

2019 WEST VIRGINIA

HEALTH SCIENCES

AND RURAL HEALTH REPORT



WEST VIRGINIA HIGHER EDUCATION POLICY COMMISSION

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About the

DIVISION OF HEALTH SCIENCES

The Division of Health Sciences at the Higher Education Policy Commission (the Commission) coordinates health sciences programs, particularly those involving the state's three academic health centers at Marshall University, the West Virginia School of Osteopathic Medicine, and West Virginia University. The Division regularly collaborates with stakeholders around key topics in the state's healthcare landscape. Current topics include behavioral health workforce development, graduate medical education, mapping primary care access issues, and community-based clinical research. The Division also oversees the Rural Health Initiative, a statewide program directed at improving the recruitment and retention of healthcare providers to rural areas of the state. In addition, the Division administers the Health Sciences Service Program, which offers a recruitment incentive to West Virginia students in advanced degree health professions programs in exchange for a commitment to practice for at least two years in an underserved area of the state.

EXECUTIVE SUMMARY

West Virginia's three state-funded medical schools enroll more medical students per capita than any other state in the country. Due to its large number of medical student slots, the state typically is able to offer all qualified West Virginians the opportunity to complete their medical education in the state. In the academic year 2018-2019, 45 percent of the 392 medical students who enrolled in the first year classes of the state's three medical schools were West Virginia residents.

In-state tuition at West Virginia medical schools is among the most affordable in the nation. In addition to affordability, all three schools continue to well prepare students to succeed as practitioners and report licensure exam passage rates at over 90 percent for the last five years.

Retaining medical school graduates in the state for their residencies is one of the most proven strategies for eventually recruiting them to practice in the state. The Commission and the three medical schools all offer programs to incentivize the state's medical students, particularly those students interested in primary care and rural practice, to complete their residency training in West Virginia. Among all 2019 medical school graduates in West Virginia, 57 percent chose to do primary care residencies.

The Commission administers two financial aid programs for students in health professions. These programs help to keep healthcare practitioners in West Virginia by providing loans and financial incentives. Since its inception in 1995, the Health Sciences Service Program has had 198 participants complete the service program. The Medical Student Loan Program makes more than 200 loans each year to the state's medical students.

West Virginia medical school graduates select primary care residencies at a rate similar to the national average. Many of these graduates remain in state to practice, however, a maldistribution of primary care physicians persists. The Commission and the medical schools, through the Rural Health Initiative and other programs, develop innovative models and engage underserved communities to help redistribute the primary care physician workforce.

MEDICAL SCHOOL PROFILES

The Marshall University Joan C. Edwards School of Medicine and the West Virginia University School of Medicine are allopathic medical schools, and the West Virginia School of Osteopathic Medicine is an osteopathic medical school. The structure and content of allopathic and osteopathic medical education and training are similar in many ways, while different in others. For this report, where similarities exist, the three schools are discussed together, and where differences exist, the information for allopathic and osteopathic programs is broken out.

All medical school applicants complete the Medical College Admission Test® (MCAT®) as part of the application process. In 2015, the Association of American Medical Colleges redesigned the MCAT®. As a result, Some West Virginia medical schools still accept scores from either the new and old versions of the MCAT®. The new MCAT® consists of four multiple choice sections each worth between 118 and 132 points (Biological and Biochemical Foundations of Living Systems, Chemical and Physical Foundations of Biological Systems, Psychological, Social, and Biological Foundations of Behavior, and Critical Analysis and Reasoning Skills). The old version of the MCAT® consisted of three multiple choice sections each worth 15 points (physical sciences, verbal reasoning, and biological sciences) and a writing sample.

The new national combined mean MCAT® score for students entering allopathic medical schools during the 2018-2019 academic year was 511.2. For students entering osteopathic medical schools, the score was 503.08. For the old MCAT®, the national combined mean MCAT® score for students entering osteopathic medical schools was 24.75. Performance data on the old MCAT® for students entering allopathic medical schools is no longer reported.

For the 2018-2019 academic year, the national mean grade point average (GPA) for students matriculating to allopathic medical schools was 3.73, and for students matriculating to osteopathic medical schools, it was 3.71 (Association of American Medical Colleges and American Association of Colleges of Osteopathic Medicine).

Marshall University Joan C. Edwards School of Medicine



ENTERING CLASS ADMISSION RATE

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>In-State</i>					
Acceptances/Applicants	88/189	81/160	98/207	73/165	87/149
Admission Rate	47%	51%	47%	44%	58%
<i>Out-of-State</i>					
Acceptances / Applicants	27/1,807	44/1,800	17/1,575	51/1,655	31/1,651
Admission Rate	1%	2%	1%	3%	2%
Total Acceptances / Applicants	115/1,966	125/1,960	115/1,782	124/1,820	118/1,800
Total Admission Rate	6%	6%	6%	7%	7%

ENTERING CLASS ACADEMIC QUALIFICATIONS

	2018-2019	2017-2016	2016-2017	2015-2016	2014-2015
Mean GPA	3.70	3.60	3.60	3.60	3.60
Mean MCAT [®] (Old Version)	-	30.0	28.8	28.7	28.5
Mean MCAT [®] (New Version)	504.0	503.0	501.0	-	-

ACADEMIC YEAR DATA

		2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>First Year New Enrollment</i>	In-State	62	49	73	53	61
	Out-of-State	17	26	10	29	18
	Total	79	75	83	82	79
Total Graduates		61	68	73	62	64
Total Medical Students		340	305	304	315	281
Tuition and Fees	In-State	\$23,904	\$22,154	\$21,104	\$20,806	\$20,806
	Out-of-State	\$54,772	\$52,542	\$50,074	\$47,676	\$47,676

West Virginia School of Osteopathic Medicine



ENTERING CLASS ADMISSION RATE

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>In-State</i>					
Acceptances/Applicants	62/126	52/121	66/148	67/146	62/123
Admission Rate	49%	43%	45%	46%	50%
<i>Out-of-State</i>					
Acceptances / Applicants	378/4,591	391/4,581	401/4,703	416/4,988	439/4,340
Admission Rate	8%	9%	9%	8%	10%
Total Acceptances / Applicants	440/4,717	443/4,702	467/4,851	483/5,134	501/4,463
Total Admission Rate	9%	9%	10%	9%	11%

ENTERING CLASS ACADEMIC QUALIFICATIONS

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
Mean GPA	3.55	3.51	3.52	3.51	3.48
Mean MCAT [®] (Old Version)	20.6	23.5	23.3	24.8	24.8
Mean MCAT [®] (New Version)	499.6	498.3	496.8	-	-

ACADEMIC YEAR DATA

		2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>First Year New Enrollment</i>	In-State	43	46	52	52	47
	Out-of-State	158	158	160	158	151
	Total	201	204	212	210	198
Total Graduates		208	192	182	187	181
Total Medical Students		841	849	847	827	819
Tuition and Fees	In-State	\$21,472	\$21,472	\$20,950	\$20,950	\$20,950
	Out-of-State	\$52,710	\$52,710	\$50,950	\$50,950	\$50,950

West Virginia University School of Medicine



ENTERING CLASS ADMISSION RATE

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>In-State</i>					
Acceptances/Applicants	88/226	77/182	64/227	72/166	79/189
Admission Rate	39%	42%	28%	43%	42%
<i>Out-of-State</i>					
Acceptances / Applicants	74/5,062	89/4,370	112/4,623	93/3,885	102/3,222
Admission Rate	1%	2%	2%	2%	3%
Total Acceptances / Applicants	162/5,288	166/4,552	176/4,850	164/4,051	181/3,411
Total Admission Rate	3%	4%	4%	4%	5%

ENTERING CLASS ACADEMIC QUALIFICATIONS

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
Mean GPA	3.86	3.80	3.72	3.78	3.80
Mean MCAT [®] (Old Version)	-	-	29.0	29.0	29.0
Mean MCAT [®] (New Version)	508.0	507.0	507.0	-	-

ACADEMIC YEAR DATA

		2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
<i>First Year New Enrollment</i>	In-State	73	66	55	63	58
	Out-of-State	39	46	55	47	52
	Total	112	112	110	110	110
Total Graduates		93	100	106	93	103
Total Medical Students		432	427	441	428	421
Tuition and Fees	In-State	\$32,373	\$31,023	\$30,348	\$29,295	\$28,134
	Out-of-State	\$63,342	\$60,642	\$58,914	\$56,673	\$55,107

MEDICAL LICENSURE EXAMS

All medical students must complete a series of licensing exams in order to become licensed physicians. Allopathic students take the United States Medical Licensing Exam (USMLE), and osteopathic students take the Comprehensive Osteopathic Medical Licensing Examination (COMLEX)-USA.

