REPORT OF THE
JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

Review of the Medicaid Inpatient Hospital Reimbursement System

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 25

COMMONWEALTH OF VIRGINIA
RICHMOND
2001

Members of the
Joint Legislative Audit and Review Commission

Chairman
Delegate Vincent F. Callahan, Jr.

Vice-Chairman
Senator Kevin G. Miller

Senator Charles J. Colgan
Delegate M. Kirkland Cox
Delegate V. Earl Dickinson
Senator J. Randy Forbes
Delegate Frank D. Hargrove, Sr.
Delegate Dwight C. Jones
Senator Thomas K. Norment, Jr.
Delegate Harry J. Parrish
Delegate Lacey E. Putney
Delegate John A. Rollison III
Delegate John H. Rust, Jr.
Senator Walter A. Stosch

Mr. Walter J. Kucharski, Auditor of Public Accounts

Director
Philip A. Leone

© COPYRIGHT 2000, COMMONWEALTH OF VIRGINIA

Preface

The Virginia Medicaid program is the largest of the State's healthcare programs for indigent persons. In FY 1999, total expenditures for the program surpassed $2 billion. Currently, payments to hospitals — which comprise nearly one-quarter of the total Medicaid budget — represent the largest component of Medicaid spending.

In 2000, the Virginia General Assembly passed Item 20 K of the Appropriation Act directing the Joint Legislative Audit and Review Commission (JLARC) to examine the process and methodology used by the Department of Medical Assistance Services (DMAS) to develop a new reimbursement system for Medicaid inpatient care. This study was mandated due to concerns raised by the hospital industry, primarily about the adequacy of the payments hospitals receive for treating Medicaid patients who require inpatient care. This report presents the findings from JLARC's review.

The study findings indicate that the rate-setting methodology developed by DMAS for inpatient care is generally logical, and it contains all of the key elements needed to calculate payment rates for hospitals that provide inpatient care to Medicaid patients. Under this methodology, for the first time since the inception of Medicaid in Virginia, hospitals receive payments for the services they provide based on the diagnosis of each patient treated, rather than on the average daily cost of care for Medicaid patients in general.

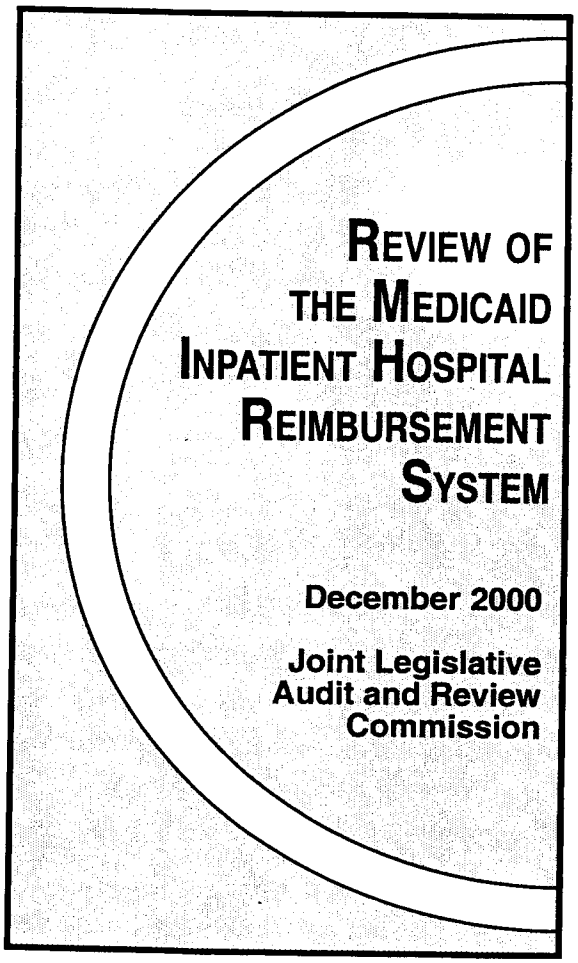
However, in developing this new, more complex system, DMAS experienced a number of implementation problems that the agency will have to address to correct underpayments to hospitals in previous years. This review indicates that the cost of correcting these underpayments will be $11 million, at a minimum. In addition, DMAS continues to adjust payments to hospitals downward, using a method that largely ignores changes in the efficiency of hospital operations. In recent years, this adjustment factor has been used to reduce hospital payments by 21 percent, despite the success the industry has experienced in holding the line on Medicaid inpatient cost. The annual cost associated with removing this adjustment factor will be substantial, amounting to more than $48 million in operating payments for inpatient care. Approximately half of this amount would have to be paid from State general fund appropriations.

On behalf of the Commission, I wish to express our appreciation for the assistance and cooperation provided by DMAS staff during the course of this study.

Philip A. Leone
Director

December 13, 2000

JLARC Report Summary



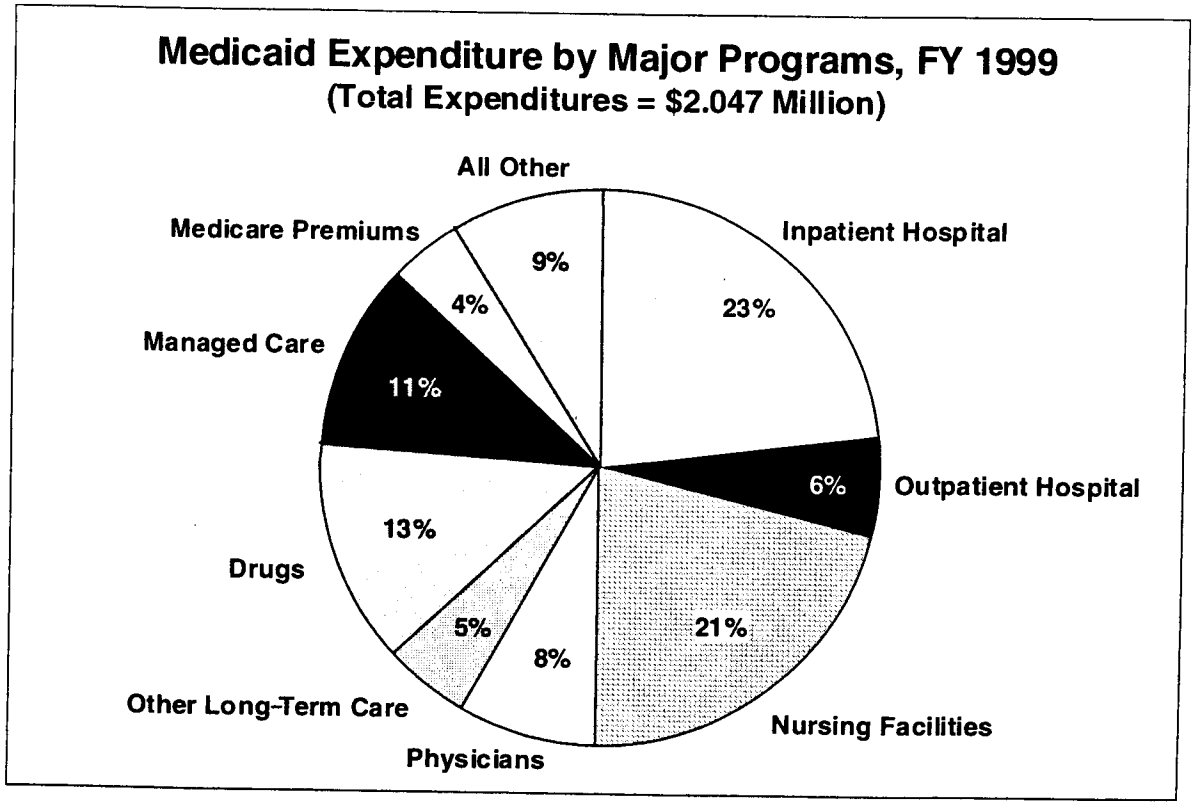
In 2000, the Virginia General Assembly passed Item 20 K of the Appropriation Act directing JLARC to examine the process and methodology used by the Department of Medical Assistance Services (DMAS) to establish a new payment system for Medicaid inpatient care. Currently, inpatient hospital care is the largest expenditure category for the Medicaid program, accounting for 23 percent of the program's expenditures (see figure on the next page).

JLARC conducted a similar review of the Medicaid inpatient program back in 1990. At that time, DMAS received high marks for developing and implementing a reimbursement system for inpatient hospital care that effectively controlled the growth in payments for those services. Particular attention was given to the fact that DMAS saved the State more than $64 million in 1990 by paying hospitals only a portion of their allowable costs associated with serving Medicaid patients. At the same time, however, the report discussed the looming specter of legal challenges to DMAS' reimbursement system and the potential threat this posed to the long-term viability of the system.

Legal challenges were made to the old system. While these challenges have abated, some of the issues that were at the center of the hospital industry's lawsuit against the Commonwealth resurfaced as the State began the process of moving to a new reimbursement system in 1996. Specifically, the Virginia Hospital and Healthcare Association (VHHA) contends that at a time when hospital costs were beginning to increase, DMAS made retroactive cuts to the inpatient reimbursement rates using databases that contained many errors. Further, VHHA asserts that a decision by DMAS to perpetuate the use of a rate "adjustment factor" unfairly reduces the Medicaid reimbursement for inpatient care by a current rate of 21 percent. This study provides a review of the process used by DMAS to establish a new payment system, assesses the soundness of the methodology used by the agency to set the new rates, and examines the adequacy of those rates.

