



WEST VIRGINIA **HEALTH SCIENCES**
and RURAL HEALTH



2014



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INTRODUCTION

Throughout the past year, the Division of Health Sciences has tackled several issues unique to West Virginia, ranging from conducting focus groups with medical students to improvements to the Health Sciences Scholarship Program. The progress made over the past year has ushered in new projects and developments for the Division of Health Sciences and the healthcare landscape of West Virginia.



The Rural Health Initiative (RHI) program continues to support the provision of unique experiences to health profession students and medical residents at 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. Beginning on page 15, this report contains summaries of these program activities over the last year. The RHI program also funded several smaller projects at a variety of institutions including an outreach program to rural dentists, a pilot to improve the use of technology to connect students and preceptors to campuses, and the development of a summer enrichment camp for high school students interested in health professions.

During the 2014 Legislative Session, the Legislature amended the statute governing the Health Sciences Scholarship Program to add dentistry and pharmacy to the list of eligible disciplines and increased the programs award levels. An overview of the 2013-2014 Health Sciences Scholarship program cycle is on page 13.

The Division also hosted focus groups of fourth year medical students at each of the medical schools. The purpose of the focus groups was to learn more about what factors influence medical students in choosing both their practice specialties and practice locations. The focus groups were so informative that the Division is planning to hold future focus groups with medical residents, third year medical students, and other disciplines such as nurse practitioners.

This year the Division began using a new definition of "rural." This definition guides what student rotation sites qualify as rural, where certain grant dollars can be spent, and how practice site data is reported in this document. The previous definition was a "homegrown" definition and a collective recognition emerged that a nationally recognized definition was needed. The Division worked with representatives from the academic health centers to select the Rural-Urban Commuting Area (RUCA) codes developed by the federal Health Resources and Services Administration. The RUCA codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting.

The future health of West Virginia has a bright outlook, thanks to the dedicated individuals who not only teach our students the necessary tools to be a capable healthcare provider, but also encourage our students to provide compassionate care for our citizens.

A handwritten signature in dark ink that reads "Robert B. Walker, M.D." in a cursive style.

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 2013-14 matriculants, the national combined mean MCAT score for students entering allopathic medical schools was 31.3; for students entering osteopathic medical schools the score was 26.9. The national mean grade point average (GPA) for these same allopathic students was 3.69 and for osteopathic students it was 3.52. (Association of American Medical Colleges and American Association of Colleges of Osteopathic Medicine)

MARSHALL UNIVERSITY SCHOOL OF MEDICINE

	2013-14	2012-13	2011-12	2010-11	2009-10
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	80/169 (47%)	59/134 (44%)	70/174 (40%)	78/191 (41%)	94/209 (45%)
Out-of-State	43/1,419 (3%)	76/1,219 (6%)	52/1,252 (4%)	46/1,157 (4%)	28/1,940 (1%)
Total	123/1,588 (8%)	135/1,353 (10%)	122/1,426 (9%)	124/1,348 (9%)	122/2,149 (6%)
Entering Class Mean GPA	3.60	3.53	3.52	3.54	3.52
Entering Class Mean MCAT	27.9	28.3	28.8	28.8	26.7
ACADEMIC YEAR DATA					
First Year New Enrollment					
In-State	53	29	40	48	58
Out-of-State	22	37	31	26	16
Total	75	66	71	74	74
Total Graduates	65	75	64	70	63
Total Medical Students	292	291	295	301	296
Tuition and Fees					
In-State	\$20,806	\$20,080	\$19,476	\$18,536	\$17,688
Out-of-State	\$47,676	\$47,670	\$46,266	\$45,326	\$44,478

WEST VIRGINIA SCHOOL OF OSTEOPATHIC MEDICINE

	2013-14	2012-13	2011-12	2010-11	2009-10
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	65/147	88/173	108/178	59/154	64/134
	(44%)	(51%)	(61%)	(38%)	(48%)
Out-of-State	379/4,183	306/3,893	377/3,342	404/3,298	451/3,162
	(9%)	(8%)	(11%)	(12%)	(14%)
Total	444/4,330	394/4,066	485/3,520	463/3,452	515/3,296
	(10%)	(10%)	(14%)	(13%)	(16%)
Entering Class Mean GPA	3.49	3.40	3.45	3.47	3.43
Entering Class Mean MCAT	24.6	24.1	24.0	25.1	24.1

ACADEMIC YEAR DATA

First Year New Enrollment

In-State	63	75	84	36	51
Out-of-State	130	123	126	166	141
Total	193	198	210	202	192
Total Graduates	184	195	160	197	161
Total Medical Students	817	838	817	806	778

Tuition and Fees

In-State	\$20,950	\$20,950	\$20,950	\$19,950	\$19,950
Out-of-State	\$50,950	\$50,950	\$50,950	\$49,950	\$49,950

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE

	2013-14	2012-13	2011-12	2010-11	2009-10
ENTERING CLASS DATA					
Acceptances/Applicants (Admission Rate)					
In-State	99/231	80/159	78/180	88/196	78/212
	(43%)	(50%)	(43%)	(45%)	(37%)
Out-of-State	72/2,852	84/2,352	94/2,491	91/2,382	81/2,424
	(3%)	(4%)	(4%)	(4%)	(3%)
Total	171/3,083	164/2,511	172/2,671	179/2,578	159/2,636
	(6%)	(7%)	(6%)	(7%)	(6%)
Entering Class Mean GPA	3.79	3.77	3.71	3.75	3.73
Entering Class Mean MCAT	29.0	28.3	28.4	28.4	29.0

ACADEMIC YEAR DATA

First Year New Enrollment

In-State	77	67	61	64	69
Out-of-State	33	39	43	40	41
Total	110	106	104	104	110
Total Graduates	78	106	100	94	103
Total Medical Students	404	423	430	424	432

Tuition and Fees

In-State	\$26,604	\$24,248	\$23,118	\$22,122	\$21,270
Out-of-State	\$53,028	\$51,473	\$49,728	\$47,884	\$46,018

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 2011 is 97 percent.

