A Report
to the
Joint Commission on Healthcare
by the
Edward Via Virginia College of Osteopathic Medicine

October 17, 2007

Introduction: Osteopathic Medicine

- Osteopathic physicians (D.O.) are licensed in all 50 states to practice the full scope of medicine.
- Osteopathic colleges teach the same medical knowledge in four years as their allopathic counterparts including the most current diagnostics techniques and treatment, however osteopathic colleges emphasize restoring the health of the patient, preventing disease, and primary care. Osteopathic students also learn musculoskeletal manipulation as a form of treatment.
- Osteopathic graduates enter all specialties from family medicine to cardiology to neurosurgery. The greatest numbers still occur in the primary care residencies.

The VCOM Success Story

The Edward Via Virginia College of Osteopathic Medicine's (VCOM) *MISSION* is to provide osteopathic primary care physicians for the rural and underserved areas of Virginia, North Carolina, and the Appalachian region.

VCOM is a private medical school in the Corporate Research Center of Virginia Tech. VCOM was founded with monies from the Bradley-Via foundations, to benefit Southwest Virginia and to promote biomedical research at Virginia Tech. VCOM has a collaborative agreement with Virginia Tech for research and select student services. The relationship demonstrates the effectiveness of a public-private partnership.

- **VCOM, the fourth medical school in the Commonwealth, is a private osteopathic medical school and receives no state funds for students or operations.**
- **VCOM was founded in 2001 and graduated the first class in 2007. There are over 600 medical students currently enrolled at VCOM.**
- **VCOM received full accreditation in 2007 from the A.O.A. Commission on Osteopathic College Accreditation (COCA), the accrediting agency recognized by the United States Department of Education (USDE).**
- **VCOM underwent all five on site annual accreditation reviews without one deficiency (a record), demonstrating our commitment to quality.**

Physicians for the Rural & Medically Underserved Areas of Virginia

2007 VCOM Student from Waynesboro

- To meet the VCOM mission we must:
  - Recruit students from rural and underserved areas of Appalachia
  - Train students in the rural and medically underserved region, and
  - Provide the incentives for primary care physician graduates to return to the region

Recruitment

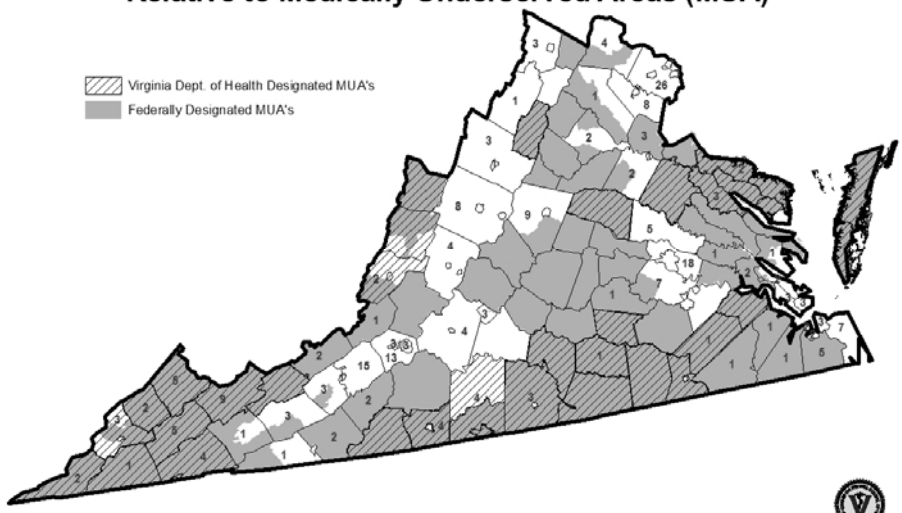
- VCOM recruitment plan is to recruit students most likely to meet the needs of the underserved.
  - We focus our recruitments efforts with Colleges most likely to train students from rural Appalachia and Virginia.
  - We provide pipeline recruitment programs in rural Appalachia.
- With over 2500 applicants for 150 positions, it is who you interview first. To meet the mission, VCOM
  - Seeks and Interviews Rural Appalachian and Virginia students first
  - Seeks and Interviews under-represented minority students first.

Recruitment

- Of the over 600 students enrolled in the first four years,
  - 350 are from the target Appalachian region
  - 255 are from Virginia
  - 139 are from medically underserved counties of Virginia
  - 103 students are under-represented minorities (African American, Latino, and American Indian).