Rate-Setting Methodology Is Logical, But DMAS Experienced Data Problems When Implementing the New Payment System

In general, this study found the rate-setting methodology implemented by DMAS to be generally logical and internally consis-



tent, while containing all the key elements necessary to calculate rates for inpatient hospital care. However, in developing this new and more complex system of reimbursement, the department experienced a number of implementation and technical problems, some of which will have to be addressed as the department moves forward with full implementation of the system. In addition, the department has continued to apply a rate adjustment factor to hospital operating rates that artificially suppresses the payment levels produced by the new reimbursement system.

In terms of implementation problems, the process used to put the system in place, make technical adjustments to the rate-setting methodology, and establish prospective rates was characterized by protracted delays. Because of these delays, DMAS was required, by regulation, to apply the initial rates for the system retroactively, which was not consistent with the general intent of the General Assembly. This action fractured relationships with the Medicaid Payment Advisory Council. Although, the working relationship between the council and DMAS has improved significantly in the past year, questions persist about the appropriate role for this body.

From a technical perspective, the department experienced two problems that affected hospital payment rates. First, the databases used by DMAS caused some patient claims to be inappropriately categorized. The result of this problem is that the severity of some cases was underestimated, and hospitals received an underpayment for those cases. DMAS is working to correct this problem, which JLARC staff estimate could cost a minimum of $11.4 million to resolve.

Second, when setting the payment rates for FY 1999, DMAS used a method for estimating hospital costs that was later determined to have lowered payment rates

to hospitals. The General Assembly appropriated $12 million in FY 2000 to compensate hospitals for the revenues lost as a result of this problem.

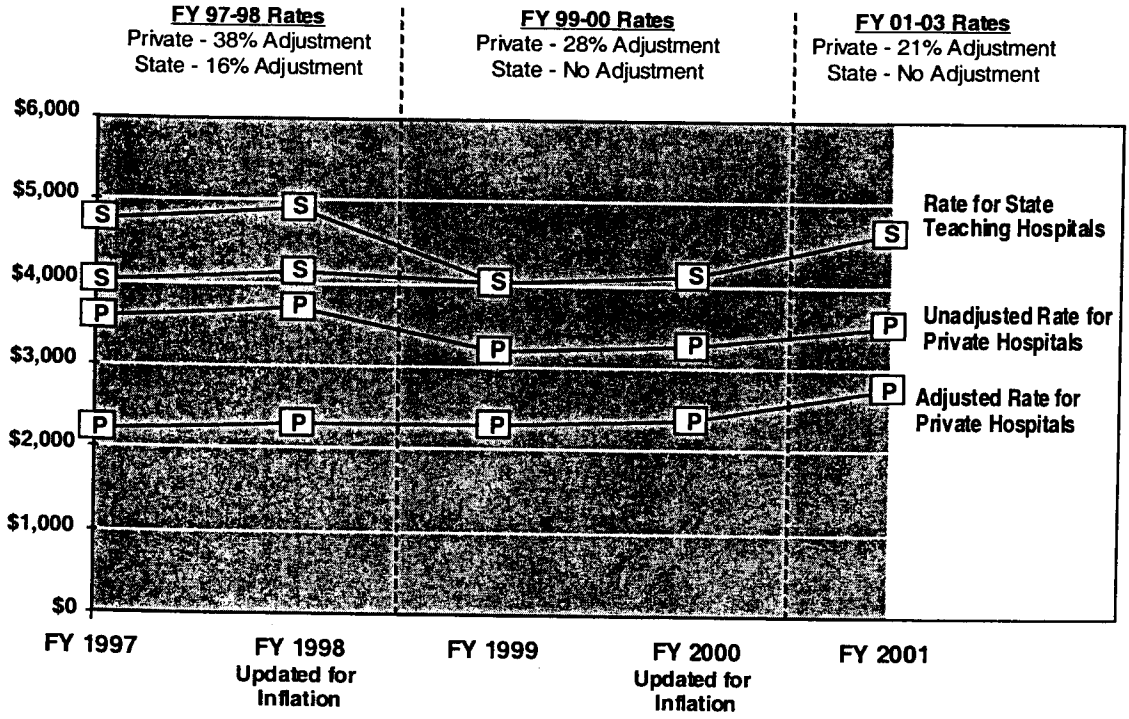
There is also some disagreement about DMAS' tentative plans to recapture savings from hospital payment rates that were paid in FY 1997 and FY 1998. The regulations that provide DMAS with the authority to capture savings from hospitals based on changes in the length of time that Medicaid recipients received inpatient care were passed in FY 1996. Nonetheless, the methodology used by the department to determine the amount of savings that can be attributed to those changes and recaptured by DMAS falls considerably short of the burden of proof required by the regulations. Therefore, any payment reductions for lengths of stay savings appear unjustified.

DMAS Adjustment Factor that Lowers Payment Rates Is a Concern

Based on the findings of this review, legitimate questions can be raised about the State's policy of lowering payment rates for Medicaid-financed inpatient hospital care through the use of an adjustment factor. Since 1996, hospitals in Virginia have reduced the length of time that Medicaid recipients are hospitalized. Over a five-year period from 1993 to 1998, hospitals have limited the average annual growth rate in the real cost of care for these patients to less than two percent, after adjustments for patient days and patient mix.

Despite these trends, the rates for private hospitals have been adjusted downward in each year since FY 1998 based on an agreement established with the hospital industry (compare bottom two lines of graph in figure below). This contributes to the fact

Average Hospital Base Operating Rate for Private and State Teaching Hospitals With and Without the Adjustment Factor (AF) Applied for Fiscal Years 1997 Through 2001



that Virginia's payment levels to hospitals for inpatient care are low relative to other states that operate a DRG system. Currently of the 22 states that use a DRG system, Virginia is one of only two states that imposes additional rate reductions through an adjustment factor. Nine of the states that do not use such a factor have no policy requiring that the payment system be periodically rebased. This may result in lower payments over time.

Although the regulations providing for the use of a rate adjustment factor were promulgated without objections from the hospital industry in 1997, it is now very clear that the industry is opposed to the continued use of this policy. As would be expected, if the use of an adjustment factor were eliminated, the General Assembly would face a considerable increase in the cost of the State's program for Medicaid inpatient hospital care. For example, based on the AP-DRG rates that were established by DMAS for FY 2001, eliminating the adjustment factor could raise the cost of inpatient care by an additional $48 million in payments to private hospitals. Approximately one-half of this amount would have to be paid through State general fund dollars.

Recommendation (1). **The Department of Medical Assistance Services should better define the role of the Medicaid Payment Policy Advisory Council.**

Recommendation (2). **The Department of Medical Assistance Services should refrain from reducing the payment rates in effect in FY 1997 and FY 1998 based on changes in the length-of-stay for Medicaid recipients of inpatient care.**

Recommendation (3). **Prior to February 1, 2001, the Department of Medical Assistance Services should submit a plan to the House Appropriation and Senate Finance Committees outlining a strategy to phase out the rate adjustment factor by FY 2003.**

Table of Contents

Page

I. INTRODUCTION 1

Medicaid Spending for Hospital Services 2
Evolution of Virginia's Reimbursement System for Hospital Inpatient Services 5
JLARC Review 11
Report Organization 15

II. THE RATE-SETTING SYSTEM FOR MEDICAID INPATIENT HOSPITAL CARE REIMBURSEMENT 17

The Appropriateness of DMAS' Rate-Setting Methodology for Hospital Inpatient Care 18
Appropriateness of the Process Used by DMAS to Establish the New Reimbursement System 27

III. THE ADEQUACY OF MEDICAID PAYMENT RATES FOR INPATIENT HOSPITAL CARE 41

The Impact of Virginia's Medicaid Inpatient Reimbursement Policy 42

APPENDIXES 57

I. Introduction

In 1996, the Virginia General Assembly placed language in the Appropriation Act requiring the Department of Medical Assistance Services (DMAS) to make fundamental changes to its payment system for Medicaid inpatient hospital care. The language in the Appropriation Act allowed DMAS to develop a schedule to transition away from the reimbursement system that was in place at that time, and directed the agency to consult with the hospital industry as the switch to the new system was implemented.

Four years later, during the 2000 legislative session, the General Assembly passed Item 20 K of the Appropriation Act, which directed JLARC to examine both the process and methodology used by DMAS to set inpatient hospital reimbursement rates under the new system (see Appendix A). The impetus for this study mandate were the numerous concerns expressed by the Virginia Hospital and Healthcare Association (VHHA) regarding the appropriateness of the process implemented by DMAS to set the new rates, as well as the adequacy of these payment rates.

According to VHHA, at a time when hospital costs were beginning to increase, DMAS made retroactive cuts to the inpatient reimbursement rates using databases that contained many errors. These rate cuts, VHHA contends, were based on regulations that DMAS promulgated without consulting with the industry, as the law required. More damaging, according to the VHHA, was the decision by DMAS to perpetuate the use of a rate "adjustment factor" which, the association contends, unfairly reduces the Medicaid reimbursement for inpatient care by 21 percent.

As a result of these changes, VHHA states that hospital efforts to recover the cost of serving Medicaid patients have been undermined. In past years, hospitals were able to subsidize these losses with the revenue generated from private pay patients. However, VHHA staff now assert that the advent of managed care, unexpected increases in the number of uninsured patients, and federal cuts in the Medicare program have greatly limited the hospital industry's ability to offset these losses.

DMAS staff acknowledge that the FY 1999 rates were published 16 months late. While they also concede that the databases upon which the new rates were based had incomplete data, staff point out that steps are being taken to address these problems. DMAS staff also recognize that the first year rates for the new system were lower than the rates hospitals were being paid during a "transition period" while the system was under development. However, staff indicate that these lower rates and the agency's continued use of a rate adjustment factor are consistent with an agreement the State made with the hospitals in 1996 and with regulations promulgated based on that agreement.

