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WEST VIRGINIA
HEALTH SCIENCES
and RURAL HEALTH

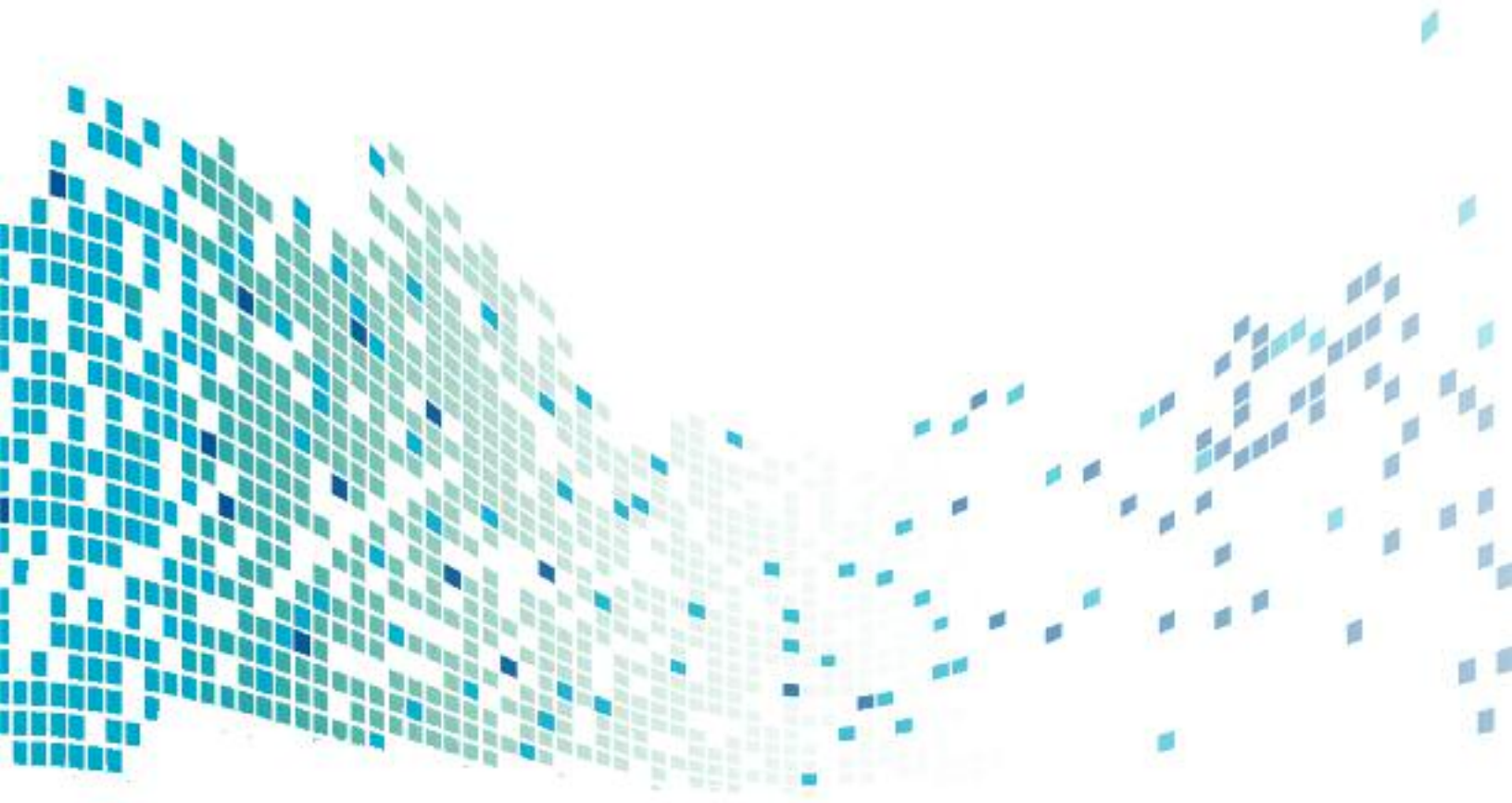
REPORT CARD 2013



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INTRODUCTION



As the healthcare landscape in West Virginia evolves, West Virginia's health professions programs are working closer together than ever to improve our citizen's health and access to care. Our institutions of higher education are focusing their health sciences education and training programs on the skills and strategies needed to adapt to sweeping changes on the national scene, while maintaining high quality professional education, all in the face of constrained resources.

In particular, the state's three academic health centers, 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, continue to provide direct care to West Virginians, including in clinical areas that are limited or unavailable through the private sector, all the while providing professional education and conducting research on the state's health problems.

The Rural Health Initiative (RHI) program is blossoming and enables the academic health centers to provide special experiences in rural and community health to students and resident physicians and involve them in creative approaches to improving our citizens' health. Additionally, the RHI program provides grants to other health professions training programs, healthcare facilities, and nonprofit organizations to further enhance the rural health landscape across West Virginia.

The 2013 National Residency Matching Program, which governs the allocation of the majority of residency positions in the country, was the most competitive in history. Similarly in West Virginia, residency programs filled nearly all of their slots. To ensure that all residents with an interest in practicing in a rural or under-served community have the opportunity to make meaningful connections with employers in these areas, the West Virginia Higher Education Policy Commission's Division of Health Sciences is reinvigorating partnerships among academic health centers, residency programs, and healthcare facilities to improve communication between these entities concerning the recruitment of graduates to rural areas.

Finally, new sources of federal funding are encouraging joint academic health center and community-based practice research into health problems especially prevalent among West Virginians. These "practice-based" research networks will unite private practices and community-based healthcare facilities in identifying healthcare methods and interventions specifically tailored to be effective in our Appalachian population. Some of the issues the networks intend to tackle include diabetes, obesity, prevention and early treatment in heart disease, stroke, and cancer.

Robert B. Walker, M.D.
Vice Chancellor for Health Sciences



MEDICAL SCHOOL PROFILES

The Marshall University 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 occur, the information for allopathic and osteopathic programs is broken out.

Both allopathic and osteopathic medical school applicants complete the Medical College Admission Test (MCAT) as part of the application process. The MCAT consists of three multiple choice sections each worth 15 points (Physical Sciences, Verbal Reasoning, and Biological Sciences) and a writing sample. For 2011-12 matriculants, the national combined mean MCAT score for students entering allopathic medical schools was 31.2; for students entering osteopathic medical schools the score was 26.9. The national mean grade point average (GPA) for these same allopathic students was 3.68 and for osteopathic students it was 3.49. (Association of American Medical Colleges and American Association of Colleges of Osteopathic Medicine)

MARSHALL UNIVERSITY SCHOOL OF MEDICINE

	2012-2013	2011-12	2010-11	2009-10	2008-09
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	59/134 (44%)	70/174 (40%)	78/191 (41%)	94/209 (45%)	94/209 (45%)
Out-of-State	76/1,219 (6%)	52/1,252 (4%)	46/1,157 (4%)	28/1,940 (1%)	33/1,107 (3%)
Total	135/1,353 (10%)	122/1,426 (9%)	124/1,348 (9%)	122/2,149 (6%)	127/1,316 (10%)
Entering Class Mean GPA	3.53	3.52	3.54	3.52	3.51
Entering Class Mean MCAT	28.3	28.8	28.8	26.7	26.3
ACADEMIC YEAR DATA					
First Year New Enrollment					
In-State	29	40	48	58	57
Out-of-State	37	31	26	16	21
Total	66	71	74	74	78
Total Graduates	75	64	70	63	52
Total Medical Students	291	295	301	296	281
Tuition and Fees					
In-State	\$20,080	\$19,476	\$18,536	\$17,688	\$16,588
Out-of-State	\$47,670	\$46,266	\$45,326	\$44,478	\$42,178