Class of 2007

Edward Via Virginia College of Osteopathic Medicine
Home County of Medical Students (in red)
Relative to Medically Underserved Areas (MUA)



Data Sources: VCOM Student Affairs (9/2007); Virginia Dept. of Health for state MUA designation (updated 9/2006); For information on state MUA's contact VDH HHS's Bureau of Health Profession for Federal MUA (still used for healthcare qualifications by federal agencies but hasn't been updated in over 10 years). For information on Federal MUA's contact the Bureau of Health Professions website: http://bhpr.hrsa.gov/shortage/muaguide.htm

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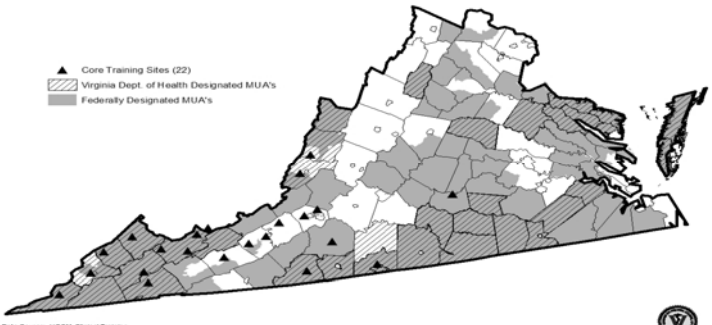
- To retain graduates, VCOM must train students to practice in rural and medically underserved areas.
- VCOM provides telecommunications, electronic medical libraries, telecommunications, and educational resources to the 22 rural and small community training hospitals.

Location of Current Residency Programs Relative to All Hospital Sites and the Medically Underserved Areas



Data Source: VCOM Clinical Training
VDH MUA designation (updated 9/2006); For information on state MUA's contact VDH http://www.vdh.virginia.gov/healthpolicy
HHS's Bureau of Health Profession
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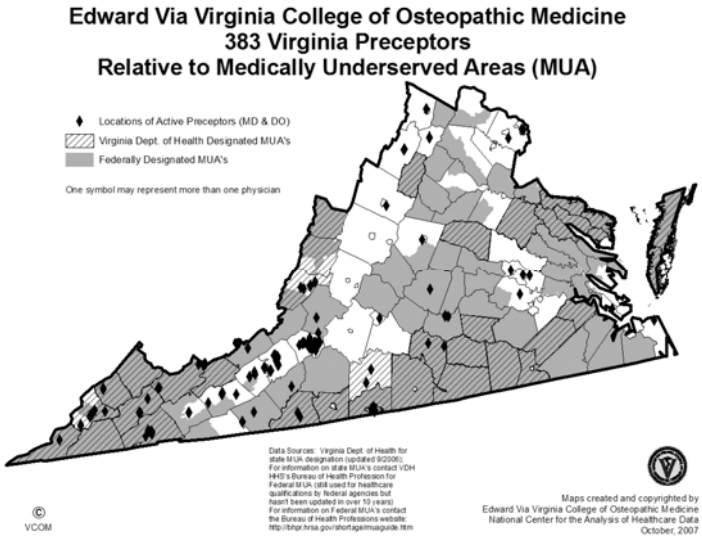
VCOM provides additional salary to rural physicians who serve as VCOM clinical faculty, this creates financial incentives to physicians who practice in rural and medically underserved areas.



VCOM Provides Medical Outreach in Rural Virginia

Each Friday:

- Faculty and students staff 5 free clinics. Thousands of uninsured patients have received free care over the past four years.
- Weekly Appalachian health literacy outreach is provided through “mini-medical schools” which are held in rural high schools to interest students in science and health, and to provide prevention on prescription and illicit drug abuse, STDs, and obesity.
- Weekly mobile clinics provide head start physicals, free health screenings, and free medical care in remote rural communities in Southwest Virginia. (Appalachian Medical Missions)
- Faculty and students provide weekend outreach health fairs throughout the year.

VCOM Provides Global Health Training

In addition to Appalachia, VCOM has sustainable year round clinics in El Salvador, Dominican Republic, and Honduras.

- Students gain an understanding of the benefits of providing compassionate and altruistic care to the underserved.
- Students gain an understanding of the importance of pubic health.
- Students develop skills to work in non-urban environments.

VCOM Medical Students and Faculty Have Responded to Provide Disaster Relief

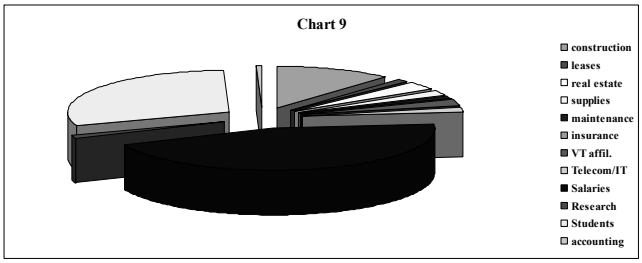
Each year VCOM students train in a live mock disaster following several days of disaster training.

