

## **II. The Mission-Related Activities and Financing Models of Virginia's Academic Health Centers**

Virginia's two AHCs have historically played a critical role in the provision of healthcare, medical education, and research in the Commonwealth. However, in recent years, due to economic changes in the health care marketplace and projected decreases in federal support for indigent healthcare, the funding streams used to support these two facilities have become unstable. At the same time, private hospitals in several metropolitan areas across the State now assume roles that have, in the past, been almost the exclusive responsibility of Virginia's AHCs – namely the provision of specialty health care to the poor, and the training of prospective doctors and other health care professionals.

In the midst of these changes, the operational cost of Virginia's AHCs has continued to grow. Critics of the spending trends in the State's AHCs acknowledge that the mission-related activities of the teaching hospitals exert upward pressure on facility operating costs. However, they also believe that AHCs remain plagued by operational inefficiencies which drive up the overall cost of indigent care in these facilities.

In addition, many of the critics of the teaching hospitals complain that some of the revenue earmarked to defray the cost of indigent healthcare is actually diverted by the AHCs to their affiliated universities, thereby creating unnecessary funding shortfalls for medical services to the poor. These factors and the widening perception that AHCs cannot deliver patient care in a more

efficient manner have given rise to questions about the future role of Virginia's AHCs, particularly with respect to the provision of indigent healthcare.

The purpose of this chapter is to empirically examine the degree to which Virginia's AHCs differ from other hospitals in the State with respect to organizational mission and patient services. In addition, the financing model and flow of funds within Virginia's two AHCs are examined. Questions about the operational efficiency of these institutions are addressed in Chapter III of this report.

In general this study found that some of the mission-related activities of the AHCs are more widely dispersed among private hospitals in Virginia. However, on a statewide basis, Virginia's AHCs remain disproportionately responsible for those activities that represent the core purpose of these institutions -- the care of the indigent population, the training of future doctors, the provision of complex specialty medical care, and the pursuit of new and innovative patient care techniques through medical research. Moreover, because the activities associated with these missions often have the characteristics of public or merit goods, private markets cannot be relied upon to produce the level of these services that are presently purchased through UVA/HS and VCU/HS.

In terms of the financing, separate models are in place at each of Virginia's AHCs. VCU/HS is organized with a faculty practice plan, the affiliated hospital, and a HMO known as Virginia Premier. These three entities generate more than \$760 million in revenue. The model at UVA/HS includes only a

hospital and the UVA School of Medicine, which are supported by more than \$610 million in revenue.

When the flow of revenue -- including the funds separately allocated to indigent healthcare -- is tracked through these systems, there is no evidence to support the claim that dollars earmarked for indigent healthcare are diverted to subsidize the operating cost of the University of Virginia and Virginia Commonwealth University. VCU/HS does pay its University a clinical earnings contribution but this is not funded with indigent healthcare dollars and it amounts to less than one-half of one percent of the health system's total revenue.

Both hospitals in these two systems purchase physician services from either a practice plan (VCU/HS) or the School of Medicine (UVA/HS) through arms length transactions that are governed by agreements and contracts. These purchases are made for patient care services and for the instruction provided to residents in the respective graduate medical education programs.

### **THE ROLE OF VIRGINIA'S AHCS IN THE PROVISION OF MEDICAL EDUCATION, INDIGENT HEALTHCARE, AND BIO-MEDICAL RESEARCH**

With the growth in the number of private hospitals that embrace a teaching mission and deliver highly specialized healthcare services, real questions exist regarding whether Virginia's two AHCs can be distinguished from some of their private counterparts.

The results of this study indicate that notwithstanding the changing role of some of Virginia's private hospitals, the two AHCs maintain a preeminent position in the delivery of mission-related health care services in the Commonwealth. Most notably, although the AHCs represent only two percent of

hospitals statewide, they provide 49 percent of the indigent care in the State, train 65 percent of the residents in graduate medical school, and operate the Commonwealth's only two clinical research centers.

Private hospitals, especially those that have assumed a limited teaching role, are also structured to provide some levels of specialty care. Still, Virginia's AHCs operate two of the five Level 1 trauma centers in the Commonwealth, perform nearly half of all transplants, provide more than half of the pediatric intensive care beds, and staff nearly 80 percent of Virginia's burn care beds.

Equally important, nearly 20 percent of all the patients requiring complex, specialty care in Virginia are treated at the two AHCs. Moreover, relative to persons treated in private hospitals, a much larger percentage of patients who received this high-cost care in AHCs had no insurance.

**While Private Hospitals Have Taken On A Larger Role, Virginia's AHCs Continue To Maintain A Preeminent Position in the Provision of Routine and Specialized Healthcare to the Poor, Medical Training, and Clinical Research**

Virginia's AHCs exist to perform three key missions: (1) the provision of medical care, including services to persons considered indigent; (2) the education of future physicians and other health care professionals; and (3) the development of new technology and medical procedures through clinical research to further advances in patient care. Given the emergence of private hospitals with increasing teaching and charity care missions, one objective of this study was to assess the degree to which Virginia's two AHCs can still be distinguished from their private counterparts. Clearly, if the competitive private

market performs reasonably well in setting prices and optimally allocating various healthcare and research services traditionally associated with the missions of AHCs, the substantial public subsidies that are used to support VCU/HS and UVA/HS are more difficult to justify.

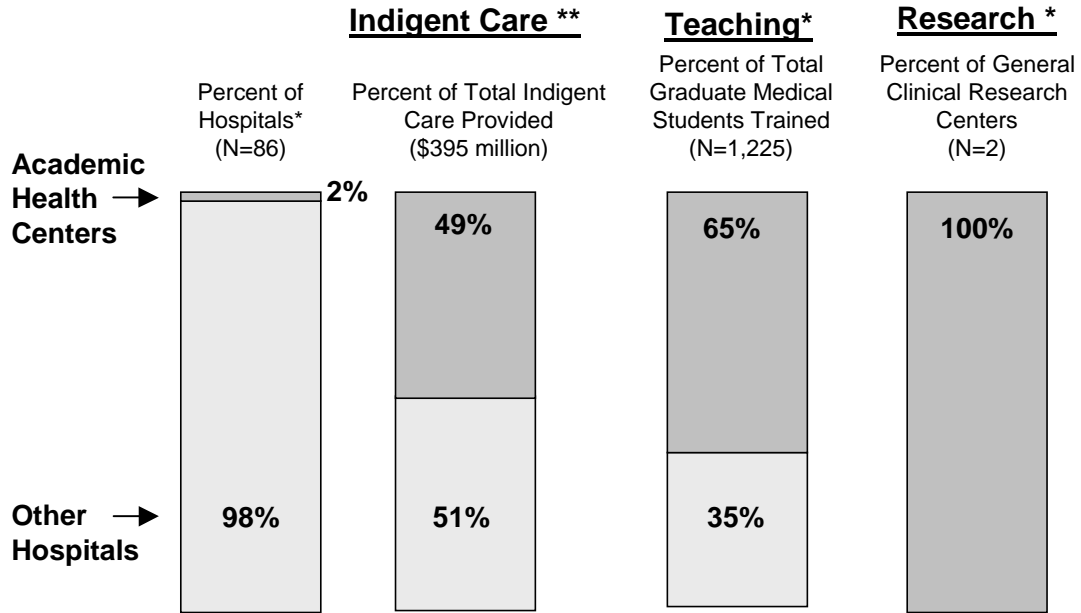
To conduct this analysis, several datasets containing information on the characteristics and activities of Virginia's hospitals were examined. In the first phase of this analysis, several variables were identified and used as proxy measures for the mission-related activities of hospitals. Next, comparisons across these variables were made for Virginia's AHCs and their private counterparts.