Because of the size of the Virginia's Medicaid program, the fiscal implications stemming from the resolution of this current dispute are considerable. Currently, the Virginia Medicaid program is the largest of the State's health care programs for indigent persons. In FY 1999, the total cost of the Medicaid program was more than $2

billion. The State's portion of this cost was $993 million. Payments to hospitals are a major component of Medicaid spending. In FY 1999, Medicaid hospital payments in Virginia from State and federal funds totaled $607 million. Nearly 80 percent of these payments were made for inpatient hospital services.

This report provides a review of the Medicaid reimbursement system for inpatient hospital care. The remainder of this chapter provides information on Medicaid spending trends for hospital services, discusses the evolution of Virginia's reimbursement system for inpatient care, and provides a brief overview of the approach JLARC staff used to complete this study.

MEDICAID SPENDING FOR HOSPITAL SERVICES

Medicaid is a healthcare program jointly financed by the federal government and the states to provide a range of medical services for the poor. The program covers services provided in hospitals and nursing homes. In 1992, JLARC completed a study of DMAS' reimbursement system for inpatient hospital services as a part of a larger study of the entire Medicaid program. At that time, Medicaid spending represented only a small proportion total hospital revenue (about seven percent). However, on both an aggregate and per-recipient basis, Medicaid expenditures for hospital services was one of the fastest growing components of the Medicaid budget. A disproportionate share of the payments made for inpatient hospital care went to the State's teaching hospitals as compared to all other hospitals.

Since that time, few things have changed with Medicaid spending for hospitals in general and inpatient hospital care in particular. Ten years later, Medicaid inpatient hospital payments still account for approximately seven percent of net hospital revenue. The overall Medicaid budget has grown by nearly 70 percent since 1992 and inpatient expenditures – which account for 23 percent of the entire Medicaid budget have increased by almost 40 percent. More importantly, when the growth in the number of Medicaid recipients is accounted for, expenditures for Medicaid inpatient care have increased at a faster rate than for all Medicaid services combined, as well as outpatient care.

The Nature of and Trends in Medicaid Inpatient Hospital Spending

Presently, there are four types of major medical services that are funded by the Virginia Medicaid program under the general category of inpatient care. These are inpatient acute care services, rehabilitation hospital services, long-stay inpatient hospital care, and inpatient psychiatric hospital services. In FY 1999, the Virginia Medicaid program paid hospitals $391 million for providing these services to Medicaid recipients, excluding special payments to the State's two teaching hospitals. Table 1 provides a brief description of these services.

Table 1

Components of Medicaid Coverage for Inpatient Care in Virginia

Type of Service	Description of Service	Coverage Exclusions	FY 1999 Expenditure
Acute Care	Services typically provided to persons suffering from acute trauma or illness.	Mentally ill persons over the age of 65. Persons needing only outpatient treatment. Persons seeking treatment for alcohol or drug use. Persons in certain organ transplants.	$369,624,605
Rehabilitation Hospital Services	General physical therapy, occupational therapy, and speech-language pathology services that are provided in acute care hospitals for a limited time period.	Persons requiring alcohol or drug abuse treatment.	$12,089,711
Long-Stay Hospital Services	Specialized hospital services for persons who require 24-hour licensed nursing care, and specialized equipment needs.	None	$7,173,432
Inpatient Psychiatric Care	Psychiatric services provided in an institutional setting.	Persons between the ages of 21 and 65.	$5,814,074

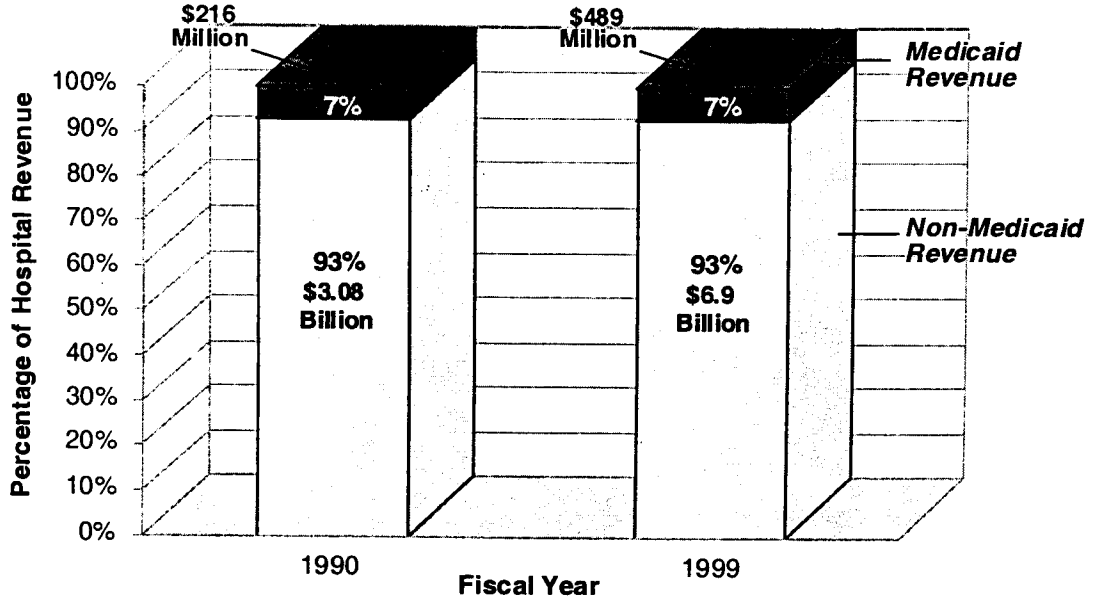
Source: *The Statistical Record of the Virginia Medicaid Program and Other indigent Health Care Programs, 1999*, a document printed by the Department of Medical Assistance Services.

The Magnitude of Medicaid Hospital Spending. When JLARC undertook its first major study of the State's Medicaid reimbursement system for hospitals in 1990, there was widespread concern among legislators about the rapidly escalating cost of the program. A key finding of that study was that Medicaid spending on hospital services could not be controlled through Medicaid policy alone because Medicaid payments accounted for only a small portion of total hospital revenue. In the ten years since that study was completed, that basic fact about Medicaid and hospitals has not changed. Specifically, in 1990, Medicaid payments represented only seven percent of total net patient revenue for hospitals. As shown by Figure 1, nine years later (in FY 1999) this figure remained at seven percent.

At the same time, nonetheless, the significance of Medicaid spending on the hospital program in general and inpatient services in particular should not be understated. In FY 1999, total expenditures on general Medicaid services were slightly more than $2 billion (this figure does include more than $400 million in Medicaid expenditures that were used to purchase mental health services.) The largest expenditure category in FY 1999 was inpatient hospital care, at 23 percent of the general

Figure 1

Medicaid Hospital Payments as a Percentage of Hospital Net Patient Revenues, FY 1990 and FY 1999



Source: JLARC staff analysis of data from Virginia Health Information.

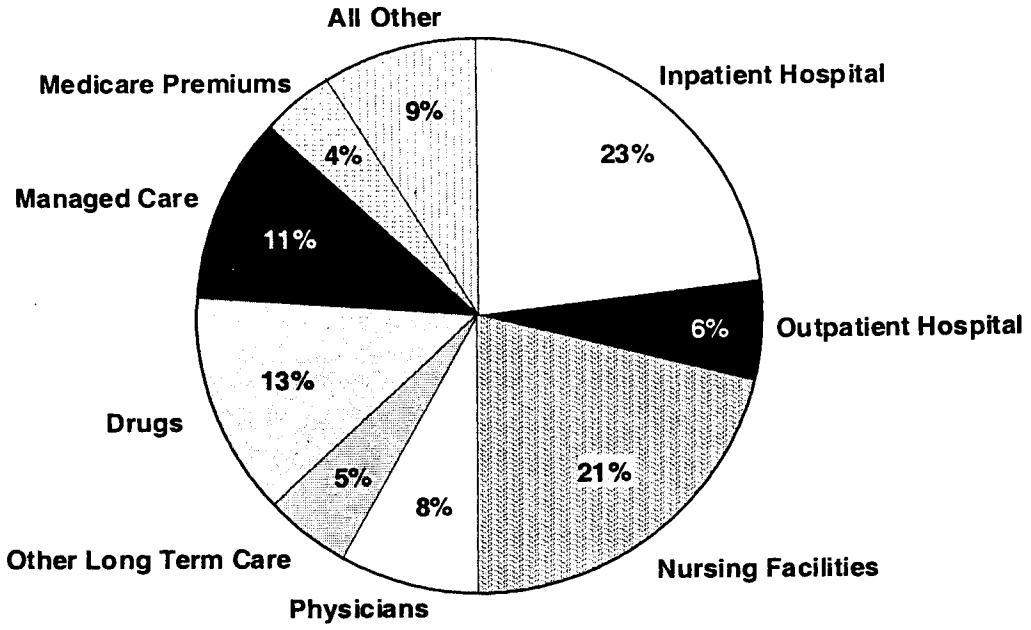
Medicaid budget (Figure 2). Expenditures for outpatient hospital services represented six percent of the general program budget, bringing the total Medicaid expenditures on hospital-related services to more than $607 million.