VCOM students have put that training to use in responding to:

- Tsunami Relief (2 weeks in rural coastal villages in India)
- Hurricane Katrina (23 days in Mississippi treating over 2000 patients)
- Assistance with the Virginia Tech tragedy providing:
  - Immediate response by emergency personnel on the ground and in the emergency rooms
  - Grief counseling with parents in the first 24 hours
  - Grief counseling with students returning to campus

In 2004, VCOM added the first research facility (11,000 square ft.) Externally funded medical research has consistently grown over the past four years to a current total of $6,057,999.

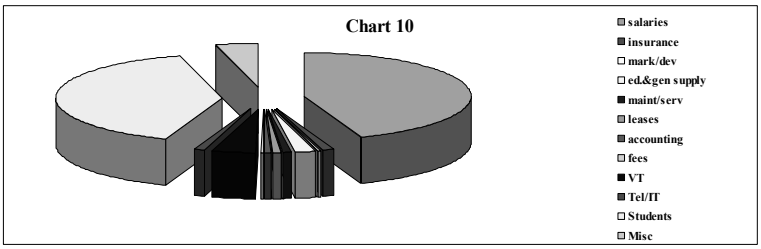
Direct Economic Impact of VCOM 2002-2007 in SW & Southside Virginia is **$78,740,000**



The 2003-2007 VCOM economic impact chart demonstrates the distribution of the dollars spent in the initial four year years of development, creating an overall economic impact of seventy-eight million, seven hundred forty thousand dollars.

(direct dollars spent, no multipliers were used to determine this amount)

Annual Economic Impact of VCOM on SW and Southside Virginia in 2007 was **$26,000,000**



The distribution of funds in the annual economic impact study of VCOM for the 2006-2007 year is shown in the chart above and is just over twenty-six million dollars. ***(direct dollars spent without multipliers).***

The 2007-2008 impact is estimated to come in at $33,000,000, in addition we are constructing a new research facility and remodeling a third facility.

Success in the Final Stages Will Require Partnerships.

1. Partnerships with Hospitals for Residencies in the Non-metropolitan areas of the Commonwealth.
    - VCOM and the community hospitals initiating the residency incur costs of up to 1 million dollars in the establishment of each residency site.
2. Assistance from the Commonwealth of Virginia in creating residencies in rural and medically underserved areas and incentives for residents to enter a non-metropolitan residency.
3. Assistance from Communities and The Commonwealth of Virginia for incentives for physicians to practice in a rural and medically underserved areas where their reimbursement will be limited.

The Need to Support Rural Healthcare and Rural Health Training in the Commonwealth of Virginia

Total Actively Practicing Physicians in Virginia

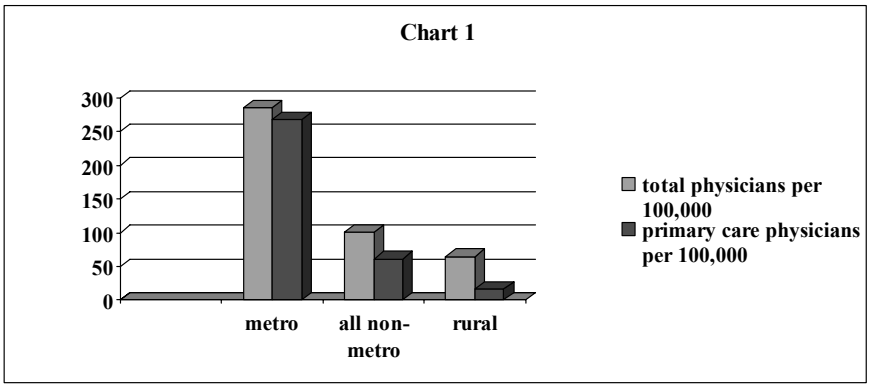
2007 data from the Virginia Medical Licensure Review Board

- Total actively practicing physicians**19,081** (allopathic M.D. and osteopathic D.O.).
  - This figure includes resident physicians and all physicians whether full time or part time. If you subtract the residents you have 17,367 and if you adjust for the full time equivalent (FTE) from full time, part time, and multiple locations, (6,789 physicians practice less than 80%), the FTE physician count is reduced from 17,367 to **14,990.**
- Given this adjusted figure, the final ratio for Virginia is **total FTE physicians (2007 figures)**
  - **211 physicians per 100,000 population** just below the national average. (using last actual population statistic of 7,100,000 without projections) or
  - IF using a population of 7,630,000 currently estimated is 199 physicians per 100,000.
    - Association of American Medical Colleges (AAMC) in 2005 suggest Virginia had 240 physicians per 100,000 and is slightly below or equal to the national average.
    - It is unlikely there is a true decrease in physicians per 100,000 since 2005, but instead that the AAMC data was not FTE adjusted.