***Focus On Indigent Healthcare.*** Figure 7 summarizes the results from this analysis. These data reveal that AHCs are still heavily focused on their traditional social mission of addressing the healthcare problems of the vulnerable indigent population. In FY 2002, over \$395 million in healthcare services were delivered to persons across the Commonwealth who were classified as indigent care patients (also referred to as charity care) because they had no insurance and their incomes were less than 200 percent of the federal poverty level. Though Virginia's AHCs account for only two percent of the hospitals in the State, these facilities provided 49 percent of the charity care in the Commonwealth.

The route to patient care at a hospital occurs in one of three ways: (1) patients are referred by a community clinic, primary care, or specialty physician

**Figure 7**

**Mission-Related Activities of Virginia's Academic Health Centers and Other Hospitals**



Notes: \* Figures reported for 86 hospitals are for the fiscal year ending in 2001 and they do not include data from 12 additional hospitals that are not represented in the datasets used for this study. \*\* Data on indigent care costs are for 2002. Also, data on number of residents does not include figures for specialties such as pediatrics, psychiatry, or rehabilitation medicine.

Sources: American Hospital Association Annual Survey, Area Resource File, National Institutes of Health, and the American Medical Association.

with whom they have a medical relationship; (2) patients seek care through a visit to the emergency room or an affiliated clinic; or (3) hospital medical staff transfer patients to other facilities that are better equipped to meet the particular healthcare needs of the patients.

The concentration of indigent cases in Virginia's AHCs reflects not only the historical commitment of these facilities to serve this population, but also the special circumstances that surround the provision of care to the poor. Because indigent patients typically do not have a community doctor, their pursuit of hospital care is often self-directed. Based on past experience and public

knowledge regarding the mission of the AHCs, indigent patients often seek both routine and emergency medical care at these facilities. This is especially true for VCU/HS given its location in a large metropolitan area with several large jurisdictions that have high rates of uninsured persons who are poor.

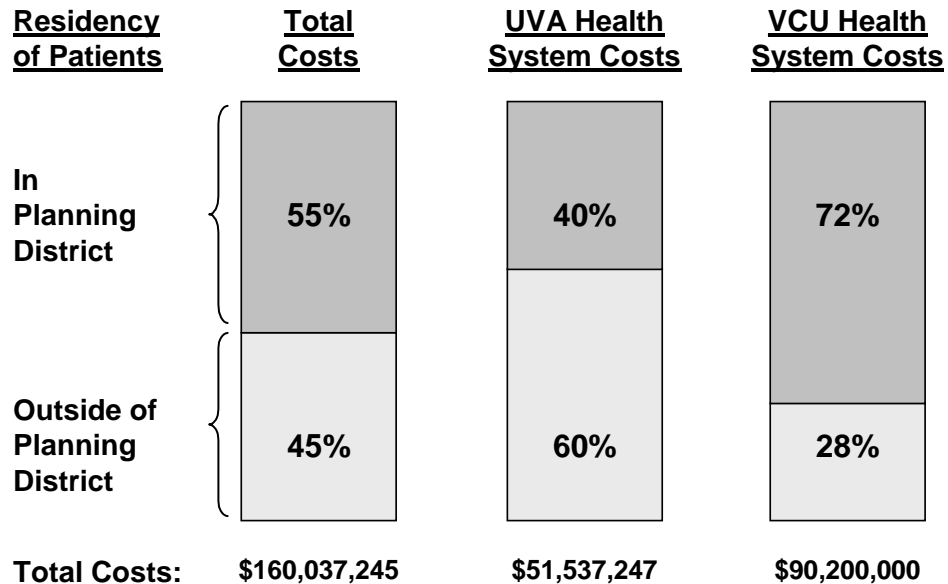
At the same time, because indigent patients tend to wait longer before seeking care, they are often sicker and need more specialized services. Some of the services they need are not routinely offered in a number of private hospitals. As a result, indigent persons who live in other jurisdictions will either travel to one of the AHCs for care, or be transferred by local hospitals that are unable to treat them. It is worth noting here that at UVA/HS, 60 percent of the indigent patients who were discharged from inpatient care in FY 2002 lived outside of the hospital's planning district (Figure 8).

***Medical Education and Training.*** AHCs play even an even greater role in the training of residents in the schools' graduate medical education programs. Once students complete four years of undergraduate medical education, they begin a period of residency training in the graduate programs. Residency training can last up to nine years, depending upon the chosen medical specialty.

A significant component of a student's residency training is served providing patient care under the general supervision of physicians who work as clinical faculty for the hospitals. Faculty in these two institutions hold appointments in the respective Schools of Medicine and also work for the affiliated faculty practice plans. At VCU/HS, these physicians work for the VCU

**Figure 8**

**Total Costs Incurred by Academic Health Centers for Indigent Inpatient Discharges and Outpatient Visits Based on Planning District, FY 2002**



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

School of Medicine and the VCUHS practice plan – MCV Physicians. Similarly, at UVA/HS, the supervising physicians work in the University’s School of Medicine and the affiliated practice plan - Health Services Foundation. The clinical work of the residents is supplemented with didactic training sessions that are designed to impart the skills essential to diagnosing illnesses and providing the appropriate treatments.

Returning to Figure 7, the data indicate that in 2001, there were 1,225 residents being trained across 86 hospitals in the Commonwealth. Nearly seven of every 10 of these individuals were performing their residency work at the State’s two AHCs. Nationwide, it is estimated that 40 percent of all residents

receive their graduate medical education from AHCs. These institutions are the training ground of choice for many students because of the degree to which the other mission-related activities of the AHCs contribute to the education of the residents. Specifically, residents are afforded the opportunity to engage in research, perform highly specialized care using the latest in healthcare technology, and provide care for a broad base of patients including persons who are indigent.

Private hospitals serve as a training ground for slightly more than a third of the State's residents. Much of this training is geared towards residents who plan to practice in primary care with little to no emphasis on research or specialized medical care. For residents with other aspirations -- research, the provision of specialty care, and exposure to nascent medical technology -- the additional educational opportunities made available at Virginia's two AHCs represent a compelling magnet.

***Clinical Research.*** Figure 7 also indicates that Virginia's AHCs operate the only two General Clinical Research Centers (GCRCs) in the Commonwealth. In an effort to link research with the practice of medicine, Congress began authorizing grants to fund the infrastructure of these centers over 40 years ago. Most of the GCRC grants were targeted to AHCs around the country. As a result, while private hospitals are eligible to participate in the program, today, virtually all of these centers are funded through AHCs. In addition to the funding received in the GCRCs in 2001, Virginia's two centers

received a total of \$151 million in NIH funding to support a wide array of research projects.

According to staff at the two centers, clinical medical research offers three substantial benefits for the AHCs. First, they allow the institutions to attract highly qualified physicians who are interested in integrating clinical work with research. This, in turn, permits the AHCs to remain on the cutting edge in the development of innovative techniques for the delivery of both complex and routine patient care. This “translational research” -- the application of knowledge gained in basic science research to routine and specialized care -- allow the AHCs to effectively marry their research and patient care missions.

Second, successfully run research programs also serve as a magnet for patients with complex diseases in search of new methods of treatment, including those who are indigent and uninsured. If the patient’s insurance does not cover the care provided in the treatment of the specific diseases, as is often the case with clinical research, the cost of the care is charged to the grant supporting the research. Any medical services that the patient receives that are not related to the clinical trial are billed to either the third party payer or the patient, whichever is applicable. If the patient is indigent, any balance remaining after charges related to the clinical trial are extracted can be billed as indigent care.

Through the research programs, AHCs can offer physicians the infrastructure and financial support needed to work on innovative medical treatments and technologies. Because the infrastructure and staff costs are

already paid for through the research grant, physicians gain a competitive advantage in the bidding process for other research grants. Should this research spawn a new technology or medical procedure that gains much wider use, the AHCs can share in the distinction and potential profits through intellectual property agreements with the physicians.