Growth in Medicaid Inpatient Hospital Expenditures Since 1990. Since the program's inception, one feature that has consistently characterized Medicaid spending on inpatient services has been its rapid growth. During the period covered by the first JLARC review of this issue (1987-1991), the aggregate increase in inpatient hospital expenditures was nearly 130 percent. On a per-recipient basis, the increase was 41 percent. While the rate of growth in this program on both an aggregate and per-recipient basis has slowed somewhat since that time period, the program continues to expand considerably. As shown in Figure 3, since 1992, aggregate inpatient hospital expenditures have increased by nearly 40 percent. While this is significantly lower than the overall rate of growth observed for all of Medicaid, it exceeds the rate of growth witnessed for outpatient healthcare services.

Further, when changes in the number of recipients receiving services are accounted for, the rate of growth for inpatient services exceeds the rates observed for both all of Medicaid as well as the outpatient program. The overall differences in the rate of growth between the inpatient program and all of Medicaid are slight (36 to 31 percent). However, the rate of spending per-recipient in the inpatient program has increased at a significantly faster rate (36 to 17 percent) than observed for hospital outpatient care.

Figure 2

Medicaid Expenditure by Major Programs, FY 1999
(Total Expenditures = $2.047 Million)



Source: *The Statistical Record of the Virginia Medicaid Program and Other Indigent Health CME Programs*, FY 1999.

EVOLUTION OF VIRGINIA'S REIMBURSEMENT SYSTEM FOR HOSPITAL INPATIENT SERVICES

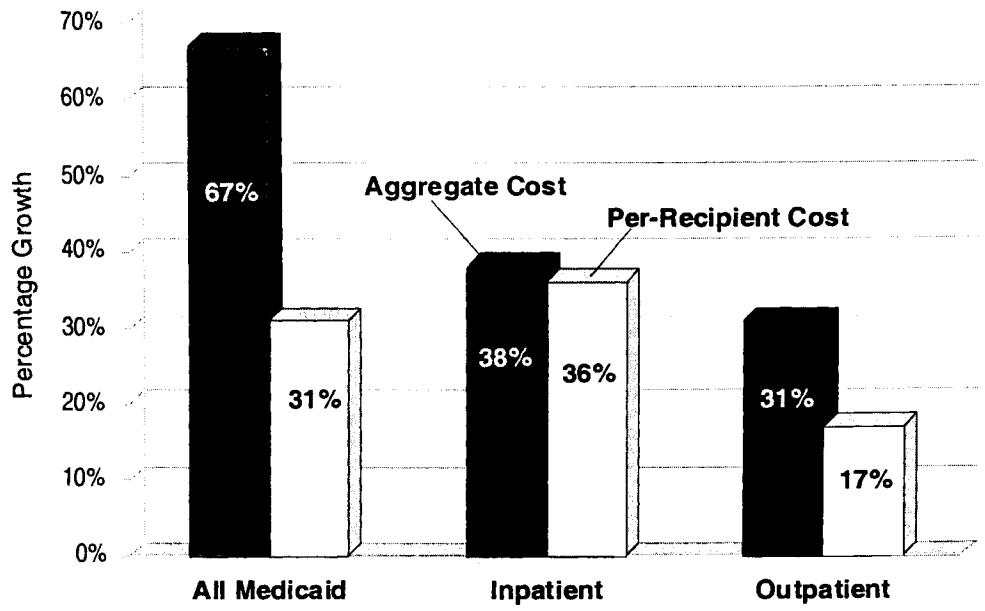
Since Medicaid was adopted in Virginia in 1969, the State has employed three different reimbursement systems for inpatient hospital services (Exhibit 1). The first system essentially reimbursed hospitals at the end of an operating year and the payments were based on their reported allowable costs. Because of concerns about the lack of cost containment incentives associated with this method of reimbursement, the State switched to a prospective reimbursement system in 1983 through which inpatient hospital rates were set prior to the actual delivery of services.

These prospective rates were based on the hospitals' previous years' per-diem operating rates. To control costs, these rates were then compared to a payment ceiling and hospitals were paid the lower of either the ceiling or their per-diem-operating rate. In effect, these payment ceilings, which were based on the median payment for hospitals in a peer group, represented DMAS' operational definition of hospital efficiency.

Shortly after that payment system was established, hospital providers expressed dissatisfaction with the State's payment rates. In 1986, the VHHA filed a lawsuit on behalf of Virginia hospitals claiming that the reimbursement rates under

Figure 3

Medicaid Hospital Services: Growth in Aggregate Spending Compared to Per-Recipient Spending, FY 1992 to FY 1999



Source: *The Statistical Record of the Virginia Medicaid Program and Other Indigent Health CME Programs*, FY 1999.

Exhibit 1

Elements of Virginia's Medicaid Reimbursement Systems for Hospital Inpatient Services

Years	System Design	Unit of Payment	Cost-Control Features
1969 – 1982	***Retrospective system.*** Hospitals were reimbursed 100 percent of their reasonable costs based on end-of-year cost reports.	Hospital allowable costs	None
1983 – 1996	***Prospective system.*** Hospital inpatient payment rates were established before the services were actually provided.	Per-diem operating costs	Payment limits (ceilings) established for different peer groups.
1996 – Present	***Prospective system.*** Hospital inpatient payment rates were established before the services were actually provided.	Per-Case Based On Complexity of Illness	Payment based on expected number of days needed to treat illness. Additional payment reduction factor applied to rate.

Source: JLARC staff review of documents from the Department of Medical Assistance Services.

the State's prospective per-diem system were not adequate to meet the costs of efficiently and economically operated facilities. As a part of a settlement agreement, the State agreed to work jointly with Virginia hospitals to design a new patient reimbursement system.

In June 1996, the State began to phase-in a new reimbursement system that maintained the prospective features of the old system, but made payments on a per-case basis using a diagnosis related group (DRG) methodology. Under the DRG system, hospital rates are set based on the patient's illness and the length of time required to treat that illness in an inpatient setting.

While the hospital association supports the agency's use of DRGs to set payment rates, they contend that rates which are in effect under the new system do not recognize those changes within the hospital industry which have caused costs to increase. Moreover, when compared to other states, payments made for Medicaid inpatient services in Virginia are among the lowest in the country. Therefore, a key issue in this study is whether DMAS' new reimbursement system adequately meets the State's objectives for containing the cost of the Medicaid inpatient hospital program while ensuring that rates allow providers a reasonable opportunity to recover their costs.

Virginia's Inpatient Hospital Reimbursement System Has Been Changed Three Times in the Last 34 Years

To be considered effective, a hospital reimbursement system must be designed to balance three sometimes conflicting policy objectives: (1) minimize the cost of Medicaid services to the State; (2) promote an efficient delivery of services among providers; and (3) pay rates that afford providers a reasonable opportunity to recover their costs. Since 1969, the State has made three major changes to its payment system for inpatient hospital care. At various times these changes were put in place because of concerns that the system was not adequately addressing at least one of the three objectives.

Early Payment System Lacked Efficiency Incentives. Under the first reimbursement system used to finance inpatient acute care for Medicaid recipients, hospitals were reimbursed based on the principles of reasonable cost reimbursement. With this approach, providers were required to submit financial reports detailing their costs for serving Medicaid patients. The State used these reports to identify those costs that were allowable under Medicaid and the facility was reimbursed 100 percent of those costs.

This method of retrospective reimbursement system drew widespread criticism at the State and federal level because it lacked provisions to encourage hospitals to control the cost associated with serving Medicaid patients. As a consequence, it was generally believed that hospitals gave little consideration to efficiency in the delivery of services and the entire reimbursement system came to be viewed as too inflationary.

In 1981, the United States Congress revisited the principles of reimbursement for Medicaid through the Omnibus Budget Reconciliation Act. A key provision of the statute, referred to as the Boren Amendment, moved the Medicaid program away from the principle of reasonable cost reimbursement by requiring states to pay facility rates "which are reasonable and adequate to meet the costs which must be incurred by efficiently and economically operated facilities..."

Virginia Switches to a Prospective Payment System in 1982. The Virginia General Assembly placed language in the 1982 Appropriations Act requiring the State Board of Health to revise the State's reimbursement system for both hospitals and nursing homes so that the system would be consistent with the new federal law. In response to this directive, the Governor convened a task force and the State hired a national consultant to advise the State on this new system. The reimbursement methodology that was recommended and later authorized as the State's hospital payment system had the following basic components.

1. The operating cost of each hospital was converted to a per diem amount by dividing this cost by the number of patient days of care provided by the hospital.

2. For purposes of establishing payment ceilings, hospitals were categorized into peer groups based on geographic location and the number of beds. Next, an analysis of the per-diem operating costs in each of the peer groups was conducted to identify the median per-diem cost which was selected as the payment ceiling for the peer group.

3. An inflation factor was applied to each of the peer group ceilings to account for the impact of inflation on hospital operating costs.

4. Each hospital's reported per-diem cost, total charges, and the peer group ceiling were compared. The lower value for these three variables was chosen as the prospective per-diem rate for the hospital's operating costs.

5. Additional payments were made to hospitals based on their capital and education costs, efficiency incentives, and whether they served a disproportionate share of Medicaid patients.

