Montana's Primary Care Workforce

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This report aims to assess the current primary care workforce in Montana by examining the following professional areas of the healthcare delivery system: (1) primary care physicians (2) physician assistants (PAs), certified nurse-midwives (CNMs), and nurse practitioners (NPs), and (3) dentists and dental hygienists. All three areas are investigated at the county, state, and national level.

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Overview: Nationally, there have been many concerted efforts to increase accessibility to healthcare, with particular attention to primary healthcare. The challenges of providing citizens with access to primary care are complex and multifaceted and in order to meet these challenges, there must be an adequate primary healthcare workforce. Primary care (PC) health professionals provide a wide spectrum of care including preventative, direct, and continuing health care. In the realm of primary care, Montana faces its own unique challenges in providing residents with complete and comprehensive health care. This report will look at three particular primary care workforce fields: (1) primary care physicians, (2) physician assistants, nurse practitioners, and certified nurse-midwives, and (3) dentists and dental hygienists. While this list of primary care professions is by no means exhaustive, it will provide insight to the condition of primary healthcare in Montana and how the state compares nationally. With 47% of Montana's population residing in rural or frontier communities[1] (defined as fewer than 6 people per square mile), considerable attention will be given to the rural healthcare delivery system.

Primary Care Physicians:

Primary care physicians are usually the first medical contact for a person with an undiagnosed health issue, but they are also charged with providing continual, comprehensive, and coordinated care to their patients. Presently, the United States' healthcare system faces a difficult challenge regarding both the increased demand of PC physicians and the inadequate supply of these physicians. As this continues to happen, the interest of U.S. medical school graduates to pursue careers in primary care is declining as shown by a number of studies. This is a troubling finding given the important role primary care has in ensuring and promoting healthy outcomes in communities throughout the U.S. Studies have also confirmed that primary care improves health outcomes, increases quality and reduces health care costs. The following data is reflective of both allopathic (MD) and osteopathic (DO) physicians. When examining Montana's PC physician workforce, four PC specialties were considered: family medicine, general practice, internal medicine, and pediatrics.

National:

- PC physicians provide 52% of all ambulatory care visits, 80% of patient visits regarding high blood pressure, and 69% of visits for chronic obstructive pulmonary disease (COPD) and diabetes, yet they make up only 1/3 of the nation's physician workforce. [2]
- Strong evidence shows that better health outcomes and decreased health care costs are achieved when PC physicians make up over 50% of a nation's physician supply.[3]
- Currently, 23.3% of physicians nationwide are over the age of 60 and are likely to retire within 5 years.[4]
- The Institutions of Medicine (IOM) states that it would take 16,261 additional PC physicians to eliminate the shortage in currently underserved areas.[5]
- It is estimated that over 60 million Americans do not have adequate access to primary care because of the shortage of primary care physicians in their communities.[6]
- Approximately 1/5 of the U.S. population resides in rural areas, however, rural physicians account for only about 1/10 of the nation's practicing physicians. [7]
- Rural communities, on average, have 53 PC physicians per 100,000 while urban residents have access to PC physicians at a much greater rate—78 per 100,000.[8]
- The average debt of indebted medical school graduates is $139,517.[9]

- The amount of educational debt is significant as students with high debt are much *less* likely to pursue family practice and primary care specialties and *more* likely to seek specialties with higher income or more leisure time.[10]
- Only 2% of medical students plan to work in primary care, according to the Journal of the AMA. Primary care physicians are the most important physician workforce for rural areas.[11]
- From 1997 to 2005, the number of U.S. medical graduates entering family medicine residencies dropped by 50 percent.[12]

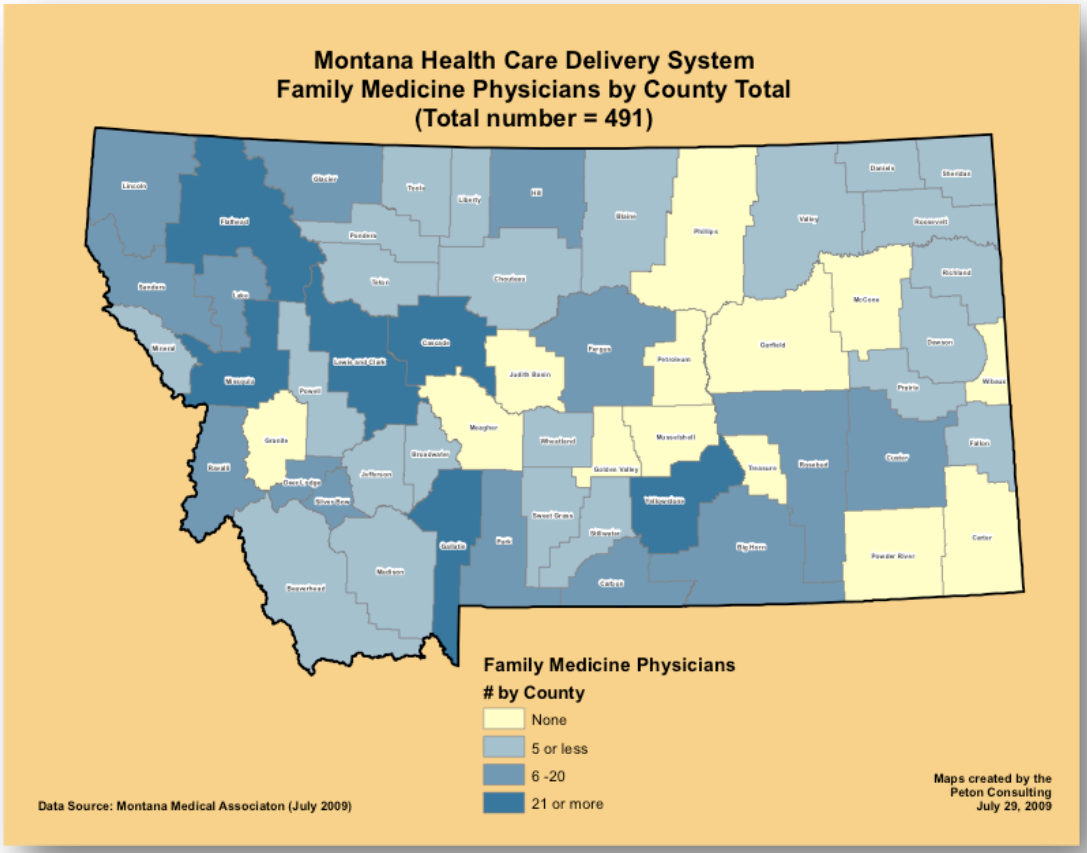
Montana:

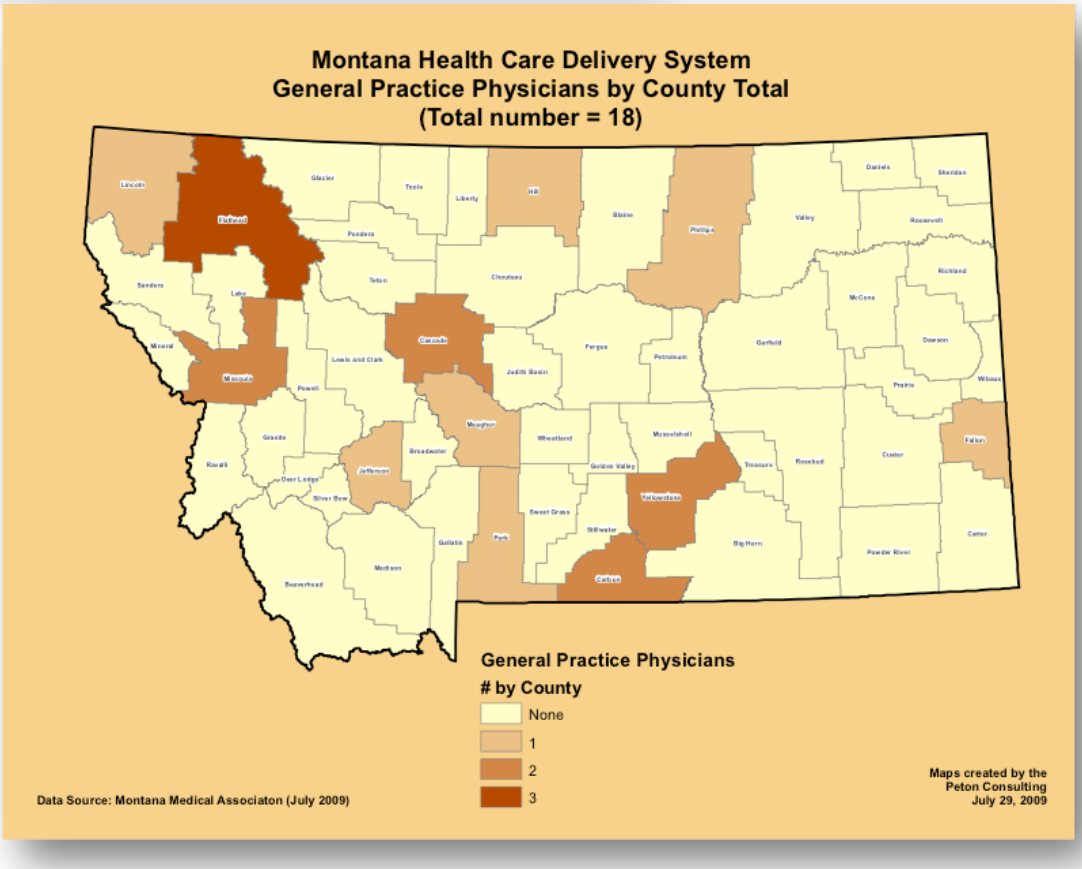
- While there is no educational institution in the state of Montana that offers MD or DO degrees, residents may attain a medical education, paying state tuition, through the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Program. This program is run by the University of Washington School of Medicine and currently admits 20 Montana residents annually. With this in mind, Montana students are at a significant disadvantage to obtain a publicly sponsored medical education as there is only one slot available per 46,000 citizens. This is well below the national average of one per 26,150 citizens.[13]
- Of Montana's 56 counties, 40 are designated Health Professional Shortage Areas in primary care.[14]
- In Montana, 24.5% of active physicians are age 60 or older (higher than the national average) and are likely to retire within 5 years.[15]
- Stenseth (2009) compared Montana's full-time PC physician workforce to the national average and concluded that Montana has a sufficient amount of family physicians, but a substantial deficit in physicians of other PC specialties.[16]
- Montana Department of Labor and Industry reports that, based on indicators of demand, each year, there are 19 openings in Montana for PC physicians.[17]
- According to a report by Newman (2009):[18]
    - 40.54% of total Montana physicians are practicing in a primary care field (i.e., family medicine, general practice, internal medicine, or pediatrics)
    - Of these PC physicians, approximately 37% practice in Billings, Missoula, or Great Falls.
    - There are 9 counties without any physicians, 12 counties without PC physicians, and 7 counties without hospitals.
- Based on data provided by the Montana Medical Association, Newman (2009), and the U.S. Census Bureau, Table 1 (below) indicates:
    - 27,331 Montana residents live in counties without PC physicians.
    - The ratio of PC physician to patient population in Montana is slightly better than the national average: 1:1,122 and 1:1,160, respectively. However, the PC physician workforce is not evenly distributed throughout the state as 33 of Montana's 56 counties are below the aforementioned national average. This is significant for two reasons: (1) the PC physicians, if any, in those counties are more burdened and are responsible for a greater patient population than their peers nationally and (2) approximately 276,000 Montanans or 28.5% of Montana's population live in counties with fewer PC physicians than the national average. For these Montanans, access to primary care is much more limited than that of their national counterparts.

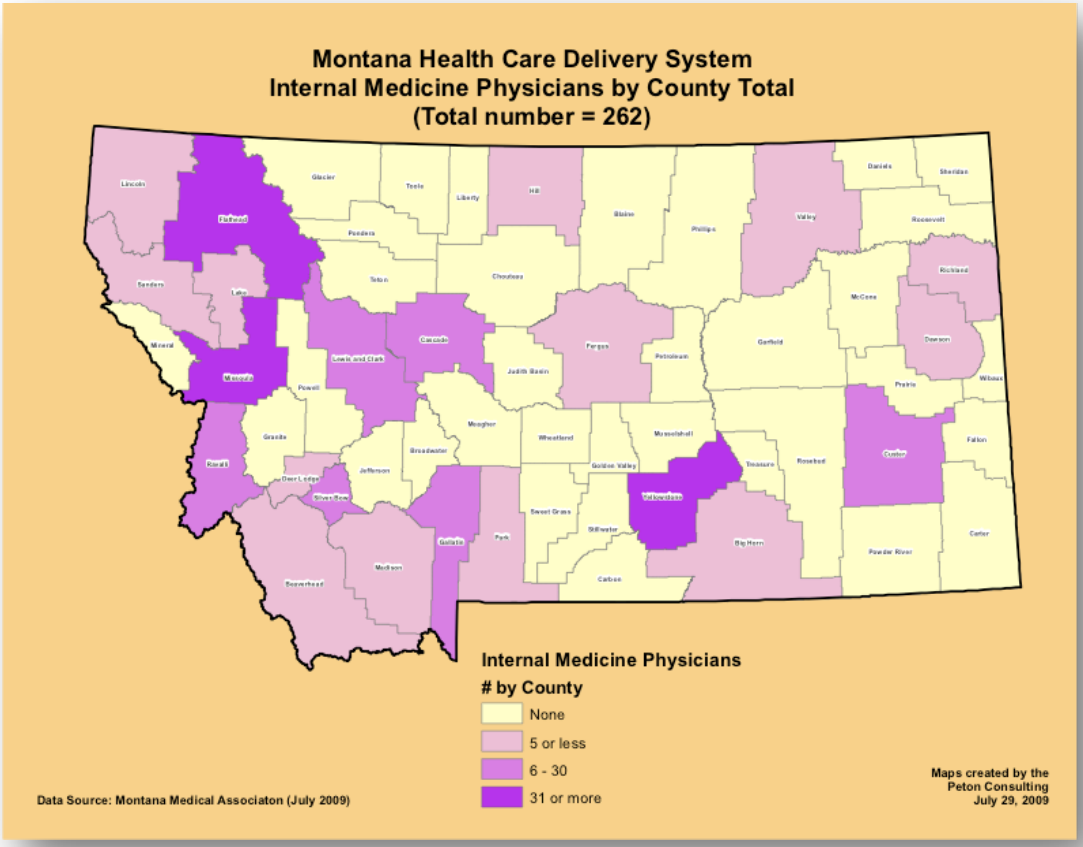
Future:

- The Association of American Medical Colleges (AAMC) estimates that there will be a shortage of 124,000 physicians by 2025—37% of which will be PC physicians.[19]
- Any future shortage of physicians, primary care or otherwise, is likely to have an uneven effect, with some geographic areas hit harder than others resulting in hardships for both poor urban and rural communities.[20] This is especially salient to Montana's condition where access to care continues to be problematic in rural areas.
- In a study of rural physicians in Pennsylvania, Rabinowitz, *et al.* (1999) discovered that one of the most critical factors in determining whether or not a physician will practice in a rural community is the extent of the physician's rural background.[21] Considering this, it would behoove state legislators and public leaders to investigate the viability of instating a program that would recruit prospective primary care physicians from the many rural communities in Montana.
- Some of the major barriers to the recruitment of physicians reported by the Journal of the American Medical Association (JAMA) (2006) are: lack of spousal employment, lack of cultural activities, lack of housing, poor-quality schools, excessive workload, and inadequate compensation.[22]
- To increase Montana's PC physician workforce and thereby increase access to primary health care, efforts should be made to recruit, retain, and produce more primary care physicians in Montana. Policies that have been suggested to increase the PC physician workforce in Montana include the following:
    - Expand Montana's participation in the WWAMI Program by 20 slots per year. This would increase Montana's existing 20 slots to 40 slots per year allowing more Montana residents access to a publicly sponsored medical education. Equally important, the WWAMI program provides a conduit for Montana medical students to remain connected to the state.[23]
    - As students with high debt are less likely to specialize in primary care, national efforts can be made to reduce medical education debt by: securing funding for Title VII in the FY 2009 appropriations bill as well as expanding and protecting the National Health Service Corps (NHSC) Loan Repayment Program.[24] In Montana, state legislators could increase the amount the Montana Rural Physician Incentive Program (MRPIP) offers in debt repayment for physicians locating in rural Montana areas for at least five years. State legislators could also strengthen and increase the Rural Physicians Credit which is available to any physician who practices in an area without a 60 bed hospital within a 30-mile radius.
    - As inadequate compensation is often an obstacle in retaining primary care physicians, increased compensation for services offered would help eliminate such a barrier. Given that many primary care physicians care for Medicare and Medicaid patients, efforts to expand services covered and increase monetary payment to primary care physicians could help decrease the cost of health care nationally and statewide. For example, Medicare will pay approximately $30,000 for a limb amputation for a diabetic patient but will pay very little to PC physicians for helping such a patient avoid medical complications that lead to amputations.[25]