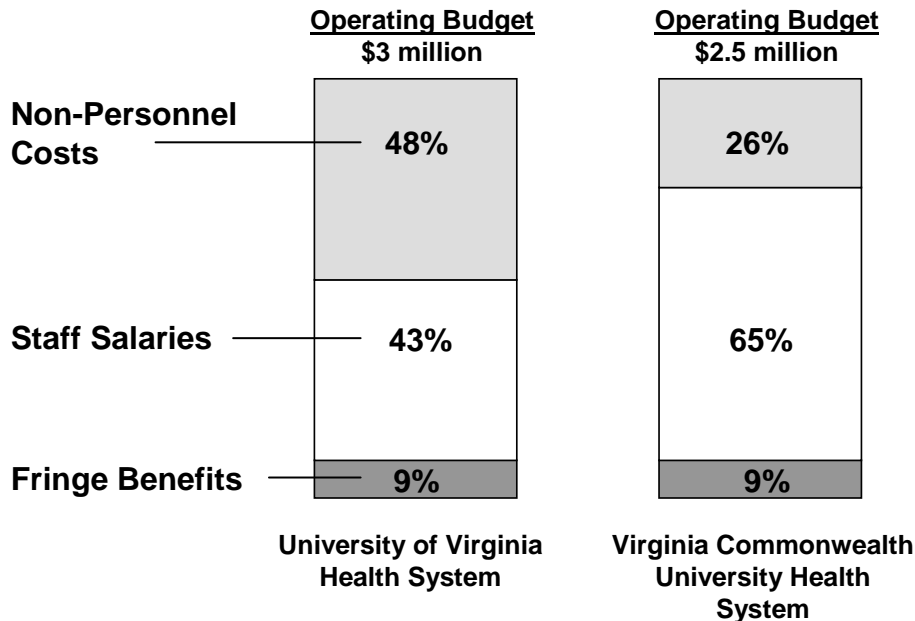
Private hospitals have typically refrained from establishing large-scale research centers for several reasons. First, the federal government is not looking to expand the number of GCRCs. Without funding, most hospitals are unwilling to absorb the start-up costs required to put the infrastructure in place that would allow staff to effectively compete for NIH medical research grants. Facility overhead and compensation packages to attract new and qualified physicians are the most significant components of start-up costs.

Second, because private hospitals must be concerned with establishing and maintaining healthy operating margins, they do not have the resources or staff time to devote to the pursuit of NIH-sponsored research. Also, some of the federal research grants require substantial matching financial commitments that add to the cost of research.

Finally, because federal research grants are distributed on a competitive basis, a constant stream of revenue is not guaranteed. This creates substantial risks for organizations that must maintain a certain level of in-house expertise in order to remain competitive for grant funding. As an example, Figure 9 reveals, the on-going operational costs of the general clinical research centers at UVA/HS and VCU/HS are \$3 million and \$2.5 million respectively. At UVA/HS,

**Figure 9**

**Operating Budgets for Clinical Research Centers  
at Virginia’s Academic Health Centers**



Notes: Salary and fringe benefits costs at UVA/HS were a combined 74 percent. The separate breakouts reported in this table are estimates.

Source: Finance offices for the Virginia Commonwealth University Health System and the University of Virginia Health System.

salary and fringe benefit costs account for more than half of the center’s budget. In the case of VCU/HS, the salary and benefit costs exceed 70 percent.

Because Virginia’s AHCs have established reputations for integrating quality research with the routine and specialized patient care offered in the hospitals and clinics, the operational cost of their clinical research centers are fully funded through the GCRC grants. These grants are renewed in five-year cycles and they allow the AHCs to compete for additional research funding through both public and private sources. From a broader perspective, the health centers benefit from the research that occurs across the institutions. In the five-year period from 1997 to 2002, UVA/HS has secured almost \$600 million in

research grants for its medical school. VCU/HS School of Medicine has been awarded over \$484 million during this same time period.

***Comparisons to Private Hospitals With Teaching Missions.*** The findings presented thus far indicate that when compared to all other hospitals in Virginia, clear distinctions can be made in the services provided based on the unique missions of Virginia's AHCs. However an important question remains: to what degree do these differences persist when the AHCs are compared with a smaller group of hospitals that have a visible teaching focus? The view has been proffered that a small group of private hospitals in Virginia essentially mirror the services provided in the AHCs. More importantly, these hospitals are thought to provide indigent care at a substantially lower cost and without large federal or State subsidies.

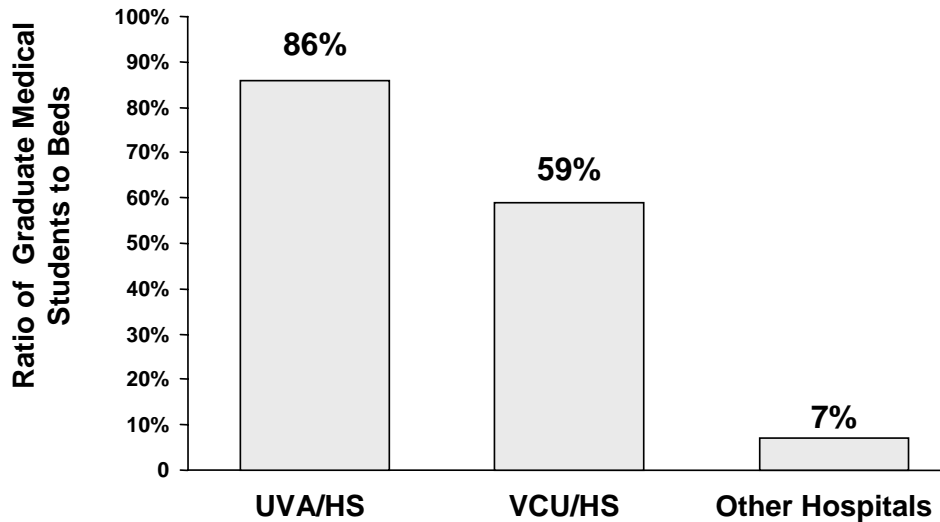
To address questions regarding the similarities in services provided by these hospitals and the AHCs, a more refined comparison was made through the construction of a variable measuring the intensity of teaching mission at each hospital. This variable was based on the number of residents in the hospital relative to the total number of hospital beds. The following classification strategy was used to establish four potential groups of hospitals and the results are reported in Figure 10:

- "Heavy Teaching Mission." Hospitals with a ratio of residents to hospital beds that is equal to, or greater than, 50 percent.
- "Moderate Teaching Mission." Hospitals with a ratio of residents to beds that ranges from 25 to 49 percent.
- "Limited Teaching Mission." Hospitals with a ratio of residents to beds that exceed 0 but are less than 24 percent.
- "No Teaching Mission." Hospitals that have no residents in training.

Figure 10

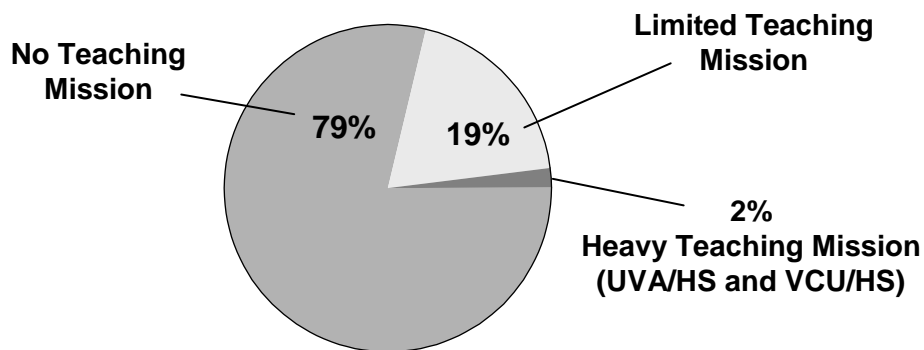
### A Comparison of Virginia's Hospitals Based on Intensity\* of Teaching Mission (2001)

Total Hospitals\*\* = 86



### Classification of Virginia's Hospitals Based on Intensity\* of Teaching Mission (2001)

Total Hospitals\*\* = 86



Notes: \* Intensity of teaching mission is based on a measure of total residents, including interns, as a percent of hospital beds and is defined as follows: 0="No Teaching Mission;" .01 to .25 = "Limited Teaching Mission;" .26 to .50 = "Moderate Teaching Mission;" and > .50 = "Heavy Teaching Mission." \*\* Figure does not include data on 12 additional hospitals that are not included in the datasets used for this study. Also, data on used to calculate intensity of teaching mission does not include figures for specialties such as pediatrics, psychiatry, or rehab medicine

Sources: American Hospital Association Annual Survey.