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

	2011	2010	2009	2008	2007
Marshall University	55/58 (95%)	57/59 (97%)	45/49 (92%)	34/38 (89%)	45/46 (98%)
West Virginia University	93/93 (100%)	91/91 (100%)	89/91 (98%)	77/79 (97%)	93/95 (98%)

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

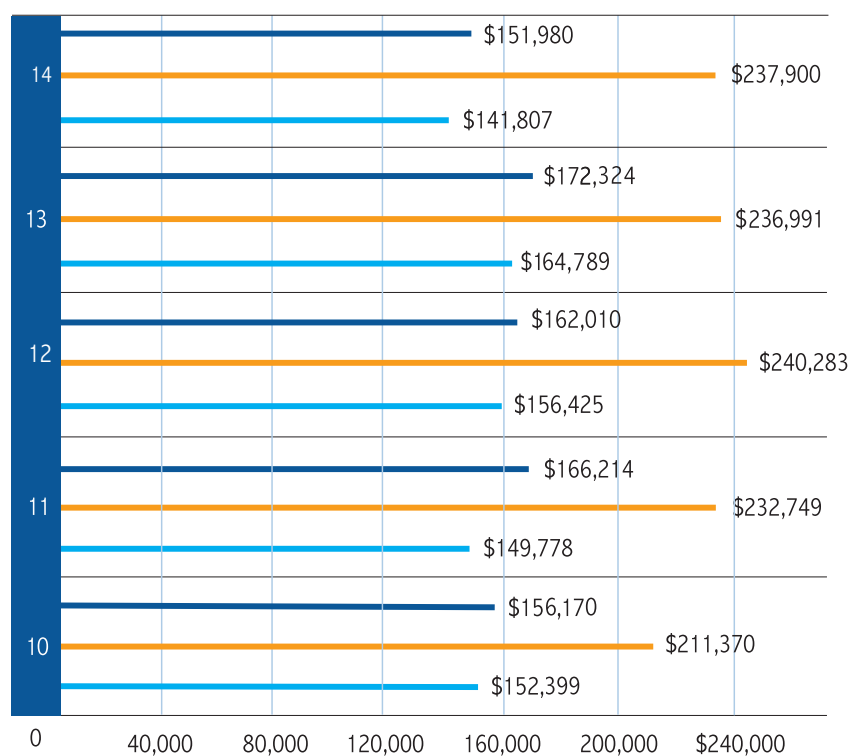
	2011	2010	2009	2008	2007
West Virginia School of Osteopathic Medicine	180/191 (94%)	134/136 (99%)	91/99 (92%)	85/94 (90%)	83/93 (89%)

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
2014	\$151,980	\$237,900	\$141,807
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



- Marshall University
- West Virginia School of Osteopathic Medicine
- West Virginia University





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

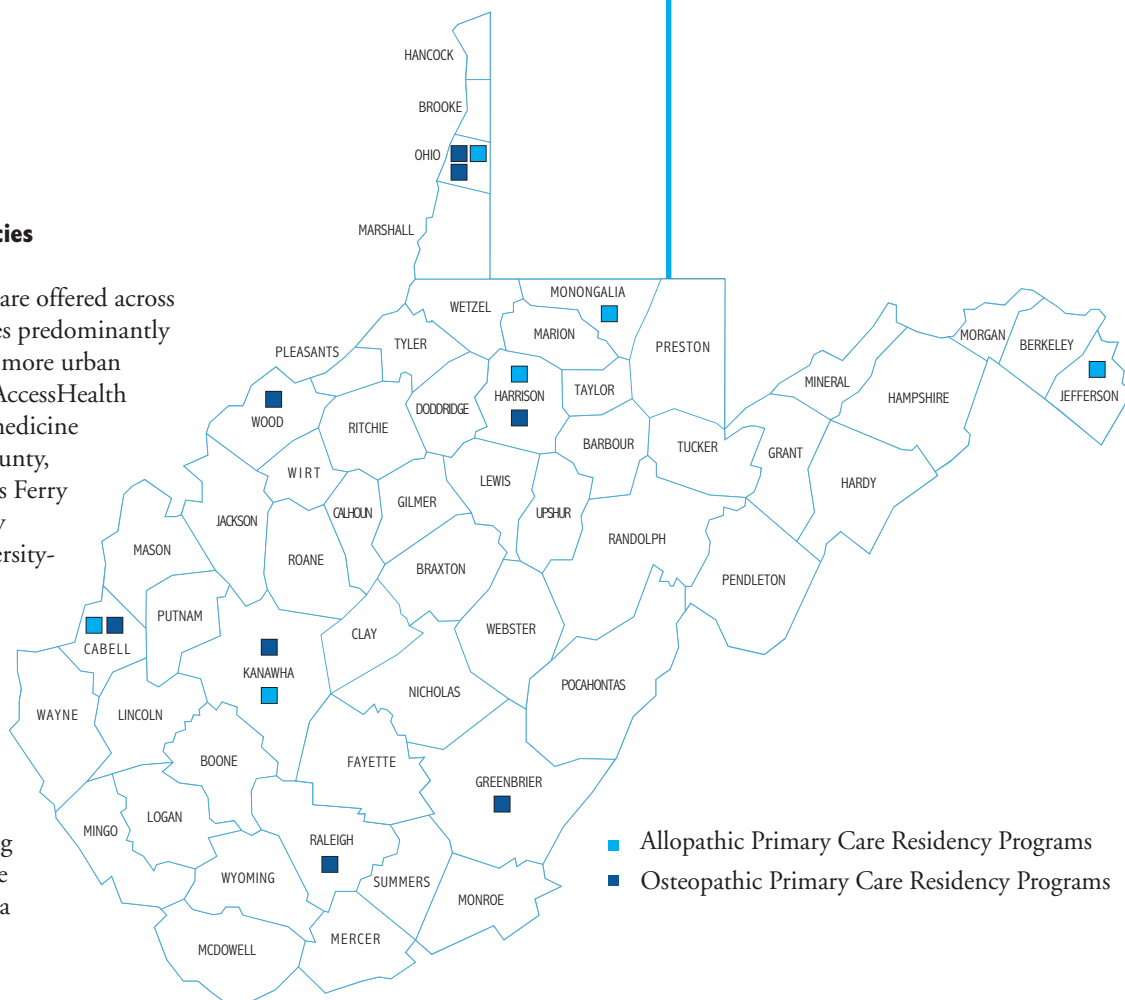
All three West Virginia medical schools frequently place graduates in primary care residency programs at a rate above the national average for these same programs. For the 2014 residency match, the national average was 57 percent. (National Resident Matching Program)