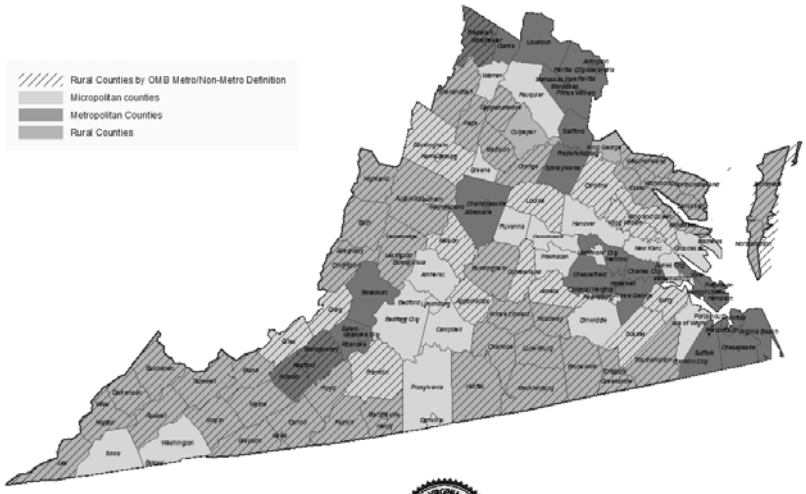
Mal-distribution of Physicians in Virginia

- The national primary care recommendations are 1 physician for 2,500 patients (averaged between recommended numbers of 2,000 to 3,000 depending on source).
- The ratio for total Virginia primary care physicians for all VA. is at national average with 79 per 100,000 population (>1 PCP per 2500).
- There is a mal-distribution of physicians in Virginia favoring the metropolitan areas.
  - Remembering that 30% of Virginians live in non-metropolitan (rural and micropolitan areas/counties), the number is 2,224,328 persons.
  - There are 1,427 primary care physicians practicing in Virginia non-metropolitan areas, or 61.5 physicians per 100,000 population, far less the u=number practicing in the Virginia Metropolitan counties/areas.
  - Primary care physicians ratios in rural areas is **16 per 100,000 or 1 primary care physician per 5,000 population**, (less than half the number recommended).
  - Primary care physicians are essential for medical care in non-metropolitan areas.

Mal-distribution of Physicians in Virginia



Virginia's County-based Definitions for Rural (Office of Management and Budget)



Data Sources: Edward Via Virginia College of Osteopathic Medicine; OMB Definition for Rural

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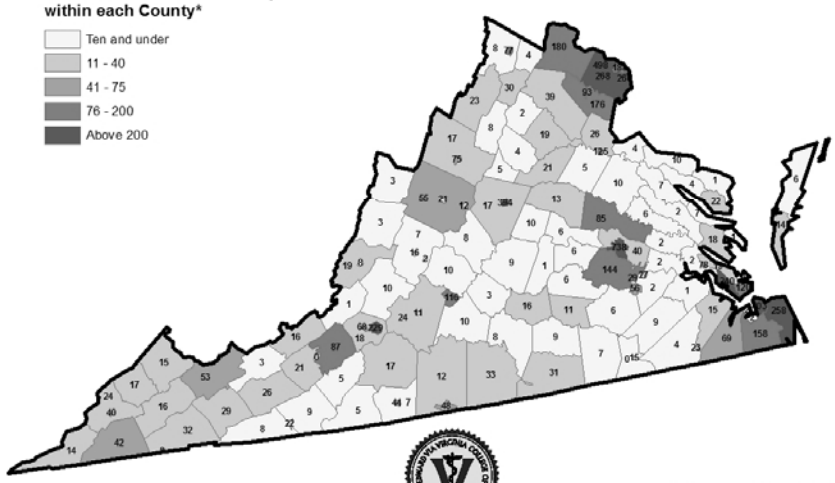
Virginia's Primary Care Physicians County Distribution (6,862)

*Primary Care Physicians include: Family and General Practice, Internal Medicine, OB/GYN and Pediatric