As the top half of Figure 10 reveals, both of Virginia's AHCs are considered to have a "heavy teaching mission" with intensity measures of 86 percent (UVA/HS) and 59 percent (VCU/HS) respectively. The average for all other hospitals in the State was only seven percent.

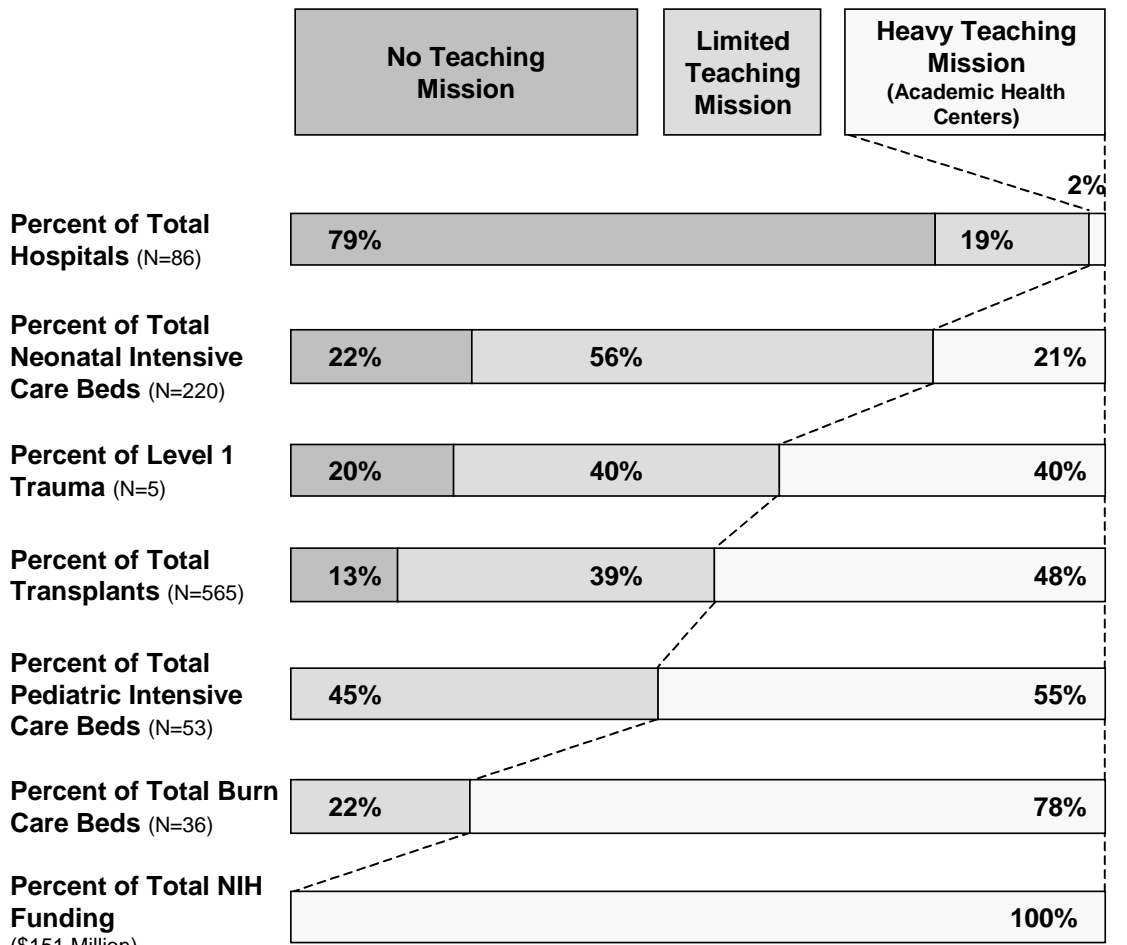
The bottom half of the graphic indicates the proportion of hospitals that fall into each of the teaching intensity categories. As shown, almost 80 percent of all hospitals in Virginia have no teaching mission as measured by the absence of any residency programs. There are no hospitals in the State with a "moderate teaching mission", but 19 percent do qualify as "limited teaching mission" facilities. Only two percent of the hospitals in the State are characterized as having a "heavy teaching mission," and these are the AHCs.

How do Virginia's AHCs compare to their counterparts who have some level of a commitment to teaching? Figure 11 reports the results of the service comparisons that were made through this analysis and demonstrates the key role that AHCs maintain in the provision of specialized care and research, even when compared to private hospitals that have similar goals.

In terms of the specialty care services, Virginia's AHCs either account for a disproportionate amount of the capacity for such care in the State, or they provide the majority of this capacity. For example, while representing two percent of all hospitals in the State, the two AHCs maintain 21 percent of the neonatal intensive care beds in the State and 40 percent of the Level 1 trauma units. Hospitals with a "limited teaching mission" provide the majority of the

**Figure 11**

**Characteristics of Virginia’s Hospitals Based on the Intensity\* of Teaching Mission**



Notes: \* Intensity of teaching mission is based on a measure of total residents as a percent of hospital beds and is defined as follows: 0="No Teaching Mission," .01 to .25 = "Limited Teaching Mission," .26 to .5 = "Moderate Teaching Mission" and > .5 = "Heavy Teaching Mission." \*\*This category consists only of Virginia's two Academic Health Centers.

Sources: Data collected from Hospital Cost Report Information System, American Hospital Association Annual Survey, Area Resource File, National Institutes of Health, the United Network for Organ Sharing, and the American Medical Association.

capacity for neonatal intensive care beds (56 percent of all such beds), compared to 22 percent for hospitals with “no teaching mission.”

**Providing Complex Care.** Because of the focus on specialty care, it was theorized that the AHCs represented a key source for the treatment of patients with complex medical problems, notwithstanding the presence of their competitors, and regardless of the patients' ability to pay. To explore this issue, data were examined on all inpatient admissions statewide. Those cases with the most resource intensive DRGs -- Diagnosis-Related Groups -- were selected for further analysis. A DRG system uses patient diagnoses and procedures to predict the resources required to treat the patient. Each DRG is assigned a relative weight that measures the cost of treating a patient who falls in that diagnosis group relative to all patients who fall in all other groups.

Accordingly, using the value of each patient's DRG weight, it was possible to identify all high resource cases in the State and the associated hospital charges. These cases could then be grouped by hospital and an average case mix score calculated. Table 1 lists the top ten most resource intensive medical procedures performed in Virginia's hospitals in FY 2001.

<b>Table 1</b>	
<b>Top Ten High Resource DRGs In Virginia</b>	
<b>Diagnosis Related Group</b>	<b>DRG Weight</b>
Heart Transplant	20.54
Tracheostomy	17.05
Extensive 3 <sup>rd</sup> Degree Burns With Skin Graft	14.65
Heart Assist System Implant	11.64
Liver Transplants	10.98
Lung Transplant	9.20
Bone Marrow Transplant	8.61
Cardiac Valve & Other Cardiothoratic Procedures With Catheter	7.99
Coronary Bypass With PTCA	7.52
Cardiac Defibrillator Implant With Cardiac Catheter	6.36
Source: Virginia Health Information Claims Data.	

