structural changes impacting workforce supply and demand. The large number of separate, but linked predictive equations in the HWSM enhances the accuracy of the results, and enables estimations at regional levels. However, several assumptions underlie the HWSM. The findings in this report must be interpreted in the context of those assumptions. First, following standard workforce projection methodology, the model assumes that the labor markets for women's health providers are currently in balance (i.e., supply and demand are equal in the base year) at the national level.[19] Second, regional demand projections account for variations in demographic, economic, and health risk factors between the regions, but because these do not account for regional differences in staffing and service delivery, they indicate the number of providers required by the regions to achieve a national level

[19] Ono, T., Lafortune, G., Schoenstein, M. 2013. "Health workforce planning in OECD countries: a review of 26 projection models from 18 countries." *OECD Health Working Papers, No. 62*. France: OECD Publishing 2013:8-11

of care. Accounting for these additional factors could result in increases or decreases in the projected adequacy of women's health providers at regional levels.

In addition, the HWSM assumes that the same proportion of health care providers will choose to practice in women's health. The HWSM also assumes that current patterns of women's health care utilization will continue in the future. Thus, the model may not fully capture currently evolving trends such as the growing popularity of midwifery care[20] or the broad trend of delaying child bearing among some demographic groups. As noted above, deviations in any of the parameters of the projections (i.e., changes in hours worked, enrollment patterns, retirement patterns, staffing or service utilization) from the assumed patterns will result in different estimates of future supply and demand for women's health providers.

Conclusions

HRSA's commitment to improve access to women's health care requires a well distributed, competent group of women's health providers to meet the growing population of women and expanded insurance coverage for women's health care. Insurance expansion is anticipated to increase coverage for an estimated 9.5 million women[21,22] and contributes about 56 percent to the projected growth in demand for women's health care providers. The growth in the population of women accounts for the remaining 44 percent of the growth in demand of women's health care providers.

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[20] MacDorman MF, Mathews TJ, Declercq E. Home births in the United States, 1990–2009. NCHS data brief, no 84. Hyattsville, MD: National Center for Health Statistics. 2012.

[21] About the Office of Women's Health.

[22] U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. 2016. Health Insurance Coverage and the Affordable Care Act, 2010-2016. *Issue Brief*. Washington DC. Available at ASPE Brief: HEALTH INSURANCE COVERAGE AND THE AFFORDABLE CARE ACT, 2010–2016. Accessed September 2016.

These projections suggest that the number of providers in women's health care will grow across all professions. However, the supply and demand for each profession varies. For example, while OB/GYN supply will be lower than demand, CNM and women's health NP and PA supplies are projected to be higher than demand for these providers in 2025.

As the Affordable Care Act expands direct access to OB/GYNs and coverage of additional women's preventive health services,[23] non-physician providers are increasingly taking a more holistic approach to women's health,[24] and the effective use of CNMs and other non-physician providers in women's health care delivery has been shown to be successful.[25,26,27] As new models of care are increasingly adopted, the OB/GYN shortage could be reduced in the future.

Substantial variation in provider adequacy by profession and geographic region are also projected. Efficient use of non-physician providers may help overcome the geographic maldistribution of the women's health provider supply revealed in this report. For example, the Midwest, South, and West regions are projected to have OB/GYN shortages. However, these three regions are also projected to have oversupplies of CNMs and women's health NPs and PAs, which may help to alleviate some of the forecast OB/GYN deficits.

Given the projected growth in non-physician providers in the three regions, the efforts to more effectively integrate these providers into the care delivery system could expand coverage and alleviate the projected OB/GYN shortage. As the health care system continues to evolve in

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[23] The American Congress of Obstetricians and Gynecologists. ACOG's Health Care Reform FAQs for Women. Accessed at: ACOG's Health Care Reform FAQs for Women.

[24] The Henry J. Kaiser Family Foundation. Accessed at: Kaiser Family Foundation Brief: Health Reform.

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response to the growing need for women's health services, with new technologies, payment mechanisms and delivery system changes, each health provider's role and its implications on future supply and demand for women's health providers will need to be updated.

Appendix A: U.S. Census Bureau Regions

Exhibit A-1 lists the states associated with each of the U.S. Census Bureau regions. This categorization was used in the regional projections of primary care practitioner supply and demand presented in this report.

Exhibit A-1: U.S. Census Bureau Regions and Associated States

NORTHEAST	MIDWEST	SOUTH	WEST
Connecticut	Illinois	Alabama	Alaska
Maine	Indiana	Arkansas	Arizona
Massachusetts	Iowa	Delaware	California
New Hampshire	Kansas	District of Columbia	Colorado
New Jersey	Michigan	Florida	Hawaii
New York	Minnesota	Georgia	Idaho
Pennsylvania	Missouri	Kentucky	Montana
Rhode Island	Nebraska	Louisiana	Nevada
Vermont	North Dakota	Maryland	New Mexico
	Ohio	Mississippi	Oregon
	South Dakota	Oklahoma	Utah
	Wisconsin	North Carolina	Washington
		South Carolina	Wyoming
		Tennessee	
		Texas	
		Virginia	
		West Virginia	

Source: U.S. Census Bureau. 2015. Geographic Terms and Concepts: Census Divisions and Census Regions. Accessed 10/1/2015: United States Census: Geographic Terms and Concepts - Census Divisions and Census Regions.

About the Model

The results included in this report come from HRSA's Health Workforce Simulation Model (HWSM), an integrated health professions projection model that estimates current and future supply and demand for health care providers.

The supply component of the HWSM simulates workforce decisions for each provider type based on each individual's demographics and profession, along with the characteristics of the local or national economy and the labor market. The starting supply plus new additions to the workforce minus attrition provide an end-of-year supply projection, which then becomes the starting supply estimate for the subsequent year. This cycle is repeated through 2025. The basic files that support the supply analyses contain records of OB/GYN physicians from the AMA Masterfile, records of NPs and CNMs from National Plan and Provider Enumeration System, and records of PAs from the National Commission on Certification of Physician Assistants.

Demand projections for health care services in different care settings are produced by applying regression equations for individuals' health care use on the projected population. The current staffing patterns by care setting are then applied to forecast the future demand for primary care practitioners. The population database used to estimate demand consists of records of individual characteristics of a representative sample of the entire U.S. population derived from the American Community Survey, the National Nursing Home Survey, and the Behavioral Risk Factor Surveillance System. Using the Census Bureau's projected population and the Urban Institute's state-level estimates of the impact of the Affordable Care Act on insurance coverage,[1,] [2] the HWSM simulates future populations with expected demographic, socioeconomic, health status, health risk and insurance status.

The HWSM makes projections at the state level which are then aggregated to the regional and national levels. A detailed description of the HWSM can be found in the accompanying technical documentation available at HRSA: Health Workforce Analysis.

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