WEST VIRGINIA SCHOOL OF OSTEOPATHIC MEDICINE

	2012-2013	2011-12	2010-11	2009-10	2008-09
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	88/173 (51%)	108/178 (61%)	59/154 (38%)	64/134 (48%)	81/168 (48%)
Out-of-State	306/3,893 (8%)	377/3,342 (11%)	404/3,298 (12%)	451/3,162 (14%)	472/2,771 (17%)
Total	394/4,066 (10%)	485/3,520 (14%)	463/3,452 (13%)	515/3,296 (16%)	553/2,939 (19%)
Entering Class Mean GPA	3.4	3.45	3.47	3.43	3.42
Entering Class Mean MCAT	24.1	24.0	25.1	24.1	23.9
ACADEMIC YEAR DATA					
First Year New Enrollment					
In-State	75	84	36	51	64
Out-of-State	123	126	166	141	141
Total	198	210	202	192	205
Total Graduates	195	160	197	161	101
Total Medical Students	838	817	806	778	710
Tuition and Fees					
In-State	\$20,950	\$20,950	\$19,950	\$19,950	\$20,426
Out-of-State	\$50,950	\$50,950	\$49,950	\$49,950	\$50,546

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE

	2012-2013	2011-12	2010-11	2009-10	2008-09
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	80/159 (50%)	78/180 (43%)	88/196 (45%)	78/212 (37%)	82/219 (37%)
Out-of-State	84/2,352 (4%)	94/2,491 (4%)	91/2,382 (4%)	81/2,424 (3%)	96/2,760 (3%)
Total	164/2,511 (7%)	172/2,671 (6%)	179/2,578 (7%)	159/2,636 (6%)	178/2,979 (6%)
Entering Class Mean GPA	3.77	3.71	3.75	3.73	3.74
Entering Class Mean MCAT	28.3	28.4	28.4	29.0	28.5
ACADEMIC YEAR DATA					
First Year New Enrollment					
In-State	67	61	64	69	63
Out-of-State	39	43	40	41	46
Total	106	104	104	110	109
Total Graduates	106	100	94	103	98
Total Medical Students	423	430	424	432	432
Tuition and Fees					
In-State	\$24,248	\$23,118	\$22,122	\$21,270	\$20,164
Out-of-State	\$52,188	\$49,728	\$47,884	\$46,018	\$43,960

MEDICAL LICENSURE EXAMINATIONS

Both allopathic and osteopathic medical students must complete a series of licensing exams in order to become licensed physicians. The allopathic test is the United States Medical Licensing Exam (USMLE) and the osteopathic test is the Comprehensive Osteopathic Medical Licensing Examination (COMLEX)-USA.

Students typically take the final USMLE or COMLEX soon after graduating from medical school. The data reported below is 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 sit for 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 typically take USMLE, Step 3 at the end of their first year of residency. The data in the table is grouped by graduating class and is for first-time test takers only. The national average passage rate for first-time test takers for the graduating class of 2010 is 97 percent.

Number Passing/Number of Examinees, USMLE, Step 3, by Graduating Class

	2010	2009	2008	2007	2006
Marshall University	57/59 (97%)	45/49 (92%)	34/38 (89%)	45/46 (98%)	38/38 (100%)
West Virginia University	91/91 (100%)	89/91 (98%)	77/79 (97%)	93/95 (98%)	88/88 (100%)

Osteopathic Medical School Graduates

The COMLEX is the primary pathway by which osteopathic physicians apply for licensure. Osteopathic graduates take the final COMLEX examination, Level 3, as early as six months into residency training, but must complete Level 3 before starting their third year of residency training. The data in the table is grouped by graduating class and is for first-time test takers only. The national average is not available.

Number Passing/Number of Examinees, COMLEX, Level 3, by Graduating Class

	2010	2009	2008	2007	2006
West Virginia School of Osteopathic Medicine	134/136 (99%)	91/99 (92%)	85/94 (90%)	83/93 (89%)	70/82 (85%)

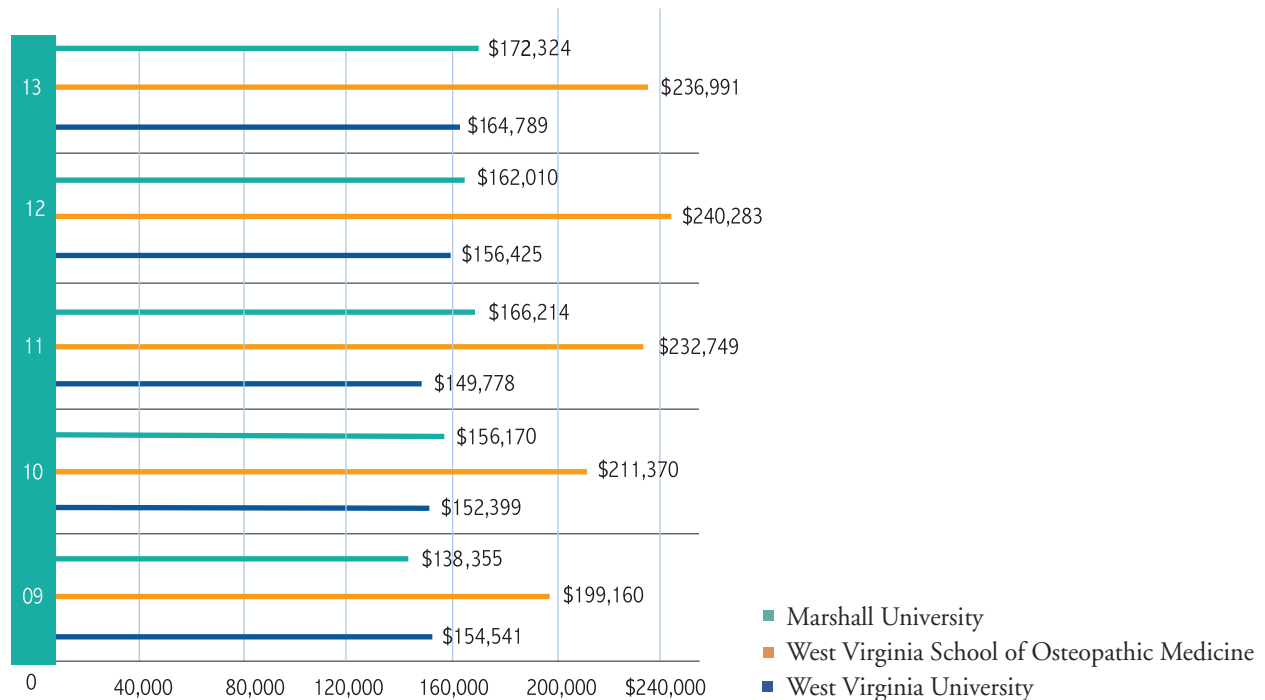


MEDICAL STUDENT INDEBTEDNESS

The average indebtedness of graduating medical students includes all loans, whether through the government or from private lenders, accumulated while pursuing their medical degrees. Average loan debt is calculated only from students who have loans and does not include pre-medical school debt. The difference in graduate indebtedness among the schools can be attributed in part to differences in the proportion of students paying non-resident tuition and fees.

Average Medical Student Debt by Graduating Class

	Marshall University	West Virginia School of Osteopathic Medicine	West Virginia University
2013	\$172,324	\$236,991	\$164,789
2012	\$162,010	\$240,283	\$156,425
2011	\$166,214	\$232,749	\$149,778
2010	\$156,170	\$211,370	\$152,399
2009	\$138,355	\$199,160	\$154,541



RESIDENCY TRAINING



Upon graduation from medical school, physicians complete residency training (also referred to as graduate medical education) in a specialty before beginning practice. Residency training typically takes three to five years to complete. Federal Medicare funding is the major funding source for residency programs. In West Virginia, the state also contributes to residency programs through the Medicaid program.

Key indicators related to residency choice impacting 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 are generally most needed in rural West Virginia.