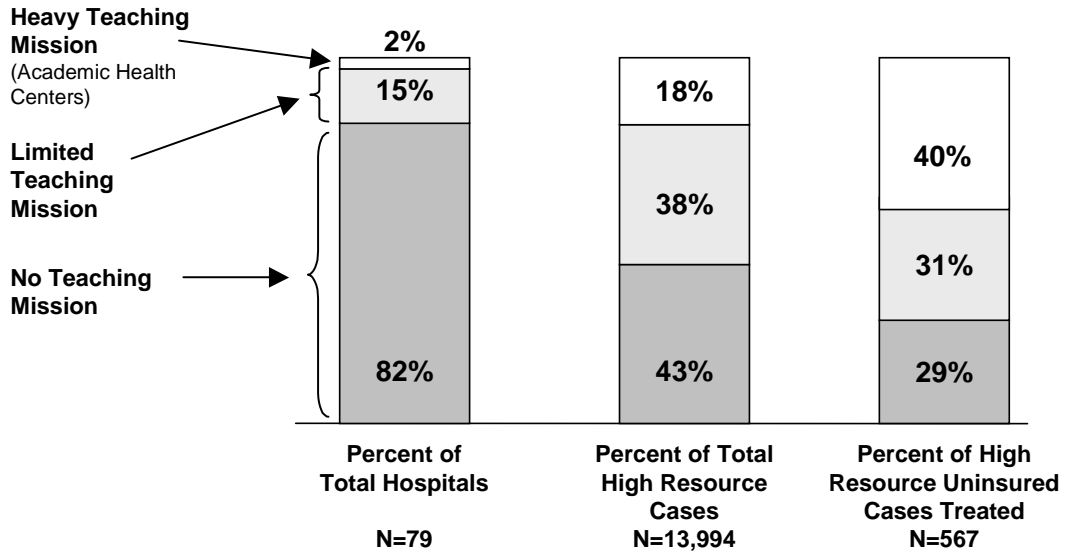
Based on this analysis, it was determined that there were 13,994 total high resource cases in Virginia in FY 2001. The patients represented by these cases were treated in 79 hospitals -- two of which were the State's two AHCs. Almost 20 percent of the high resource cases were treated in the two AHCs (Figure 12). The largest share of these cases (43 percent) was treated in hospitals with no teaching mission (82 percent of all hospitals that provide services to a high resource case). Those hospitals with a limited teaching mission (15 percent of all hospitals that provided services to a high resource case) treated 38 percent of these cases.

National studies have shown that indigent patients and the uninsured who are not poor are less likely to receive the high-cost specialty care services. When these historically underserved populations received that care, it was mostly offered through AHCs. There is evidence to suggest that this pattern of care occurs in Virginia as well. Figure 12 reveals that a substantially larger portion of the uninsured high resource cases (including persons who are indigent) gain access to specialty care in the AHCs. Specifically, nearly four of every 10 persons who were uninsured and received specialty high resource care were treated in the AHCs. In terms of charges (bottom of Figure 12), nearly 12 percent of VCU/HS total charges for high resource cases were for persons who were uninsured. These figures are considerably higher than those observed for other hospitals across the State, despite the presence of several hospitals in the Richmond-Metropolitan area that provide specialty care services. These data

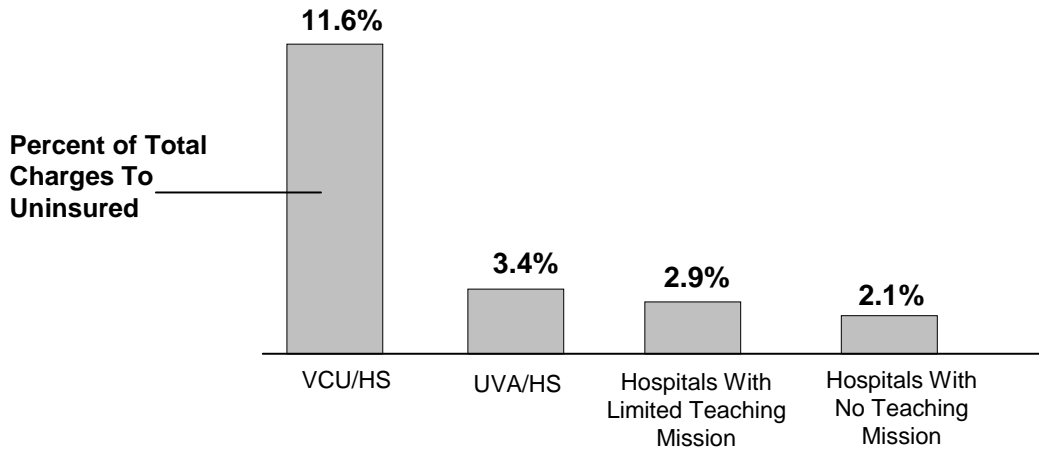
**Figure 12**

## High Resource Cases Treated In Virginia Hospitals, 2001

### Percent of High Resource Indigent And Uninsured Cases Treated



### Percent of Total Charges to the Indigent and Uninsured for High Resources Care (N=567)



Sources: Virginia Health Information Claims Data, American Hospital Association Annual Survey and the American Medical Association data.

indicate that uninsured persons with the highest cost of care are more likely to receive that care at an AHC, which will usually be VCU/HS.

A benign interpretation of these findings is that private hospitals, even with recent forays into the field of specialized care, do not have the service lines in place to treat those complex illnesses that are more common among the indigent and uninsured. A less optimistic interpretation is that private hospitals are finding ways to ration this type of care to persons who do not have insurance and are not able to pay, without violating federal legislation that prohibits “patient dumping” to publicly funded hospitals. In addition, it should be noted that in the Richmond area in particular, four acute care and two specialty care hospitals have either closed or left the City in part due to the financial pressures of operating in a market that requires the provision of substantial levels of care to uninsured and underinsured populations.

Notwithstanding an explanation of this finding, the problem for policy makers posed by these and other results reported in this chapter is clear. The State’s two AHCs pursue a combination of social missions that continue to distinguish these institutions from their private counterparts in many ways. A basic characteristic of the activities associated with some of these social missions is that they represent either public or merit goods. Public goods are both non-rival and non-excludable in nature. Non-rival means that the amount of the available good is not depleted when consumed by others. Non-excludable means the good is freely available for use after it is produced. The clinical research conducted in the AHCs is an example of a public good.

Merit goods, such as the medical education of residents and specialized health care for indigents, can be purchased, and such consumption generates external benefits for society as a whole. When AHCs spend resources training residents with the latest in medical technology and treating patients who suffer from rare complex illnesses, clearly both the residents and patients benefit. However, society benefits as well from the knowledge base created by these endeavors and the advancements made in healthcare.

Economic theory holds, and experience indicates, that the competitive market does not efficiently or optimally produce public or merit goods. Because the benefits associated with the delivery of public goods such as research are often diffuse, profit-oriented hospitals are not likely to engage in a large-scale production of these goods. Likewise, the external benefits that flow from the use of nascent technology to treat rare illnesses are not fully accounted for in private transactions between the hospital and the patient. Hence, private markets cannot be relied upon to produce an optimal level of these goods and services. Therefore, if policy makers hope to maintain the level of services tied to the core mission of the AHCs, government will have to retain a major role in the funding of these institutions.

## **THE FLOW OF FUNDS IN VIRGINIA'S ACADEMIC HEALTH CENTERS**

Over the years, one of the persistent charges raised against AHCs has been that its healthcare costs are inflated because of direct subsidizes made by these institutions to their affiliated universities. Critics contend that these subsidies are made from revenue intended for the care of patients for the sole

purpose of offsetting some of the operational cost of the University of Virginia and Virginia Commonwealth University.

Based on the proforma funds flow documents for the AHCs, these criticisms and claims could not be substantiated. Relying on five different revenue sources, VCU/HS receives more than \$768 million and allocates these funds to three entities -- MCV Hospitals, a physician practice plan, and a Medicaid HMO. Through purchase of service agreements, almost \$60 million of these funds are moved between these three entities to pay for the management and delivery of healthcare. The one exception is a \$3.2 million clinical earnings contribution made to the University. This transfer is financed by a tax on the gross receipts of insurance plans and is used by VCU to support its School of Medicine.

