I. Introduction

Virginia's two academic medical centers -- the University of Virginia Health Systems (UVA/HS) and Virginia Commonwealth University Health Systems (VCU/HA) -- play a pivotal role in the delivery of healthcare to the poor. As a part of their broader mission of education, research, and the provision of highly specialized care, these two systems serve as the primary source of healthcare to a disproportionate number of Virginia's poor citizens who lack health insurance.

In November of 2002, Governor Mark Warner directed members of his Cabinet, policy office, and representatives from Virginia's two academic health centers (AHCs) to identify long-term options for addressing operational and indigent healthcare funding issues at the State's two teaching hospitals. Five months later, the Virginia General Assembly placed language in the 2003 Appropriations Act requiring the Secretaries of Health and Human Resources and Education to report on the indigent healthcare cost trends, funding options, and opportunities for operational efficiencies at the AHCs.

The impetus for these actions was a report from staff at the Department of Medical Assistance Services (DMAS) on an emerging funding crisis in the State's indigent healthcare program. Based on current projections, it appears that the State's two AHCs face a funding shortfall for indigent healthcare for the next biennial budget of more than $83 million. This shortfall will be created primarily by the depletion of reserve federal funds from the Medicaid Disproportionate Share Program (DSH).

The loss of federal support for this mission occurs at a time when other hospital revenues are being squeezed due to stiffening competition from private hospitals and reduced reimbursement rates resulting from price negotiations by third party payers, including preferred provider organizations (PPOs) and Health Maintenance Organizations (HMOs). This has substantially reduced the number of payers who do not insist on price discounts and thereby weakened the ability of the AHCs to cover losses that they have been experiencing in their indigent healthcare program over the past several years.

Still, before policymakers are willing to consider alternative revenue sources for the indigent healthcare programs at the AHCs, longstanding questions about these facilities must be revisited. Has the changing healthcare marketplace lessened the need for publicly funded and mission-driven AHCs in Virginia? If not, on what grounds do the higher costs, believed to be associated with patient care at these institutions, remain tenable at a time when much of government is contracting?

This report presents the results from an analysis of the mission-related activities of the AHCs, the cost of patient care, the relative efficiency of their operations, and the magnitude of the fast approaching funding shortfall. In the remainder of this chapter, a brief description of the organization and funding of the two health systems is provided. This is followed by a discussion of the State's indigent healthcare program and general challenges posed for the AHCs in carrying out this social mission.

THE ORGANIZATION OF VIRGINIA'S AHCs AND THE CHALLENGES FACED IN THE INDIGENT HEALTHCARE PROGRAM

Virginia's AHCs offer an integrated network of primary and specialty care services. Both systems have established major acute care hospitals as hubs of the care network. These hospitals consist of various specialty care programs and are complemented by a network of outpatient clinics. This operation of not only diagnostic services, but also outpatient primary and specialty care clinics makes the AHC's unique in comparison to many other hospitals that are operated across the Commonwealth. Through strong linkages to the respective medical schools, these systems pursue their unique mission of routine and high technology healthcare, bio-medical research, education of future health care professionals, and patient care, including the treatment of disproportionate numbers of underinsured and uninsured patients.

In FY 2002, the combined net patient revenue for these two systems surpassed $1 billion, having grown at a rate of just over five percent per year since 1997. Comparatively, revenue growth at VCU/HS has been relatively flat over these years, while UVA/HS has experienced an annual growth rate of more than eight percent. More important, and not coincidentally, nearly 40 percent of the net patient revenue received by VCU/HS was generated from the treatment of persons who are poor and uninsured or receiving Medicaid. . At UVA/HS, the figure was 20 percent.

Due in part to the emphasis on specialty care and the mission of treating indigent patients, these two systems rank 1st (UVA/HS) and 3rd (VCU/HS) among all Virginia hospitals in terms of the acuity level of their

patients. Moreover, the extensive commitment of resources to indigent patients allows the AHCs to fulfill a valuable social mission. At the same time, however, it also produces greater fiscal strain on the health systems, because the cost of treating these patients consistently exceeds the amount of reimbursement that is provided. This is a special concern for the two AHCs because indigent patients, especially many of those served by the AHCs, need some of the more expensive forms of care.