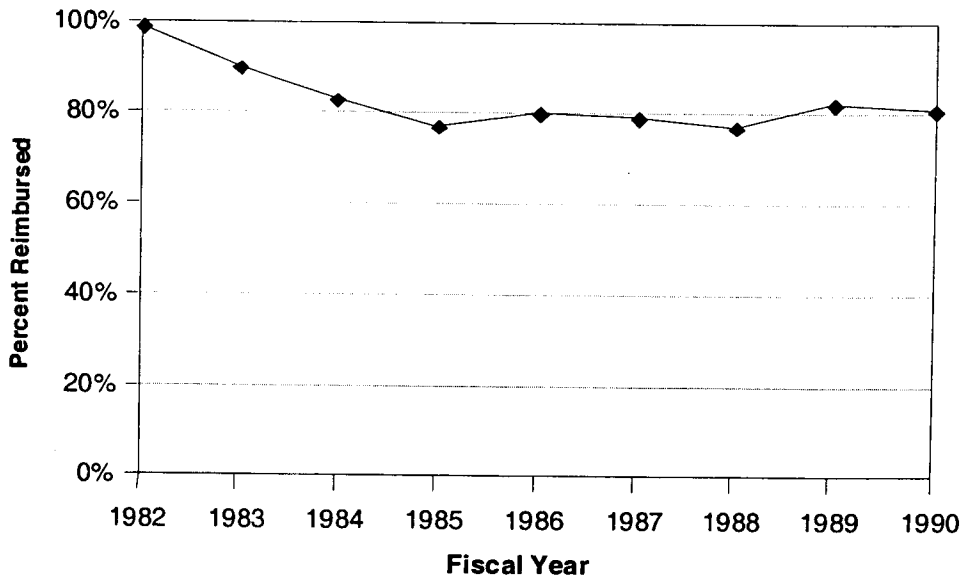
The intent of the payment ceilings was to encourage cost containment by limiting the reimbursements for services to the median per-diem cost of the respective peer group. As noted in the 1992 JLARC report on this issue, the payment ceilings represented DMAS' operational definition of an efficient hospital. Those hospitals with higher reported costs than the payment ceiling were financially penalized. Those hospitals whose costs fell below the payment ceiling would receive an efficiency payment as a reward for containing their costs.

DMAS Switches to a Diagnosis-Related Group (DRG) Payment System. In 1986, four years after Virginia changed its method of reimbursement from a retro-

spective to a prospective system, the VHHA filed a lawsuit in U.S. District Court against the Commonwealth. This lawsuit represented the apex of the dispute between the State and hospitals that began shortly after the State ceased to pay hospitals nearly 100 percent of their allowable costs. As shown in Figure 4, after 1982, the operating payments paid to the hospitals as a percentage of Medicaid allowable costs began to drop significantly. For example, in 1982 the State reimbursed hospitals nearly 100 percent of their total Medicaid operating costs. Two years later, this figure had dropped to 83 percent.

Figure 4

Percentage of Hospital Costs Reimbursed, FY 1982 to FY 1990



Source: *Medicaid Financed Hospital Services in Virginia*, JLARC 1992.

In 1985, the year before the lawsuit was filed, DMAS paid hospitals approximately 77 percent of their Medicaid allowable costs. In the lawsuit, VHHA contended that the Commonwealth was in violation of the Boren amendment because the rates paid to hospitals by DMAS were not reasonable and adequate to meet the costs that must be incurred by efficiently operated hospitals. Although DMAS adjusted the rates each year for inflation, VHHA argued that the adjustment factors were not sufficient because they failed to account for fundamental changes in the hospital industry which were exerting upward pressure on hospital operating costs. As reported in the 1992 JLARC report, hospital administrators cited the costs of new technologies, increasing labor and supply costs, and the increasing complexity of their case or patient mix as factors that were not fully considered by DMAS' inflation adjustments.

Hospital administrators were equally concerned about DMAS' use of 1982 per-diem costs as the basis for the new prospective system. Because the length of stay

for Medicaid patients declined in the four years following the establishment of the new system, hospitals were left with fewer days over which its operating costs could be averaged. As the most expensive services are typically delivered in the early days of a patient's visit, hospitals witnessed an increase in their per-diem costs, which was not reflected in the annual inflation adjustments to the 1982 base year.

In February of 1991, the court dismissed the lawsuit when the parties reached a settlement agreement. Although there were a number of provisions to that settlement, for this study the most important was an agreement by the Commonwealth to implement changes to the reimbursement system for hospitals prior to FY 1997. Based on this agreement, a joint task force comprised of DMAS and representatives from VHHA convened to begin negotiations for the new system in 1995.

Nearly one year later, the task force agreed to transition away from the prospective per-diem system to a prospective all-payor diagnostic related group methodology, most commonly referred to as a DRG system. A DRG system differs from a per-diem method because it determines the payments a hospital will receive on a per-case basis and differentiates the payment based on the complexity of the illness. For example, the system will establish a rate of payment for patients who need a heart bypass operation. This rate will be based on an expected number of days that patients who receive this surgery remain in the hospital. If the hospital is able to treat and discharge that person before the standard length–of-stay is reached, it keeps the full payment. However, if the patient remains in the hospital longer than the expected number of days, the hospital must absorb the additional cost.

In February 1996, the General Assembly approved the outline of the new plan. During the next four years, DMAS worked to put the system in place. In fiscal years 1997 and 1998, the department paid hospital inpatient cost during that year using a per-diem. At the end of the year, during cost settlement, a blended rate that was part DRG and part per diem was applied. When delays prevented DMAS from fully implementing the system in FY 1999, the agency adopted emergency regulations continuing payments based on the per diem rates. At the end of the year, DMAS applied full DRG rates. In May 2000, DMAS met with representatives from VHHA and presented the DRG rates that would take effect in July 2000.

Although officials from the hospital industry support the agency's switch to the DRG system, they take exception to "technical" adjustments DMAS has made to the rates, which effectively reduce Medicaid payments to hospitals to approximately 79 percent of their allowable cost. Moreover, VHHA representatives state that this adjustment has been made without any attention to "demonstrable changes in hospital efficiency." VHHA argues that hospitals across the State have reduced the average length of stay for patients despite an increasingly complex case mix, and have held cost below the rate of general inflation. Rather than reward hospitals for increased efficiency, VHHA officials state that DMAS has "punished" them. Most notable among the charges leveled at DMAS by the VHHA are the following:

- Rates were set based on claims data that excluded some of the more expensive cases.

- Implementation of the new system was delayed by 16 months and the new lower rates were applied retroactively.

- Payments have been adjusted downward, thereby eliminating any reasonable opportunity for hospitals to recover the cost of treating Medicaid patients.

While DMAS officials do not agree with each issue raised by VHHA, they do acknowledge that rates are adjusted downward to control growth in payments to Medicaid inpatient operating costs. As Table 2 reveals, the controls DMAS has placed in its inpatient reimbursement system may have contributed to the Commonwealth having one of the least expensive Medicaid inpatient service programs in the country. When compared to the 48 states for which data are available, Virginia ranks 41st in the total inpatient Medicaid expenditures per discharged patient. The State's cost of $3,504 per discharge is 32 percent less than the nationwide median of $4,627.

DMAS staff acknowledge that, consistent with their charge, cost controls have been built into the reimbursement system. Ultimately, however, DMAS staff point out that questions of whether and by how much rates should be adjusted downward are essentially policy questions that State policy-makers must address based on their willingness to appropriate more funds to support this aspect of the Medicaid program.

JLARC REVIEW

When JLARC completed its last review of the Medicaid program in 1993, DMAS received high marks for developing and implementing a reimbursement system for inpatient hospital care that effectively controlled the growth in payments for those services. Particular attention was given to the fact that DMAS saved the State more than $64 million in 1990 by paying hospitals only a portion of their allowable costs associated with serving Medicaid patients. At the same time, however, the report discussed the looming specter of legal challenges to DMAS' reimbursement system and the potential threat this posed to the long-term viability of the system.

Since that time, DMAS has developed a new reimbursement system for inpatient hospital services and the legal challenges to the old system have abated. Nonetheless, some of the issues that were at the center of the lawsuit between the State and the hospital industry have resurfaced as the State has moved to its new reimbursement system. As a result, the mandate for this study requires JLARC staff to examine whether DMAS' inpatient hospital reimbursement system has been appropriately designed and whether it allows hospitals a reasonable opportunity to cover costs.

Accordingly, JLARC staff designed a study framework to focus on the following issues: (1) an analysis of whether the DMAS' new reimbursement system is consistent with the intent of the General Assembly; (2) an assessment of the appropriateness of DMAS rate-setting and rebasing policies; and (3) an assessment of whether the rates that have been established through the new system afford hospitals a "reasonable opportunity to recover their costs." Within this framework, the following research questions were addressed as a part of this review:

1. What was the intent of the General Assembly in requesting a shift to the prospective DRG reimbursement system?

2. Were the process and methods used by DMAS to set and rebase weights for inpatient hospital care appropriate and consistent with legislative intent?

3. Were the DRG weights set by DMAS based on accurate and valid data?

4. What has been the trend in DRG rates established by DMAS since 1996 and how do these rates compare to those paid by other States?

5. How has DMAS' use of an adjustment factor impacted the cost coverage rate of the new inpatient reimbursement system?

6. Does it appear that hospitals have become more or less efficient over the past few years? Do changes in the measures of hospital efficiency justify DMAS' continued use of an adjustment factor?

7. How do the reimbursement policies used by DMAS for the payment of inpatient care compare to those of other states?

8. What would be the fiscal impact of reducing or eliminating the State's use of an adjustment factor in the reimbursement of hospitals for inpatient care?

Analysis of Whether the New System Is Consistent with the Intent of the General Assembly

When DMAS was in the process of designing the State's new reimbursement system, it received a number of directives from the General Assembly in the Appropriations Act. Among these, the legislature specified that the new system, like its predecessor, should be "fully prospective" — meaning that hospitals are to be informed of their reimbursement rates in advance — and the rates should be based on DRGs rather than hospital per-diem operating costs. Second, DMAS was required to convene an advisory group consisting of representatives from the hospital industry that would make recommendations concerning key aspects of the new reimbursement system. Third, the General Assembly directed DMAS to evaluate and adjust the weights of the new system at least every other year.