In West Virginia, a primary care residency includes any residency program in:

- family medicine
- internal medicine
- internal medicine/pediatrics
- obstetrics/gynecology
- pediatrics

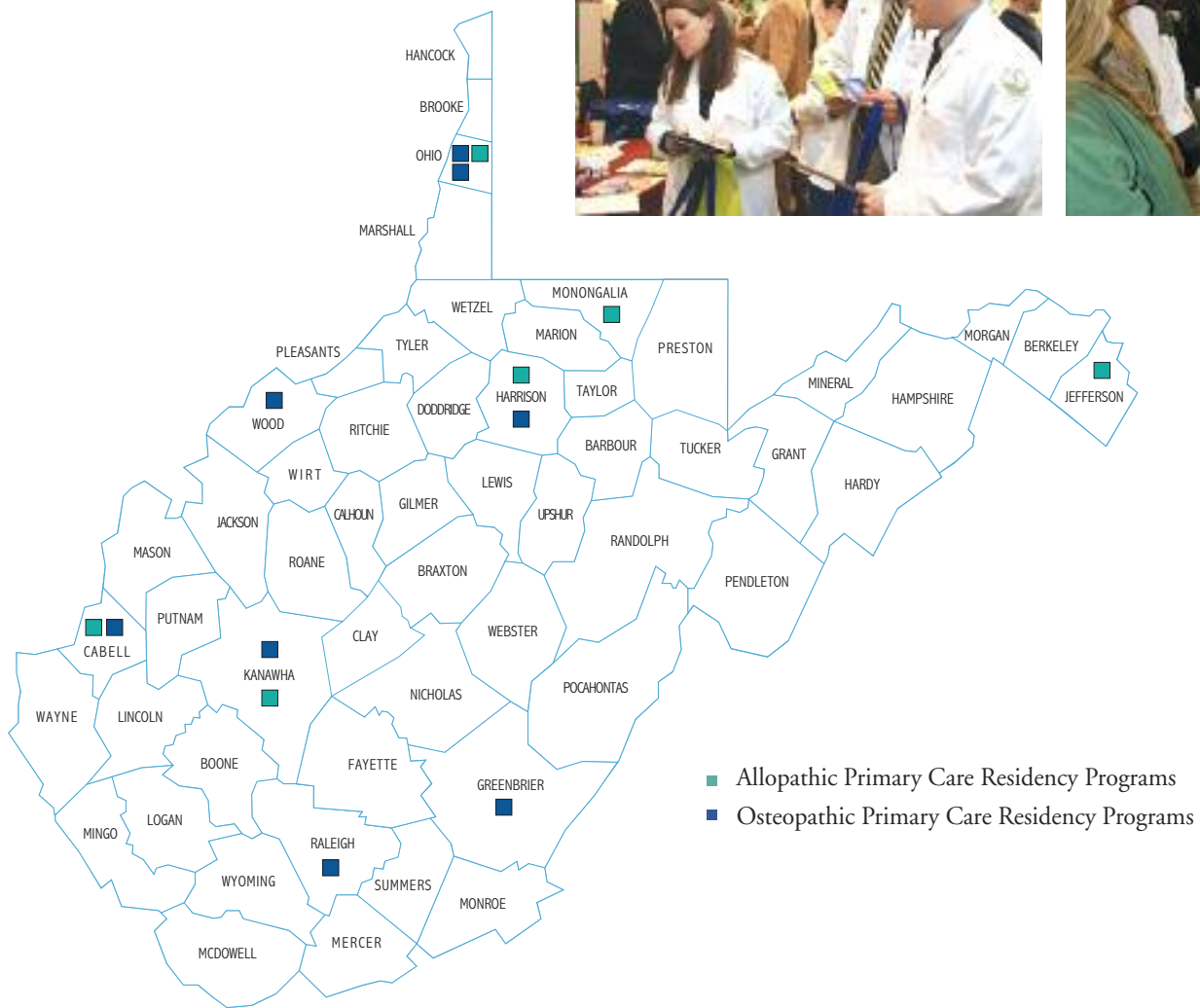
All three West Virginia medical schools frequently place graduates in primary care residency programs at a rate above the national average for these same programs. For the 2013 residency match, the national average was 57 percent. (National Resident Matching Program)

However, completing a primary care residency program does not always translate to practicing primary care. Often, individuals entering internal medicine residencies 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. Thus, some of the graduates counted below ultimately may not practice in a primary care setting.



Number and Percentage of Graduates Choosing Primary Care Residencies, by Graduating Class

	2013	2012	2011	2010	2009
Marshall University	44 (60%)	41 (64%)	37 (54%)	37 (60%)	27 (52%)
West Virginia School of Osteopathic Medicine	133 (68%)	107 (68%)	123 (65%)	119 (72%)	67 (68%)
West Virginia University	48 (47%)	43 (43%)	38 (41%)	51 (50%)	49 (52%)



Location of Primary Care Residencies

Primary care residency programs are offered across West Virginia, however, these sites predominantly are hospital-based and located in more urban areas. Unique programs like the AccessHealth Teaching Health Center family medicine residency program in Raleigh County, West Virginia University-Harper's Ferry Rural Family Medicine Residency Program, and the Marshall University-Lincoln Primary Care Center Rural Residency Program allow residents to spend all or a significant portion of their residency in a rural or underserved area. As part of more traditional programs, residents may spend a small percentage of their time practicing away from the main residency site such as in a rural health clinic or a community health center.

Allopathic Primary Care Residency Programs, 2012-13:

Charleston Area Medical Center, Kanawha County
 Marshall University School of Medicine, Cabell County
 United Hospital Center, Harrison County
 West Virginia University Hospital, Monongalia County
 West Virginia University Rural, Jefferson County
 Wheeling Hospital, Ohio County

Osteopathic Primary Care Residency Programs, 2012-13:

AccessHealth Teaching Health Center, Raleigh County
 Cabell Huntington Hospital, Cabell County
 Camden-Clark Memorial Hospital, Wood County
 Charleston Area Medical Center, Kanawha County
 Greenbrier Valley Medical Center, Greenbrier County
 Ohio Valley Medical Center, Ohio County
 United Hospital Center, Harrison County
 Wheeling Hospital, Ohio County

MEDICAL SCHOOL GRADUATE RETENTION

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.

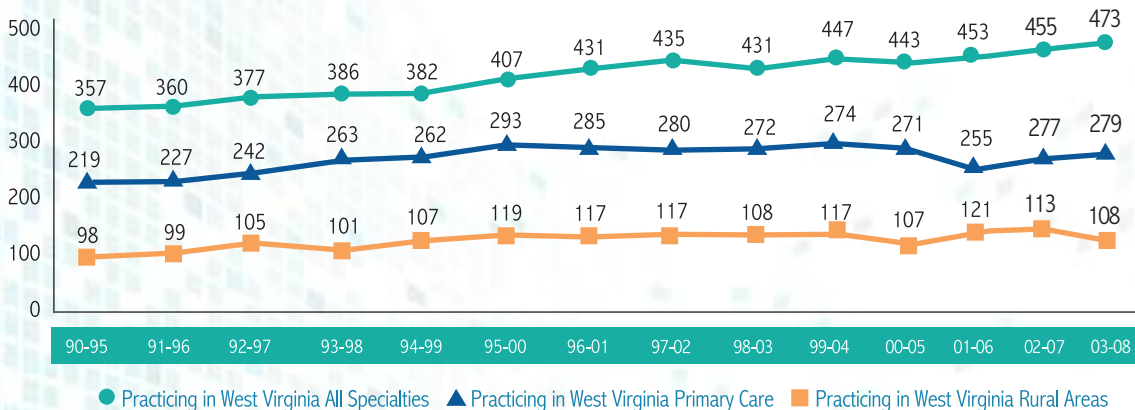
- Primary Care is defined as family medicine, internal medicine, internal medicine/pediatrics, obstetrics/gynecology, and pediatrics.
- Rural areas include all areas of the state except: Beckley, Charleston (including South Charleston, Dunbar, Nitro, Institute, etc.), Clarksburg, Fairmont, Huntington, Hurricane (including Barboursville), Martinsburg, Morgantown (including Star City and Westover), Parkersburg (including Vienna), Weirton, and Wheeling.
- Data is provided only for graduates who have completed their residency training.