Distribution of Montana's Primary Care Physicians:






Montana Health Care Delivery System
Internal Medicine Physicians by County Total
(Total number = 262)
Internal Medicine Physicians
by County
None
5 or less
6 - 30
31 or more
Data Source: Montana Medical Associaton (July 2009)
Maps created by the
Peton Consulting
July 29, 2009

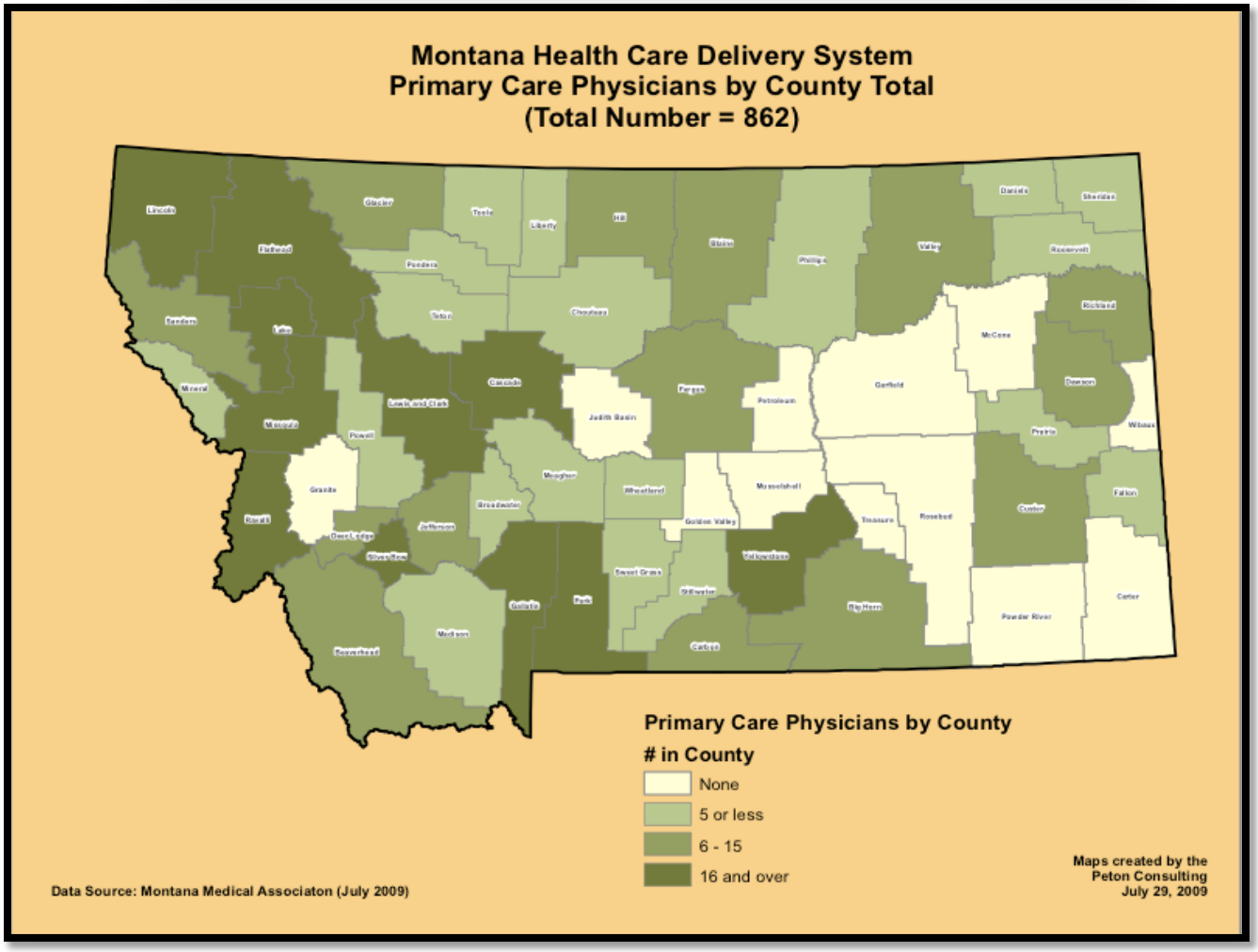

Montana Health Care Delivery System
Primary Care Physicians by County Total
(Total Number = 862)
Primary Care Physicians by County
in County
None
5 or less
6 - 15
16 and over
Data Source: Montana Medical Associaton (July 2009)
Maps created by the
Peton Consulting
July 29, 2009