These exams have multiple parts. Students typically take the final USMLE or COMLEX soon after graduating from medical school. The data reported below is for the final exam for first-time test takers who took their respective licensing exam within two years of graduation. In evaluating the data presented below, it is important to consider some of its limitations:

- ▶ The data is for first-time test takers.
- ▶ Graduates can elect to not report their results to their medical schools.
- ▶ The data does not reflect graduates who take the exam more than two years after graduation.
- ▶ Not all graduates enter residency programs and therefore do not sit for these exams.

Allopathic Medical School Graduates

The USMLE, Step 3 is the final of three tests completed by allopathic medical students. Graduates normally take USMLE, Step 3 at the end of their first year of residency. The national average passage rate for first-time test takers for the graduating class of 2016 is 98 percent.

NUMBER PASSING/NUMBER OF EXAMINEES, USMLE, STEP 3 GRADUATING CLASS

	2016	2015	2014	2013	2012
Marshall University	59/59	53/58	64/65	67/68	62/64
	100%	91%	98%	99%	97%
West Virginia University	89/90	94/99	77/78	94/95	94/95
	99%	95%	99%	99%	99%

Osteopathic Medical School Graduates

Osteopathic graduates take the final COMLEX, Level 3 as early as six months into residency training. They must complete Level 3 before starting their third year of residency training. The national average is not available.

NUMBER PASSING/NUMBER OF EXAMINEES, COMLEX, STEP 3 GRADUATING CLASS

	2016	2015	2014	2013	2012
West Virginia School of Osteopathic Medicine	169/181	189/200	175/183	190/194	144/147
	93%	95%	96%	98%	98%

MEDICAL SCHOOL INDEBTEDNESS

The average indebtedness of each graduating medical school class is calculated from all loans, public and private, accumulated while pursuing medical degrees. It does not include pre-medical school debt. Members of the graduating class who do not have any debt are excluded from the calculation. The difference in graduate indebtedness among the schools can be attributed in part to differences in the proportion of students paying out-of-state tuition and fees. Historically, the West Virginia School of Osteopathic Medicine has had classes composed of more out-of-state students, although the number of out-of-state students at both West Virginia University and Marshall University has grown in recent years.

AVERAGE MEDICAL STUDENT DEBT, BY GRADUATING CLASS

Class	Marshall University	West Virginia School of Osteopathic Medicine	West Virginia University
2019	\$158,731	\$240,727	\$197,999
2018	\$147,414	\$249,870	\$196,694
2017	\$153,435	\$250,378	\$165,289
2016	\$190,345	\$235,108	\$154,789
2015	\$158,408	\$224,457	\$159,944

RESIDENCY TRAINING

Upon graduation from medical school, physicians complete specialized residency training programs (also referred to as graduate medical education) before beginning practice. Residency training typically takes three to five years to complete. The federal Medicare program is the major funder of residency programs nationwide. In West Virginia, the Bureau for Medical Services (Medicaid) and the Public Employees Insurance Agency also provide funding for residency training.

Through a computerized process referred to as “the match”, medical students rank their top residency program choices, and residency programs rank the top medical students they would like to recruit. Based on these rankings, an algorithm then matches each medical student with a residency program. There is an allopathic matching program and an osteopathic matching program. Allopathic medical students are only eligible for the allopathic matching program, and osteopathic medical students can enter either the allopathic or osteopathic matching program.

Across West Virginia, 54 different residency programs exist. Although many of these programs are for primary care specialties such as family medicine and pediatrics, training programs for other critical non-primary care specialties are offered that help ensure West Virginia has providers practicing critical specialties such as dermatology, ophthalmology and surgery.

WEST VIRGINIA RESIDENCY PROGRAMS

Sponsoring Institution	Primary Site	City	Specialty	Filled Residency
Mountain State Osteopathic Postdoctoral Training Institution	AccessHealth Teaching Health Center	Beckley	Family Medicine	12
Mountain State Osteopathic Postdoctoral Training Institution	Bluefield Regional Medical Center	Bluefield	Family Medicine	16
Mountain State Osteopathic Postdoctoral Training Institution	Bluefield Regional Medical Center	Bluefield	Internal Medicine	3
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Emergency Medicine	18
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Urological Surgery	10
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Family Medicine	21
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Internal Medicine Categorical	27
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Internal Medicine Preliminary	6
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Internal Medicine/Psychiatry	10
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Obstetrics and Gynecology	12
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Pediatrics	19
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Psychiatry	15
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Surgical Categorical	20
Mountain State Osteopathic Postdoctoral Training Institution	Charleston Area Medical Center	Charleston	Surgery Preliminary	1
Charleston Area Medical Center	Charleston Area Medical Center	Charleston	Vascular Surgery Integrated	5
Greenbrier Valley Medical Center	Greenbrier Valley Medical Center	Ronceverte	Family Medicine	12
Mountain State Osteopathic Postdoctoral Training Institution	Greenbrier Valley Medical Center	Ronceverte	Osteopathic Neuromusculoskeletal Medicine	6
Mountain State Osteopathic Postdoctoral Training Institution	Greenbrier Valley Medical Center	Ronceverte	Transitional Year	4
Marshall University	Cabell Huntington Hospital	Huntington	Family Medicine	24

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WEST VIRGINIA RESIDENCY PROGRAMS (CONTINUED)

Sponsoring Institution	Primary Site	City	Specialty	Filled Residency
Marshall University	Cabell Huntington Hospital	Huntington	Internal Medicine	64
Marshall University	Cabell Huntington Hospital	Huntington	Internal Medicine/Pediatrics	8
Marshall University	Cabell Huntington Hospital	Huntington	Neurology	6
Marshall University	Cabell Huntington Hospital	Huntington	Obstetrics and Gynecology	12
Marshall University	Cabell Huntington Hospital	Huntington	Orthopedic surgery	15
Marshall University	Cabell Huntington Hospital	Huntington	Pediatrics	18
Marshall University	Cabell Huntington Hospital	Huntington	Psychiatry	18
Marshall University	Cabell Huntington Hospital	Huntington	Surgery	24
United Hospital Center	United Hospital Center	Bridgeport	Family Medicine	23
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Anesthesiology	30
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Dermatology	6
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Emergency Medicine	32
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Family Medicine	18
West Virginia University School of Medicine	West Virginia University Rural Family Medicine	Harpers Ferry	Family Medicine	19
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Internal Medicine	68
West Virginia University School of Medicine	Camden Clark Medical Center	Parkersburg	Internal Medicine	19
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Internal Medicine/Pediatrics	15
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Neurological Science (Surgery)	8
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Neurology	22
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Obstetrics and Gynecology	12
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Ophthalmology	13
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Orthopedic surgery	19
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Otolaryngology	10
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Pathology-Anatomic and Clinical	10
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Pediatrics	18
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Plastics-Integrated	3
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Psychiatry	30
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Radiation/Oncology	3
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Radiology-Diagnostic	23
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Surgery	26
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Transitional Year	13
West Virginia University School of Medicine	Ruby Memorial Hospital	Morgantown	Urology	7
West Virginia University School of Medicine	WVU School of Public Health	Morgantown	Preventative Medicine-Occupational Medicine	4
West Virginia University School of Public Health	WVU School of Public Health	Morgantown	Preventative Medicine-Public Health/General Preventative Medicine	1
Wheeling Hospital	Wheeling Hospital	Wheeling	Family Medicine	23

881

Data was obtained September 2019

Key indicators related to residency choice affecting the supply of physicians across West Virginia are:

- ▶ Location: graduates who complete residencies in West Virginia are much more likely to remain in the state.
- ▶ Specialty: primary care fields generally are most needed in rural West Virginia.