Between 2003 and 2008, 1,240 graduates of the state’s three medical schools completed residency training, either in West Virginia or another state, and 38 percent of these graduates are now practicing in West Virginia. Nine percent of the graduates in this cohort are practicing in rural West Virginia and 23 percent are practicing primary care in the state (either in a rural or urban location). These percentages are very similar to numbers reported over the last 25 years for West Virginia. Although the percentages have remained rather flat, the actual number of graduates retained has increased respectably. This increase is due largely to the growth in medical school class size at all three medical schools.

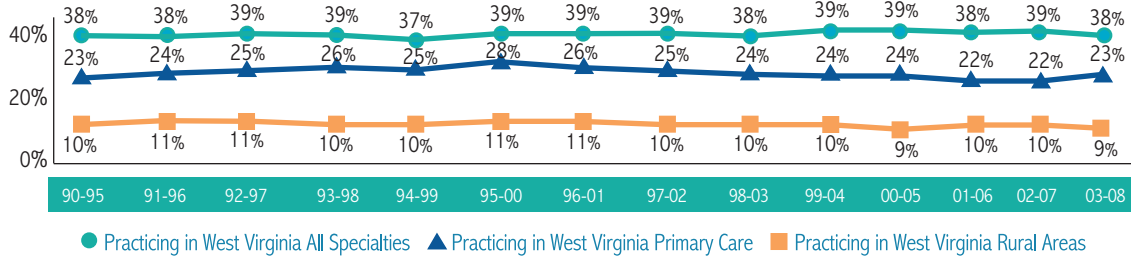
Medical School Graduates Retained by Institution, Graduating Classes of 2003-2008

	Total Number of Graduates	In Practice in WV	In Primary Care in WV	In Rural Areas of WV
Marshall University	250	98 (39%)	58 (23%)	17 (7%)
West Virginia School of Osteopathic Medicine	481	178 (37%)	114 (24%)	65 (14%)
West Virginia University	509	197 (39%)	107 (21%)	26 (5%)
TOTAL	1,240	473 (38%)	279 (23%)	108 (9%)

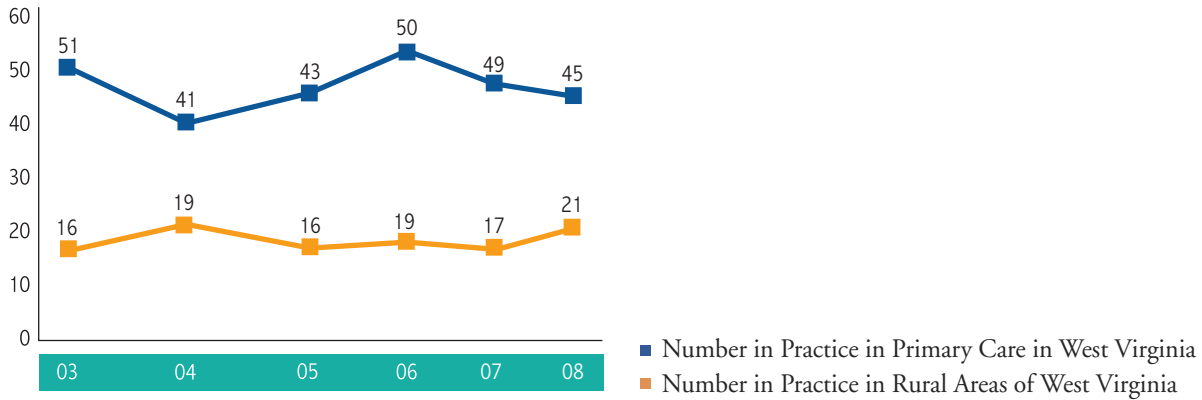
Number of West Virginia Medical School Graduates Retained, Graduating Classes of 1990-2008



Percentage of West Virginia Medical School Graduates Retained, Graduating Classes of 1990-2008



Number of West Virginia Medical School Graduates Practicing Primary Care or in Rural Areas, Graduating Classes of 2003-2008



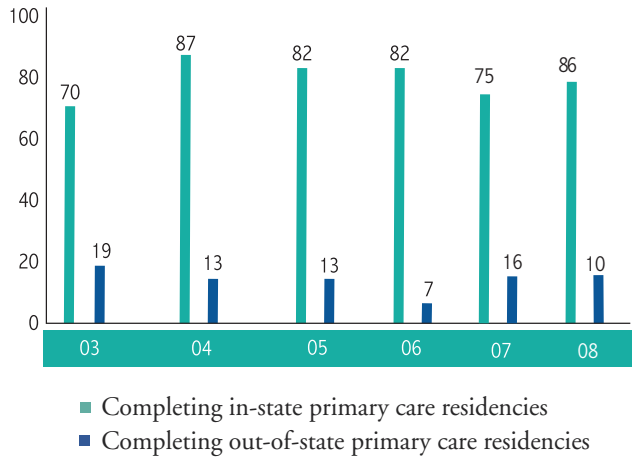
West Virginia continues to focus on recruiting more primary care physicians to the state, especially to its rural areas. The presence of physicians practicing primary care and in rural areas is critical to ensuring communities across the state can access quality care.

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, however. It is a snapshot of the placement of the most recent West Virginia medical school graduates only and does not include graduates of out-of-state medical schools or physicians of long-standing 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 health and primary care education and training program activities and physician recruitment priorities.

West Virginia Medical School Graduates Practicing in West Virginia, by County, Graduating Classes of 2003-2008

County	Number in Practice	Number Practicing in Rural Areas	Number Practicing Primary Care	County	Number in Practice	Number Practicing in Rural Areas	Number Practicing Primary Care
Barbour	1	1	1	Mineral	2	2	2
Berkeley	14	0	6	Mingo	0	0	0
Boone	6	6	5	Monongalia	103	0	38
Braxton	0	0	0	Monroe	1	1	1
Brooke	0	0	0	Morgan	1	1	1
Cabell	66	0	36	Nicholas	6	6	5
Calhoun	0	0	0	Ohio	27	0	15
Clay	0	0	0	Pendleton	1	1	1
Doddridge	1	1	1	Pleasants	0	0	0
Fayette	7	7	7	Pocahontas	3	3	3
Gilmer	0	0	0	Preston	1	1	1
Grant	0	0	0	Putnam	11	1	10
Greenbrier	18	18	15	Raleigh	14	4	12
Hampshire	1	1	0	Randolph	5	5	3
Hancock	1	0	0	Ritchie	0	0	0
Hardy	0	0	0	Roane	2	2	1
Harrison	23	6	15	Summers	1	1	1
Jackson	2	2	2	Taylor	0	0	0
Jefferson	3	3	2	Tucker	0	0	0
Kanawha	96	0	53	Tyler	0	0	0
Lewis	3	3	2	Upshur	1	1	1
Lincoln	2	2	2	Wayne	2	2	2
Logan	1	1	0	Webster	1	1	1
Marion	6	0	4	Wetzel	0	0	0
Marshall	1	1	1	Wirt	1	1	1
Mason	5	5	4	Wood	15	1	11
McDowell	0	0	0	Wyoming	0	0	0
Mercer	15	14	10	TOTAL	473	108	279

Percentage of West Virginia Medical School Graduates Completing Primary Care Residencies Retained, Graduating Classes of 2003-2008



The location of a medical school graduate’s residency program frequently predicts whether that graduate will practice in West Virginia. For the 2008 graduating class of West Virginia medical schools, 113 graduates went on to complete primary care residency programs (44 in-state and 69 out-of-state). Upon completing residency, 86 percent of the graduates who completed in-state primary care residencies were retained in West Virginia to practice, while only 10 percent of graduates who completed out-of-state primary care residencies returned to West Virginia to practice.



OTHER HEALTH SCIENCES PROGRAM GRADUATES

Medical education is only one track of graduate-level health sciences education occurring in West Virginia. Dental, Advanced Practice Nursing, Pharmacy, and Physician Assistant programs among others are offered by various public and private institutions in the state. The data below provides an overview of some of these programs at public institutions.