Therefore, the first aspect of the review involved an assessment of whether and how well DMAS has met some of the basic requirements imposed on the agency by the General Assembly in the design of the new system. Hence, JLARC staff reviewed documents that outlined the intent of the General Assembly with respect to the new system, interviewed staff at DMAS and within the hospital industry for their perspectives on this issue, and analyzed the process employed by DMAS in the design and implementation of the new system to see if its actions were compatible with the intent of the legislature. Particular attention was given to the issue of whether the legislated-mandated advisory group was appropriately included in the process of developing the system and whether the rates were prospectively set.

Review of DMAS' Rate-Setting and Rebasing Process

The second part of this review was largely a technical assessment of the validity and appropriateness of DMAS reimbursement methodology. Representatives from the hospital industry contended that the rates from the new system have been artificially depressed because DMAS used incomplete claims data and inappropriately grouped certain claims. Concern was also expressed about adjustments DMAS made to the data in calculating the rates over time, which VHHA argues serve the agency's primary objective of lowering the payment rates, but are otherwise without merit.

Based on these concerns, a key part of this analysis focused on whether DMAS set the rates for the current system using incomplete claims data. To conduct this analysis, it was necessary to compare claims data from the department's database with data collected by Virginia Health Information (VHI). VHI is a private, non-profit organization that is responsible for maintaining data on all healthcare for patients in Virginia. Under current law, each hospital in the Commonwealth is required to report data to VHI, on each patient who receives inpatient or outpatient services in the State. Through a contractual arrangement with JLARC, VHI compared the data that was reported on all the Medicaid cases in its databases with the claims databases used by DMAS to set the rates for its new reimbursement system. The results of this file match were provided to JLARC staff, allowing the study team to determine the nature and magnitude of any problems with missing claims data in the DMAS' files.

JLARC staff also conducted a technical review of the changes that DMAS made to the DRG weights over time. To complete this review, spreadsheets containing the formulas used to set the rates were examined to determine whether the methodology was internally consistent or logical. In addition, structured interviews were conducted with DMAS staff, the consultants who implemented the system, and representatives from VHHA to further JLARC staff's understanding of the methodology.

Assessment of the Adequacy of Inpatient Hospital Rates

When the United States Congress repealed the Boren Amendment in 1997, the guiding principle for Medicaid reimbursement was eliminated and replaced only

with the requirement that states follow the regulatory process — allow for public comment and publish final rates — when developing their reimbursement systems. This has left to public debate the question of how high Medicaid payment rates should be set.

For this study, the question of whether DMAS has set the inpatient reimbursement rates at levels that are fair and appropriate turns on two key issues — whether changes have occurred in hospital efficiency, and whether Virginia's reimbursement policies are similar to those observed for other states. If, over the past decade, hospital costs have been spiraling upward, or if the inpatient hospital rates being paid by other payors are about the same or considerably lower than those paid by DMAS, few questions can be raised about rate adequacy in the Commonwealth. However, if hospitals have made an effort to control costs, and if DMAS pays rates that are considerably lower than their counterparts, legitimate policy questions surface about rate adequacy.

To address these issues, JLARC staff assessed whether changes have occurred in hospital efficiency over the past five years. To accomplish this, a number of activities were conducted. First, using trend data provided by VHI for all hospital claims in Virginia from 1995 through 1999, JLARC staff examined changes in hospital lengths-of-stay. Because length-of-stay varies considerably based on the severity and complexity of the illness experienced by the patient, the lengths-of-stay outcomes were adjusted by a measure of patient acuity.

To supplement this analysis, hospital cost data were also examined. Using hospital cost reports from DMAS, trends in the cost per case from 1993 to 1998 were evaluated. To account for inflation in these data, JLARC staff constructed new cost variables for each of the relevant years by expressing the hospitals' allowable costs in real or constant 1998 dollars. Additionally, measures of patient volume and the severity of patient illnesses were employed to control for the impact of these factors on hospital cost. Based on the results of these two basic indicators of hospital efficiency — changes in length-of-stay and adjusted allowable cost — JLARC staff determined if hospitals have made some efficiency gains in recent years.

To supplement this analysis, Virginia's reimbursement policies and rates were compared to those of other states. These data were collected through a JLARC staff survey of 50 states. With a response rate of 84 percent, JLARC staff were able to determine among the states that responded:

- the number of states that have adopted a DRG system;
- the number of states using DRGs that apply an equivalent to Virginia's adjustment factor;
- the frequency with which other states with similar reimbursement systems rebase and update the weights; and

- how Virginia's rates for certain high-volume DRG cases compared to those paid by other states and private insurers.

REPORT ORGANIZATION

The remaining chapters of this report present the results of JLARC staff's review of Virginia's reimbursement system for Medicaid inpatient hospital services. Chapter II provides an analysis of the appropriateness of the rate-setting process and methodology. The last chapter in the report — Chapter III – provides an assessment of the adequacy of the rates set by DMAS for inpatient care.

II. The Rate-Setting System for Medicaid Inpatient Hospital Care Reimbursement

In October 1999, DMAS published payment rates for hospitals that provide inpatient care to Medicaid recipients based on the agency's new reimbursement system. With the publication of these rates, the transition from the State's old per-diem method of payment to a reimbursement system that customizes payments to hospitals based on the illness of the patient was complete. As required by the study mandate, this chapter examines the methodology for this new payment system and assesses the appropriateness of the process used by DMAS to put the system in place.

In general, this study found the rate-setting methodology implemented by DMAS to be generally logical and internally consistent, while containing all the key elements necessary to calculate rates for inpatient hospital care. However, in developing this new and more complex system of reimbursement, the department experienced a number of problems and remains at odds with the hospital industry over certain aspects of the new system.

In terms of implementation problems, the process used to put the system in place, make technical adjustments to the rate-setting methodology, and establish prospective rates was characterized by protracted delays. Because of these delays, DMAS was required, by regulation, to apply the initial DRG rates for the system retroactively. This does not appear to be consistent with the general intent of the General Assembly.

From a technical perspective, the department experienced problems with its patient claims databases and used a method for estimating hospital costs that artificially suppressed payment rates to hospitals. The General Assembly appropriated $12 million in the 2000 Session to compensate hospitals for the revenues lost as a result of this problem. Moreover, DMAS is working to correct the problems caused by errors in the databases that were used to establish the payment rates. Estimates from this study indicate that this problem could cost a minimum of $11.4 million to resolve.

Finally, the most controversial aspect of this new system centers on an agreement negotiated by the department with the hospital industry in 1996 to implement an adjustment factor that controls the growth in inpatient Medicaid payments. Currently, hospital operating payment rates are reduced by an average of 21 percent based on the department's use of this factor. This chapter describes the role of the adjustment factor in the rate-setting process and how DMAS applies it. Whether this continued adjustment to the rates is justifiable is the subject of the last chapter in this report.

THE APPROPRIATENESS OF DMAS' RATE-SETTING METHODOLOGY FOR HOSPITAL INPATIENT CARE

In 1996, a Joint Medicaid Task Force was established to develop a new payment system for Medicaid inpatient care. This Task Force, which includes members from DMAS and VHHA, recommended that the State adopt a payment methodology similar to the one employed by the Health Care Financing Administration (HCFA) to reimburse hospitals for treating Medicare patients.

Based on this recommendation, DMAS pursued the development of a reimbursement system that establishes payment rates based on variations in the labor costs of hospitals, and more importantly, differences in the complexity of the illnesses of patients who are admitted for medical care. This represented a sharp departure from previous payment approaches that had been employed in the State. Further, because of the complexity of the proposed system, the work required to put this new patient-based payment system in place posed a significant challenge for DMAS.

Since 1996, DMAS has worked with consultants to establish this new payment system. The payment methodology that was ultimately developed contains all of the elements needed to reimburse hospitals based on their patients' illnesses, and the VHHA is generally supportive of most features of the new system.

One area in which disagreement remains concerns DMAS' use of what is commonly referred to as a rate adjustment factor. To ensure the budget neutrality of the new payment system in 1996, both DMAS and VHHA determined that the total Medicaid payments for inpatient care should be adjusted to cover only a portion of the hospitals' costs of serving Medicaid patients. At that time, the rates were adjusted downward by 38 percent. Five years later, this downward pressure on rates has been moderated, but hospital payment reductions attributable to the adjustment factor are still equal to 21 percent.

DMAS' DRG Methodology Is Generally Sound and Contains the Key Elements Necessary to Set Rates for Inpatient Care

Virginia's methodology for reimbursing hospitals that provide inpatient care to Medicaid patients is referred to as a Diagnosis Related Group, or DRG, system. There are two basic parts of the payment methodology for each patient in this system, as illustrated in Figure 5: (1) the hospital base operating rate, which accounts for differences between hospitals; and (2) the relative weight, which accounts for differences between illnesses. While this basic methodology for determining payments is similar to the system used for Medicare, the way in which each component of the system is calculated differs. This section briefly summarizes JLARC staff findings from the review of the major components of the Medicaid rate-setting process in Virginia.

Figure 5

Basic Methodology of a DRG Reimbursement System

DRG Payment = Relative Weight X Hospital Base Operating Rate

- DRG Payment: Per patient payment
- Relative Weight: The cost of treating a patient in a particular DRG compared to the costs of treating patients in all other DRGs
- Hospital Base Operating Rate: Average cost of treating a Medicaid patient in Virginia adjusted for a measure of the hospital's labor costs

Source: *Virginia Administrative Code.*

Two aspects of the rate-setting process are similar for all of the components of Virginia's Medicaid reimbursement system. First, the components are all calculated using what is called base year data. The base year refers to the most recent year in which information is available to calculate the rates for future years. For example, the base year for the current DRG rates, effective through FY 2003, is FY 1998. Second, each component is calculated separately for private hospitals and for the two State teaching hospitals – the Medical College of Virginia and the University of Virginia Medical Center.