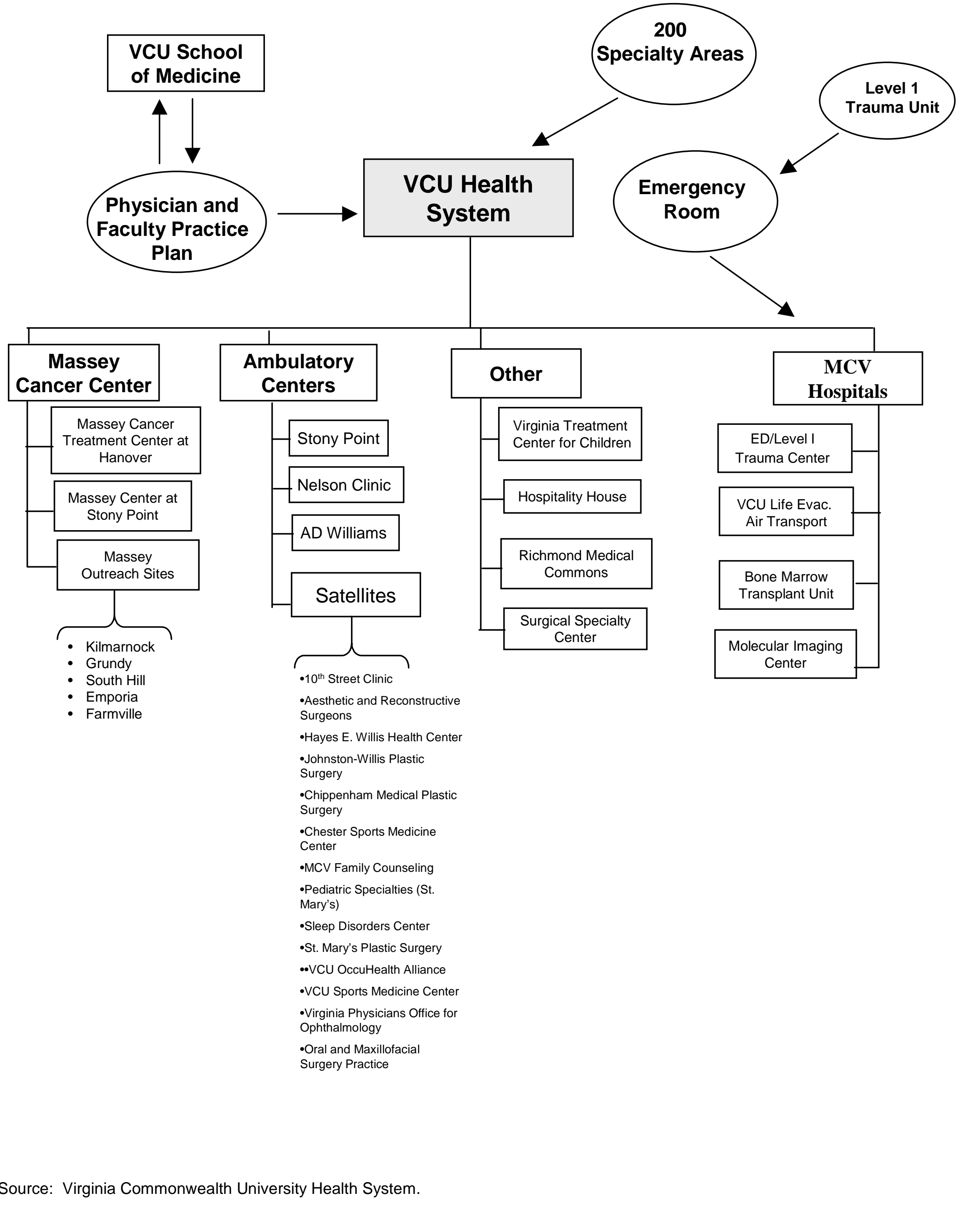
To Survive in a More Competitive Marketplace, Virginia's AHCs Have Developed Fully Integrated Healthcare Systems

While there are no standard definitions of an academic health center, nationwide, these systems typically consist of a large tertiary hospital with a strong clinical component with direct links to a university medical school. Because of the growing competition in the healthcare marketplace, many of the large AHCs have been forced to become fully integrated health systems in order to retain or increase their share of the inpatient and outpatient healthcare market. Virginia's two AHCs have followed this trend.

Virginia Commonwealth University Health System. The VCU/HS is a highly integrated system of care. Its hospital -- MCV Hospitals -- is the teaching hospital component of the system supported by physician staff from the 600-member physician and faculty practice plan (Figure1). The staff in this practice plan provide the nexus between the health system's major missions by linking patient care, research, and the education of graduate medical students from the VCU School of Medicine.

Figure 1

Key Components of the Virginia Commonwealth University Health System



Source: Virginia Commonwealth University Health System.

As a large urban institution, MCV Hospitals serves multiple functions. To carry out one of its major functions -- inpatient care -- the hospital has 822 licensed beds and offers a myriad of health services. In 2002, the number of inpatient admissions to the hospital exceeded 31,000. These admissions resulted in 185,679 total days of inpatient care, producing an occupancy rate of 62 percent.

Key features of the hospital include its emergency room and designation as a Level 1 trauma center. In 2002, more than 82,000 visits were made to the emergency room. The trauma center is staffed to treat persons who arrive at the hospital in critical condition after sustaining a life-threatening injury. This unit is supported by an emergency helicopter transport system referred to as "VCU Life Evac." Through this system, VCU/HS has extended access to its critical care services throughout South Central Virginia. Operated in tandem with Rocky Mountain Helicopters, VCU Life Evac also helps support the transfer of critically ill patients between the network of hospitals in the State.