DENTISTRY: West Virginia University

Upon completion of their education, some dental graduates enter practice immediately, while others pursue dental residencies. Due to the logistics involved in establishing a practice, it often may take a dentist several months to establish a practice. Typically, the number of dentistry graduates practicing in West Virginia increases over time as more graduates establish practices and/or complete residency.

Dentistry Graduates Retained, by Graduating Class

	2012	2011	2010	2009	2008
Graduates	46	48	47	50	45
Practicing in West Virginia	25 (54%)	18 (38%)	19 (40%)	31 (62%)	25 (56%)

PHARMACY: West Virginia University

In recent years, a decline has occurred in the number of West Virginia pharmacy graduates remaining in state to practice. This result may be due to two convergent factors: an increasing number of graduates both nationally and in West Virginia, coinciding with a decline in the number of employment opportunities for pharmacists in West Virginia. Consequently, more graduates are leaving the state in search of employment or to secure postgraduate residencies.

Pharmacy Graduates Retained, by Graduating Class

	2012	2011	2010	2009	2008
Graduates	82	83	84	73	76
Practicing in West Virginia	54 (66%)	53 (63%)	55 (64%)	47 (64%)	45 (59%)

NURSE PRACTITIONER: West Virginia University

Family Nurse Practitioner Graduates Retained, by Graduating Class

	2012	2011	2010	2009	2008
Graduates	42	42	48	27	31
Practicing in West Virginia	33 (79%)	33 (79%)	42 (88%)	22 (81%)	19 (61%)

Marshall University

Family Nurse Practitioner Graduates Retained, by Graduating Class

	2012	2011	2010	2009	2008
Graduates	60	43	42	30	32
Practicing in West Virginia*					

*Data on retention were not available for this report.

LOANS AND INCENTIVES



Health Sciences Scholarship Program

The Health Sciences Scholarship Program is a state-funded incentive program and is administered by the West Virginia Higher Education Policy Commission (Commission). The program provides financial awards to health professionals who agree to practice in underserved areas of the state upon completion of their education and training. Medical students receive a \$20,000 award for a two-year service commitment. Doctoral clinical psychologists, licensed independent clinical social workers, nurse educators, nurse practitioners, physical therapists, and physician assistants receive a \$10,000 award for a two-year service commitment.



Since 1995, 148 participants have completed their service obligation. In 2012-13, 11 awards totaling \$130,000 were given to:

- Two medical students
- Two nurse practitioner students
- Five physical therapy students
- One doctoral psychology student
- One master's social work student

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

	2012-2013	2011-12	2010-11	2009-10	2008-09
Loans Awarded in Fiscal Year	273	256	224	289	312
Total Amount Awarded	\$1,589,301	\$1,379,420	\$1,350,194	\$2,033,237	\$1,881,843
Amount of Unexpended Funds*	\$1,781,561	\$1,983,043	\$1,944,894	\$1,877,002	\$2,642,508
Loan Postponement**	30	16	14	23	22
Loan Forgiveness***	40	36	44	49	47
Default Rate on Previous Awards	1.9%	2.2%	2.6%	2.7%	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 at the end of the year, 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.

Other Programs

The West Virginia Bureau for Public Health administers several innovative loan and incentive programs directed at recruiting and retaining a variety of primary care providers in rural areas of the state.

- The state-funded Recruitment and Retention Community Project provides up to \$10,000 to medically underserved communities to use for recruitment and retention of primary care providers. Communities must supply at least a 50 percent match.
- The State Loan Repayment Program is supported by state and federal funds, and offers repayment of up to \$40,000 for educational loans to primary care providers in return for an obligation to practice for at least two years in an underserved area.

The Bureau for Public Health also works in conjunction with the federal government to administer the federal National Health Service Corps (NHSC). The NHSC offers several programs, including a loan repayment program that in 2012-13 provided up to \$60,000 in loan repayment for an initial two-year commitment. In return, participants must practice at least full-time for two years or half-time for four years at an NHSC-approved site in a Health Professional Shortage Area (HPSA). Eligible sites exist across West Virginia and the rest of the country.





RURAL HEALTH INITIATIVE PROGRAM

The West Virginia Rural Health Initiative is contained in 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 Rural Health Initiative rests with the Vice Chancellor for Health Sciences at the West Virginia Higher Education Policy Commission. To carry out the goals, the Commission grants funding to the Joan C. Edwards School of Medicine at Marshall University, the West Virginia School of Osteopathic Medicine, and West Virginia University Health Sciences Center (“the academic health centers”). Additionally, the Commission makes grants to other institutions, healthcare facilities, and nonprofit organizations to further advance Rural Health Initiative activities across the state.

The following pages contain program overviews for each of the academic health center’s Rural Health Initiative activities during state fiscal year 2013.

MARSHALL UNIVERSITY JOAN C. EDWARDS SCHOOL OF MEDICINE

The Marshall University Joan C. Edwards School of Medicine has focused on an intensive rural educational model that identifies students with the commitment to and interest in rural health care, and provides them with a valuable, interdisciplinary, high quality experience.

Increase the recruitment of healthcare providers to rural areas.

One of the objectives of the initiative is to encourage medical students to select primary care residencies in West Virginia. The need for primary care physicians in the state is great, especially in rural areas, and research shows that state medical school graduates who complete in-state primary care residency training are much more likely to practice in West Virginia.

- *Financial Forum:* A “financial future forum” was held to inform medical students about state and federal financial incentives for practice in rural and underserved areas. Survey completion found 86 percent thought the forum was helpful, 97 percent felt more knowledgeable about financial incentives, and 90 percent would consider utilizing loan forgiveness programs.
- *Rural research projects:* Four medical students and four medical residents participated in rural research projects with faculty mentors from Cardiology, Family Medicine, Obstetrics, and Pediatrics.
- *Rural Health Scholars Program:* This program was created to support students and residents with a career goal of rural practice. In its first year, two residents and two students were involved. The program coordinates with other financial incentive programs, and the goal is to maximize support to outstanding medical students who have the greatest potential for rural practice.

Increase the retention rate of healthcare providers in rural areas.

The initiative is focused on two areas of retention: (1) retention of residents in rural practice by providing rural training and community experiences; and (2) retention of rural physicians practicing in the state by providing support, continuing medical education, access to specialty services, and opportunities for research.

- **Rural Residency Program:** Rural Health Scholars have the opportunity to participate in their continuity practice clinic at Marshall University's Rural Family Practice Residency program in Lincoln County, which provides interested medical residents with special training in rural primary care. Continuity care practice allows for residents to develop their own patient base and develop relationships with the same patients over time. Over the years, the program has been very successful in retaining these residents.
- **Mingo County Specialty Clinic:** The Internal Medicine and Cardiology departments continue a monthly endocrinology and cardiology clinic in Gilbert, Mingo County, with resident participation. This clinic is a retention activity, as well as a community service.
- **Health Policy Fellows Program:** This program was created to develop leadership and interest in health policy, with an emphasis on rural health. Two second-year residents are participating in this program. There also are Health Policy Program activities for interested students and residents.
- **Chief Resident Immersion Training (CRIT):** Given the higher percentage of older West Virginians, there is a pressing need to ensure that all medical residents know how to care for older adults. The CRIT program is training residents who will care for the elderly in rural settings. *This program is open to chief residents from all three medical schools in the state.*
- **Other activities:**
 - Opportunities for rural experience activities for residents in primary care.
 - Mentoring rural providers new to community leadership roles.
 - Family Medicine faculty provided practice management workshops on coding for community health center staff in Lincoln, Logan and Mingo Counties.

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



The Center for Rural Health (the Center) and the Joan C. Edwards School of Medicine have developed a very active pipeline program (a pathway) that begins in middle school and runs through high school, through college, through medical school, through residency training, and out into practice. This program includes dozens of initiatives along this pathway. The Center and the School of Medicine continue to support and expand their existing award-winning pipeline program with high schools and colleges in the region. It collaborates with programs targeting underserved students such as HSTA (Health Sciences and Technology Academy), HOSA (Health Occupations Students of America) and Upward Bound. These programs raise awareness of healthcare careers and assist in removing perceived or actual barriers for students in pursuing these careers.