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

	2014	2013	2012	2011	2010
Marshall University	33 (51%)	44 (60%)	41 (64%)	37 (54%)	37 (60%)
West Virginia School of Osteopathic Medicine	126 (68%)	133 (68%)	107 (68%)	123 (65%)	119 (72%)
West Virginia University	40 (51%)	48 (47%)	43 (43%)	38 (41%)	51 (50%)

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.



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

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.

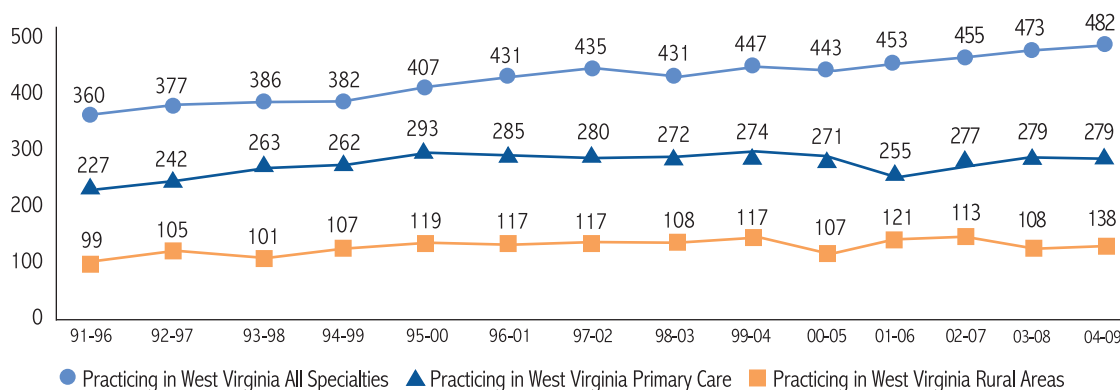
- Primary Care is defined as family medicine, internal medicine, internal medicine/pediatrics, obstetrics/gynecology, and pediatrics.
- Rural areas include all areas of the state with a 2006 Rural Urban Commuting Area (RUCA) code of 4.0 or higher. These codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting. The most recent RUCA codes are based on data from the 2010 decennial census and the 2006-10 American Community Survey.
- Data is provided only for graduates who have completed their residency training.

Between 2004 and 2009, 1,263 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. Eleven percent of the graduates in this cohort are practicing in rural West Virginia and 22 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 2004-2009

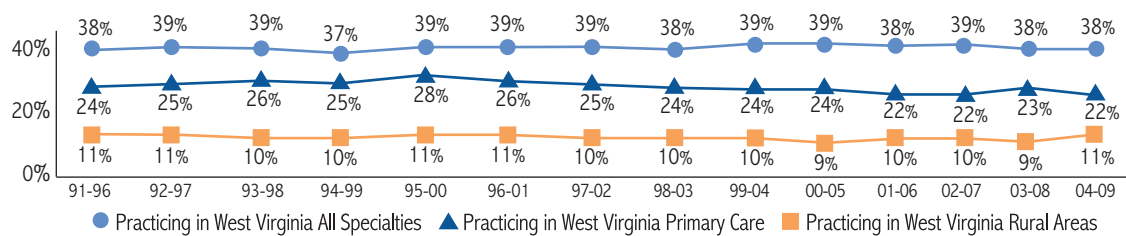
	Total Number	In Practice in WV	In Primary Care in WV	In Rural Areas of WV
Marshall University	232	102 (44%)	59 (25%)	12 (5%)
West Virginia School of Osteopathic Medicine	508	186 (37%)	118 (23%)	78 (15%)
West Virginia University	523	194 (37%)	102 (20%)	48 (9%)
TOTAL	1,263	482 (38%)	279 (22%)	138 (11%)

Number of West Virginia Medical School Graduates Retained, Graduating Classes of 1991-2009

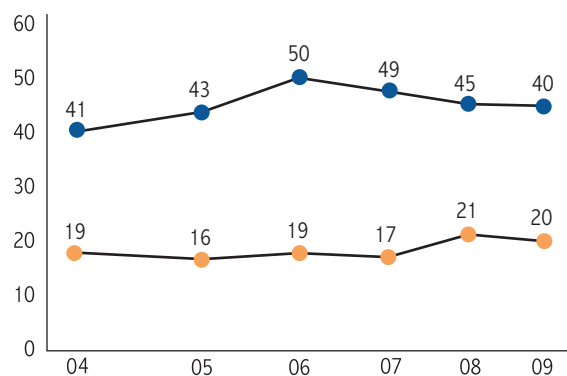




Percentage of West Virginia Medical School Graduates Retained, Graduating Classes of 1991-2009



Number of West Virginia Medical School Graduates Practicing Primary Care or in Rural Areas, Graduating Classes of 2004-2009