As with most AHCs, there is a significant emphasis on specialty care at the VCU/HS. Presently the system operates over 200 specialty programs. Some of the programs are housed in the hospital and others are operated through the on-campus and satellite outpatient facilities. One of the largest such facilities is the clinic at Stony Point. Located away from the downtown campus, this facility offers primary care, specialty services, and diagnostic services.

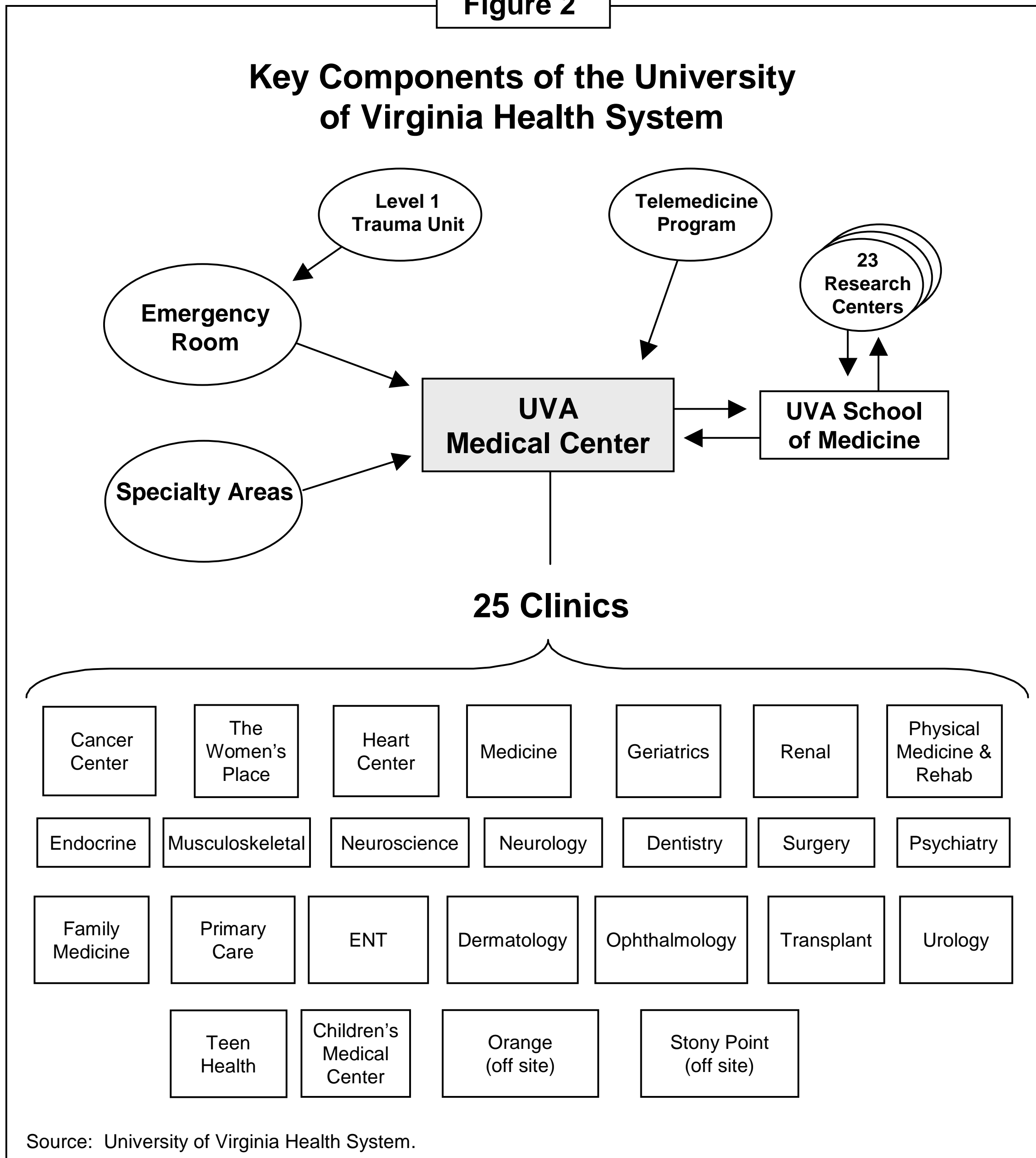
The specialized care programs are equipped with the latest in technology and highly trained specialists. These specialists employ

sophisticated methods to both detect and treat complex diseases. Some of the specialty programs include a chest tumor center, a neuro-oncology center, bone marrow transplant program, and a radiation oncology medical park. Perhaps the most noted centers are the VCU Massey Cancer Center, Harold F. Young Neurosurgery Center and the nationally recognized Evans-Haynes Burn Unit. This burn unit was the first such unit in the country and it remains the only burn unit of its type in the State of Virginia.