Table 1. Active Primary Care Physicians in Montana by Specialty and County

COUNTY	COUNTY SEAT	COUNTY POP.	PHYSICIANS PER COUNTY	PRIMARY CARE PHYSICIANS FM	GP	IM	PD	TOTAL PC	PC PHYSICIAN: PATIENT POPULATION
	STATEWIDE TOTAL:	***967,440***	***2,139***	***491***	***18***	***262***	***97***	***862***	***1: 1,122***
Beaverhead	*Dillon*	*8,903*	12	4	0	4	0	8	1: 1,112
Big Horn	*Hardin*	*12,841*	13	10	0	1	1	12	1: 1,070
Blaine	*Chinook*	*6,491*	6	5	0	0	1	6	1:1,081
Broadwater	*Townsend*	*4,704*	3	2	0	0	0	2	1: 2,352
Carbon	*Red Lodge*	*9,657*	13	7	2	0	0	9	1: 1,073
Carter	*Ekalaka*	*1,234*	0	0	0	0	0	0	N/A
Cascade	*Great Falls*	*82,026*	225	27	2	24	17	70	1: 1,171
Chouteau	*Fort Benton*	*5,225*	1	1	0	0	0	1	1: 5,225
Custer	*Miles City*	*11,149*	22	6	0	7	2	15	0 1: 743
Daniels	*Scoby*	*1,643*	1	1	0	0	0	1	1: 1,643
Dawson	*Glendive*	*8,490*	12	5	0	2	0	7	1: 1,212
Deer Lodge	*Anaconda*	*8,843*	21	8	0	2	0	10	0 1: 884
Fallon	*Baker*	*2,716*	3	2	1	0	0	3	0 1: 905
Fergus	*Lewistown*	*11,195*	18	9	0	3	1	13	0 1: 861
Flathead	*Kalispell*	*88,473*	244	38	3	32	9	82	1: 1,078
Gallatin	*Bozeman*	*89,824*	211	56	0	23	10	89	1: 1,009
Garfield	*Jordan*	*1,184*	0	0	0	0	0	0	N/A
Glacier	*Cut Bank*	*13,297*	12	10	0	0	1	11	1: 1,208
Golden Valley	*Ryegate*	*1,081*	0	0	0	0	0	0	N/A
Granite	*Philipsburg*	*2,821*	1	0	0	0	0	0	N/A
Hill	*Havre*	*16,454*	25	6	1	3	0	10	1: 1,645
Jefferson	*Boulder*	*11,255*	14	5	1	0	0	6	1: 1,875
Judith Basin	*Stanford*	*2,014*	0	0	0	0	0	0	N/A
Lake	*Polson*	*28,690*	30	19	0	2	1	22	1: 1,304
Lewis & Clark	*Helena*	*60,925*	176	38	0	28	10	76	0 1: 801
Liberty	*Chester*	*1,725*	3	3	0	0	0	3	0 1: 575
Lincoln	*Libby*	*18,971*	23	11	1	3	2	17	1: 1,115
Madison	*Virginia City*	*7,509*	5	3	0	2	0	5	1: 1,501
McCone	*Circle*	*1,676*	0	0	0	0	0	0	N/A
Meagher	*White Sulphur Spgs.*	*1,868*	1	0	1	0	0	1	1: 1,868
Mineral	*Superior*	*3,862*	2	1	0	0	0	1	1: 3,862
Missoula	*Missoula*	*107,320*	329	52	2	31	12	97	1: 1,106
Musselshell	*Roundup*	*4,498*	0	0	0	0	0	0	N/A
Park	*Livingston*	*16,189*	24	11	1	3	1	16	1: 1,011
Petroleum	*Winnett*	*436*	0	0	0	0	0	0	N/A
Phillips	*Malta*	*3,904*	1	0	1	0	0	1	1: 3,904
Pondera	*Conrad*	*5,852*	5	4	0	0	0	4	1: 1,463
Powder River	*Broadus*	*1,694*	0	0	0	0	0	0	N/A
Powell	*Deer Lodge*	*7,041*	5	4	0	0	0	4	1: 1,760
Prairie	*Terry*	*1,064*	1	1	0	0	0	1	1: 1,064
Ravalli	*Hamilton*	*40,664*	57	19	0	7	1	27	1: 1,506
Richland	*Sidney*	*9,270*	13	3	0	4	1	8	1: 1, 158
Roosevelt	*Wolf Point*	*10,089*	3	2	0	0	0	2	1: 5,044
Rosebud	*Forsyth*	*9,190*	6	6	0	0	0	0	N/A
Sanders	*Thompson Falls*	*11,034*	11	7	0	1	0	8	1: 1,379
Sheridan	*Plentywood*	*3,283*	1	1	0	0	0	1	1: 3,283
Silver Bow	*Butte*	*32,803*	63	13	0	13	5	31	1: 1,058
Stillwater	*Columbus*	*8,687*	4	3	0	0	0	3	1: 2,895
Sweet Grass	*Big Timber*	*3,790*	1	1	0	0	0	1	1: 3,790
Teton	*Choteau*	*5,992*	1	1	0	0	0	1	1: 5,992
Toole	*Shelby*	*5,141*	3	3	0	0	0	3	1: 1,713
Treasure	*Hysham*	*637*	0	0	0	0	0	0	N/A
Valley	*Glasgow*	*6,892*	10	5	0	1	0	6	1: 1,148
Wheatland	*Harlowton*	*2,010*	2	2	0	0	0	2	1: 1,005
Wibaux	*Wibaux*	*866*	0	0	0	0	0	0	N/A
Yellowstone	*Billings*	*142,348*	502	76	2	66	22	166	0 1: 857
	STATEWIDE TOTAL:	***967,440***	***2,139***	***491***	***18***	***262***	***97***	***862***	***1: 1,122***
	NATIONWIDE TOTAL:	***304,059,724***	***764, 783***	***103,182****		***104,699***	***54,016***	***261,897***	***1: 1,160***

* This figure includes both FM and GP physicians.

Sources:

1.) Population Division, U.S. Census Bureau, Release Date: March 19,2009

2.) Montana Medical Association. (2009). *MMA Directory of Montana Physicians* (29 ed.) Helena, MT: *Data from this publication was analyzed by Frank Newman of the Montana Office of Rural Health.

3.) *[AMA Physician Masterfile (January 2008)]* as cited by Association of American Medical Colleges. (2008). *2008 Physician Specialty Data* Washington, D.C.: AAMC.

Physician Assistants, Nurse Practitioners and Certified Nurse-Midwives:

Physician assistants (PAs), nurse practitioners (NPs), and certified nurse-midwives are critical members of the primary healthcare team. Each of these professions requires post-baccalaureate training and certification in order to practice and may also obtain prescriptive authority. Physician assistants provide many primary care services to patients and operate out of hospitals, clinics, offices, and a variety of military settings. They work under both direct and indirect supervision of physicians. That is to say that they may be personally supervised or remotely supervised depending on the state in which their practice occurs. In Montana, PAs are not required to work under the direct supervision of a physician which allows PAs to practice in areas without physicians. Of the advanced practice nurse (APN) specialties, NPs and CNMs are most likely to serve in an area of primary care and will therefore be considered in this report. Nurse practitioners are registered nurses (RNs) with an advanced degree which allows them to diagnose and manage acute, episodic and chronic illness—care once only offered by physicians. In Montana and elsewhere, NPs can practice either independently or as part of a health care team. Certified nurse-midwives have advanced clinical education which allows them to provide birthing services, women's' health care, and educational services. Together, these three critical primary healthcare professions form a group of practitioners that is approaching 20% the size of the physician workforce.[26]

National:

- A report distributed by the U.S. Department of Health and Human Services (2002) noted that: [27]
    - The period between 1992 and 2002 saw a 160% increase in the numbers of PAs, NPs, and CNMs.
    - These three professions have experienced increased responsibilities over this time and helped to meet the health care needs of underserved populations.
    - As many of the PAs, NPs, and CNMs are recent graduates of their respective education programs and few are near the age of retirement, the supply of new practitioners will effectively grow relative to both population and supply of physicians.
- Future demand for physicians could be reduced if PAs and NPs were more accessible in patient care.[28]
- Recent graduates of PA programs indicate that they are less likely to locate in rural areas than their predecessors.[29]
- Looking at a census report offered by the American Academy of Physician Assistants (AAPA) (2008):[30]
    - The median age of PAs in the U.S. is 39.
    - Only 2.6% of PAs are self-employed.
    - Approximately 37% of PAs practice in a field of primary care and 15% practice in a non-metro area as designated by the Bureau of Health Professions, US DHHS.
- According to the American Academy of Nurse Practitioners (2009):[31]
    - Approximately 8,000 new NPs were prepared in 2008.
    - The average age of an NP is 48.
    - 66% of NPs practice in a primary care site and 20% of NPs practice in rural or frontier settings.

- Citing a study conducted by Mundinger *et al.* (2000):
  "In an ambulatory care situation in which patients were randomly assigned either nurse practitioners or physicians, and where nurse practitioners had the same authority responsibilities, productivity and administrative requirements, and patient population as primary care physicians, patients' outcomes were comparable."[32]
- More than half of CNMs practice in an office or clinic setting and most CNMs reported their employers to be either physicians or hospitals.[33]
- According to a report given by Brigham and Women's Hospital (2009):[34]
    - Of all visits to CNMs, 90% are for primary, preventative care.
    - The number of CNMs who are certified each year has increased by 25% since 1991.