UVA/HS receives its revenue of \$605.3 million from four major sources. Virtually all of these funds are allocated to the UVA Medical Center, which purchases more than \$17 million in physician services from the School of Medicine.

**With the Exception of a Small “Dean’s Tax” At VCU\HS, All Fund Transfers within the Academic Health Centers Are Made for the Purchase of Services Related to the Management and Delivery of Healthcare**

Because of the size, complexity of organizational structure, and the multiplicity of revenue sources of Virginia’s AHCs, understanding the funding and flow of dollars in these institutions poses a considerable challenge. Both of these organizations consist of several interrelated entities whose financial relationships are directed by numerous contracts and agreements. These documents govern the arms length financial transactions between the various components of the

AHCs, which are necessary to support the mission-related activities of the two systems.

To shed some light on how these funds move through the AHCs, budget and internal purchase of service documents were analyzed for both systems. Through this review, the total dollars received by these systems and the amount and nature of fund transfers were identified.

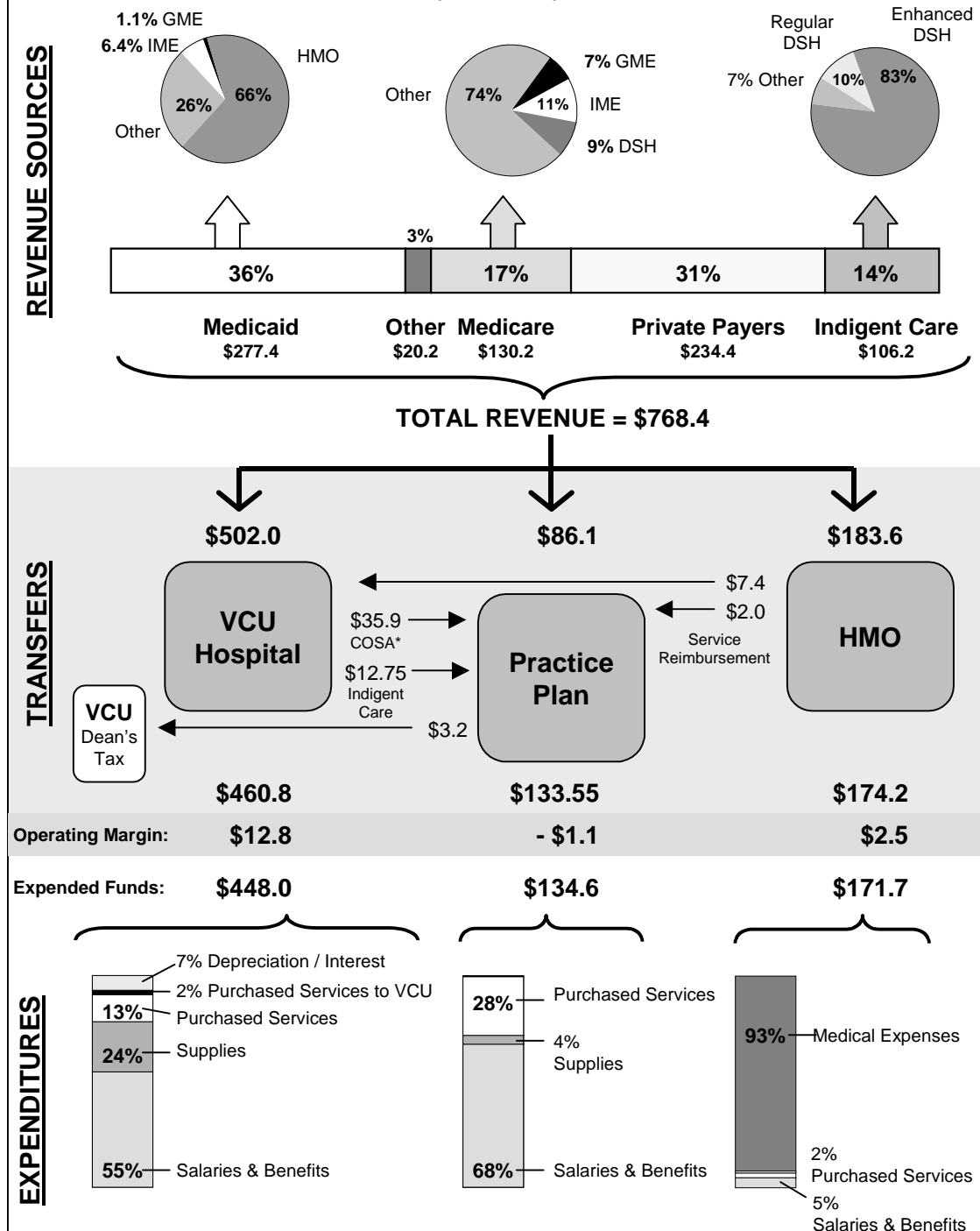
***Revenue Sources and Flow of Funds at VCU/HS.*** Figure 13 presents the results of this analysis for VCU/HS. The top part of the graphic indicates the revenue sources for the health system. As shown, through five different sources, in FY 2003, VCU/HS received more than \$768 million. The Medicaid program was the largest revenue source for the hospital, contributing 36 percent (\$277 million) to the system. Private payers accounted for 31 percent of the system's revenue, followed by Medicare (17 percent) and appropriations for indigent healthcare (14 percent).

The middle portion of the graphic illustrates how the revenue was allocated and moved between the major components of VCU/HS. Over 65 percent (\$502 million) of the total revenue was allocated for the operation of the hospital. Smaller amounts (\$86.1 million) and (\$183.6 million) fund the system's practice plan and HMO.

Two significant internal purchase of service agreements were executed between the hospital and the practice plan. In one, referred to as Clinical Operating Service Agreements (COSA), the hospital purchased \$35.9 million in services from the plan. These purchases included \$17 million in clinical services

**Figure 13**

**Revenues and Expenditures for the Virginia Commonwealth University Health System, FY 2003**  
(in millions)



\* COSA refers to Clinical Operating Service Agreements.

Source: Analysis of data provided by the Virginia Commonwealth University Health System.

provided by the physicians, \$8.2 million for resident supervision, \$6 million for joint operations between the hospital and practice plan, and \$4.1 million in overhead costs that were stepped down to the hospital to pay for a portion of the practice plan's medical administration services. The second significant transfer paid for physician services provided to persons who were indigent. The system's HMO spent a total of \$9.4 million on hospital care for those it insured (\$7.4 million) and on their related physician services (\$2 million).

The only transfer made to the University that was not tied to patient care services was a \$3.2 million clinical earnings fee. In the lexicon of the AHCs, this is commonly referred to as a "Dean's Tax." Generated from a tax on the proceeds received by VCU/HS from private plans, these dollars are used to directly support the academic mission of the School of Medicine. Some of these funds are used for the recruitment of teaching and research faculty, salary supports, and research start-up costs.

The figure also shows that VCU/HS was able to generate a \$12.8 million operating margin (2.5 percent) from its hospital operations in FY 2003 -- the industry standard is four percent -- and a 2.5 million margin (1.4 percent) for its HMO. The practice plan actually lost money, requiring officials to use \$1.1 million of the system's reserve to cover the expenses of the plan.

The bottom of Figure 13 indicates how the remaining dollars in each of these entities were spent following the internal fund purchases. Most of the revenue for MCV hospitals and the practice plan covered the salaries of the

relevant staff. More than 90 percent of the revenue for its HMO was used to pay the medical expenses of those insured through this plan.