Graduates of all three West Virginia medical schools typically enter primary care residency programs at a rate at or above the national average for these same programs. Among all three medical schools, 60 percent of 2019 medical school graduates chose a primary care residency in West Virginia. Nationally for the 2019 allopathic residency match program, 46.8 percent of allopathic medical school graduates matched with a primary care residency program, and 59.1 percent of osteopathic medical school graduates matched with a primary care residency program (National Resident Matching Program). National data is not available for the osteopathic only matching program.

Selecting a primary care residency program does not always translate to practicing primary care, particularly in an outpatient setting. For example, individuals entering internal medicine residencies often forego a general internal medicine track, and instead subspecialize in fields not traditionally viewed as primary care such as cardiovascular disease, gastroenterology, and infectious diseases. Additionally, primary care graduates frequently elect to work as hospitalists in inpatient settings. Thus, some of the graduates reported below ultimately may not practice in an outpatient, primary care setting.

NUMBER AND PERCENTAGE OF GRADUATES CHOOSING PRIMARY CARE RESIDENCIES, BY GRADUATING CLASS

	2019	2018	2017	2016	2015
Marshall University	30 (51%)	38 (58%)	38 (54%)	28 (47%)	31 (48%)
West Virginia School of Osteopathic Medicine	119 (59%)	124 (66%)	119 (66%)	113 (61%)	111 (62%)
West Virginia University	50 (55%)	47 (47%)	54 (51%)	44 (48%)	48 (48%)

MEDICAL SCHOOL GRADUATE RETENTION

for practice in West Virginia

Retention denotes the number or percentage of West Virginia medical school graduates who remain in the state to practice. Retention is tracked annually for a six-year cohort of medical school graduates who have completed residency training. The data in this section focuses on retention of West Virginia medical school graduates in primary care and/or rural practice.

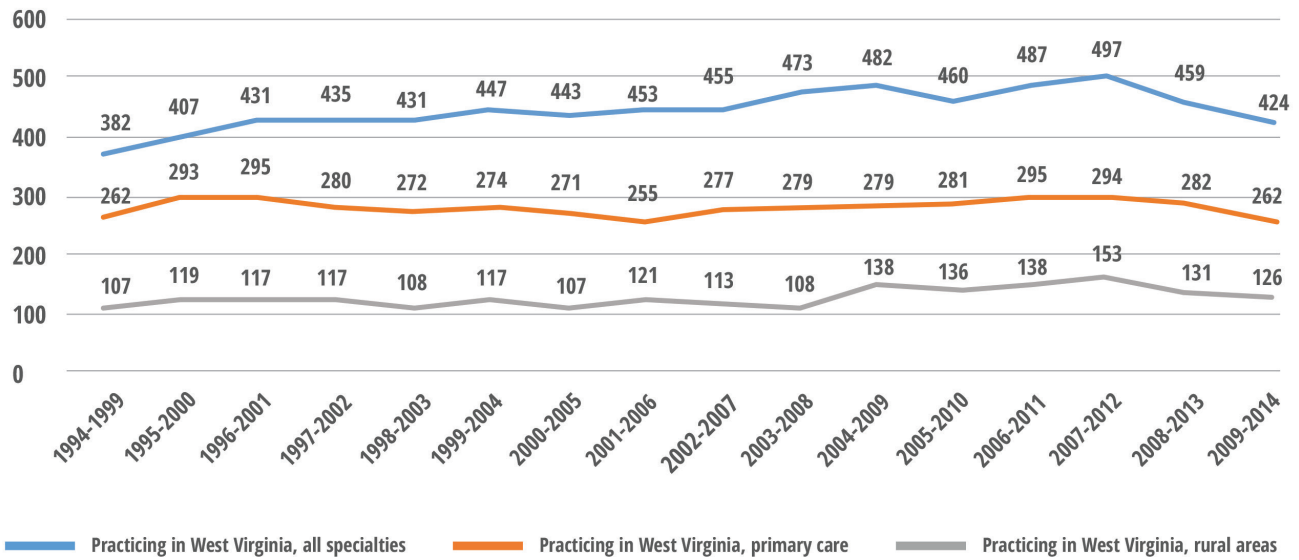
- ▶ Primary care is defined as family medicine, internal medicine, internal medicine/pediatrics, obstetrics/gynecology, and pediatrics.
- ▶ Rural areas include all areas of the state with a 2006 Rural Urban Commuting Area (RUCA) code of 4.0 or higher. These codes classify U.S. Census tracts using measures of population density, urbanization, and daily commuting.
- ▶ Data is provided only for graduates who have completed their residency training.

Between 2009 and 2014, 1,875 graduates of the state's three medical schools completed residency training, either in West Virginia or another state, and 23 percent of these graduates (424) are now practicing in West Virginia. Seven percent of the graduates (127) in this cohort are practicing in rural West Virginia, and 14 percent (262) are practicing primary care in the state (either in a rural or urban location). The growth in medical school class sizes in recent years is supplying more graduates to practice in West Virginia; however, issues still persist in recruiting graduates to practice in both outpatient primary care and rural settings.

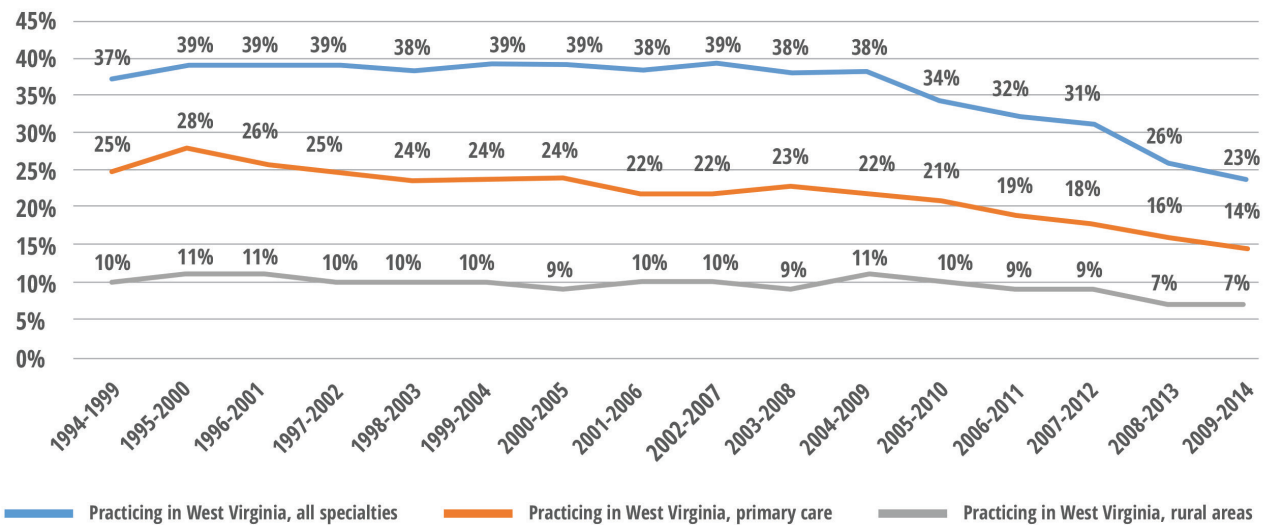
MEDICAL SCHOOL GRADUATES RETAINED, BY INSTITUTION, GRADUATING CLASSES OF 2009–2014