Montana:

- Regarding the AAPA census report (2008)mentioned above:[35]
    - The median age of PAs in Montana is 43 (compared to the national median age of 39).
    - 3.4% of Montana PAs are self-employed (compared to 2.6% nationally).
    - Approximately 57% of Montana PAs practice in a field of primary care (compared to 37% nationally).
- Table 2 looks at these 3 professions by county in Montana. According to the population information obtained by the Population Division, U.S. Census Bureau (2009):
    - In Montana, approximately 58% of PAs, 51% of CNMs, and 64% of NPs are located in a large rural (15,000-50,000) or smaller community.
    - The practitioner: patient populations are as follows:
      Montana- PA 1:2968, CNM 1:23,596, NP 1:2,354
      National- PA 1:3802, CNM 1:21,719, NP 1:2,156

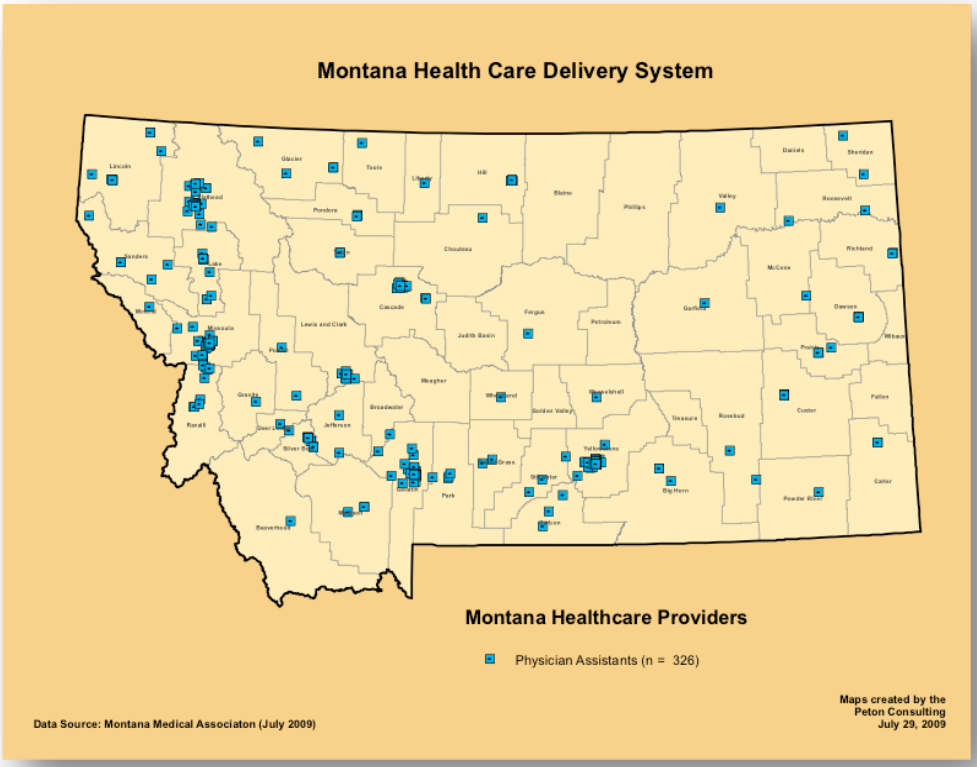
From this, we can see that Montana has a greater number of PAs than the national average. This could be explained by a number of reasons: Montana may need more PAs to satisfy the demand for primary care; PAs tend to be more flexible and mobile than physicians so they may be better equipped to serve many small communities; or the infrastructure of Montana's healthcare delivery system may be more conducive to allow more PAs to practice than the national average. Further investigation will be needed to understand Montana's perceived excess of PAs. Conversely, there appears to be a deficit of both CNMs and NPs in the state of Montana.

- There are 11 counties without a PA, 44 counties without a CNM, 10 counties without an NP, and 3 counties without anyone practicing these three professions. So while there appears to be a surplus of PAs in the above figure, there also seems to be a misdistribution of this profession as well as NPs and CNMs in Montana.

Future:

- Efforts should continue to recruit, retain, and produce more CNMs and NPs in the state of Montana. Also, providing incentives for all three professions to practice in the more underserved, rural communities would be prudent in order to increase the access of healthcare statewide and distribute Montana's resource of PAs more equitably.
- If the future demand for physicians is not met, Montana may look to PAs, NPs, and CNMs to provide more of the state's primary care. We may already be seeing a glimpse of this with the high proportion of PAs in Montana.
- In order to make a more complete assessment of Montana's NP and CNM workforce, a more in-depth study of these professions and nature of employment would be essential.

Distribution of Montana's PAs, CNMs, and NPs:



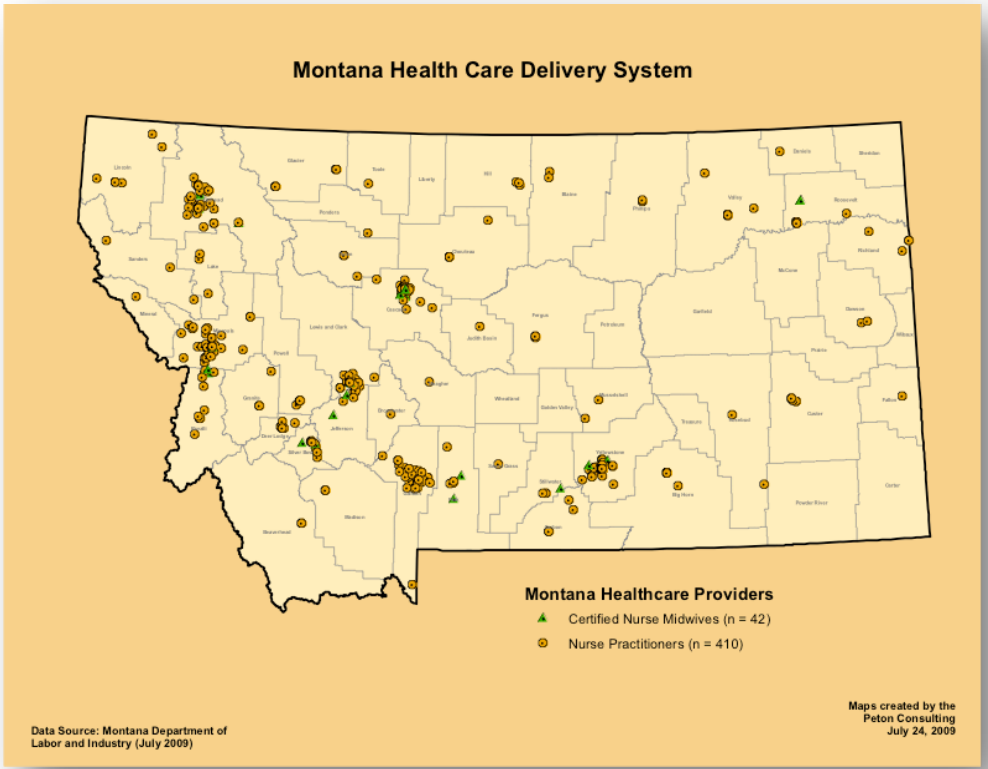


Table 2. Active Physician Assistants (PAs), Certified Nurse-Midwives (CNMs), and Nurse Practitioners (NPs) in Montana by County