***VCU/HS' Flow of Funds For Indigent Healthcare.*** Figure 14 tracks the flow of funds for the dollars VCU/HS received to pay for indigent healthcare services. In FY 2003, the system received a total of \$106.2 million. As indicated by the pie chart at the top of the graph, VCU/HS received virtually all of the indigent healthcare funds from the Medicaid Disproportionate Share program (93 percent). The Virginia General Assembly appropriated the remainder from the general fund.

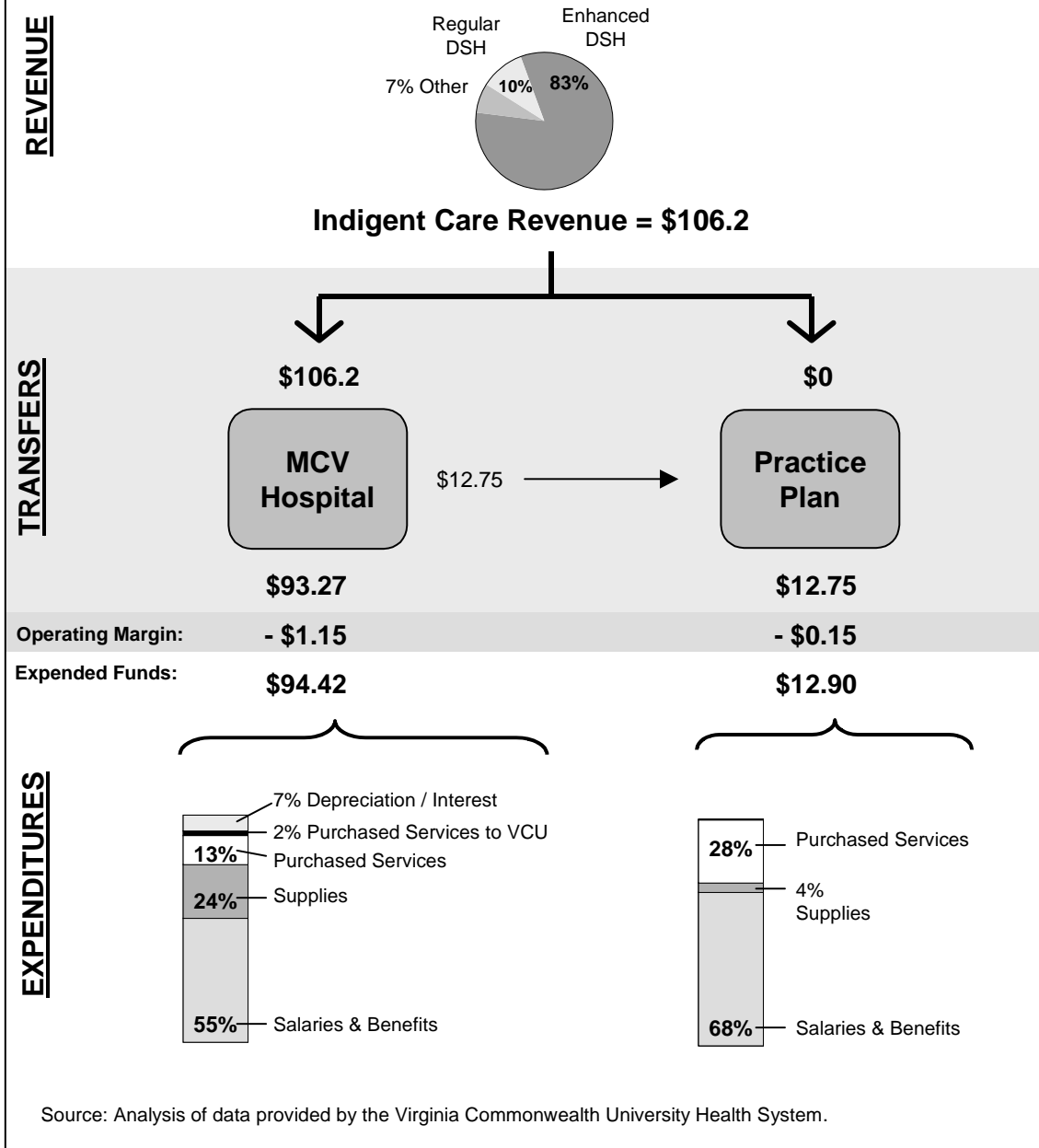
Health system administrators allocated all of the revenue for indigent healthcare to the hospital. To pay for physician services provided by the practice plan, a purchase of service fund transfer of more than \$12 million was made to the plan.

In FY 2003, indigent healthcare expenses for both the hospital and the practice plan exceeded the revenue appropriated for these services. For VCU hospital, the operating margin reflected the loss of \$1.15 million, while the practice plan suffered losses of approximately \$150,000. As noted earlier, the health system covers these losses with withdrawals from its reserve fund.

***Revenue Sources and Flow of Funds at UVA/HS.*** The financing model in place at the UVA/HS is composed of two entities – the UVA Medical Center and the UVA School of Medicine. The sources of funding for this system are similar to those for VCU/HS but the revenue generated for the hospitals from private payers account for a much larger share of the system's revenue (47

**Figure 14**

**Revenues and Expenditures from Indigent Care for the Virginia Commonwealth University Health System  
FY 2003 (in millions)**



percent) than observed for VCU/HS (Figure 15). Medicare payments were the second largest source of revenue for the system (33 percent), followed by Medicaid (12 percent), and indigent healthcare (eight percent).

In FY 2002, UVA/HS received \$605.3 million in total revenue. Of this amount, all but \$400,000 was allocated to the UVA's Medical Center. The remaining amount was an appropriation from the General Assembly to support indigent healthcare at the UVA School of Medicine.

To facilitate the care of its patients, the UVA Medical Center purchased \$17.3 million in physician services from the School of Medicine. As with the VCU/HS, these funds were used to offset the cost of medical and education services provided by physicians. Following this purchase of services, the hospital was left with \$587.6 million to cover expenses. As shown by the graph, actual expenses in FY 2002 were \$582.6 million, nearly half of which were employee salaries and benefits. This generated an operating margin of \$5 million - about one percent.

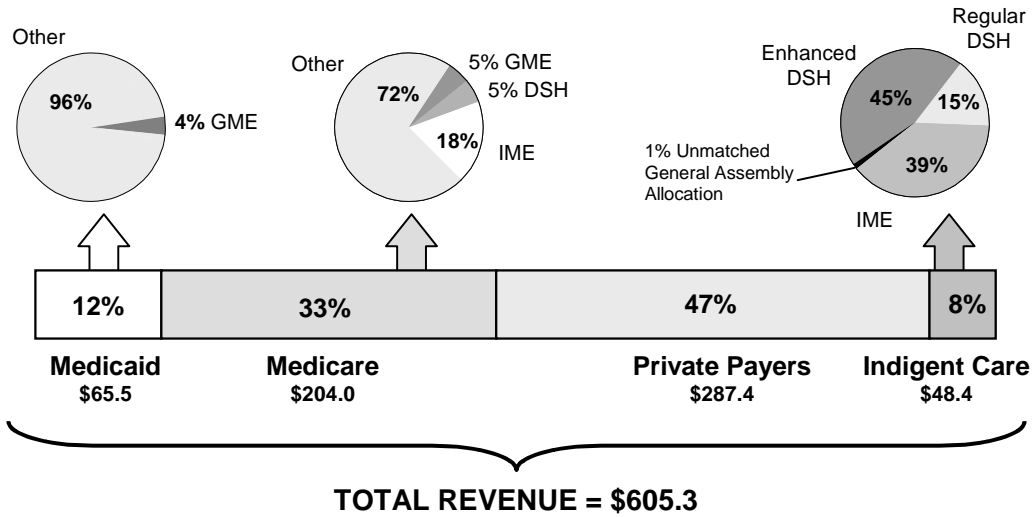
With the purchase of service fund transfer from the hospital, the UVA School of Medicine generated \$17.7 million in revenue. As the cost of these services matched the amount transferred through the internal fund purchase, the UVA/HS neither made nor lost money on the operations through the school.