	Total with completed training	Total in practice in West Virginia	Total in primary care in West Virginia	Total in rural areas of West Virginia
Marshall University	389	103 (26%)	65 (17%)	17 (4%)
West Virginia School of Osteopathic Medicine	946	165 (17%)	118 (12%)	77 (8%)
West Virginia University	540	156 (29%)	79 (15%)	32 (6%)
Total	1,875	424 (23%)	262 (14%)	126 (7%)

NUMBER OF WEST VIRGINIA MEDICAL SCHOOL GRADUATES RETAINED, GRADUATING CLASSES OF 1994-2014

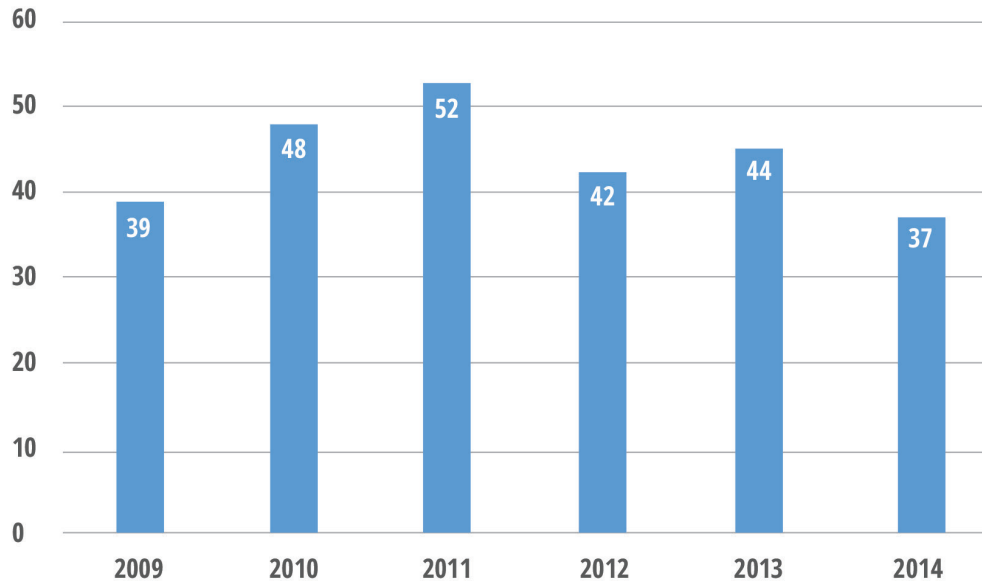


PERCENTAGE OF WEST VIRGINIA MEDICAL SCHOOL GRADUATES RETAINED, GRADUATING CLASSES OF 1994-2014

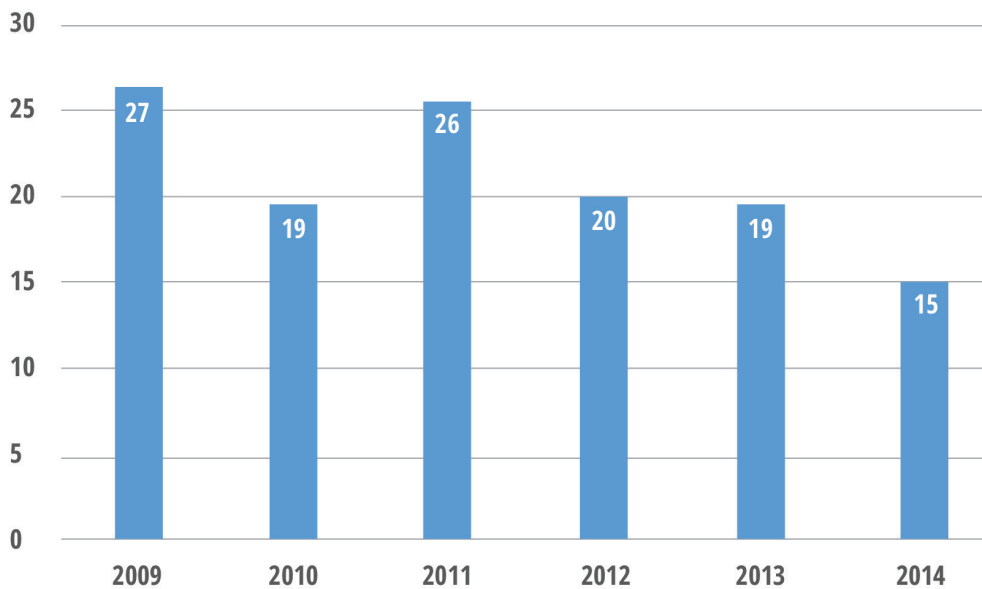


NUMBER OF WEST VIRGINIA MEDICAL SCHOOL GRADUATES PRACTICING PRIMARY CARE OR IN RURAL AREAS, BY GRADUATING CLASS

Practicing Primary Care in West Virginia



Practicing in Rural Areas of West Virginia



County of Practice of Recent West Virginia Medical School Graduates

West Virginia continues to focus on recruiting more physicians to the state, especially to rural areas. Having physicians who practice primary care and/or in rural areas is crucial to ensuring communities across the state have access to health care.

The table below illustrates recruitment of the most recent six-year cohort of West Virginia medical school graduates to all 55 counties of West Virginia. This information must be interpreted carefully. It is a snapshot of the placement of the most recent West Virginia medical school graduates over a six-year period only and does not include graduates of out-of-state medical schools or physicians who graduated prior to 2009 who are practicing in these counties. Thus, a zero listed in any column does not necessarily indicate that a county is underserved. At the same time, tracking this type of information over an extended period can help inform education and training program activities and physician recruitment priorities.

WEST VIRGINIA MEDICAL SCHOOL GRADUATES PRACTICING IN WEST VIRGINIA BY COUNTY, GRADUATING CLASSES OF 2009–2014

County	Number in Practice	Number Practicing in Rural Areas	Number Practicing in Primary Care
Barbour	1	1	1
Berkeley	16	0	10
Boone	2	2	2
Braxton	1	1	0
Brooke*	1	1	0
Cabell*	58	0	37
Calhoun	0	0	0
Clay	2	2	2
Doddridge	1	1	1
Fayette	4	1	3
Gilmer	0	0	0
Grant	4	4	3
Greenbrier	24	24	18
Hampshire	0	0	0
Hancock	3	0	3
Hardy	1	1	0
Harrison	18	18	10
Jackson	3	3	1
Jefferson	7	7	6
Kanawha*	72	1	40
Lewis	4	4	4
Lincoln	0	0	0
Logan	2	2	1
Marion	6	6	4

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WEST VIRGINIA MEDICAL SCHOOL GRADUATES PRACTICING IN WEST VIRGINIA BY COUNTY, GRADUATING CLASSES OF 2009–2014 (CONTINUED)