Hospital Base Operating Rate with Patient-Mix and Wage Adjustments. A key part of the reimbursement system is the hospital base operating rate, which is the average cost of treating a Medicaid patient after accounting for wage differences between hospitals. Accounting for wage differences is important to achieving equity in hospital payments because the cost of treating patients in Virginia varies between geographic regions. For example, treating a patient in an urban, Northern Virginia hospital costs more than treating a patient with the same condition in a rural, Southwest Virginia hospital due to differences in labor costs.

Since the hospital base operating rate is the component of the DRG payment that accounts for differences in labor costs between hospitals, the first step in the process requires that an adjustment be made to this measure to remove the effect of patient severity from patient costs. This is reasonable because the relative weights — which are multiplied times the hospital base operating rate to determine payments for each patient — will account for severity of illness in the DRG payment. To neutralize the effect of illness severity, the operating cost of each case is divided by a measure of the hospital's patient mix. The statewide average cost of treating a Medicaid patient after adjusting patient-mix is currently $3,412 for private hospitals and $4,446 for state teaching hospitals.

Next, DMAS applies a rate adjustment factor to the statewide average cost for private hospitals to effectively reduce the average cost. In the current biennium this

rate adjustment was 21 percent. The adjustment factor is the ratio of Medicaid operating payments to operating costs in the base year. The application of the rate adjustment reduces the statewide average cost of treating a Medicaid patient from $3,412 to $2,695 for private hospitals. There is no rate adjustment applied for State teaching hospitals.

Finally, DMAS adjusts the statewide average for labor costs to determine each hospital's base operating rate. To make this adjustment, DMAS applies a nationally accepted measure of wage differences between regions to the statewide average cost. This measure is published each year by HCFA in the *Federal Register* and is used by other states with similar systems of reimbursement to adjust for wage differences.

Use of DRG Relative Weights. In a DRG system, payments depend on the type and complexity of a patient's illness, which is different from a per diem system that provides a payment for each patient day regardless of the patient's condition. The DRG methodology in Virginia uses 641 All Patient Diagnosis-Related Groups (AP-DRGs) by which every medical and surgical case (with the exception of transplants) is defined based on type and complexity. Each AP-DRG is assigned a relative weight that measures the cost of treating a patient who falls into that group as compared to treating patients who fall into all other groups.

The methodology used by DMAS to determine the relative weights is reasonable and consistent with the general HCFA methodology. Because the hospital base operating rate accounts for differences in labor costs between hospitals, as previously explained, the effect of labor costs is removed in the calculation of relative weights. The weights are then used as a component of the final payment.

Methodology Includes Payments for Outlier Cases. Some patients face costly complications that are not adequately reflected in the basic DRG payment structure discussed thus far. Treating these patients can be extraordinarily costly in comparison to treating other patients whose illnesses fall into the same AP-DRG. If these cases, considered "outliers," were not reimbursed differently, the payments would essentially punish hospitals for treating the sickest patients. However, DMAS sets aside a portion of the budget to issue additional payments for extraordinarily costly cases. The methodology that determines whether a case is an outlier and the amount of the additional payment is a complex but reasonable approach for accomplishing this goal (Appendix B).

Other Payments. In developing the DRG methodology, DMAS recognized that there are additional costs associated with inpatient hospital care other than the direct cost of treating a particular patient. Costs that could be considered hospital specific instead of patient specific include capital costs and costs of providing medical education within the hospital environment. Virginia Medicaid provides a pass-through payment for these costs, meaning that for each hospital, DMAS determines the percentage of the hospital's business that is Medicaid, and pays that same percentage of the hospital-specific costs.

Also, some of Virginia's hospitals serve a high proportion of the State's Medicaid population. These hospitals are provided a disproportionate share hospital (DSH) payment from a fund comprised of State and federal monies. Payments are also made from this fund to provide additional reimbursement for the treatment of patients who have no insurance and who are unable to pay out-of-pocket for the services. All hospitals provide some level of this charity care, as federal law requires hospitals to assess every patient who enters the emergency room, regardless of ability to pay. The DSH payment received by each hospital depends on the percent of the hospital's patients who are Medicaid or low income and the estimated amount of the hospital's Medicaid DRG payment.

Rebasing the DRG Rates. The study mandate requested JLARC staff to examine the appropriateness of the State's rebasing process. Rebasing is the process of recalculating all parts of the DRG rates using more recent data. The decision on how often the rates should be rebased depends on the availability of administrative resources (such as internal staff and consultants), and the trend in medical costs.

In an environment of increasing medical costs, rebasing has the effect of increasing the DRG rates because the new rates will be based on the hospitals' rising costs. During structured interviews with JLARC staff, some hospital administrators suggested that the system should be rebased every year because of anticipated rising costs associated with higher labor expenses and the cost of new technology. In such an environment, administrators pointed out that because the costs to treat patients would be substantially higher than recognized in rates paid by DMAS, hospitals would be financially penalized by longer interim periods between rebasing.

In FY 2001, DMAS changed the rebasing policy from every two years to every three years. Rebasing every three years and updating for inflation using the Hospital Price Index in non-rebasing years appears to be a reasonable policy for the hospital reimbursement program. Substantial administrative resources are required to rebase a DRG system. Updating the rates for inflation every year results in a reasonable approximation of the cost of treating patients. Although updating for inflation does not reflect external influences on cost, such as increased use of technology in medical procedures, these changes will be captured in three-year intervals during rebasing. DMAS and VHHA were in agreement with the change to a three-year rebasing policy.

Virginia's rebasing policy is within the timeframe range of the rebasing policies in other states with DRG systems, which are typically one to three years (Table 2). Based on a survey of state Medicaid directors, 22 states reimburse at least some patient cases based on the use of a DRG methodology. Of these states, nine do not have a rebasing policy but have recalculated the DRG rates at least once in the last ten years as directed by the state's legislature. Of the states that do have a rebasing policy, four states rebase every three years, three states rebase every two years, and five states rebase annually. Like Virginia, almost all of the states that reimburse using a DRG methodology update the rates for inflation annually, regardless of how often the rates are rebased.

Table 2

Rebasing Policies for States which Reimburse Hospitals for Inpatient Care Based on a DRG Methodology

State	Annually	Every Two Years	Every Three Years	No Rebasing Policy
Colorado			●	
Illinois*				●
Indiana		●		
Iowa			●	
Kansas	●			
Massachusetts	●			
Michigan			●	
Minnesota		●		
Montana*		●		
New Hampshire**				
New Jersey				●
New York				●
North Carolina				●
North Dakota				●
Ohio				●
Oregon*	●			
Pennsylvania*				●
South Carolina				●
Texas			●	
Utah				●
Virginia			●	
West Virginia	●			
Wisconsin*	●			

* Indicates states that only pay some of the patient cases based on a DRG system.
** Information not available.
Source: JLARC Survey of State Medicaid Directors.

Efforts to Make Virginia's Medicaid Inpatient Care System Budget Neutral Have Lowered Hospital Payment Rates

In 1996, as a part of a settlement of litigation over the adequacy of the State's Medicaid payment system for inpatient care, DMAS and VHHA agreed that in designing a new payment system, two principle objectives should be pursued. First, the system should be "budget neutral." In other words, it was agreed that the rates for the

new system should be calculated so that the "system-wide amount of the reimbursement would not be altered solely by the implementation of the new rate setting methodology." Second, the system should be designed to stop the decline in the rate at which operating costs were reimbursed, which had characterized the system in the 1980s.

To accomplish these objectives, it was agreed that when all Medicaid payments were considered — operating payments, disproportionate share payments, medical education, and capital payments — the new system should cover 75 percent of hospital costs in 1996. Both parties agreed that this payment-to-cost ratio should be maintained until there were "demonstrable changes in hospital efficiency" or other external factors that influence either payments or hospital costs. This section of the chapter discusses how DMAS has applied a payment reduction factor to the reimbursement system and illustrates the trend in the hospital base operating rate — the factor to which the rate adjustment is applied.

Application of Adjustment Factor for the New Payment System. In Virginia, the transition to a budget neutral system began in July 1996 when the Task Force agreed to establish an initial cost coverage rate for the inpatient reimbursement system for FY 1997 and FY 1998. As Table 3 indicates, to arrive at this cost coverage rate, the Task Force first established budget neutral values for a number of inpatient cost categories. For example, it was estimated that more than $212 million would be needed to meet the budget neutral target for the general category of inpatient operating payments. An additional $7 million was assigned to finance the elimination of the patient length-of-stay restrictions that were built into the old reimbursement system. Under that system, hospitals were not reimbursed for any patient stays that exceeded 21 days. With the planned AP-DRG system, the Task Force agreed that such limitations would not be appropriate.

As a part of the settlement of the 1986 hospital lawsuit filed by VHHA against the State, an additional $40 million in payments to the hospitals were built into the

Table 3

Budget Neutral Values Used by the Task Force to Set Medicaid Inpatient Rates for FY 1997

Cost Categories	Payment Amount
1997 Inpatient Operating Payments	$212,764,167
Elimination of 21-Day Limit On Length-of-Stay	$7,022,607
Free-Standing Psychiatric Facilities	$759,621
Indirect Medical Education	$5,000,000
Disproportionate Share Payments	$21,695,772
Hospital Lawsuit Settlement	$30,000,000
Total	$277,242,166

Source: Virginia Hospital & Healthcare Association/ Department of Medical Assistance Services Joint Medicaid Policy Task Force Interim Report, 1996.

the "trended data." DMAS has corrected the regulations such that actual hospital costs will be used in all future rebasing.