- Number in Practice in Primary Care in West Virginia
- Number in Practice in Rural Areas of West Virginia



MEDICAL SCHOOL GRADUATE RETENTION

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

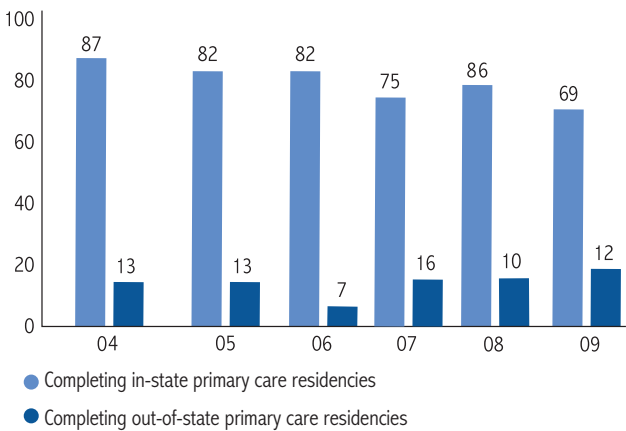
The table below illustrates recruitment of the most recent six-year cohort of West Virginia medical school graduates to all 55 counties of West Virginia. This information must be interpreted carefully, however. It is a snapshot of the placement of the most recent West Virginia medical school graduates 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 2004-2009

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	2	2	2	Mineral	2	2	2
Berkeley	7	0	5	Mingo	0	0	0
Boone	6	6	5	Monongalia	93	0	33
Braxton	0	0	0	Monroe	0	0	0
Brooke	1	0	1	Morgan	2	2	2
Cabell	76	0	43	Nicholas	5	5	4
Calhoun	0	0	0	Ohio	30	0	18
Clay	0	0	0	Pendleton	1	1	1
Doddridge	1	1	1	Pleasants	0	0	0
Fayette	6	7	7	Pocahontas	4	4	4
Gilmer	0	0	0	Preston	2	2	2
Grant	1	1	0	Putnam	8	0	8
Greenbrier	21	21	14	Raleigh	11	11	8
Hampshire	1	1	0	Randolph	9	9	4
Hancock	1	0	1	Ritchie	2	0	1
Hardy	0	0	0	Roane	1	1	1
Harrison	22	22	16	Summers	1	1	1
Jackson	2	2	2	Taylor	0	0	0
Jefferson	7	1	5	Tucker	0	0	0
Kanawha	104	0	52	Tyler	0	0	0
Lewis	2	2	2	Upshur	6	6	5
Lincoln	0	0	2	Wayne	3	0	0
Logan	1	1	0	Webster	2	2	1
Marion	7	7	4	Wetzel	2	2	1
Marshall	0	0	0	Wirt	1	0	1
Mason	2	2	1	Wood	8	0	6
McDowell	0	0	0	Wyoming	0	0	0
Mercer	15	15	10	TOTAL	482	138	279

Percentage of West Virginia Medical School Graduates Completing Primary Care Residencies Retained, Graduating Classes of 2004-2009

The location of a medical school graduate’s residency program frequently predicts whether that graduate will practice in West Virginia. For the 2009 graduating class of West Virginia medical schools, 126 graduates went on to complete primary care residency programs (42 in-state and 84 out-of-state). Upon completing residency, 69 percent of the graduates who completed in-state primary care residencies were retained in West Virginia to practice, while only 12 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

	2013	2012	2011	2010	2009
Graduates	45	46	48	47	50
Practicing in West Virginia	22 (49%)	25 (54%)	18 (38%)	19 (40%)	31 (62%)

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

	2013	2012	2011	2010	2009
Graduates	73	82	83	84	73
Practicing in West Virginia	52 (71%)	54 (66%)	53 (63%)	55 (64%)	47 (64%)

FAMILY NURSE PRACTITIONER:

West Virginia University Family Nurse Practitioner Graduates Retained, by Graduating Class

	2013	2012	2011	2010	2009
Graduates	43	42	42	48	27
Practicing in West Virginia	39 (91%)	33 (79%)	33 (79%)	42 (88%)	22 (81%)

Marshall University

Family Nurse Practitioner Graduates Retained, by Graduating Class

	2013	2012	2011	2010	2009
Graduates	52	60	43	42	30
Practicing in West Virginia*					

* Data on retention was 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. 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. This year, dental students and pharmacy students were added to the Health Sciences Scholarship Program. Dental students will receive a \$20,000 award and pharmacy students will receive a \$10,000 award for a two-year service commitment.

Since 1995, 156 participants have completed their service obligation. In 2013-14, 19 awards totaling \$230,000 were given to:

- Four medical students
- Eight nurse practitioner students
- One nurse educator student
- Four physical therapy students
- One midwifery 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