Combined Number of Primary Practice Sites within each County*

- Ten and under
- 11 - 40
- 41 - 75
- 76 - 200
- Above 200



Data Sources: Virginia Medical Licensure Review Board (10/2007); HHS's Bureau of Health Professions

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Virginia's Primary Care Physicians County Distribution (6,050)

(Without OB/Gyn)

Combined Number of Primary Practice Sites within each County*

- Ten and under
- 11 - 40
- 41 - 75
- 76 - 200
- Over 200

*Based uon Primary Practice Site

*Primary Care Physicians include: Family and General Practice, Internal Medicine, and Pediatric

Data Sources: Virginia Medical Licensure Review Board (10/2007); HHS's Bureau of Health Professions

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Virginia's Primary Care Health Professional Shortage Areas (HPSA) Designation* With Primary Care Physicians (6,862)

Primary Care Physicians include: Family and General Practice, Internal Medicine, Pediatricians and OB/GYN

- Primary Care Physicians
- Primary Care HPSA

545 or 8% of the total primary care physician are eligible for the 10% reimbursement for certain medicaid services.

*Geographic Designation only

Data sources: HHS's HRSA for HPSA(10/2007); 9/2007 Virginia Medical Licensure Review Board

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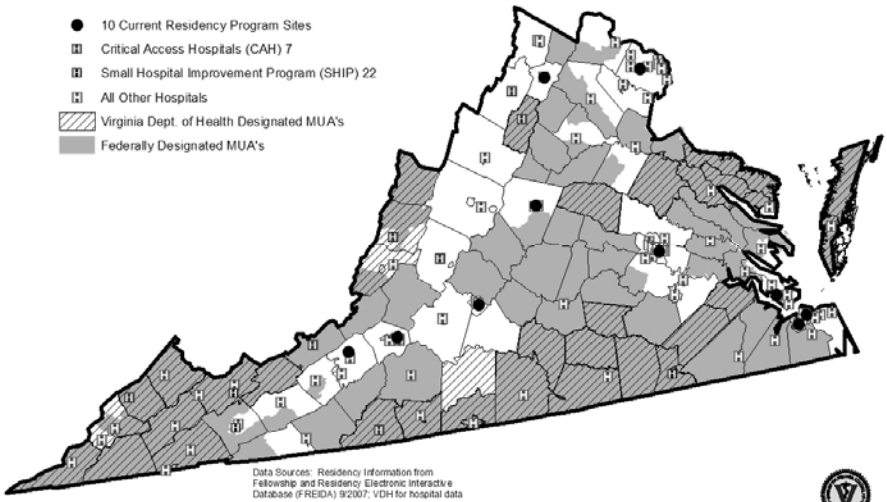
Location of Current Residency Programs Relative to All Hospital Sites and the Medically Underserved Areas



Data Sources: Residency Information from Fellowship and Residency Electronic Interactive Database (FREIDA) 9/2007; VDH for hospital data
VDH MUA designation (updated 9/2006); For information on state MUA's contact VDH http://www.vdh.virginia.gov/healthpolicy
HHS's Bureau of Health Profession for Federal MUA (still used for healthcare qualifications by federal agencies but hasn't been updated in over 10 years). For information on Federal MUA's contact the Bureau of Health Professions website: http://bhpr.hrsa.gov/shortage/muaguide.htm

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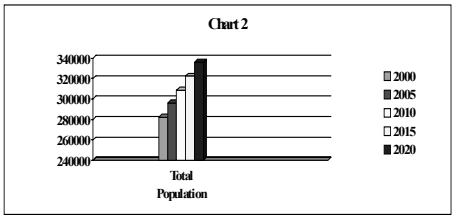
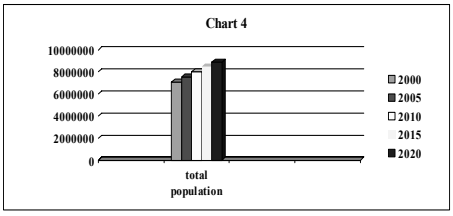
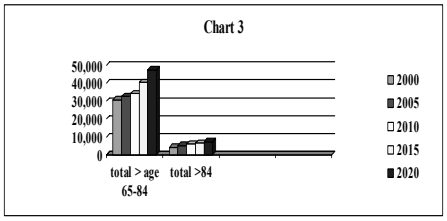
Virginia is Predicted to Have a Population Growth and Growth in Older Citizens Similar to the U.S. as a Whole