The University of Virginia Health System. The UVA/HS is also a multi-component healthcare system, offering a full range of healthcare, education and research services (Figure 2). As with VCU/HS, the centerpiece of the system is the UVA Medical Center. This is a 542-bed facility that provides primary, specialized, and emergency care services. In FY 2002, there were more than 26,800 inpatient admissions at the Medical Center, resulting in almost 150,000 days of care and an occupancy rate of 75 percent. Outpatient visits surpassed the half million mark.

Within the Medical Center is a Level I trauma center, offering services similar to those at VCU/HS. The center is also supported by a helicopter and ambulance service to expedite the transfer of critically ill persons. In addition to trauma services, there were more than 58,700 emergency room visits made at the Medical Center in FY 2002.

UVA/HS focus on specialty care treatment is coordinated through the Medical Center's 25 clinics. As reported by the University Health System



Source: University of Virginia Health System.

Consortium in a recent study of UVA/HS, some of the more noted clinics focus on the following areas:

- The Cancer Center offers some of the most advanced treatment for all types of cancer. In addition, the center supports the research mission of the system by providing patient access to clinical trials and the latest treatments.

- The Heart Center is staffed with noted surgeons, cardiologists, physical therapists, and other healthcare professionals to provide one of Virginia's most comprehensive heart programs.
- The Woman's Place provides a wide range of programs to address the healthcare needs of women. The services provided include gynecology, obstetrics, breast care, and infertility treatment.
- The Children's Medical Center is a comprehensive network of health care dedicated to the children from birth through adolescence. The service ranges from well baby care to heart transplants and neurosurgery.
- The UVA Telemedicine program was developed to link patients from rural and remote sites to trained healthcare professionals using advanced computer technology and broadband telecommunications technologies.

Patients who need more routine or primary care can visit one of the several clinics that are operated in different locations in Charlottesville and neighboring counties. Primary care physicians and nurses staff these clinics and provide a range of preventive healthcare and general wellness services. In FY 2002, these staff handled more than 144,000 visits.

The UVA School of Medicine is the second major component of the health system. This school employs almost 800 faculty and consists of 23 different research centers. The focus of this school is on developing innovative treatments for various diseases with a special emphasis on cancer research, cardiovascular disease, vaccine development, and neurodegenerative disease. In addition, the school supplies residents to both the UVA Health System and hospitals around the State to gain the clinical experience needed to become physicians. Other components of the system are the School of Nursing, the

Claude Moore Health Sciences Library, and a foundation that supports the clinical, academic, and research mission of the UVA Medical Center.

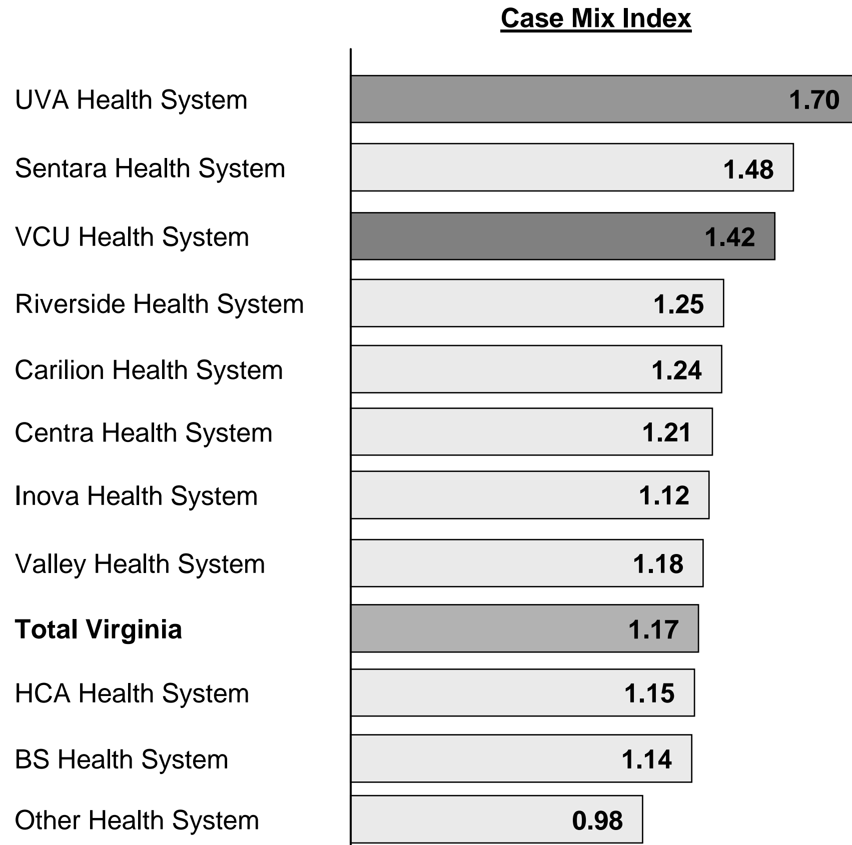
Due in part to the special mission of the AHCs hospitals, both UVA/HS and VCU/HS often treat some of the sickest patients in the State. As Figure 3 indicates, among Virginia hospitals, the AHCs have two of the three highest patient case mix scores in the State. These scores measure the severity of patient illness. For example, the UVA/HS score of 1.70 means that its patients should, on average, cost 45 percent more to treat than the average patient in the State (1.70 / 1.17 = 1.45). Undoubtedly, the level of specialty care provided in these hospitals and their willingness to treat patients regardless of ability to pay are fueling the differences shown in patient case mix.