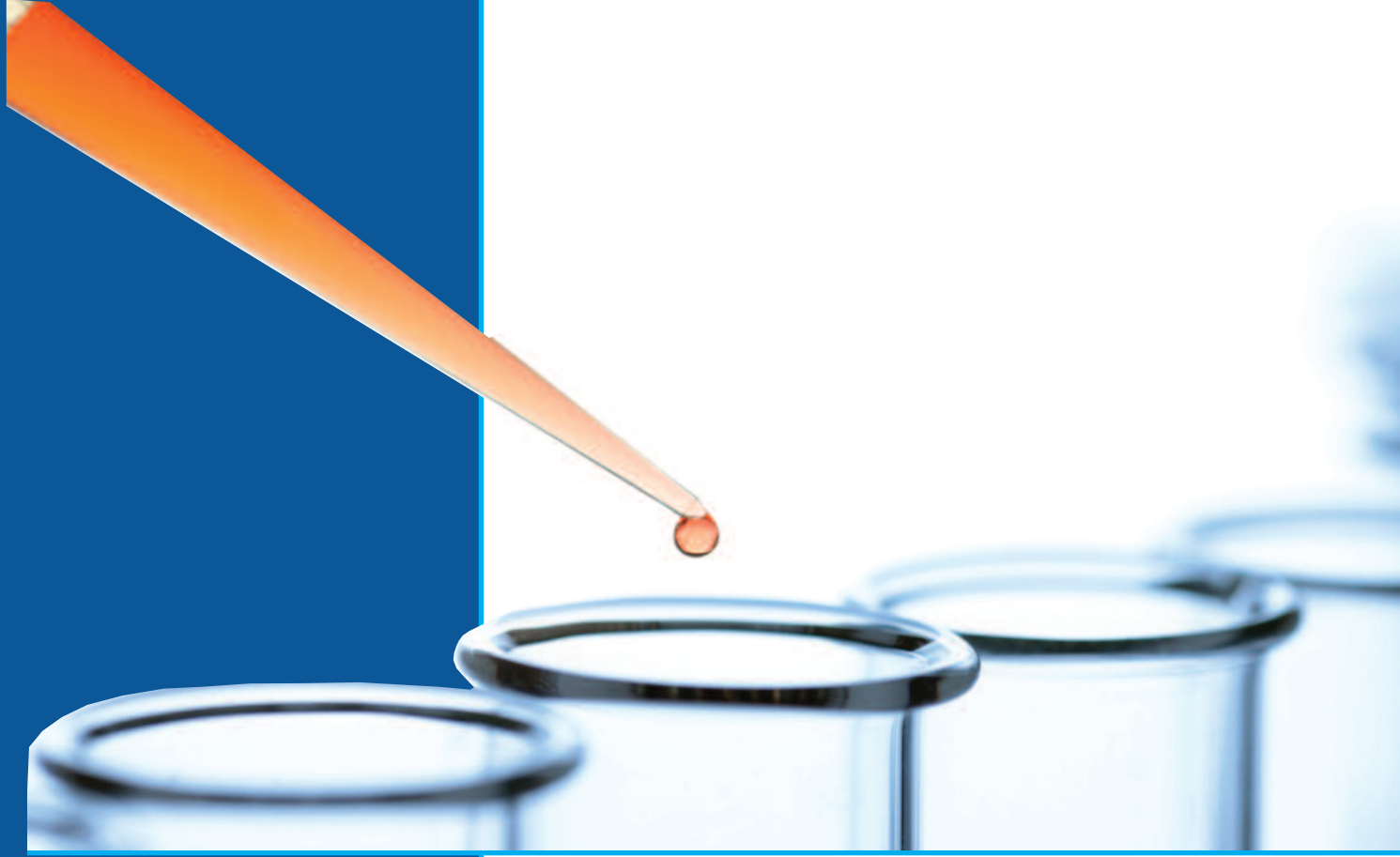
	2013-2014	2012-2013	2011-12	2010-11	2009-10
Loans Awarded in Fiscal Year	245	273	256	224	289
Total Amount Awarded	\$1,523,500	\$1,589,301	\$1,379,420	\$1,350,194	\$2,033,237
Amount of Unexpended Funds*	\$1,811,521	\$1,781,561	\$1,983,043	\$1,944,894	\$1,877,002
Loan Postponement**	26	30	16	14	23
Loan Forgiveness ***	48	40	36	44	49
Default Rate on Previous Awards	1.80%	1.9%	2.2%	2.6%	2.7%

* 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.





Rural Health Initiative

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 the 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 2014.



Marshall University Rural Health Initiative Program

The Marshall University Joan C. Edwards School of Medicine (JCESOM) 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.

1. Increase the recruitment of healthcare providers to rural areas

Rural Health Scholars

Students and residents in primary care are selected as Rural Health Scholars based on their interest in rural medicine and commitment to practicing in West Virginia. This year there were six Rural Health Scholars. Rural Health Scholars have opportunities to participate in rural clinical rotations, rural research, community-based initiatives, and incentives. In addition, they can serve as a resource for other students and residents considering rural health. The Center for Rural Health at JCESOM has identified competencies for the program that mirror the American College of Graduate Medical Education competencies for medical education. The adoption of these competencies will assure that Rural Health Scholars are better prepared to practice in rural or underserved communities.

Rural Research

Conducting research on rural topics gives students and residents opportunities to learn about study design and methodology while becoming immersed in a rural community or health issue. Students and residents, with faculty mentors, can apply for rural research grants to support projects, which could enhance rural healthcare, lead to more effective health promotion and disease prevention programs, and address barriers to care. This year, rural research has been conducted on topics such as cardiovascular disease in rural women, food security and obesity, and exploring inter-hospital acute care transfers from rural hospitals.



Health Policy

The Health Policy Fellows Program was created to encourage interest in health policy, with an emphasis on rural health. This program is open to both students and residents, and this year three fellows participated. Kimberly R. Becher, M.D., a recent residency graduate and Health Policy Fellow, participated in key health policy meetings of the state legislature and served as a physician resource to legislative leaders. Last year Dr. Becher was elected by her fellow family medicine residents nationally as the sole resident member of the American Academy of Family Physicians Board of Directors.

2. Increase the retention rate of healthcare providers in rural areas

Rural Health Fellowship

Newly graduated residents beginning their residencies can participate in a rural health fellowship program. The program strengthens their ties to the medical school after graduation and can reduce the isolation of rural practice, while allowing them to explore additional clinical areas they might not have had time for during residency. The Rural Health Fellowship has allowed Tracy Hendershot, M.D. in Wirt County to complete a Chief Medical Officer Manual that guides his daily work and improves work flow in a rural health center.

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

Middle and High School Programs

The Center for Rural Health and the JCESOM have developed a very active pipeline program that begins in middle school and continues through high school, college, medical school, residency training, and into practice. This program includes dozens of initiatives along the pathway to increase exposure to health professions careers. Evaluative data indicates a high level of satisfaction among participants, as well as increased knowledge about healthcare careers.