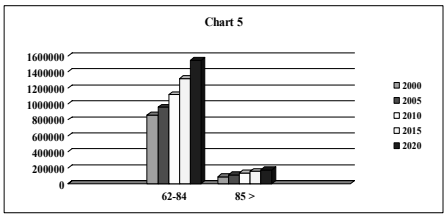
U.S. predicted population growth



Virginia predicted population growth



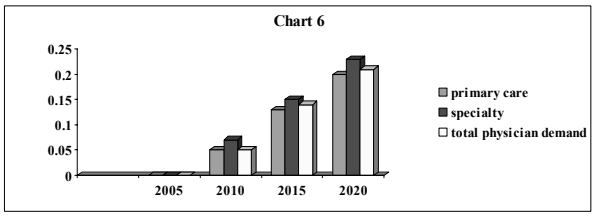
U.S. predicted population growth ages over 65 and 84



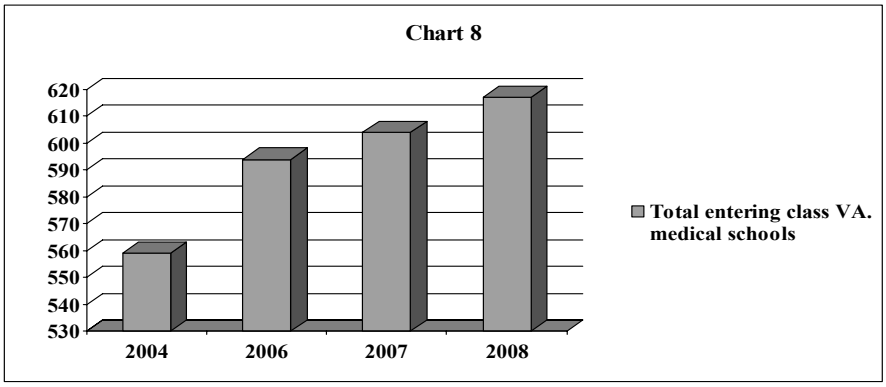
Virginia predicted population growth over 65 and 84

Physician Workforce Shortage

- The Council on Graduate Medical Education (COGME), a national advisory body that makes policy recommendations regarding the adequacy of the supply and distribution of physicians, recently predicted that according to current trends the demand for physicians will significantly outweigh the supply of physicians by 2020.
- COGME and AAMC followed with a recommendation for medical schools to expand the number of graduates by 10%.



Are We Graduating Enough Physicians in Virginia?



The Enrollment of Medical Students in Virginia has risen by the recommended 10% since 2004.

The average in state enrollment in Virginia's four medical schools grew from 46% to 56% in 2005-2007.

The pool of applicants have remained healthy in Virginia, with the total applications per school approximately 2500 to 6000 applicants per school.

Table 1

Virginia Medical School Applicant Qualifications—2006 Means Scores

	Allopathic applicants[1]	Osteopathic applicants[2]
MCAT	27.7	24
Science GPA	3.31	3.4
Total GPA	3.41	3.45

Table 2

Virginia Pool of Medical School Matriculants—2006

	In-state matriculants	Out-of-State matriculants
Allopathic and Osteopathic matriculants (4 colleges)	297	301

[1] Data Source: AAMC.
[2] VCOM data.

Does Virginia Need to Do Better in Retaining Virginia Medical School Graduates into Virginia Residencies? **YES**

According to AAMC data,

- Virginia ranks 38th among all states for retention of physicians who completed medical school within the state (36% retention rate – near the national average), and
- Virginia ranks 38th among all states for states with physicians who actively practice in the state where they received their residency training (37% retention rate – below the national average).
- Considering the new figures of 40 to 56% of medical students matriculating in Virginia medical schools (including VCOM) are from Virginia, the overall numbers of physicians retained should increase, however there is a need to increase the percentage of medical students retained.
- **If** effective measures are taken to increase the retention of medical school and residency graduates, the current medical schools in Virginia will be sufficient to meet the needs of the population growth within the state.

(Note: VCOM is not included in the AAMC retention rate percentages as the first class graduated in 2007 and is just entering their residency. States with Osteopathic Colleges have by history had a higher retention rate of graduates).