- **High school health career clubs:**
 - Seventeen hundred students from 14 counties in Southern West Virginia participated in 52 events.
 - Of these 52 events, 19 events with 684 students were collaborative with HSTA, HOSA, Upward Bound and GEAR UP.
 - Pre and post assessment of high school students in 2013 showed a 25 percent increase in knowledge about selected healthcare careers, including medicine.
- **Promote health careers to colleges:**
 - A summer residential academy was held at the Joan C. Edwards School of Medicine for undergraduate students who aspire to become physicians. Participants were asked to evaluate the Summer Academy anonymously. Thirteen out of 15 participants rated it as "excellent," and no one rated it less than "good."



(Continued)

Highly-rated activities were mock interviews for admissions, contact with physicians and other faculty, tips for studying and test taking, online practice for the MCAT, and hands-on activities.

- A college chapter of HOSA was formed at Marshall University and has held three meetings this year.
- Visits were conducted to West Virginia colleges and universities to meet with students to encourage them to stay in the state for medical school. Interested students will receive a rural mentor and role model, who hopefully can increase student interest in pursuing a career in primary care in a rural community.

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

By utilizing rural communities as a part of the health education process, the initiative provides recruitment opportunities for medical residents and students. The initiative also provides outreach and support to rural physicians in an effort to increase provider retention in rural areas.

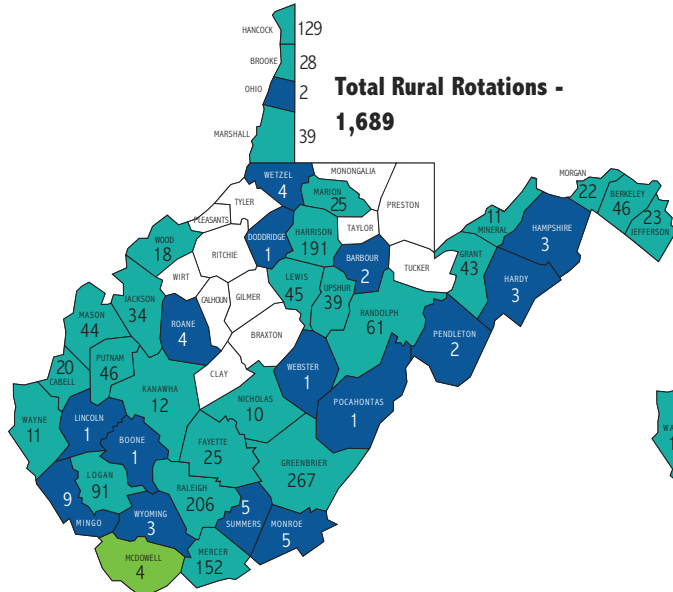
- *Chapmanville Hub (Logan County):* The Chapmanville teaching hub enables the School of Medicine to utilize technological and human resources to work on chronic healthcare problems in the southern region, while implementing educational objectives and research activities that are anticipated to improve not only recruitment and retention of healthcare providers in the area, but also the overall well being of the communities. In addition, the health center has become a focal point for outreach to high school and college students by partnering with schools and community colleges.
- *Underserved community clinical rotations:* Seven second and third-year Family Medicine residents participated in rotations at Ebenezer (area free clinic); all eight first-year Family Medicine residents do a four week rotation there, as well as rotations in women's health.
- *Pediatric Mobile Clinic:* The West Virginia Children's Health Project (WVCHP) is a mobile unit program to expand access to quality primary and specialty health care for children in rural areas of West Virginia. Pediatric residents are assigned to this unit on an ongoing basis, allowing them to develop a continuing patient base. The WVCHP serves rural, Appalachian families, who frequently are underinsured or have no medical insurance. The WVCHP currently serves eight elementary schools, one middle school, and one high school.
- *Rural Health Promotion and Disease Prevention activities:* Activities in McDowell County are required for all second-year residents in Family Medicine.

WEST VIRGINIA SCHOOL OF OSTEOPATHIC MEDICINE

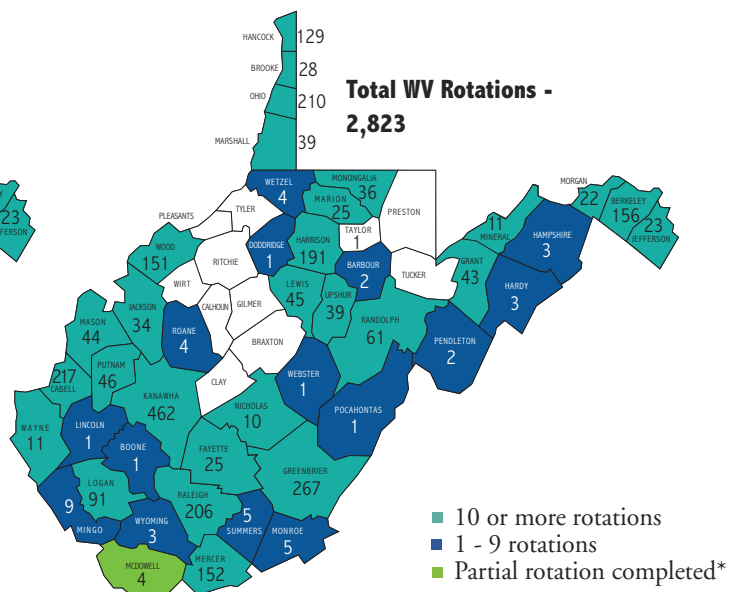
The Rural Health Initiative (RHI) mission is to enhance the rural primary care curriculum at the West Virginia School of Osteopathic Medicine (WVSOM) in order to produce graduates uniquely qualified to practice medicine in underserved communities of West Virginia.

- West Virginia School of Osteopathic Medicine third and fourth-year medical students completed 1,689 rural rotations during the academic year 2012-2013.

Rural WV Rotations - 2012 -13 Academic Year



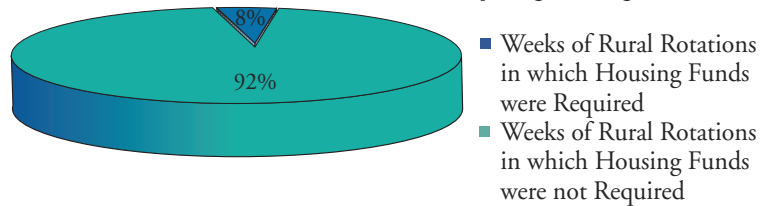
Total WV Rotations - 2012 -13 Academic Year



Housing

- Out of 11,163 weeks of rural West Virginia rotations, WVSOM students utilized Higher Education Policy Commission-sponsored shared housing for 540 weeks, most often when rotating more than 45 miles from their Statewide Campus (SWC) base site.

Percent of Rural Rotations Requiring Housing Funds



Rural Practice Day 2013

- One hundred and eleven WVSOM students attended the Second Rural Practice Day on March 9, 2013 along with alumni, faculty and staff.
- A panel of rural physicians, workshops on wilderness medicine, women in rural medicine, quality of rural life, family life, financial incentives, and displays by rural hospitals/clinics were part of the day's agenda.

Green Coat Program

- The first WVSOM RHI Green Coat Program started on June 24, 2012 at Charleston Area Medical Center (CAMC).
- Two students from University of Charleston, who have a GPA of 3.0 or higher and are majoring in health related fields, were selected by the WVSOM RHI Program Administration Team.
- West Virginia School of Osteopathic Medicine RHI Program provides funding for each student participating in the program and a program coordinator.
- Charleston Area Medical Center agrees to supervise the program and expose the students to a variety of learning experiences such as observing Grand Rounds in Medicine, Surgery, Psychiatry, Pediatrics and OB/GYN. The Volunteers Interacting with Patients program enhances students' communication skills with geriatric patients.
- Additional plans for the Green Coat Program include expansion to other Statewide Campus regions and increasing the number of students participating at CAMC.