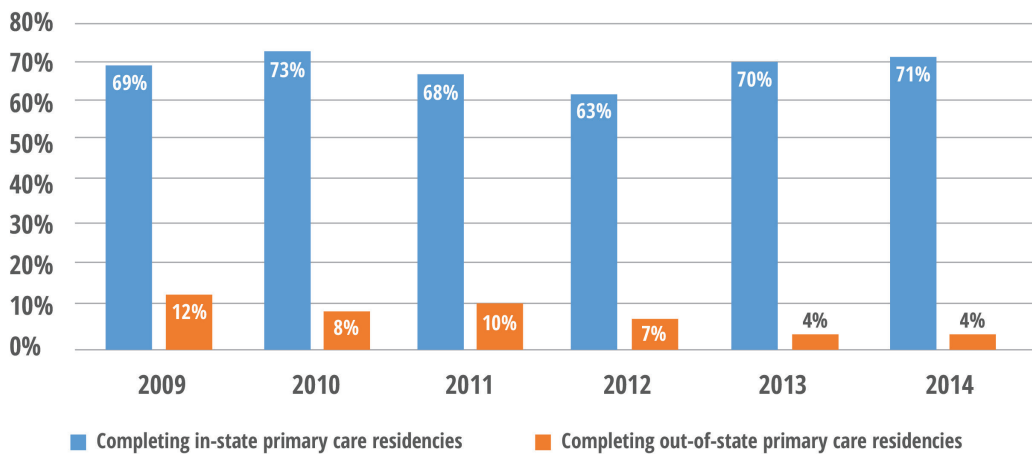
County	Number in Practice	Number Practicing in Rural Areas	Number Practicing in Primary Care
Marshall *	3	0	3
Mason	6	6	6
McDowell	1	1	1
Mercer	10	10	6
Mineral	1	1	1
Mingo	0	0	0
Monongalia*	107	1	50
Monroe	0	0	0
Morgan	1	1	1
Nicholas	1	1	1
Ohio*	5	0	2
Pendleton	0	0	0
Pleasants	0	0	0
Pocahontas	3	3	3
Preston	4	4	4
Putnam*	8	1	5
Raleigh	14	1	11
Randolph	3	3	1
Ritchie	0	0	0
Roane	0	0	0
Summers	0	0	0
Taylor	1	1	1
Tucker	0	0	0
Tyler	1	1	0
Upshur	4	4	4
Wayne	4	2	4
Webster	3	3	2
Wetzel	1	1	0
Wirt	0	0	0
Wood*	12	1	9
Wyoming	1	1	1
Total	424	126	262

* Denotes urban/non-rural county with a 2006 Rural Urban Community Area Code (RUCA) of less than 4.0, and therefore, the county has no rural areas.

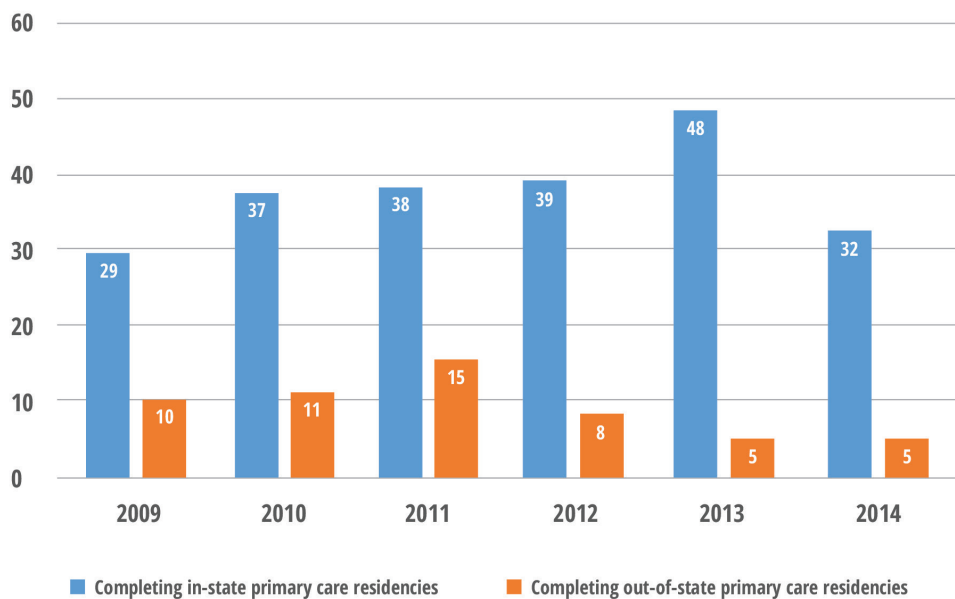
Retention of West Virginia Medical School Graduates Completing Primary Care Residencies

The location of a medical school graduate's residency program frequently predicts whether that graduate will practice in West Virginia. For the 2014 graduates of West Virginia medical schools, 174 graduates went on to complete primary care residency programs. Upon completing residency, 32 of the 45 graduates who completed in-state primary care residencies were retained in West Virginia to practice, while only five of the 127 graduates who completed out-of-state primary care residencies returned to West Virginia to practice.

PERCENTAGE OF WEST VIRGINIA MEDICAL STUDENTS GRADUATES COMPLETING PRIMARY CARE RESIDENCIES RETAINED, BY GRADUATING CLASS



NUMBER OF WEST VIRGINIA MEDICAL SCHOOL GRADUATES COMPLETING PRIMARY CARE RESIDENCIES RETAINED, BY GRADUATING CLASS



LOANS AND INCENTIVES

Health Sciences Service Program

The Health Sciences Service Program is a state-funded incentive program and is administered by the Commission. The program provides financial awards to health professions students who agree to practice in underserved areas of the state upon completion of their education and training. Participants complete either two years of full-time service or four years of part-time service. Medical and dental students receive a \$30,000 award. Doctoral clinical psychology, licensed independent clinical social work, nursing education, nurse practitioner, physical therapy, pharmacy, and physician assistant trainees receive a \$15,000 award.

Since 1995, 198 participants have completed their service obligation. In the 2018-2019 academic year, 15 awards totaling \$360,000 were offered to:

- ▶ 5 medical students
- ▶ 4 dental students
- ▶ 2 physical therapy students
- ▶ 2 clinical psychology students
- ▶ 1 nurse practitioner student
- ▶ 1 clinical social work students

Medical Student Loan Program

The Medical Student Loan Program, which is funded from student fees, is a need-based program for students at West Virginia medical schools and administered by the Commission. Institutions award loans of up to \$10,000 each year per eligible student, and a student may receive a loan in more than one year of medical school. Upon graduation and once in practice, borrowers either must repay the loan or seek loan forgiveness. Borrowers are eligible for loan forgiveness of up to \$10,000 per year for each year they practice in West Virginia in an underserved area or in a medical shortage field. Borrowers are permitted to reapply for loan forgiveness in subsequent years.

MEDICAL STUDENT LOAN PROGRAM ACTIVITY, BY PROGRAM YEAR

	2018-2019	2017-2018	2016-2017	2015-2016	2014-2015
Loans awarded in Fiscal Year	246	240	247	247	256
Total amount awarded	\$1,732,612	\$1,830,125	\$1,424,846	\$1,404,300	\$1,462,142
Amount of unexpended funds*	\$2,628,242	\$2,643,084	\$2,535,240	\$1,991,422	\$1,993,939
Loan postponement**	16	35	12	23	24
Loan forgiveness***	300	255	33	49	42
Default rate on previous awards	7.2%	7.2%	2.5%	2.5%	2.5%

* Amount of unexpended funds includes loan repayments.