The Need For More Residency Positions

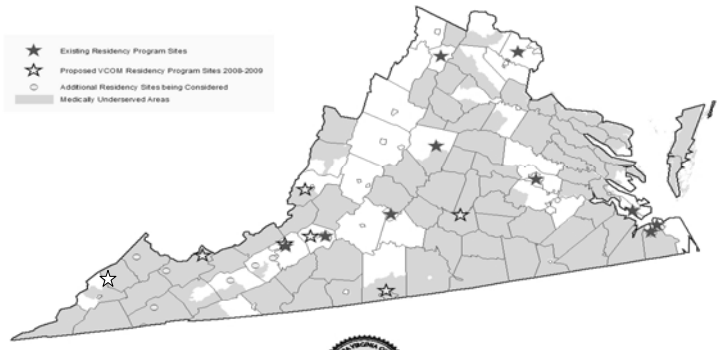
- According to FREIDA and AOA post graduate information there are between 350 to 400 filled/funded entry level internship/residency positions within the state.
  - There are 11 new entry year positions funded in the upcoming year in Montgomery Regional Hospital in Blacksburg and 12 in Bluefield Virginia/West Virginia.
- Even with the new positions there are not enough for the over 600 graduates from the four Virginia medical schools annually.
- In addition, of the current residencies in Virginia, 17% are historically filled with international medical graduates (IMG) from non-accredited medical schools outside the United States. As stated prior, retention of Virginia graduates to Virginia residencies has been poor.

Distribution of Current Residency Positions Within Virginia is a Concern

- Current recruitment and retention methods by the state have not been effective to recruit a significant number of physicians to meet the rural area needs of the state.
- Significant effort must be placed to support current primary care residencies and to create new residencies in non-metropolitan and medically underserved areas
- VCOM is helping to fill the current primary care residencies within the state.
  - Note: VCOM has created additional residency positions that begin in 2008 in Blacksburg and Bluefield. In 2009 VCOM has proposed residencies in Lewis-Gale, Danville, Farmville, and Allegheny. Additional residencies are being explored in non-metropolitan and rural areas in VCOM Core training hospitals.

- The majority of current residency positions within Virginia are in metropolitan training hospitals with the exception of Norton, VA.
- In addition the majority of residency training hospitals are **not** located in underserved counties within the state.
- The state should consider supporting residencies in medically underserved or physician scarcity areas of the state.

Edward Via Virginia College of Osteopathic Medicine
Residency Program Sites Viewed with Medically Underserved Areas



Data Sources: Edward Via Virginia College of Osteopathic Medicine; HHS' Bureau of Health Professions

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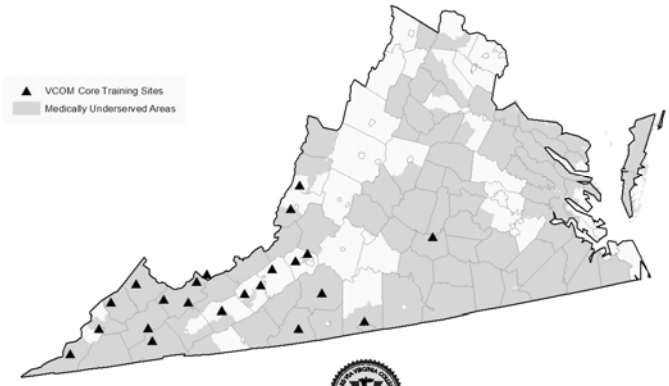
VCOM Proposes to Create Additional Residencies in Core Training Sites. This will increase care for the underserved populations in these sites.

Edward Via Virginia College of Osteopathic Medicine
Core Training Sites
Relative to Medically Underserved Areas



Data Sources: Edward Via Virginia College of Osteopathic Medicine; HHS Bureau of Health Professions

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Current recruitment and retention efforts by Virginia have **not** been effective

- Virginia dissolved the medical school loans for students who agreed to practice in a rural area in 2001, turning a portion of those to loan repayment.
  - The scholarships when in place, were not adequate to attract students. ($4,000 of the >$45,000 medical students spend on tuition and living expenses per year)
- GMEC a graduate medical education consortia, although one of the better programs funded by the Commonwealth at $350,000 a year, has resulted in 25 graduates locating in SW Virginia (less than 5 per year). GMEC has recommended in their annual report to be more successful there is a need to
  - Provide incentives to residents who obligate to practice in rural and medically underserved areas
  - Provide incentives to physicians to locate in rural and medically underserved areas.

Nationally Residency Programs in Rural Areas are Successful in Recruitment and Retention

- Of the 474 family medicine training programs that exist nationally, there are 143 rural fellowships and 29 rural training tracts.
- Rural training tracts have 76 percent of their graduates remaining in rural locations and 61 percent are in Health Professional Shortage Areas (HPSA's).
- These physicians remain near their residency 45 percent of the time and 39 percent of them are near their hometowns.
- Rural training tracts have the best record for placement of residents in rural areas.