Mentor Program

The WVSOM RHI Mentorship Program was created in academic year 2012-2013 with the following goals in mind:

- To encourage RHI students to participate in rotations that will enhance rural primary care.
- To provide RHI students with an identified rural primary care physician who will reinforce their interest in rural primary care practice.
- To demonstrate to the RHI student the quality of life in a rural community.

The RHI Program selects between 12-18 students each year who are linked to WVSOM Statewide Campus sites. (See SWC Map indicating location of RHI Students.)

With the assistance of the Statewide Campus Assistant Regional Deans, the RHI Coordinator assigned a mentor to each RHI student. An RHI Mentor should portray qualities such as strong interpersonal communication skills, positive patient interactions, be a professional role model, have an active involvement within his/her community, and be willing to assist the student's growth. Each RHI Mentor should benefit from the program by gaining an overall satisfaction of reinforcing rural practice to students, enhancing a network of rural mentors to share best practices, and receiving a modest financial enhancement.

The RHI Mentor's role is to be a sponsor, a teacher/coach, and a role model. The first mentor orientation and faculty development session was held during the WVSOM Alumni Association 30th Annual Mid-Winter Osteopathic Seminar on February 2, 2013. A lecture on mentorship for the general physician audience, as well as a face to face, evening interactive session with the RHI Program mentors was held. (Tyler Cymet, D.O., FACP, Associate Vice President for Medical Education at the American Association of Colleges of Osteopathic Medicine was this year's presenter.) Specific program guidelines included recommended contact schedules and methods to be used by the mentors.

Activities

Six RHI Activities during 2012-2013 including:

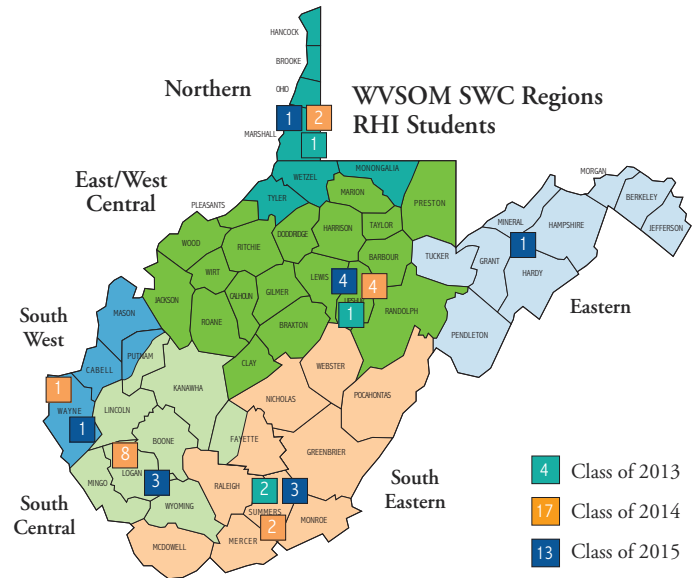
- #1 – Mine Academy in Beaver, WV on August 13, 2012
- #2 – Timber in Ghent, WV on September 21, 2012
- #3 – Search and Rescue at Pipestem State Park on November 11, 2012
- #4, 5 – Chemical Industry and Threat Preparedness in Charleston, WV on January 17-18, 2013
- #6 – Rural Health Workforce Day in Charleston, WV on April 4, 2013

Residency Sign On Incentive

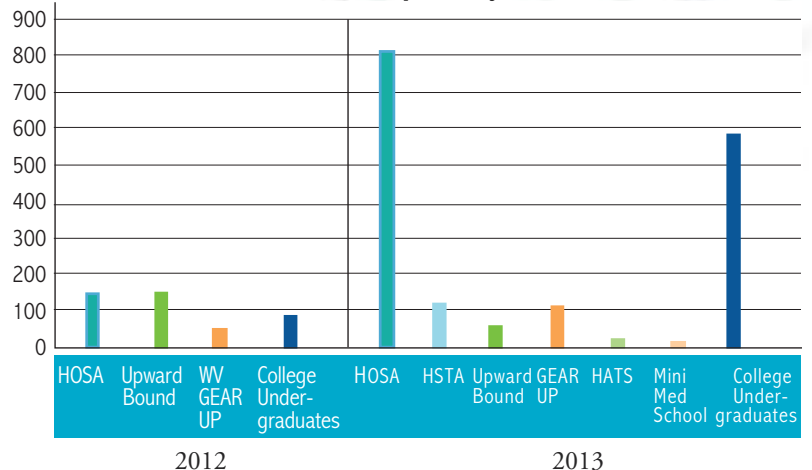
Two of the four WVSOM RHI students from the Class of 2013 received a sign-on bonus for acceptance into the AccessHealth Teaching Health Center Family Medicine Residency Program in Beckley, WV (Raleigh County).

High School Pipeline

The WVSOM RHI Coordinator has teamed up with the WVSOM admissions and recruitment offices and the SWC Assistant Deans and Directors to introduce the RHI program to students at both the high school and college levels. During 2012, a total of 423 students from rural West Virginia were introduced to the RHI program. This year the total is 1,701 students. This is a 402 percent increase from 2012. The RHI program plans to continue collaboration with these pipeline programs (Health Occupations Students of America, Health Sciences and Technology Academy, Heart of Appalachia Talent Search, etc.) throughout the grant cycle. (See table for a breakdown of number of students per program).



Students Impacted by RHI



■ WEST VIRGINIA UNIVERSITY HEALTH SCIENCES CENTER

Promoting Rural Health Careers

Improved Support for Students with Rural Health Interests

In fiscal year 2013, West Virginia University (WVU) awarded six medical students and two dental students with substantial scholarships in exchange for their commitment to practice in an underserved area of the state after graduation. Several funded students are residents of rural counties such as Fayette, Gilmer, Preston and Upshur.

State FY 2013 was the second year of the Rural Track program in the Department of Family Medicine. Students spend four to five weeks at a rural site the summer before medical school and the summer between their first and second year. Additionally, they spend 12 weeks in a rural community in their third year and eight weeks in their fourth year. In FY 2013, the Department of Family Medicine signed on five additional Rural Track medical students for a total of 10 students currently enrolled. Seven of these students received stipends for rural rotations in Fayette, Jefferson, Mercer, Raleigh, Randolph and Wirt counties.

Six additional stipends were awarded to medical students in the Family Medicine Longitudinal Community Scholar and Extern Programs where upcoming first- and second-year medical students complete a summer rotation with a family medicine physician. In addition to spending time in the office of the rural doctor, these students complete a health needs assessment of their preceptor's rural community. Four of these rotations were completed in rural areas in Jefferson, Marshall, Pendleton and Tyler counties.

Participation in Community-Based Clinical Activities

WVU Student/Resident Community-based Clinical Activity between 7/1/12 – 6/30/13

School or Program	Number of students/residents participating in community-based rotations	Number of students/residents participating in rural* rotations	Number of student/resident weeks at rural* sites	Number of student/resident weeks in a primary care medical or dental HPSA**	Number of rural/community-based Adjunct Faculty serving as preceptors***
Dental	45	33	205	118	39
Dental Hygiene	39	30	182	91	
Family Medicine Residents	9	5	20	12	80
Medicine	172	144	549	313	
Med Lab Science	1	1	4		4
Nursing	166	67	758†		88
Nurse Practitioner	31	18	546†	314†	81
Pharmacy	143	102	593		76
Physical Therapy	50	38	312		42
TOTAL	656	438	3,169	848	410

* Rural = the Higher Education Policy Commission definition of rural which excludes Barboursville, Beckley, Charleston (and outlying areas), Clarksburg, Fairmont, Huntington, Hurricane, Martinsburg, Morgantown (including Star City and Westover), Parkersburg, Vienna, Weirton, and Wheeling.

** HPSA = Health Professional Shortage Area. Primary care and Dental HPSA designations by county can be found at <http://hpsafind.hrsa.gov/>.