Activity Highlights

- One hundred and fifty-eight middle school students participated in four events in McDowell County.
- In total, 2,500 students from 31 high schools in 15 counties participated in 60 events.
- Post-testing indicated a 72 percent increase in health career knowledge this year, and the survey indicated a 100 percent satisfaction with the program from representatives of the surveyed schools.
- Seven hundred and forty-five students participated in 20 collaborative events with state and federal programs such as Health Occupations Students of America (HOSA), Health Sciences and Technology Academy (HSTA), and GEAR UP.

Summer Academy

A residential week-long academy was held on the Marshall campus on June 9-13, 2014 to prepare undergraduate students who intend to apply to medical school. Academy participants included 13 students from Bethany College, Concord University, Marshall University, West Virginia Wesleyan College, Shepherd University, and Hampton College in Virginia. Students gave highest ratings to their contact with medical students, residents, and physicians; mock interviews; and study/test-taking tips.

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

Southern West Virginia Teaching Hub in Logan County

The Chapmanville teaching hub uses technological and human resources to work on chronic healthcare problems in the southern region, while implementing educational objectives and research activities. This unique approach is anticipated to increase recruitment and retention of healthcare providers in the area, and also improve the overall well-being of the communities. Fifty-three registered nursing students from Southern West Virginia Community and Technical College did rotations in the fall semester at the Chapmanville site. Additionally, the Center for Rural Health works in collaboration with Tug River Health Association and Valley Health Systems in Southern West Virginia.

Rural Residency Program

The Rural Residency Program is a collaborative educational partnership with Lincoln Primary Care Center. The program allows Family Medicine residents to complete continuity care clinics in rural primary care, as well as schedule rotations in rural obstetrics, pediatric and adolescent care. Residents also can work in Mingo County in a specialty clinic.

Underserved Populations

Residents and students have opportunities to participate in education and service to underserved urban populations. These populations face similar issues of transportation and access to health care as those who live in rural communities. Six Family Medicine residents participated in multiple clinical activities at Ebenezer Clinic, a local free clinic. Mobile medical outreach events for the homeless were held once a month, with 40-50 students and residents, supervised by faculty, participating at each event. Approximately 950 patients were seen.



WVSOM Rural Health Initiative Program

The Rural Health Initiative's 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.

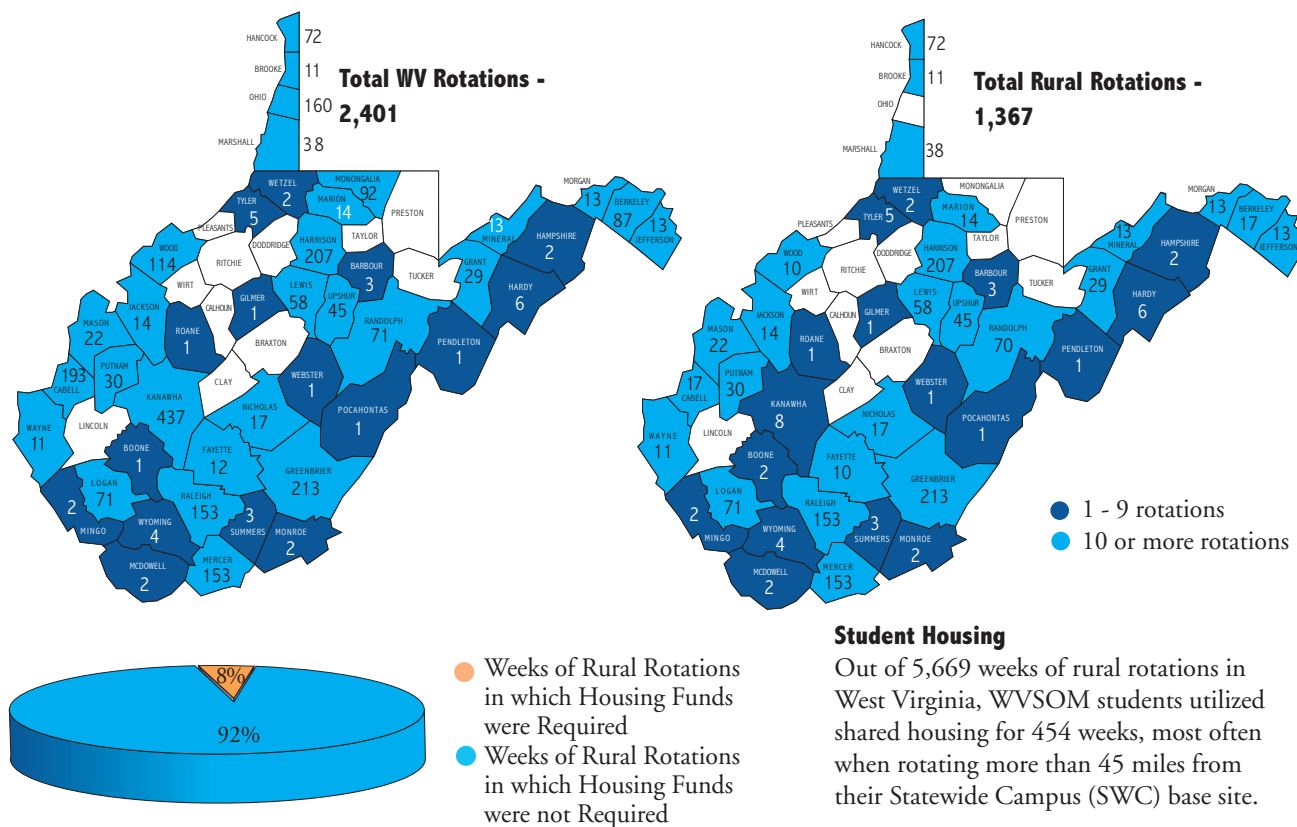
1. Increase the recruitment of healthcare providers to rural areas

RHI Rural Practice Day 2014

- The third annual Rural Practice Day Event was held on March 8, 2014 on the WVSOM campus and was attended by 93 WVSOM students, as well as alumni, faculty, staff, and rural hospitals/clinics.
- Breakout sessions were held on Wilderness Medicine, Women in Rural Medicine, and Practice Management.