Data from National Rural Health Association, Report: **Recruitment and Retention of a Quality Health Workforce in Rural Areas:** A series of Policy Papers on The Rural Health Careers Pipeline

Effective Strategies

- Considering that historically by national trends approximately 40% to 50% of residents locate within 1 hour of the hospital where they trained, Virginia should consider loan repayment while in Residency, if the residency is done in a non-metropolitan area of the state.
  - As residents tend to locate within the area of the hospital they train, this would be a logical strategy. This would also reduce the total indebtedness of the resident, making it possible to enter a non-metropolitan practice.
- Virginia should provide loan repayment to graduating residents for up to 4 years if they locate their practice in a medically underserved area or a physician scarcity area of the state.
- Virginia should use their own categories of medically underserved or the national physician scarcity areas to define the areas of loan repayment, as this best fits the needs of the citizens. (Also recommended by GMEC)

The Importance of the Rural Hospitals and Rural Physicians

- There are 91 hospitals in Virginia, 32 of which are located in rural areas (North Carolina Rural Health Research and Policy Analysis Center, 2007).
- The state has seven hospitals currently identified by the Flex Monitoring Team as Critical Access Hospitals.
  - There are 55 Rural Health Clinics in Virginia, and 21 Federally Qualified Health Centers that provide services at 88 sites in the state (Kaiser, 2004).
- According to the Economic Research Service, the average per-capita income for all Virginia residents in 2005 was $37,503, although rural per-capita income lagged at $25,390. Estimates from 2004 indicate a poverty rate of 13.5% in rural Virginia, compared to 9.5% in urban areas of the state. **This number would likely increase without the rural hospitals as they are an important employer in rural Virginia, where the current unemployment rate is 4%.**
- The following slide outlines the economic impact of non-metro hospitals in Virginia on their community and county.

Importance of Rural and Small Community Hospitals

Table 3

Hospital	Community	FTE employees	Contracts	Gross Patient revenues
Allegheny	Low Moor	324	0	$104,036,000
Bedford Memorial	Bedford	No data	No data	$60,386,000
Buchanan	Grundy	310	5	$78,315,000
Franklin Memorial	Rocky Mount	No data	No data	$77,775,000
Carilion New River	Radford	770	128	$262,914,000
Clinch Valley	Richlands	430	7	$177,926,000
Culpeper	Culpeper	469	2	$113,183,000
Community Memor.	South Hill	476	45	$150,392,000
Danville Regional	Danville	1251	66	$375,361,000
Fauquier	Warrenton	706	14	$216,222,000
Johnston Memorial	Abingdon	567	10	$142,712,000
Lee Regional	Pennington Gap	207	0	$70,000,000
Lonesome Pine	Big Stone Gap	256	2	$91,225,000
Montgomery	Blacksburg 449	6		$193,351,000
Mountain View	Norton	No data	No data	$74,143,000
Norton Community	Norton	475	8	$122,430,000
Pulaski Community	Pulaski	289	4	$97,018,000
Rappahannock	Kilmarnock	No data	No data	$55,818,000
Riverside	Tappahannock	198	3	$73,143,000
Riverside W-R	Gloucester No data	No data		$98,083,000
Russell County	Lebanon	245	1	$97,506,000
Smyth County	Marion	376	6	$94,989,000
Southern VA. Reg.	Emporia	238	1	$100,792,000
Tazewell Comm.	Tazewell	138	0	$29,066,000
Warren	Front Royal	275	0	$79,021,000
Western State	Staunton	No data	No data	$44,817,000
Wythe Community	Wytheville 320	12		$88,824,000

Recommendations

- Provide additional funds to hospitals in non-metropolitan and medically underserved areas to create residencies
- Provide loan repayment funds to residents and physicians to recruit and retain primary care physicians in underserved communities. These should include:
  - loan repayment with added stipends to cover taxes in exchange for service in underserved areas
  - loan repayment to medical residents completing a residency in a non-metropolitan underserved community
- Continue administering the federal loan repayment program for primary care physicians who locate in federally designated Health Professional Shortage Areas and Medically Underserved Areas.

Recommendations

- Do not tie Virginia incentive funds to physicians and residents according to national funding trends. Instead establish new criteria for determining physician shortages in Virginia that are according to or use
  - Physician Scarcity
  - Poverty level and uninsured
  - Lack of primary care
- Provide grants and funding programs that secure our rural and small community hospitals
  - as they are often one of the top 3 economic engines in the county and cater to a disproportionate number of low income,
  - And they are essential to the economy through employment and ability to recruit business.

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