*** Some preceptors may be counted more than once if used by more than one program.

† Nursing students complete ~15 hours/week. Nurse Practitioner students complete ~500 hours over two full semesters. Students other than nursing and nurse practitioner students complete ~40 hours/week.

Honoraria and Services for Community-Based Preceptors

Efforts to keep quality rural medical preceptors involved in teaching and mentoring have been vital. West Virginia University has affiliation agreements with 181 rural medical facilities and/or individuals to train students. Those physicians who precept medical students fulfilling their rural or community-based requirement are eligible for honorarium payments, and all have online access to WVU libraries. In FY 2013, nine preceptors chose to donate their honoraria to a scholarship fund for students who intend to practice in underserved areas of the state. These preceptors collectively donated \$11,000 to the fund.

Uncompensated Care Provided by Dental and Dental Hygiene Students

The rural dental sites reported providing \$3,708,299 in uncompensated care from July 1, 2012 - June 30, 2013. Dental students treated 3,817 patients and provided 7,966 procedures. Dental Hygiene students treated 2,986 patients and provided 8,598 procedures.

Interprofessional Student Rural Health Interest Group

The new Interprofessional Rural Health Interest Group held six meetings during 2012-13. Students came together to discuss topics that impact rural health care and delivery in the state. In Project R.E.A.C.H (Rural Education Alliance for Community Health), a student-led service project, students provided multiple screening services to more than 300 rural West Virginians in seven counties (Calhoun, Jefferson, McDowell, Mingo, Monongalia, Preston, and Pocahontas).

Facilitating Recruitment and Retention and Interprofessional Team Work in Rural Areas through Subcontracts with Five AHEC Centers

West Virginia University has been the recipient of a federal Area Health Education Center (AHEC) grant since 2000. In June 2012, WVU renewed and expanded its contracts with the five West Virginia AHEC Centers for the following services: a) the scheduling of rotations with preceptors; b) the management of 16 houses across the state used by students from WVU and other institutions on their rural rotations; c) K-16 pipeline programs; d) continuing education activities; and, e) interprofessional education activities.

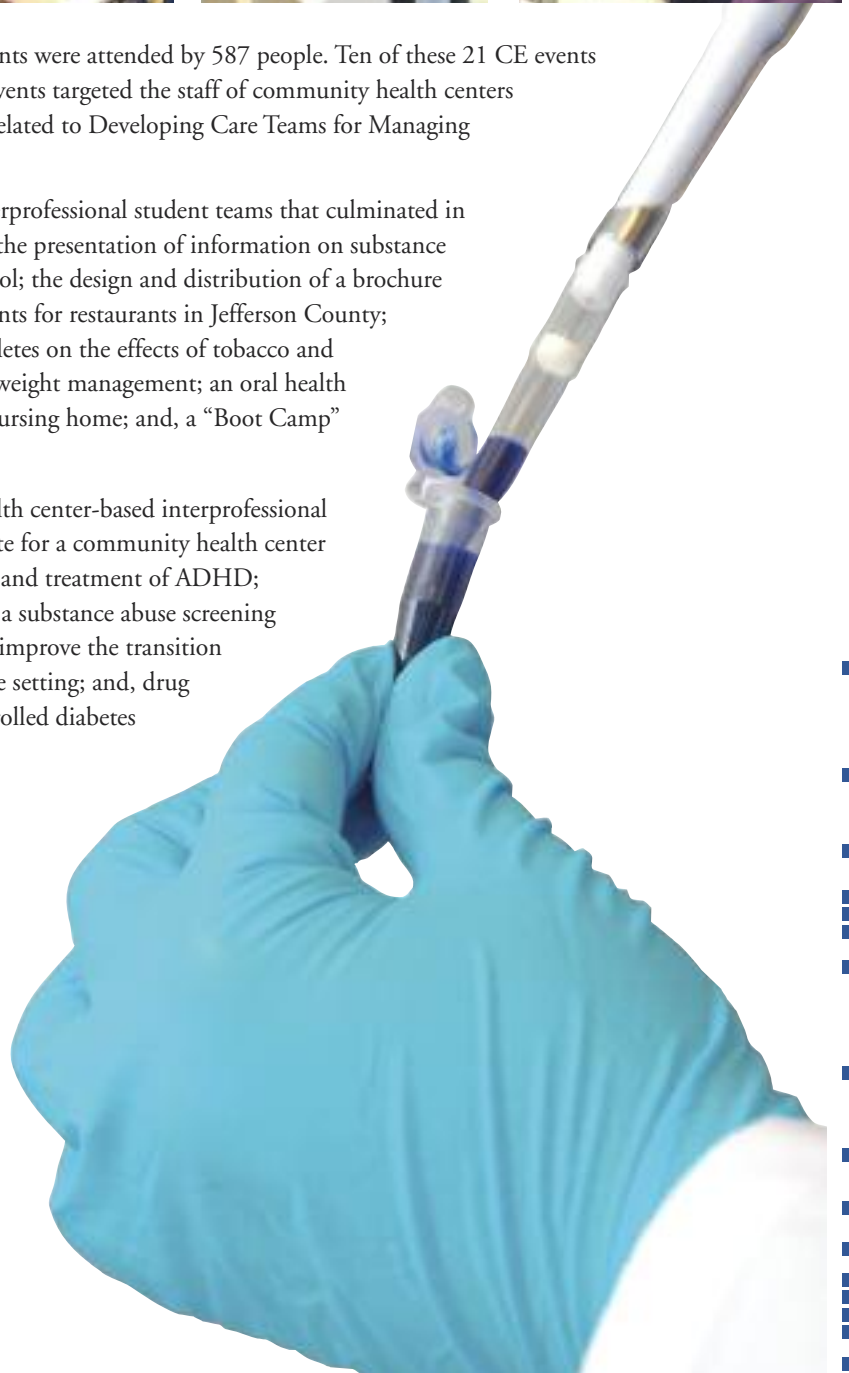
In 2012-13, WVU co-sponsored the following activities with the five AHEC Centers:

- AHEC personnel scheduled 316 clinical rotations for the WVU School of Medicine and WVU Nurse Practitioner program and scheduled housing for 292 clinical rotations. Altogether, students from WVU and non-WVU schools utilized housing for 1,336 weeks.
- Programs for high school students that promote health careers included: high school health career clubs in Berkeley and Grant counties (20-25 hours of programming for a total of 101 students); a shadowing program for four high school students at the Minnie Hamilton Health Center in Calhoun County (120 hours of programming); a health career day (six hours of programming) for students from Randolph (three high schools), Upshur (one high school and one technical center), and Tucker (one high school) counties for a total of 225 students; student advisory clubs for two Kanawha County school-based health centers that gave 13 students the opportunity to provide the health centers with priorities from the student perspective and to learn about health careers (12-14 hours of programming); and, three six to seven hour health careers programs for high school students from southeastern and southwestern counties of West Virginia.





- Twenty-one continuing education (CE) events were attended by 587 people. Ten of these 21 CE events were held in rural locations. Six other CE events targeted the staff of community health centers across the state and covered various topics related to Developing Care Teams for Managing Complex Patients.
- Coordination of five community-based interprofessional student teams that culminated in the following community service projects: the presentation of information on substance abuse to students at a rural elementary school; the design and distribution of a brochure on the advantages of smoke-free environments for restaurants in Jefferson County; an educational program for high school athletes on the effects of tobacco and steroid use and the importance of diet and weight management; an oral health educational program at a Preston County nursing home; and, a “Boot Camp” for seven adolescents at risk for obesity.
- Coordination of 15 federal community health center-based interprofessional teams, which worked on projects appropriate for a community health center setting such as a protocols for the diagnosis and treatment of ADHD; pre-visit planning; a smoking cessation and a substance abuse screening tool; a toolkit for new parents; strategies to improve the transition of care from the hospital to the primary care setting; and, drug utilization reviews on patients with uncontrolled diabetes who were taking multiple medications.



HEALTH SCIENCES

Health Sciences Report Card 2013

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