Revenue Sources. Although the AHCs generate revenue from a variety of sources -- investment income, cafeteria sales, etc -- these operations depend primarily upon the revenue from providing patient care. Each of the AHCs derive patient revenue from the following major payment sources:

- **Medicare.** The fully federally-funded Medicare program makes payments to the AHCs based on healthcare services provided to the elderly or disabled. The Medicare program also provides direct payments to AHCs to cover the indirect costs of medical education services provided through the medical schools, as well as payments to subsidize the cost of graduate training for physicians.
- **Medicaid.** AHCs receive revenue from this health insurance program for the services provided to qualifying low-income adults and their children. This program is funded through federal and State dollars.
- **Indigent Healthcare.** AHCs receive revenue from both the State and federal government to cover the costs of indigent care - defined as persons who are uninsured

Figure 3

Comparison of Case Mix Index of Virginia Hospital Systems, FY 2001



Source: Virginia Health Information System

and whose income is less than 200 percent of the federal poverty level.

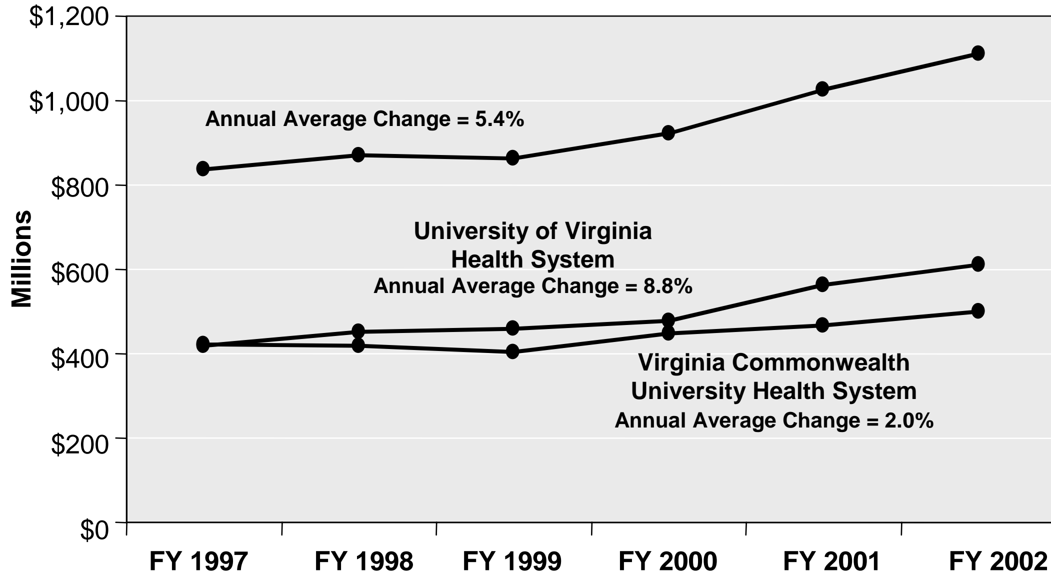
- **Commercial Insurers and Self-Pay.** AHCs receive revenue from persons treated in the hospital who have private insurance or who pay for their care with personal resources.

In FY 1997, the two AHCs generated over $830 million in net patient revenue. By FY 2002, this figure had grown to more than $1 billion, reflecting an average annual increase of 5.4 percent (top of Figure 4). Revenue growth has