COUNTY	COUNTY SEAT	COUNTY POP.	PAs PER COUNTY	ADVANCED PRACTICE NURSES PER COUNTY		TOTAL APNs PER COUNTY
				CNMs	NPs	
	STATEWIDE TOTAL:	*967,440*	*326*	*41*	*411*	*452*
Beaverhead	*Dillon*	*8,903*	1	0	2	2
Big Horn	*Hardin*	*12,841*	3	0	5	5
Blaine	*Chinook*	*6,491*	0	0	2	2
Broadwater	*Townsend*	*4,704*	0	0	1	1
Carbon	*Red Lodge*	*9,657*	3	0	4	4
Carter	*Ekalaka*	*1,234*	2	0	0	0
Cascade	*Great Falls*	*82,026*	17	5	41	46
Chouteau	*Fort Benton*	*5,225*	1	0	4	4
Custer	*Miles City*	*11,149*	6	0	7	7
Daniels	*Scoby*	*1,643*	0	0	1	1
Dawson	*Glendive*	*8,490*	3	0	2	2
Deer Lodge	*Anaconda*	*8,843*	2	0	8	8
Fallon	*Baker*	*2,716*	0	0	1	1
Fergus	*Lewistown*	*11,195*	1	0	3	3
Flathead	*Kalispell*	*88,473*	32	6	47	53
Gallatin	*Bozeman*	*89,824*	32	1	50	51
Garfield	*Jordan*	*1,184*	1	0	0	0
Glacier	*Cut Bank*	*13,297*	4	0	7	7
Golden Valley	*Ryegate*	*1,081*	0	0	1	1
Granite	*Philipsburg*	*2,821*	1	0	3	3
Hill	*Havre*	*16,454*	5	0	3	3
Jefferson	*Boulder*	*11,255*	2	2	8	10
Judith Basin	*Stanford*	*2,014*	0	0	1	1
Lake	*Polson*	*28,690*	10	0	3	3
Lewis & Clark	*Helena*	*60,925*	11	1	25	26
Liberty	*Chester*	*1,725*	1	0	0	0
Lincoln	*Libby*	*18,971*	8	0	7	7
Madison	*Virginia City*	*7,509*	3	0	2	2
McCone	*Circle*	*1,676*	1	0	0	0
Meagher	*White Sulphur Springs*	*1,868*	0	0	1	1
Mineral	*Superior*	*3,862*	2	0	2	2
Missoula	*Missoula*	*107,320*	37	10	57	67
Musselshell	*Roundup*	*4,498*	1	0	1	1
Park	*Livingston*	*16,189*	4	2	5	7
Petroleum	*Winnett*	*436*	0	0	0	0
Phillips	*Malta*	*3,904*	0	0	2	2
Pondera	*Conrad*	*5,852*	3	0	1	1
Powder River	*Broadus*	*1,694*	1	0	0	0
Powell	*Deer Lodge*	*7,041*	2	0	4	4
Prairie	*Terry*	*1,064*	3	0	0	0
Ravalli	*Hamilton*	*40,664*	9	2	12	14
Richland	*Sidney*	*9,270*	2	0	4	4
Roosevelt	*Wolf Point*	*10,089*	2	2	6	8
Rosebud	*Forsyth*	*9,190*	2	0	2	2
Sanders	*Thompson Falls*	*11,034*	5	0	3	3
Sheridan	*Plentywood*	*3,283*	2	0	0	0
Silver Bow	*Butte*	*32,803*	9	4	9	13
Stillwater	*Columbus*	*8,687*	3	1	3	4
Sweet Grass	*Big Timber*	*3,790*	2	0	1	1
Teton	*Choteau*	*5,992*	2	0	3	3
Toole	*Shelby*	*5,141*	1	0	1	1
Treasure	*Hysham*	*637*	0	0	0	0
Valley	*Glasgow*	*6,892*	1	0	5	5
Wheatland	*Harlowton*	*2,010*	1	0	0	0
Wibaux	*Wibaux*	*866*	0	0	0	0
Yellowstone	*Billings*	*142,348*	82	5	51	56
	STATEWIDE TOTAL:	*967,440*	*326*	*41*	*411*	*452*
	NATIONWIDE TOTAL:	*304,059,724*	*79, 980*	*14,000*	*141,000*	*155,000*

Sources:

1.) Population Division, U.S. Census Bureau , Release Date: March 19,2009

2.) Montana Department of Labor and Industry, Business Standards Division (July 2009)

3.) Montana Board of Nursing, Professional and Occupational Licensing Division (July 2009)

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Dentists and Dental Hygienists: Offering oral healthcare is crucial in providing complete, comprehensive primary healthcare. Maintaining good oral health and proper dental hygiene is paramount in primary care as it is an effective preventative form of healthcare. Most dentists are solo practitioners and are trained to diagnose and treat problems with teeth and other oral-medical issues. Dentists and dental hygienists are important members of the primary healthcare workforce as they educate, advise, and instruct their patients. These dental health professionals administer care to their patients to help prevent future health issues like infection, cancer, and neurologic injuries, just to name a few.

National:

- In 2002, there were 2,041 dental Health Professional Shortage Areas (HPSAs) and more than half of these areas were classified as rural.[36]
- The ratio of dentists to urban population is 150% of the rural ratio.[37]
- According to the American Dental Education Association (ADEA) (2007):[38]
    - 33.9% of active dentists are 55 years of age or older.
    - In 2007, 6,652 dental hygienists graduated and were poised to enter the workforce.
    - Approximately 74% of dental hygienists are employed by independent dentists.

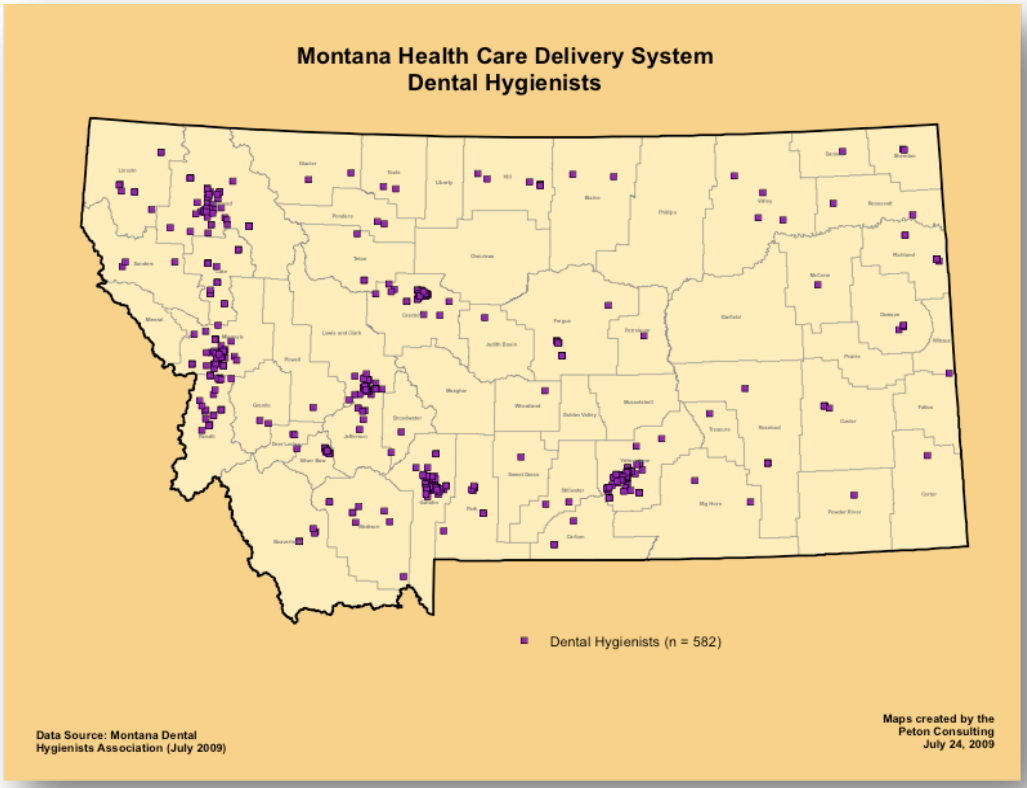
Montana:

- Referring to Table 3 (below):
    - There are 13 counties in Montana that have no practicing dentists and 10 counties without dental hygienists which means that 19,291 Montana residents must travel to another county in order to receive dental care.
    - Nationally, there is approximately 1 dentist for every 1,891 people, but in Montana there is only one dentist for every 2,058 people. So in Montana, the dentist to patient population is significantly worse than the national average. As with PC physicians, workforce is not evenly distributed throughout Montana as 44 counties are below the national average. The dentists practicing in those counties will tend to be more burdened and will be responsible for a greater patient population than their peers nationally. Also, roughly 390,516 Montanans or 40.4% of Montana's population live in counties with fewer dentists than the national average. For these Montanans, access to dental care is much more difficult to obtain than it is for others nationwide.
    - About 61% of dentists and 57% of dental hygienists are located in a large rural (15,000-50,000) or smaller community.
    - The Montana ratio of dental hygienists to population is slightly better than the national ratio: 1:1,662 and 1:1,820, respectively.
- In a survey conducted by the Department of Public Health and Human Services along with the Montana Dental Association (2001), it was found that 70% of Montana dentists are older than 45 and 26.7% are 55 years of age or older.[39]

Future:

- The employment of dentists is projected to grow nationally 9% through 2016 as the demand for dental services will continue to increase. As the baby-boom generation ages, the demand for complicated dental work and dental work in general will increase significantly. With productivity increasing from new technology, dentists will be able to perform more services than ever before. As their practices expand, they are more likely to hire dental hygienists to conduct the routine services once performed by dentists. [40]
- Nationally, there were 55 dentists per 100,000 people in 2005 and it is projected that there will only be 50 dentists per 100,000 people in 2050.[41]
- Between 2014 and 2027, it is estimated that more dentists will leave the workforce than enter it.[42]
- Employment of dental hygienists is expected to increase dramatically in the future—nearly 30% through 2016, much higher than the average for all occupations.[43]
- At present, Montana would have to employ 42 additional dentists to achieve the national ratio of dentist to population.
- In Montana, efforts to recruit, retain, and produce more dentists could include the following:
    - Place 4th year dental students in community health centers and other underserved areas throughout the state.
    - As there is no dental education program in Montana, the Montana University System could enter into a consortium agreement with the University of Washington School of Dentistry (similar to the WWAMI Program for medical students) that would allow a select number of Montana residents to obtain a publicly sponsored dental education.
    - Offer financial incentives for dentists to relocate to Montana. Some incentives could include debt forgiveness, loan repayment, and tax exemptions for practice in rural/underserved areas.
    - In order to retain the dentists and dental hygienists already in Montana, legislators could offer loan forgiveness and/or tax exemptions in return for a certain number of years of service.