** Loan postponement is the number of borrowers who applied for the first time in a given year to begin practicing toward earning loan forgiveness. If these borrowers complete one year of service, they receive up to \$10,000 in loan forgiveness, and then, are included in the subsequent year's loan forgiveness count.

*** Loan forgiveness is the number of borrowers who received up to \$10,000 in loan forgiveness in a given year.

RURAL HEALTH INITIATIVE PROGRAM

The West Virginia Rural Health Initiative (RHI) Program is derived from West Virginia Code §18B-16-1 et seq. and focuses on several goals, including:

1. Increasing the recruitment of healthcare providers to rural areas.
2. Increasing the retention rate of healthcare providers in rural areas.
3. Developing pipeline programs to enhance student interest in rural healthcare careers.
4. Supporting the involvement of rural areas of the state in the health education process.

Overall responsibility for the RHI Program rests with the West Virginia Higher Education Policy Commission. To carry out the goals, the Commission grants the majority of funding to the Joan C. Edwards School of Medicine at Marshall University, the West Virginia School of Osteopathic Medicine, and the West Virginia University Health Sciences Center (the academic health centers). In FY 2019, each academic health center received \$587,000.

The Commission also uses RHI Program funding to make smaller grants to other higher education programs, healthcare facilities, and nonprofit organizations to further advance RHI activities across the state. Examples of projects funded during FY 2019 include:

- ▶ Davis Medical Center – Acquisition of prenatal remote monitoring equipment and supplies to improve prenatal outcomes for residents of Webster County.
- ▶ West Virginia Rural Health Association – Development of a website to post healthcare job openings from across the state.
- ▶ West Virginia University School of Public Health – Establishment of a preventive medicine residency program to increase the number of preventive medicine physicians practicing in public health settings in the state.

The following pages contain a profile of the statewide student housing system for clinical rotations and program overviews for each of the academic health center's RHI activities during FY 2019.

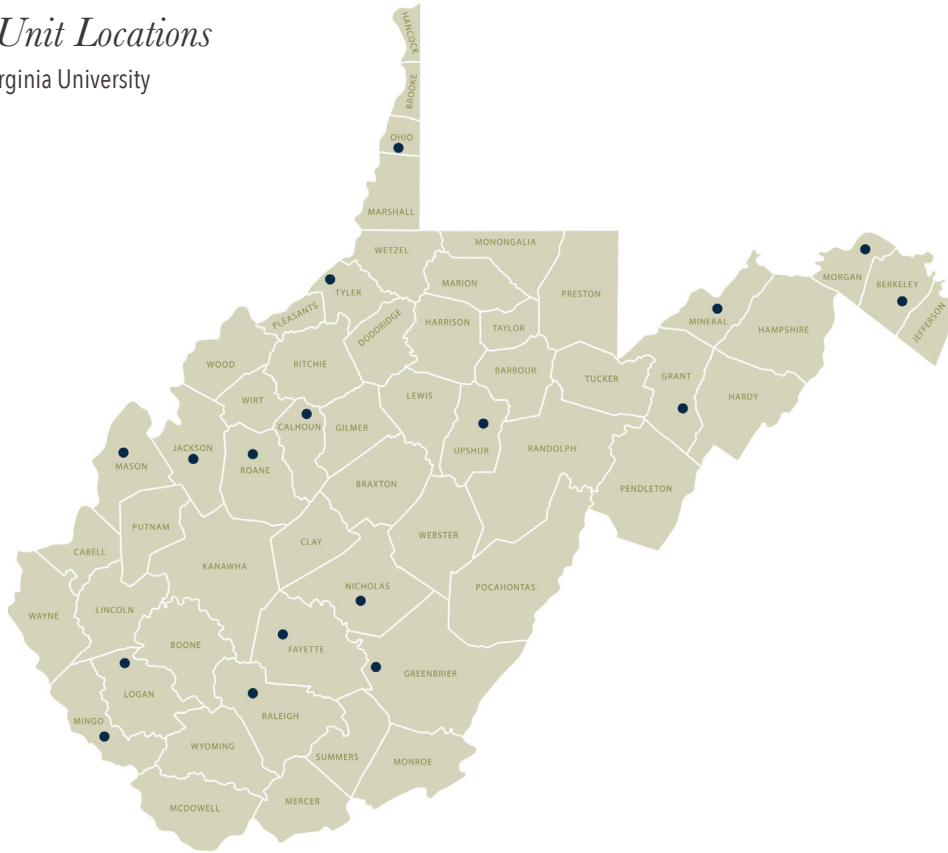
Statewide Housing System

The RHI statewide housing system for health sciences students has allowed students to complete clinical rotations away from the main campus and immerse themselves in a rural or underserved community. The housing is open to all health sciences students, but in FY 2019, the housing was most frequently used by medical, dental, occupational therapy, pharmacy, and physical therapy students. The typical length of stay for students utilizing housing is about four weeks.

The 17 housing locations are primarily leased houses or apartments, which are property managed by West Virginia University. Housing locations are identified based on demand for clinical rotations in certain geographic areas, as well as the ability to secure the appropriate type of rental property. The operating costs of the program are supported through the Commission's RHI funding and a \$135/week fee paid by students utilizing the housing. Often, the cost of housing is covered by the student's institution. A total of 1,207 weeks were utilized across all housing unit locations in FY2019.

Students enrolled in training programs in West Virginia receive priority for housing. Students from out-of-state programs are accommodated based on availability. In FY 2019, students from the following institutions utilized housing: Marshall University, University of Charleston, West Virginia School of Osteopathic Medicine, West Virginia University, Wheeling Jesuit University, Avalon University School of Medicine (OH), Marietta College (OH), and Spalding University (KY).

17 Housing Unit Locations
Managed by West Virginia University



Marshall University Joan C. Edwards School of Medicine

Marshall University Joan C. Edwards School of Medicine (Marshall) is dedicated to providing high quality medical education and postgraduate training programs to foster a skilled physician workforce to meet the unique healthcare needs of West Virginia. Marshall is committed to the development of innovative rural initiatives that encourage and prepare students and residents to practice in rural communities. This rural educational model focuses on students and residents with an interest in rural medicine and provides them with intensive, high-quality educational experiences

Increase the recruitment of healthcare providers to rural and underserved areas.

Rural Family Medicine Scholars Track Program - A fourth year medical student program for students interested in rural health care and remaining in the state for their residency. Fourth year electives are spent in Family Medicine with a focus on rural issues. Activities include case studies, research projects, rotations, and opportunities to work with underserved populations.

Rural Research Grants - The Robert C. Byrd Center for Rural Health provides resources for community-based research. During the 2018-19 academic year, the Center for Rural Health provided seven grants to medical students, residents, and fellows for rural research projects totaling approximately \$95,000 with topics including:

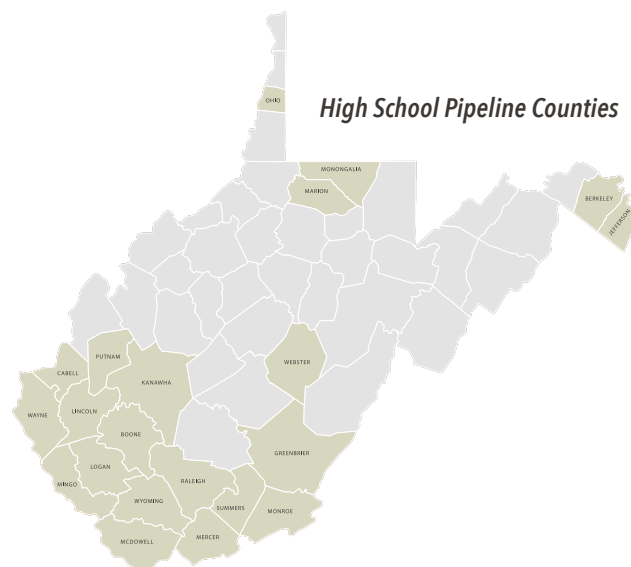
- ▶ A Comparative Analysis of the Relationship Between Patient Malnutrition and Opioid Use Disorder in Rural West Virginia
- ▶ Office Based Spirometry Evaluation of Community Dwelling Oldest-Old
- ▶ Impact and Trends of Novel Nicotine Delivery Systems in Rural Appalachian Youth

Health Policy Fellowship - A program for family medicine residents to develop leadership and interest in health policy with an emphasis on rural issues. Offerings include educational forums, activities during the legislative session, and opportunities to attend state/national conferences.