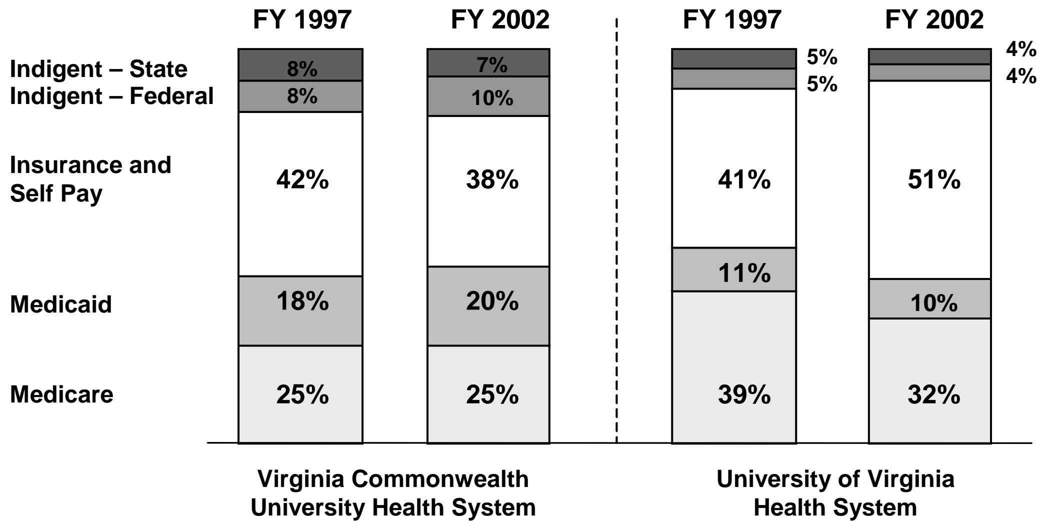
Figure 4

Net Patient Revenue for Virginia's Academic Health Centers

Trend in Net Patient Revenue, FY 1997 to FY 2002



Components of Net Patient Revenue, FY 1997 to FY 2002



Note: Revenue figures do not include physician revenue.

Source: University of Virginia Health System and Virginia Commonwealth University Health System.

been strongest at UVA/HS over this time period. Moving from $417 million in FY 1997, this system witnessed an average annual growth rate of 8.8 percent by the end of FY 2002.

By comparison, VCU/HS saw less movement in net patient revenue over this same time period with an average annual growth rate of about two percent. This is actually less than the four percent rate of change for hospital inflation that occurred during these years. Though not shown in this graph, it should be noted that net patient revenue for VCU/HS increased by more than $311 million in FY 2003. Most of this increase was due to an expansion of the coverage area for the HMO owned by VCU/HS called Virginia Premier. However, as will be illustrated in the next chapter, virtually all of the revenue from this expansion was used to cover the cost of the healthcare for those who were insured through the plan and treated at other hospitals.

The bottom of Figure 4 depicts the components of net patient revenue for the two AHCs. The significant finding here is that for VCU/HS, Medicaid and the indigent care program accounted for almost four of every ten dollars the system received in net patient revenue in FY 2002. While this is only an annual growth rate of approximately two percent, it has raised concern among hospital management about the system's mounting reliance on these two revenue sources. The figure for UVA/HS, on the other hand, was less than two of every 10 dollars of net patient revenue.

AHCs Face a Number of Challenges as They Carry Out the Social Mission of Indigent Healthcare

Although indigent healthcare is a State program for Virginia's uninsured residents whose incomes are less than 200 percent of the federal poverty level, most of the payments are paid under the Medicaid Disproportionate Share Hospital (DSH) program. Since DSH payments are funded through the same federal matching provisions as the larger Medicaid program, Virginia has been able to fund its indigent healthcare program at half the cost to the State general fund.

It has always been the policy of the General Assembly to fund indigent healthcare services through the AHCs. In turn, Virginia's AHCs have always embraced this mission of treating the poor. For AHCs, the goal of providing indigent care is consistent with their overall mission of improving the general health of the community. Also, because research has demonstrated that low-income persons who do not have insurance are often sicker when they seek healthcare, medical residents are exposed to the treatment of these problems, thereby providing a richer educational experience.

Shortfalls in Indigent Healthcare Funding. Although the General Assembly has funded indigent healthcare in the AHCs, as the Joint Legislative Audit and Review Commission (JLARC) found in a study of this issue in the early 1990s, legislators typically have not appropriated funds to cover 100 percent of the cost of this care. In 1991, in an effort to reduce the fiscal pressure on the General Fund, the General Assembly sharply increased DSH payments to the AHCs, through additional payments that were referred to as "enhanced DSH".