Rural Rotations

West Virginia School of Osteopathic Medicine third and fourth year students completed 1,367 rural rotations during state fiscal year 2014 (FY 2014).



2. Increase the retention rate of healthcare providers in rural areas

Residency Sign on Incentive

Six of the 13 WVSOM RHI Graduates (a select cohort of students interested in rural practice who applied and were selected to participate in the WVSOM RHI Program) from the class of 2014 received a sign-on incentive for acceptance into primary care residency programs in West Virginia.

Mentor Program

The mentorship program goals for RHI students include:

- Participation in rotations that will enhance rural primary care;
- Reinforcement of their interest in rural primary care through mentor interactions; and,
- Provide a linkage to the quality of life in rural communities.

All RHI students received a mentor who contacted the student by email, text/phone, or in person. Mentors submitted report forms monthly to document their interactions with the students and track students' continuing interest in rural primary care.

Currently, the RHI program has 16 mentors. During FY 2014, the mentors contacted the students 29 percent by email, 55 percent by text/phone, and 16 percent in person.

Seven RHI mentors attended the Mid-Winter CME mentor workshop held on Saturday, February 1, 2014 in Charleston, which focused on optimum documentation of student/mentor interaction.



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

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 FY 2014, the RHI program impacted 1,570 students from rural West Virginia. The RHI program plans to continue collaborations with these organizations throughout the grant cycle.

Green Coat Program

The WVSOM RHI Green Coat Program was established in 2012-2013 to offer undergraduates a unique opportunity to gain exposure to clinical responsibilities in a hospital environment. Students are mentored by WVSOM SWC regional assistant deans, alumni, and other healthcare professionals.

Two students from the University of Charleston completed the first WVSOM RHI Green Coat Program at Charleston Area Medical Center (CAMC) on March 29, 2014.

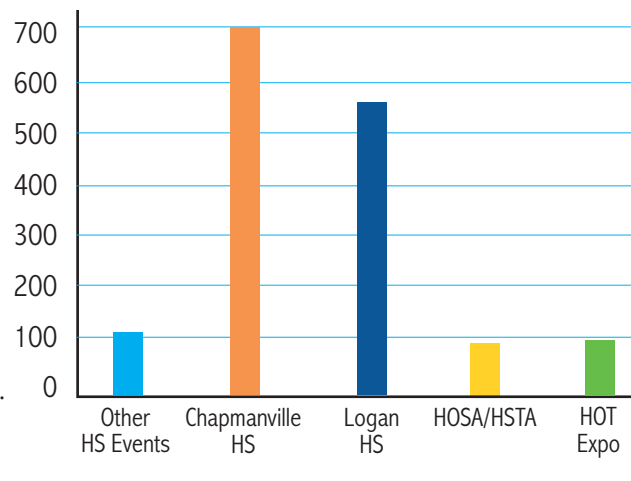
- One Green Coat student was accepted by WVSOM into its class of 2018.
- One Green Coat student was accepted to Marshall University's medical school into its class of 2018.
- A second group of four students from the University of Charleston were selected and began the Green Coat Program at CAMC on August 1, 2014.

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

Community Outreach

- Eight class of 2016 RHI students educated the public at the West Virginia State Fair on the "Consequences of Diabetes." Nearly 400 attendees visited the RHI booth for one-on-one interactive educational sessions. Students reported the attendees appreciated the knowledge they gained.

Students Impacted by RHI



Community Outreach Continued

- On November 4, 2013, the South Central SWC Regional Assistant Dean and the RHI Program planned a local public health department presentation to RHI students regarding public health inspections and food safety.
- On June 14, 2014, the RHI Coordinator and two RHI students attended the Health Education Day for Senior Citizens at the Renick Community Center.

RHI Activities

RHI activities seek to acquaint RHI students with statewide industries to understand environmental exposures that could cause injury/diseases in rural patients.

Six RHI Activities occurred during FY 2014 including:

- Oil and Gas Industry, Weston, on October 25, 2013
- Memorial Tunnel, Charleston, on November 4-5, 2013
- Coal Mine Industry, Beaver, on December 4-5, 2013
- Rural Workforce Day, Charleston, on January 16, 2014
- Poultry Industry, Moorefield, on March 16-17, 2014
- Underground Mine Tour, Eccles, on April 28-29, 2014



West Virginia University Rural Health Initiative Program

1. Increase the recruitment of healthcare providers to rural areas

Support for Students with Rural Health Interests

In state fiscal year 2014 (FY 2014), West Virginia University (WVU) awarded substantial scholarships to three medical students (from Mineral, Randolph and Wirt counties) and two dental students (from Grant and Webster counties) in exchange for their commitment to practice in an underserved area of the state after graduation. Additionally, WVU supplemented a scholarship provided by Community Care of West Virginia, a Federally Qualified Health Center (FQHC), for two second-year primary care residents at \$500 per month for six months. These two residents have committed to practice in Clay and Pocahontas counties at the end of their residency in 2015. These scholarship recipients will be tracked over the next several years to assess recruitment and retention efforts.

State FY 2014 was the third year of the Rural Track program in the WVU Department of Family Medicine. Students spend three to four 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 of medical school. In the Spring of 2014, the Department of Family Medicine signed on five additional rural track medical students for a total of 16 WVU medical students currently in the rural track. Nine of these students received stipends in FY 2014 for June rotations in Clay, Jefferson, Mercer, Nicholas, Preston, Raleigh, Randolph, Taylor and Wirt counties.