Rural Health Scholars Program For Residents - A program to encourage residents in a rural track to pursue a career in rural medicine. The program requires participation in rural research or community development.

Rural/Underserved Experience Activities For Residents - Marshall's residency programs provide opportunities for Pediatric and Family Medicine residents to participate in rural/underserved experiences and activities. Seventy-eight percent of pediatric residents participated in the rural mobile clinic or other rural activities. Sixty-seven percent of family medicine residents participated in rural continuity care, 21 percent participated in rural obstetrical care, and 50 percent participated in underserved women's health care.

Rural Residency Program - Based at Lincoln Primary Care Center in Hamlin and Marshall Family Medicine in Lavalette, this unique residency program allows residents to hold their continuity clinics at rural sites. Since 1994, 24 residents have completed the rural residency program, 13 (more than 50 percent) of whom went on to practice in a rural or underserved area.



Increase the retention rate of healthcare providers in rural and underserved areas.

Rural Health Service Program - An incentive program that provides financial assistance to third and fourth-year students in exchange for students' commitment to a rural practice service obligation upon completion of residency.

Rural Health Fellowship - A year-long training program that allows a newly practicing physician to participate in community-based projects, community-based research, and supports training that will enhance the physician's clinical skills.

Develop pipeline programs to enhance student interest in rural healthcare careers.

High School Pipeline Programs - The Center for Rural Health collaborates with multiple organizations to reach rural, minority and underserved students through broad-based initiatives that build awareness and break barriers for college and the pursuit of healthcare careers for high school students. Over 2,600 students from 38 high schools in 21 counties participated in a total of 76 Center for Rural Health high school pipeline events. The programming is evaluated via pre and post testing of students and evaluative surveys of teachers and counselors.

Marshall Bachelor of Science/Doctor of Medicine (BS/MD) Program - A three year program that provides enrichment activities to undergraduates who intend to enter medical school. This past year the program welcomed 10 West Virginia high school students bringing the program total to 29 undergraduate students. The goal is to educate more future physicians who will choose to practice medicine in the state.

Support the involvement of rural and underserved areas of the state in the health education process.

Coalfield High School Student Outreach - Coalfield Health Center staff participate in events with area high school students in Logan and surrounding counties. Activities include suturing workshops as well as discussions about healthcare careers and medicine.



Pictured: Marshall University BS/MD ceremony



Pictured: Marshall University Summer Academy

West Virginia School of Osteopathic Medicine

The Rural Health Initiative (RHI) mission is to enhance the rural primary care curriculum at the West Virginia School of Osteopathic Medicine (WVSOM) in order to produce graduates uniquely qualified to practice medicine in underserved communities of West Virginia. In addition to offering rural training opportunities to all students, WVSOM operates an intensive RHI program, which provides special training and enrichment opportunities to its students who express the strongest interest in rural practice.

Increase the recruitment of healthcare providers to rural areas.

RHI Rural Practice Day 2019: West Virginia School of Osteopathic Medicine hosted its 8th annual Rural Practice Day with WVSOM students, spouses/significant others, pre-medicine students (undergraduate), faculty/employees, rural hospitals/clinics, and speakers on its campus on March 2, 2019. The workshops focused on financial incentives and a simulated case study that involved residents/RHI program alumni. Nine rural hospitals, clinics and vendors from across West Virginia participated and provided students an opportunity to learn more about specific practice opportunities.

Rural or Underserved Rotations: Third and fourth year WVSOM students completed 1,210 rural or underserved rotations during state Fiscal Year 2019 (academic year 2018-2019).

Student Housing: Out of 4,548 weeks of rural or underserved rotations in West Virginia, WVSOM students utilized shared housing for 609 weeks. Students utilized shared housing most often when rotating more than 50 miles from their statewide campus (SWC) base site.

RHI Student Rotations: RHI students complete rotations within four different WVSOM Statewide Campus regions. Five different hospitals serve as four RHI base sites in rural/underserved areas. RHI base sites for the 2018-2019 academic year included:

- ▶ Davis Medical Center/St. Joseph's Hospital
- ▶ Grant Memorial Hospital
- ▶ Logan Regional Medical Center
- ▶ Princeton Community Hospital

Increase the retention rate of healthcare providers in rural areas.

Residency Sign-on Incentive: Six of the 11 RHI program graduates from the WVSOM graduating class of 2019 each received a \$5,000 sign-on incentive for acceptance into a primary care or emergency medicine residency within West Virginia. Five graduates accepted primary care residencies (one at Charleston Area Medical Center, Charleston; one at West Virginia University School of Medicine, Morgantown; and three graduates at Greenbrier Valley Medical Center, Ronceverte). One graduate accepted an emergency medicine residency at Ohio Valley Medical Center, Wheeling.

Mentor Program: During FY2019, all 61 RHI students received a rural practitioner mentor. The mentorship program goals for RHI students include:

- ▶ Participation in rotations that will enhance rural primary care training;
- ▶ Reinforcement of students' interest in rural primary care through mentor interactions; and,
- ▶ Exposure to the quality of life offered by rural communities.

Tele-Stroke Training Initiative: The WVSOM RHI Program partnered with Charleston Area Medical Center (CAMC) Health Education and Research Institute, Inc. and Partners in Health Network, Inc. to provide a rural stroke initiative titled: Tele-Stroke: A Cultural Shift in Providing Stroke-Care in Rural WV. This training initiative seeks to introduce the knowledge and skills required to assist with preparation, activation, intervention and follow up activities of a tele-stroke call with CAMC. RHI mentors, residents, students and staff members attended these collaborative trainings.

Develop pipeline programs to enhance student interest in rural healthcare careers.

High School Pipeline: The RHI Coordinator and RHI Program Assistant, along with the admissions and recruitment offices, SWC assistant deans and directors, and the anatomy lab conducted pipeline activities for 428 high school students to introduce them to rural medicine opportunities in West Virginia. This number included 302 high school students who participated in a program called “CPR in Schools” where WVSOM students taught high school students CPR and promoted careers in health care.

Green Coat Programs: The WVSOM Green Coat program provides undergraduate students who are interested in medical school and/or a healthcare profession an opportunity to gain exposure to clinical responsibilities in a hospital environment. To be selected for the program, a student must have at least a 3.0 GPA and be majoring in a health-related field.

The sixth cohort of CAMC Green Coat students completed the program on December 18, 2018 (two students) and May 3, 2019 (three students). Four of the students were from the University of Charleston and one of the students was from West Virginia University Institute of Technology. The fourth cohort of Davis Health System Green Coat students from Davis & Elkins College completed the program on November 27, 2018 (two students) and May 7, 2019 (two students).

Support the involvement of rural areas of the state in the health education process.