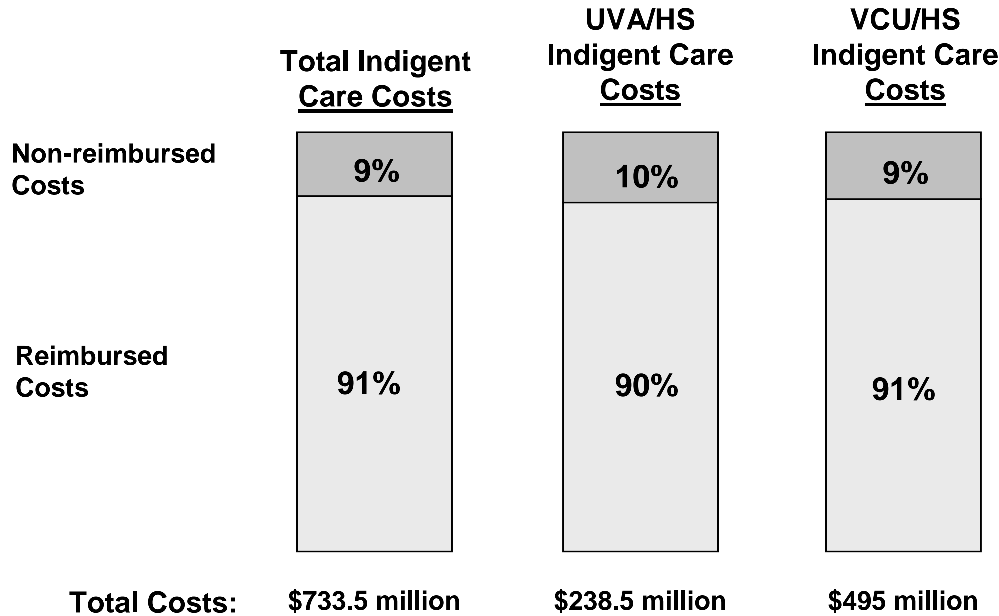
When first implemented, “enhanced DSH” resulted in $30 million in annual savings for the State general fund. This amount of new DSH spending did not result in greater spending on indigent care. Instead, it represented the increased substitution of the enhanced DSH program for direct general fund appropriations to fund that care. With these enhanced payments, AHCs were still able to cover only about 75 percent of the cost of treating their indigent patients.

This shortfall was not a problem for the two systems at the time because the revenue generated from other commercial insurers and the Medicaid program covered the remaining 25 percent. This practice is known in the healthcare industry as “cost shifting.” In more recent years, these revenue streams have diminished as well. One of the contributing factors is the ability of managed care companies to negotiate discounted prices for some of the specialty care areas once controlled by the AHCs. HMO plans have shown a greater reluctance to pay the higher rates to which many hospitals have become accustomed. Also, reduced private-pay revenue has limited the ability of AHCs to supplant State and federal funds for indigent healthcare.

These fiscal pressures are creating special problems because of the losses that AHCs continue to experience in the indigent care program (Figure 5). In the five-year period from FY 1998 to FY 2002, the total accumulated cost of indigent care at Virginia’s two AHCs was slightly more than $733 million. Over this period, these facilities received reimbursements to cover 91 percent of this cost. This means that combined, the AHCs experienced losses in the indigent

Figure 5

Indigent Care Reimbursements as a Percent of Indigent Healthcare Costs (FY1998 to FY2002)



Notes: Reimbursements for indigent care include Medicaid payments, regular and enhanced Disproportionate Share Hospital (DSH) payments, indirect medical education (IME) payments related to indigent care, and the indigent care payments included in the 2002-2004 Appropriation Act.

Source: University of Virginia Health System and Virginia Commonwealth University Health System.

care program of more than $68 million. Approximately $44 million of these losses were incurred by VCU/HS, while UVA/HS absorbed $23 million.