Distribution of Montana's Dental Hygienists and Dentists:



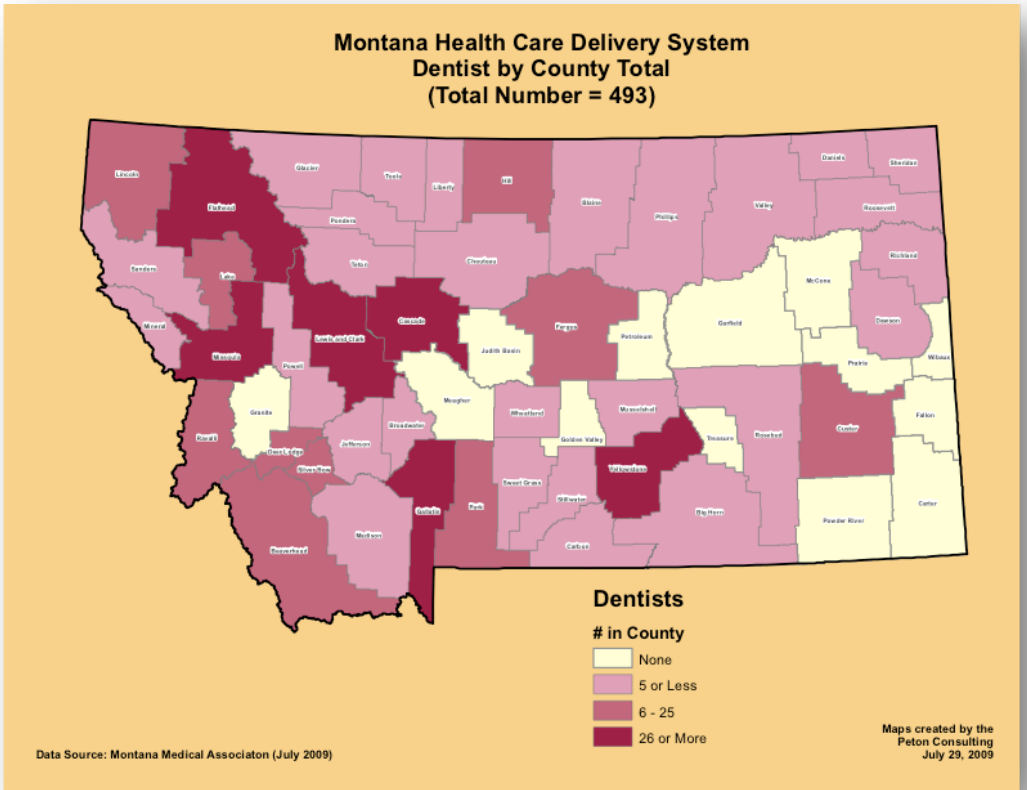


Table 3.Active Dental Hygienists and Dentists in Montana by County

COUNTY	COUNTY SEAT	COUNTY POP.	DENTAL HYGIENISTS IN COUNTY	ACTIVE DENTISTS PRACTICING IN COUNTY	DENTIST: PATIENT POPULATION
	STATEWIDE TOTAL:	*967,440*	*582*	*470**	*1: 2,058*
Beaverhead	*Dillon*	*8,903*	6	6	1: 1,483
Big Horn	*Hardin*	*12,841*	2	2	1: 6,420
Blaine	*Chinook*	*6,491*	2	2	1: 3,245
Broadwater	*Townsend*	*4,704*	1	1	1: 4,704
Carbon	*Red Lodge*	*9,657*	3	2	1: 4,828
Carter	*Ekalaka*	*1,234*	1	0	N/A
Cascade	*Great Falls*	*82,026*	49	43	1: 1,907
Chouteau	*Fort Benton*	*5,225*	0	2	1: 2,612
Custer	*Miles City*	*11,149*	4	6	1: 1,858
Daniels	*Scoby*	*1,643*	1	1	1: 1,643
Dawson	*Glendive*	*8,490*	4	5	1: 1,698
Deer Lodge	*Anaconda*	*8,843*	3	6	1: 1,473
Fallon	*Baker*	*2,716*	1	0	N/A
Fergus	*Lewistown*	*11,195*	14	9	1: 1,243
Flathead	*Kalispell*	*88,473*	67	49	1: 1,805
Gallatin	*Bozeman*	*89,824*	61	50	1: 1,796
Garfield	*Jordan*	*1,184*	0	0	N/A
Glacier	*Cut Bank*	*13,297*	2	3	1: 4,432
Golden Valley	*Ryegate*	*1,081*	0	0	N/A
Granite	*Philipsburg*	*2,821*	2	0	N/A
Hill	*Havre*	*16,454*	8	6	1: 2,742
Jeffereson	*Boulder*	*11,255*	8	4	1: 2,813
Judith Basin	*Stanford*	*2,014*	1	0	N/A
Lake	*Polson*	*28,690*	15	11	1: 2,608
Lewis & Clark	*Helena*	*60,925*	42	37	1: 1,646
Liberty	*Chester*	*1,725*	0	1	1: 1,725
Lincoln	*Libby*	*18,971*	8	6	1: 3,161
Madison	*Virginia City*	*7,509*	10	1	1: 7,509
McCone	*Circle*	*1,676*	1	0	N/A
Meagher	*White Sulphur Springs*	*1,868*	0	0	N/A
Mineral	*Superior*	*3,862*	0	1	1: 3,862
Missoula	*Missoula*	*107,320*	73	72	1: 1,490
Musselshell	*Roundup*	*4,498*	0	1	1: 4,498
Park	*Livingston*	*16,189*	9	8	1: 2,023
Petroleum	*Winnett*	*436*	1	0	N/A
Phillips	*Malta*	*3,904*	0	1	1: 3,904
Pondera	*Conrad*	*5,852*	2	2	1: 2,926
Powder River	*Broadus*	*1,694*	1	0	N/A
Powell	*Deer Lodge*	*7,041*	1	2	1: 3,520
Prairie	*Terry*	*1,064*	0	0	N/A
Ravalli	*Hamilton*	*40,664*	28	15	1: 2,710
Richland	*Sidney*	*9,270*	7	4	1: 2,317
Roosevelt	*Wolf Point*	*10,089*	2	1	1: 10,089
Rosebud	*Forsyth*	*9,190*	5	2	1: 4,595
Sanders	*Thompson Falls*	*11,034*	3	2	1: 5,517
Sheridan	*Plentywood*	*3,283*	2	2	1: 1,641
Silver Bow	*Butte*	*32,803*	15	23	1: 1,426
Stillwater	*Columbus*	*8,687*	2	2	1: 4,343
Sweet Grass	*Big Timber*	*3,790*	1	1	1: 3,790
Teton	*Choteau*	*5,992*	3	2	1: 2,996
Toole	*Shelby*	*5,141*	2	1	1: 5,141
Treasure	*Hysham*	*637*	1	0	N/A
Valley	*Glasgow*	*6,892*	4	2	1: 3,446
Wheatland	*Harlowton*	*2,010*	1	1	1: 2,010
Wibaux	*Wibaux*	*866*	0	0	N/A
Yellowstone	*Billings*	*142,348*	103	88	1: 1,617
	STATEWIDE TOTAL:	*967,440*	*582*	*470**	*1: 2,058*
	NATIONWIDE TOTAL:	*304,059,724*	*167,000*	*160,800*	*1: 1,891*

*This figure represents the total number of active dentists in Montana.
Some dentists practice in two or more counties, but are only counted once in this figure.