RHI Industry Activities: Rural Health Initiative activities seek to acquaint RHI students with statewide industries to understand environmental exposures that could cause injury or disease to rural patients. Four RHI industry activities occurred during FY 2019 including:

- ▶ Rural Health Workforce Day, Charleston, on February 8, 2019
- ▶ Coal mining in West Virginia, Beaver, on March 11, 2019
- ▶ Underground mine tour, Raleigh County, on March 12, 2019
- ▶ 2019 Opioids in West Virginia workshop, Bridgeport, on April 15, 2019

West Virginia University Health Sciences Center

Increase the recruitment of healthcare providers to rural areas.

A.H.E.C.: The WV Area Health Education Centers Program (WV AHEC) developed by Congress in 1971, is a program to recruit, train and retain a health professions workforce committed to underserved populations. WV AHEC partners with WVU to manage statewide housing for health professions students and scheduling WVU medical student rotations.

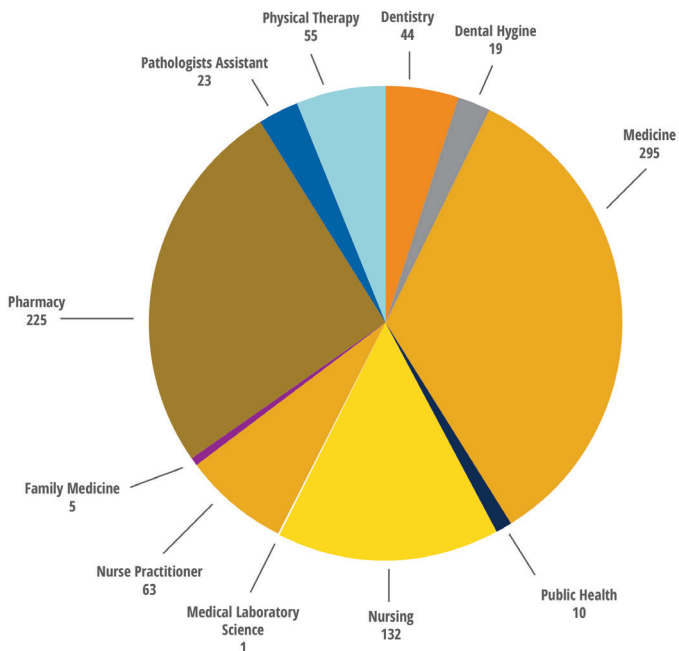
Rural Track: The WVU Rural Track Program's goal is to increase the number of primary care physicians who enter and remain in practice in rural West Virginia. Rural track students are exposed to more time in rural areas during their primary clerkship and in their fourth year of medical school.

Rural Immersions - These in-depth experiences for health professions students allow them to learn about community health and disease processes while immersed in a rural community. In FY19, students participated in four immersions focused on nutrition, rural outdoor rescue, social determinants of health, and addressing the opioid epidemic.

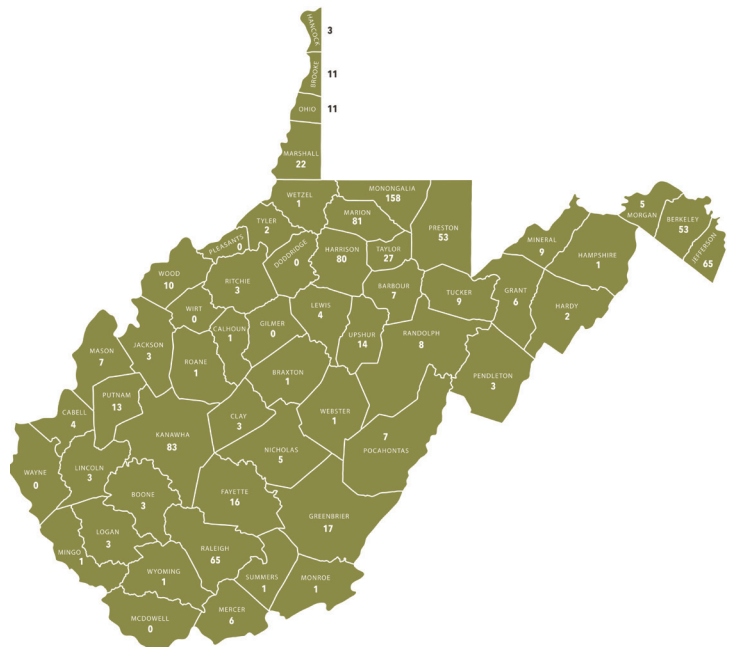
R.H.I.G. - The Rural Health Interest Group is a student-led group of health professions students of different disciplines who learn about rural health issues through guest speakers and activities. In FY-19, six meetings were held and topics covered included health policy in rural West Virginia, midwives and their role in rural communities, the use of telehealth in rural areas, smoking cessation, and drug addiction.

WVU collaborated with WV AHEC to hold 28 inter-professional team meetings that included students from health promotion, medicine, nursing, nurse practitioner, and pharmacy programs. Students completed eight clinical and community interventions around topics such as infectious disease control, harm reduction, cervical cancer awareness, health effects of e-cigarettes, social determinants of health, patient-centered care for LGBT clients, medication-assisted treatment, and heart health.

WVU STUDENT ROTATIONS IN COMMUNITY BASED CLINICAL ACTIVITIES, BY DISCIPLINE 7/1/18 - 6/30/19



NUMBER AND LOCATION OF WVU STUDENT ROTATIONS IN COMMUNITY BASED CLINICAL ACTIVITIES 7/1/18 - 6/30/19



Increase the retention of healthcare providers in rural areas.

WVU partnered with WV AHEC to provide 30 continuing education opportunities for current healthcare professionals. Seventy percent of opportunities took place in rural and underserved areas. The partnership also included the participation of current healthcare providers in 108 WV Project ECHO sessions including topics such as cardiology, endocrinology, chronic pain, psychiatry, and medication-assisted treatment.

In FY19, medical preceptors donated \$36,500 to a scholarship fund for students planning to work in rural areas of the state.

Develop pipeline programs to enhance student interest in healthcare activities.

H.S.T.A.: The Health Sciences & Technology Academy is a one-of-a-kind mentoring program in West Virginia that helps participating high school students enter and succeed in STEM-based undergraduate and graduate degree programs. In FY19, WVU collaborated with HSTA to support 39 clubs and 365 students to participate in educational and research activities.

Rural Health Day: An annual event that brings pre-health undergraduate students together to learn more through various speakers and hands-on activities about the medical school application process and health professions career opportunities in rural areas. In April 2019, 50 undergraduate students from WV, PA and MD participated.

R.U.S.H.: The Rural Undergraduate Shadowing in Healthcare Program is designed to provide pre-medical participants with a unique experience that offers insight into what it is like to practice a health profession in rural West Virginia. Selected students were placed in Calhoun, Preston and Wyoming counties for the 20-hour shadowing program. All three students reported the experience increased their interest in rural health.

Support the involvement of rural areas of the state in the health education process.

Project R.E.A.C.H.: Project Rural Education Alliance for Community Health is a student-run outreach program that provides education and health information throughout the state. In FY19, students participated in eight health education events that served 391 people from Hampshire, Preston, Braxton, Greenbrier and Wyoming counties.

Newsletter: Provides annual updates on WVU health profession students' educational and outreach activities to nearly 800 field faculty across the state.

MEDICAL AND DENTAL STUDENT SCHOLARSHIPS AWARDED 2011-2019

**\$2
MILLION**

WHERE OUR SCHOLARSHIP RECIPIENTS ARE TODAY

22 DENTAL STUDENTS



1 RESIDENCY 19 PRACTICING IN WV

17 MEDICAL STUDENTS



4 IN SCHOOL 8 RESIDENCY 3 PRACTICING IN WV 1 ARMED FORCES

West Virginia Higher Education Policy Commission

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Higher Education
Policy Commission