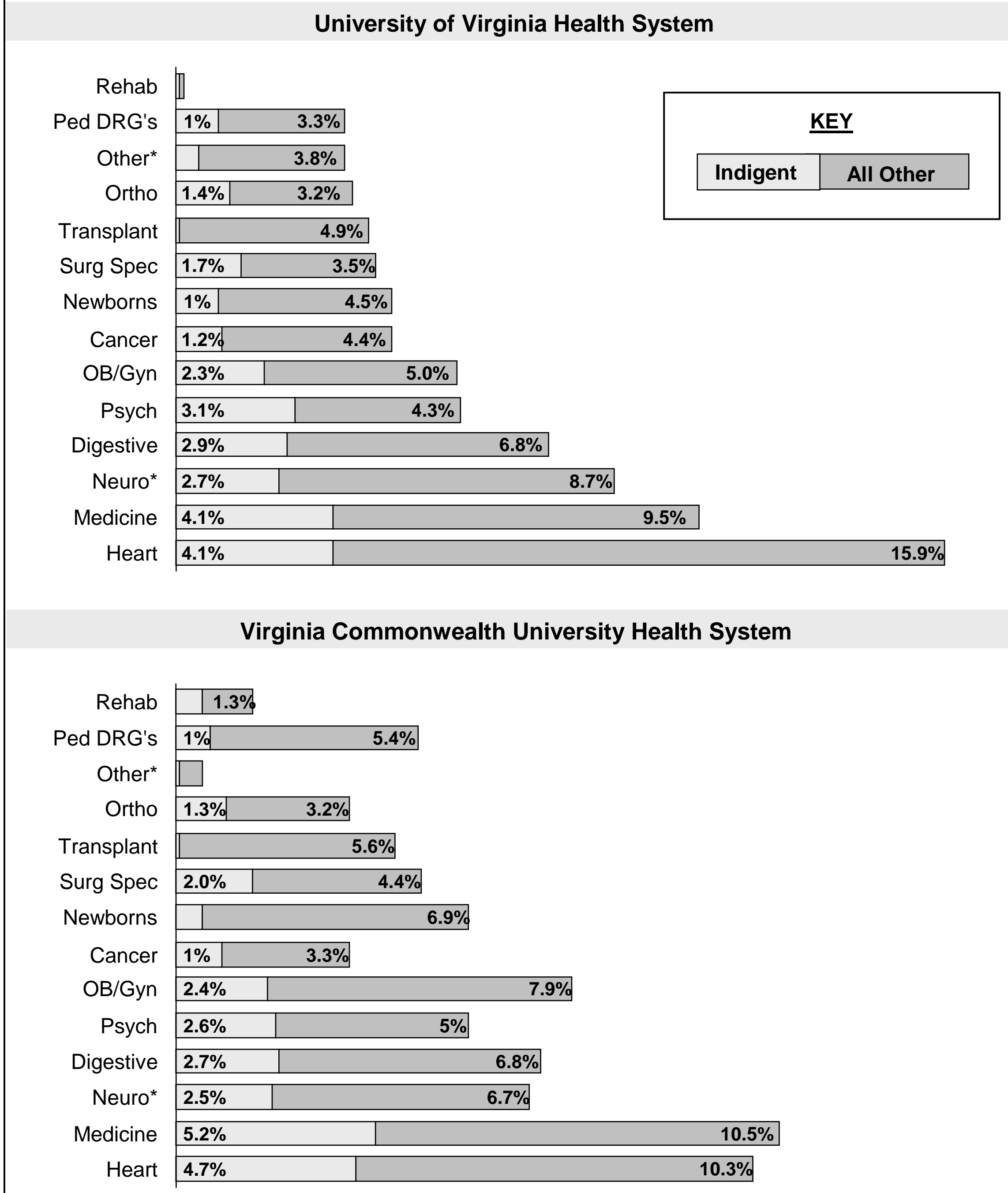
Losses from the Medicaid program are a key factor impacting the size of the shortfalls that AHCs now face. In years past, both AHCs typically made a profit on Medicaid patients that was subsequently used to mitigate losses in the indigent care program. More recently, the reimbursements received by the AHCs for the care of Medicaid patients has fallen short of the cost of treating this population because of lower rates paid by HMOs coupled with physician payments which are paid by Medicaid at 70 percent of the Medicare rate.

Because of the confluence of factors that have weakened the revenue streams of the AHCs, losses of this magnitude cannot be easily covered in future years.

As noted by JLARC in its 1993 report on this issue, a primary reason that AHCs do not receive 100 percent of their indigent healthcare costs is timing. General fund appropriations are based on costs incurred by the AHCs in the year prior to the appropriation. Obviously, from year-to-year, indigent healthcare costs can increase unexpectedly for any number of reasons. However, in light of the State's fiscal problems, there is a growing reluctance among legislators to appropriate additional dollars for many programs, including indigent healthcare

This problem of funding shortfalls in the State's indigent healthcare program should also be considered in the context of the types of healthcare services that AHCs provide to indigent patients. As noted earlier, for a number of reasons, research has shown that when indigent patients seek medical care, they are usually sicker than persons who arrive for treatment with insurance. Thus, when they seek medical care, it is expected that indigent patients will disproportionately require some of the more expensive forms of treatment. The data in Figure 6, which highlight the categories of inpatient services that are provided for indigent patients at VCU/HS and UVA/HS, seem to support this theory.

For the most part, the distribution of discharges by service is comparable to that of other patients in both institutions. However, when the percentage of indigent discharges is compared to total discharges for all patients, it appears that there are disproportionate numbers of indigent patients in the



* Other includes miscellaneous and unknown; Neuro includes spine.

Source: University of Virginia Health System and Virginia Commonwealth University Health System.

areas of orthopedics, psychiatry, rehabilitation, and the surgical specialties. With the exception of psychiatry, these are all high resource intensive areas for treatment. Further, the benefits of lower costs psychiatric services are not typically realized because these patients tend to have extended lengths of stay, contributing to an overall increased cost of providing care to these patients as well.

Report Organization

The remaining chapters of this report present the results from the analysis of the costs and funding of Virginia's AHCs. Chapter II assesses whether Virginia's AHCs still maintain a unique role in the State's healthcare arena and addresses questions about the flow of funds within the AHCs. Chapter III examines differences in the cost of patient care at the AHCs relative to private hospitals, presents outcome data measuring the efficiency of Virginia's AHCs, and analyzes trends in the utilization and costs for indigent healthcare at the two health systems. Chapter IV discusses the funding crisis emerging in indigent healthcare.