***UVA/HS' Flow of Funds For Indigent Healthcare.*** As is the case for VCU/HS, the UVA/HS receives separate appropriations from various sources to pay for the indigent healthcare services provided through the system. In FY

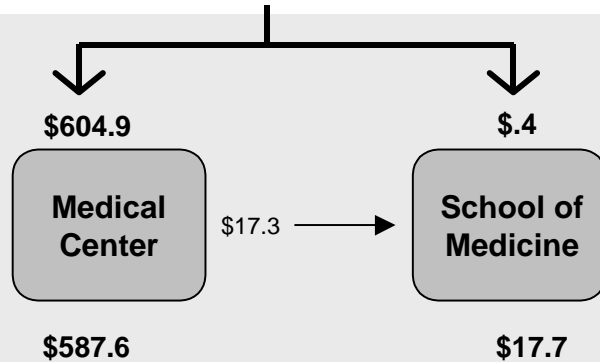
**Figure 15**

**Revenues and Expenditures for the  
University of Virginia Medical Center, FY 2002  
(in millions)**

**REVENUE SOURCES**



**TRANSFERS**



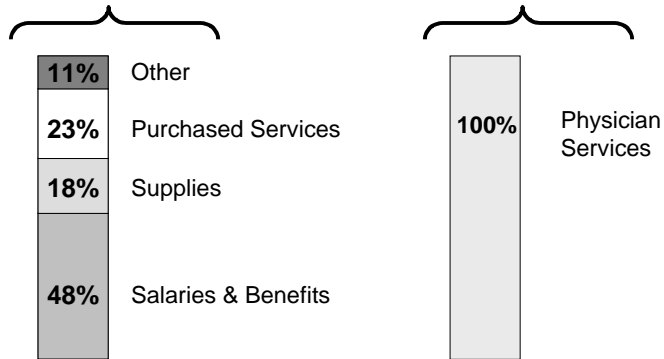
**Operating Margin:**

Medical Center: **\$587.6**      School of Medicine: **\$17.7**  
 Operating Margin: **\$5.0**      **\$0.0**

**Expended Funds:**

Medical Center: **\$582.6**      School of Medicine: **\$17.7**

**EXPENDITURES**



Source: Analysis of data provided by the University of Virginia Health System.

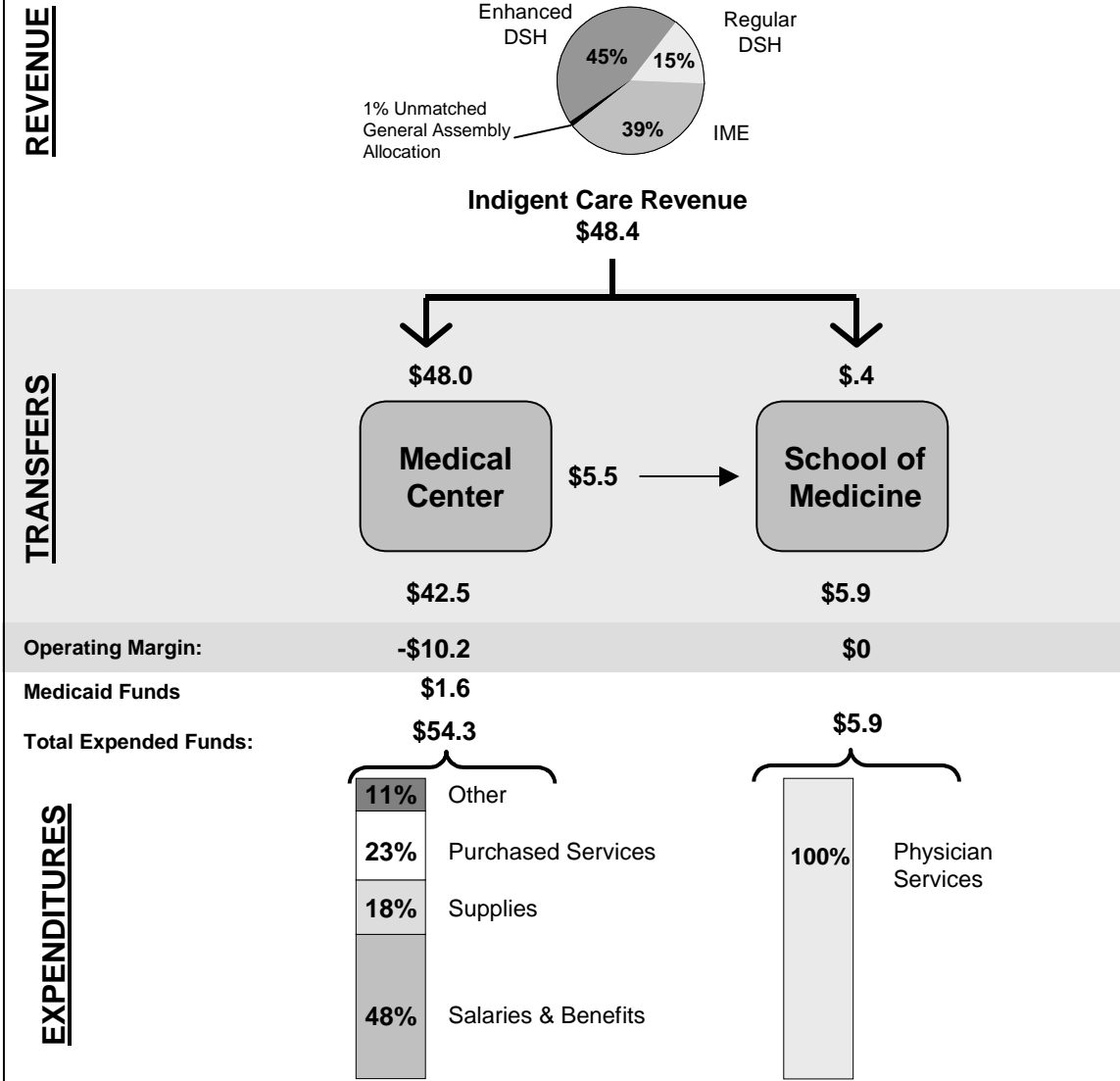
2002, UVA/HS received \$48.4 million for the indigent healthcare services it provided. Figure 16 reports the flow of funds for these dollars. Tracking the flow of funds through the system reveals one transfer to the School of Medicine of \$5.5 million to pay for physician services. When combined with the \$400,000 appropriation from the General Assembly, the School of Medicine received and spent \$5.9 million on indigent healthcare services. In the UVA Medical Center, after accounting for the purchase of services from the School of Medicine and the cost incurred for indigents in the hospital, UVA/HS lost over \$10 million on the treatment of indigent patients.

In summary, these analysis results do not support claims that valuable healthcare resources for the poor are diverted from the intended purpose to mitigate the impact of university expenses. It is important to note, however, that this funds flow analysis was only designed to answer questions related to how administrators for AHCs allocate healthcare dollars and whether these funds are being used to subsidize the education and operational cost of the universities. Quite apart from the issues examined here are questions related to service utilization of indigent patients and the operational efficiency of the AHCs. Accordingly, some of the questions addressed in the next chapter of this report are as follows:

- What are the differences in overall per-patient cost between the AHCs and other hospitals in the State? What major factors explain any observed differences in cost?
- How do Virginia's AHCs compare to peer institutions across the country in terms of the cost of the care provided?
- What trends can be observed in the cost of indigent care provided by Virginia's AHCs and what do these trends

**Figure 16**

**Revenues and Expenditures for Indigent Care for the University of Virginia Health System, FY 2002 (in millions)**



Source: Analysis of data provided by the University of Virginia Health System

suggest about the manner in which the AHCs have managed the indigent care program? Have the costs for this program grown at a faster rate than hospital inflation?

- Are the indigent patients appropriately screened to determine their eligibility for other sources of funding when they seek indigent care?