Eleven 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 a rural or underserved area. These rotations took place in Jackson, Jefferson, Marshall, Mineral, Pendleton, Pocahontas, Raleigh, Taylor, Tyler and Upshur counties.

The student Interprofessional Rural Health Interest Group held five meetings where students discussed topics that impact rural health care and delivery in the state. Additionally, students who participated in Project R.E.A.C.H (Rural Education Alliance for Community Health), a student-led service project, provided multiple screening services to more than 410 primarily rural West Virginians in five counties (Cabell, Hampshire, Mercer, Mingo and Monongalia).

Housing for Students on Rural Rotations

Since June 2012, WVU has maintained contracts with the five West Virginia Area Health Education Centers (AHECs) for services that include the management of 16 houses across the state used by students from WVU and other institutions while on their rural rotations. During FY 2014, the AHECs scheduled 1,239 weeks of student housing in rural areas for 326 WVU and non-WVU clinical rotations.



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 or community-based Adjunct Faculty serving as preceptors****
Dental	50	36	228	155	45
Dental Hygiene	33	26	122	84	
Family Medicine Residents	6	6	23	23	86
Medicine	193	108	428	406	
Med Lab Science	2	2	7	-	5
Nursing	133	99	1,485	-	32
Nurse Practitioner	45	26	824	678	45
Pharmacy	99	90	863	-	78
Physical Therapy	44	32	272	-	44
TOTAL	605	425	4,252	1,346	335

* Rural is defined as sites that have a Rural Urban Commuting Area code of ≥ 4 .

* WVU Nursing students completed ~8 hrs/week; WVU Institute of Technology nursing students completed 12 hrs/week; NP students completed ~500 hours over two full semesters. Students other than nursing and nurse practitioner students completed ~40 hrs/week. Residents completed ~ 30-40 hrs/wk (3.5 days/week).

*** HPSA is a Health Professional Shortage Area. Numbers of dental and dental hygiene student-weeks are the number of weeks in a dental HPSA; numbers of resident, medical and nurse practitioner student-weeks are the numbers of weeks in a primary care medical HPSA.

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

2. Increase the retention rate of healthcare providers in rural areas

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 208 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 preceptors also receive online access to WVU libraries. In FY 2014, 11 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 \$13,000 to the fund.

Uncompensated Care Provided by Dental and Dental Hygiene Students

In addition to providing dental care for those West Virginians who cannot afford it, WVU dental students help to reduce the demand for dental services in rural areas. The rural dental sites reported providing \$3,040,997 in uncompensated care from July 1, 2013 - June 30, 2014. Dental and dental hygiene students performed more than 13,718 procedures.

Continuing Education for Rural Providers

The WVU contract with the five AHECs provided support for continuing education (CE) programs. Forty CE events were offered and attended by 1,467 people, 818 of whom were from a rural workplace.

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

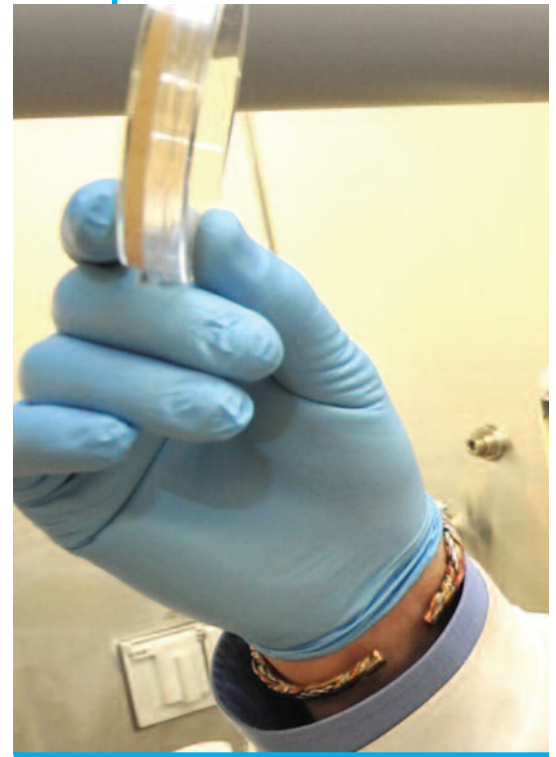
Interprofessional Learning Opportunities for Students

The development of interprofessional team-building skills by rural healthcare professionals assists in effectively managing a heavy workload and providing high-quality care. West Virginia University contracted with four of the five AHECs to coordinate interprofessional team experiences for students at rural sites or at FQHCs. Nineteen interprofessional teams of two to five students each met an average of four times to address a variety of topics including multiple hospital readmissions, cervical screenings, polypharmacy, and diabetes prevention. Seventy-one students in the disciplines of dentistry, dental hygiene, medicine, nursing, nurse practitioner, pharmacy, physical therapy, and physician assistant participated in these teams.

4. Develop pipeline programs to enhance student interest in health care activities

West Virginia University provided support for field trips for 11 Health Sciences and Technology Academy (HSTA) clubs comprised of 393 disadvantaged and minority high school students. In addition, WVU contracted with the five AHECs to provide pipeline programs in their areas. Some of these programs included:

- Two high school health career clubs in Berkeley and Grant counties that provided 20-27 hours of programming for a total of 82 students (Eastern AHEC).
- A shadowing program of approximately 120 hours in duration for four Calhoun County high school students at the Minnie Hamilton Health Center, an FQHC in Calhoun County (Northern WV AHEC).
- An eight hour event for 400 Greenbrier East and West high school students to learn about health professions (Southeastern AHEC).
- A four and one half hour health career fair at River View High School in McDowell County for 421 students (Southern AHEC).



Health Sciences Report Card 2014

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