Sources:
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3.) Montana Dental Hygienists Association (July 2009). Special Data Request.
4.) Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2008-09 Edition, http://www.bls.gov/oco/ocos072.htm#emply (visited July 30, 2009). Search terms: dentists , dental hygienists

In the News:

On Tuesday, July 28, 2009, HHS Secretary Kathleen Sebelius announced the availability of $200 million to support grants, loans, loan repayment, and scholarships to expand the training of health care professionals.

These funds are expected to train approximately 8,000 students and credentialed health professionals by the end of FY 2010. This $200 million is part of the $500 million allotted to Health Resources and Services Administration (HRSA) to address healthcare workforce shortages under the American Recovery and Reinvestment Act (ARRA). The other $300 million is being used to expand HRSA's National Health Service Corps, a program which provides scholarships and loan repayment for primary healthcare providers serving in health professional shortage areas (HPSAs). In hopes to expand the workforce, the AARA funds provide targeted investments in primary care, nursing, faculty development and equipment purchases.

The $200 million funds are allocated as follows:

- $80.2 million for scholarships, loans, and loan repayment awarded to students, health professionals and faculty with particular attention to nurses, nurse faculty, disadvantaged students and faculty from disadvantaged backgrounds.
- $50 million in grants to health profession training programs used to purchase equipment.
- $47.6 million to fund primary care training programs. This may be of interest to Montana's rural primary care workforce as funds will support the training of residents, medical students, PAs, and dentists—many of whom will practice in underserved areas.
- $10.5 million to strengthen the public health workforce.
- $10.2 million to increase the diversity of the health professions workforce.
- And $1.5 million to support the work of state licensing boards and to improve telemedicine.[44]

Many of these funds could help improve and expand Montana's primary care workforce. The National Health Service Corps expansion not only means that more medical professionals will be eligible to practice in Montana, but that Montana students hoping to become health professionals will be eligible for scholarships. Additionally, Montana's healthcare infrastructure could be improved by the additional funds allowing the state to: purchase equipment needed to expand programs, increase support of state professional licensing boards, and to enhance telemedicine. Given the primary care shortage and misdistribution of resources mentioned earlier, Montana's healthcare delivery system could greatly benefit from these funding programs and all efforts should be made to utilize this funding in order to improve Montana's healthcare.

Educating Montana's Workforce *(Courtesy of Kristin Juliar, MORH/AHEC)*

Physician Education: Each year, 20 Montana students are accepted into the WWAMI Medical School Program of the University of Washington. The first year of education is at Montana State University in Bozeman. Students can return to either Billings or Missoula for the 3rd and 4th years of medical education. The Montana Family Medicine Residency Program is sponsored by Billings Clinic, St. Vincent Healthcare and RiverStone Health in Billings. Medical students from WWAMI and

other medical schools are placed with dozens of rural physician practices for clinical experiences through the Montana Area Health Education Programs. In addition, Montana sponsors WICHE slots.

A new program for WWAMI medical students is called the Montana TRUST (Targeted Rural Underserved Track). TRUST is a focused medical school experience with the goal of returning physicians to practice in rural Montana. Montana TRUST students will have multiple opportunities to experience firsthand the joys and satisfaction of practicing medicine in a rural community by having a physician mentor and extensive rural clinical experience.

Nursing Education: Registered Nurses are the largest component of the healthcare workforce. Montana nursing educational programs are the Baccalaureate Nursing Program of Montana State University where undergraduates complete upper division coursework in one of the state's major population areas of Billings, Bozeman, Great Falls, Kalispell or Missoula; Carroll College; and Salish Kootenai College. Associate Degree Nursing Programs are offered at Miles City Community College, MSU – Billings, MSU-Northern, MT Tech COT, UM COTs in Helena and Missoula, and Salish Kootenai. ADRN's can complete the BS at MSU Northern and Montana Tech. In 2007, there were 462 nursing graduates in Montana.

The graduate program of the MSU College of Nursing leads to a Master of Nursing (MN) degree in community-focused rural nursing that prepares students to take certification examinations as a Family Nurse Practitioner (FNP), Clinical Nurse Leader (CNL) or Nurse Educator. Full- or part-time study is available. Students may access graduate nursing courses through any of the College's campuses at Billings, Bozeman, Great Falls or Missoula during each academic year. All graduate courses are offered via audio teleconference, interactive video or online. Clinical supervision is provided to students by faculty on each campus site. There is, however, no education program to train CNMs in the state of Montana.

Physician Assistant Education: The only Physician Assistant (PA) program in Montana is offered through Rocky Mountain College in Billings. In order to be admitted, applicants must hold a bachelors degree and have completed a number of pre-requisite classes. This program is 26 months in length and results in a master's degree in Physician Assistant Studies. In order to become nationally certified and licensed to practice, PA graduates from this program must pass the PANCE (Physician Assistant National Certifying Examination).

Associate Degrees, Diplomas and Certificate in Allied Health: Allied health workers are critical to Montana's healthcare organizations. Dental hygienists and assistants; surgical technicians, respiratory therapists, nursing assistants, health administration, billing specialists, medical assistants, pharmacy technicians, physical therapy technicians and radiology technicians are only some of the many allied health professions education programs in Montana. Associate Degrees, diplomas and certificates are offered in the Colleges of Technology (Great Falls, Missoula, Butte, Helena, and Billings), Community Colleges (Miles, Dawson, Flathead, and Blackfeet), MSU Northern, and Tribal Colleges. These important programs often serve both important local and statewide needs for allied health professions.

Dentists: There is no dental education program in Montana. A study by an interim committee of the Legislature recommended that Montana implement several programs to attract dentists to rural Montana, including placing 4th year students in community health centers and other underserved areas, and financial incentives for practice in rural/underserved areas.

What can be done to increase the entire primary care workforce in rural and frontier Montana?

Preparing Adequate Numbers of Health Professionals

It takes from 2 to 10 years to educate health professionals. We need to prepare now for the workforce of the future. Investments in all levels of education and all types of professions are needed now in order to assure the workforce we need in the future. We are competing with every other state in the nation for health professionals.

Encourage Health Profession Education and Practice in Rural and Underserved Areas

Clinical rotations in rural and underserved settings; clinical preceptors from rural Montana; distance education programs; and education programs specifically targeted to a rural practice will increase the number of practitioners in rural settings. The Montana Area Health Education Center system works with Montana and other states to place students in rural settings. The state can support clinical coordination, rural and underserved placements, and support rural facilities and campuses in getting students into rural and underserved settings.

Recruit Young People from Rural and Frontier Communities

People who come from rural communities are more likely to practice in rural areas. High school programs in partnership with local hospitals and clinics will help recruit the next generation of rural practitioners. The Montana Department of Public Instruction's Health Science Program and Health Occupations Students of America work with higher education, local schools and healthcare providers to prepare rural students for success in health professions education.

Provide Opportunities for Rural Residents to Obtain Education

Hospitals and clinics have talented staff members who would like to advance their education and become healthcare professionals. Opportunities to fund their education, provide distance education, and create partnerships with higher education will allow these facilities to "grow their own" health professionals.

Recruit to Rural and Underserved Communities

Montana is an attractive environment for many health professionals, but these professionals need to be matched with the right opportunities. The Montana Recruitment Collaborative can help communities recruit the right people for the right settings.

Is Montana Prepared?

As a state and nation, we are not prepared for the health workforce shortage. Healthcare reform will put new demands for a primary care workforce. Retirements and the aging of the population will increase demand. Lack of faculty hampers expansion of programs. Montana should commission a state study of healthcare workforce needs and strategies for assuring an adequate workforce in the future.

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