The second factor relates to measured changes in the mix of Medicaid patients admitted to Virginia hospitals. As noted earlier, the hospital base operating rate is adjusted for patient mix as a means of neutralizing the effect of differences in patient illness before the AP-DRG weights are applied. Therefore, higher values for patient mix will have the effect of lowering the standardized hospital base operating rate. DMAS staff contend that in 1993, hospitals were not precise in coding patient mix for Medicaid patients because severity of illness was not a factor in their reimbursement. However, by 1997, claims were being paid based on AP-DRGs, and hospitals were more accurate in categorizing patient illness. This, it was stated, caused an increase in the values for patient mix, which resulted in a lower standardized hospital base operating rate per patient. As the data from FY 1997 were used to calculate the hospital base operating rate effective in FY 1999 and FY 2000, a decline in this factor was observed.

In the last year the system was rebased, FY 2001, the average unadjusted hospital base operating rates increased for both State teaching hospitals and private facilities. Staff at both VHHA and DMAS cite the agency's use of non-trended, more recent cost data as the factor responsible for returning the hospital base operating rate per patient to levels previously observed in FY 1997.

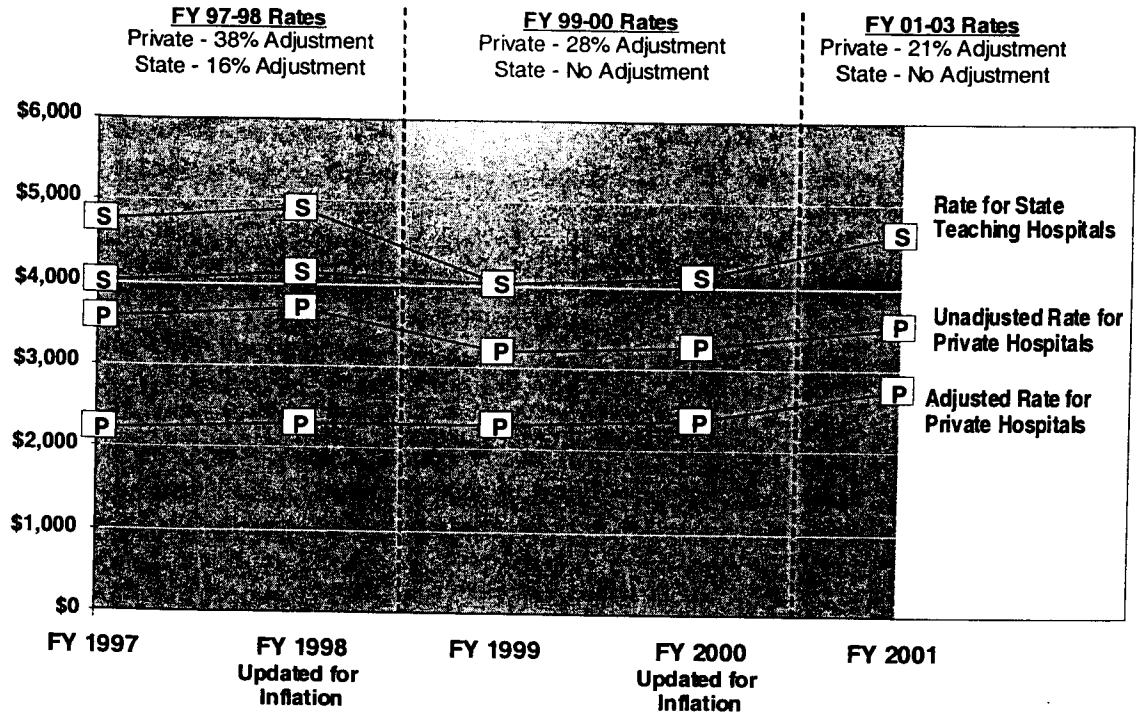
Clearly, however, the largest influence on the private hospital base operating rate is exerted by the rate adjustment factor. Figure 7 illustrates this effect by comparing rates both before and after the adjustment factor is applied. When this factor is applied to the hospital base operating rates for private hospitals, the fluctuations witnessed in the unadjusted rates disappear. However, as expected, the level of the adjusted rate remains considerably below the unadjusted rates. As shown, for private hospitals, the DRG rates effective in FY 1997 and FY 1998 were 38 percent below the unadjusted rates. When the system was last rebased in FY 2001, the base-operating rate did increase from approximately $2,400 per patient to almost $2,800. However, consistent with the use of the payment reduction factor applied for this period, this rate was 21 percent less than the unadjusted rate.

In FY 1997, DMAS used an adjustment factor of 16 percent for the State teaching hospitals. In subsequent years, DMAS made no adjustments to these rates. This decision is part of a State strategy to maximize federal funding for the State hospitals. Currently, the federal government reimburses the State 50 percent of the funds it spends on its Medicaid program. Lowering the reimbursement rate for State teaching hospitals would simply mean that more general fund dollars would be needed to pay a larger share of the costs for these facilities.

Whether the use of an adjustment factor of any size is appropriate under the State's AP-DRG system is largely a policy question. VHHA contends that no such adjustment is necessary because the AP-DRG system only pays a certain amount for a

Figure 7

Average Hospital Base Operating Rate for Private and State Teaching Hospitals With and Without the Adjustment Factor (AF) Applied for Fiscal Years 1997 Through 2001



Source: JLARC staff analysis of Department of Medical Assistance Services cost and claims data.

specific patient diagnosis, regardless of how long the patient remains in the hospital. DMAS staff believe that the adjustment factor helps the system to remain budget neutral while rewarding the industry as a whole if hospitals operate more efficiently. Chapter III examines this issue in greater detail.

APPROPRIATENESS OF THE PROCESS USED BY DMAS TO ESTABLISH THE NEW REIMBURSEMENT SYSTEM

The General Assembly requested DMAS to implement a fully prospective DRG reimbursement system for hospital inpatient care through language in the 1996 Appropriation Act. Item #J of the Act stated:

> The Department of Medical Assistance Services shall adopt regulations necessary to implement a fully prospective reimbursement system for hospital inpatient services. Reimbursement weights for most

inpatient services shall be based on a Diagnosis Related Groups (DRG) methodology.

Currently, the DRG system is fully implemented, with rates published prospectively and claims being paid upon submission on a per-patient basis. However, over a three-year period, the department experienced a number of problems in putting this system in place. Most notably, due to the failures of its contractor, DMAS was not able to meet the initial deadlines for implementing the new system. Nor did the agency take the necessary steps to extend the transition year rates under which the hospitals were being paid at the time. As a result, despite statutory requirements to the contrary, hospitals treated Medicaid patients for 16 months without being informed of their new rates — which were nine percent lower than the transition year rates.

These problems were exacerbated by the lack of communication between the Medicaid Payment Policy Advisory Council and DMAS during the rate-setting process. Changes in agency leadership, lack of clarity about the role and purpose of the council, and the pressing demands associated with agency staffing problems were factors that reportedly caused the agency to shut down formal communication with the council for almost 20 months. Although the agency was careful not to make any major policy decisions during this time, the failure to meet regularly with the council undermined the working relationships that both groups had worked hard to establish.

From a more technical standpoint, DMAS staff must resolve several issues that grew out of decisions made during the rate-setting process. The most significant of these involve errors in the database that was used to establish payment rates. JLARC staff's analysis reveals that due to problems with the computer algorithm used by DMAS' contractor, at least 24,434 patient claims may have had information excluded from the database from which payment rates were set due to problems with the computer algorithm used by the agency's contractor. These claims, which involve a minimum of nearly $11.4 million, will have to be identified and accounted for in future payments to the hospitals that were impacted by this error.

In Transitioning into the New System, DMAS Applied Rates Retroactively

According to the regulations promulgated by DMAS, the department would take two years to transition into the AP-DRG system, with full implementation scheduled for July 1, 1998. The system is considered "fully implemented" when the old per diem system of payment is completely abandoned and patient claims are paid as they are submitted based on the AP-DRG into which the patient's illness falls. As required by the study mandate, this section of the report evaluates the appropriateness of the process used by DMAS in putting the new payment system in place.

Retroactive Application of Rates. According to the regulations, the first rebasing to the new AP-DRG system was scheduled to take effect on July 1, 1998. Rebasing means recalculating the AP-DRG rates using the most recent cost and claims

data available. The new rates would be effective in FY 1999 and FY 2000 and would be calculated using FY 1997 cost and claims data.

Despite this, DMAS did not calculate these rates until October 1999, 16 months after they were scheduled to go into effect. According to DMAS staff, the delay in setting the rates was caused by the inability to access the necessary data due to the failure of a consultant to meet the requirements of the contract. When the rates were finally calculated, DMAS contends that they were bound by federal rules to apply the rates retroactively to July 1, 1998. Figure 8 summarizes the delay in setting the rates applicable in FY 1999 and FY 2000.

DMAS staff indicate that the main cause of the delay was the failure of Electronic Data Systems (EDS) to develop the new Medicaid Management Information System (MMIS) as required under contract. DMAS initiated a $45 million contract with EDS in 1994 which was terminated in the spring of 1998 when it was determined that EDS would be unable to complete the project. The Attorney General's Office facilitated a settlement that provided for a $2.3 million payment from EDS to the Commonwealth, which DMAS staff indicate more than recovered the money paid to the consultant for services rendered since 1994. As a part of the settlement payment, EDS surrendered considerable hardware and software to the State.

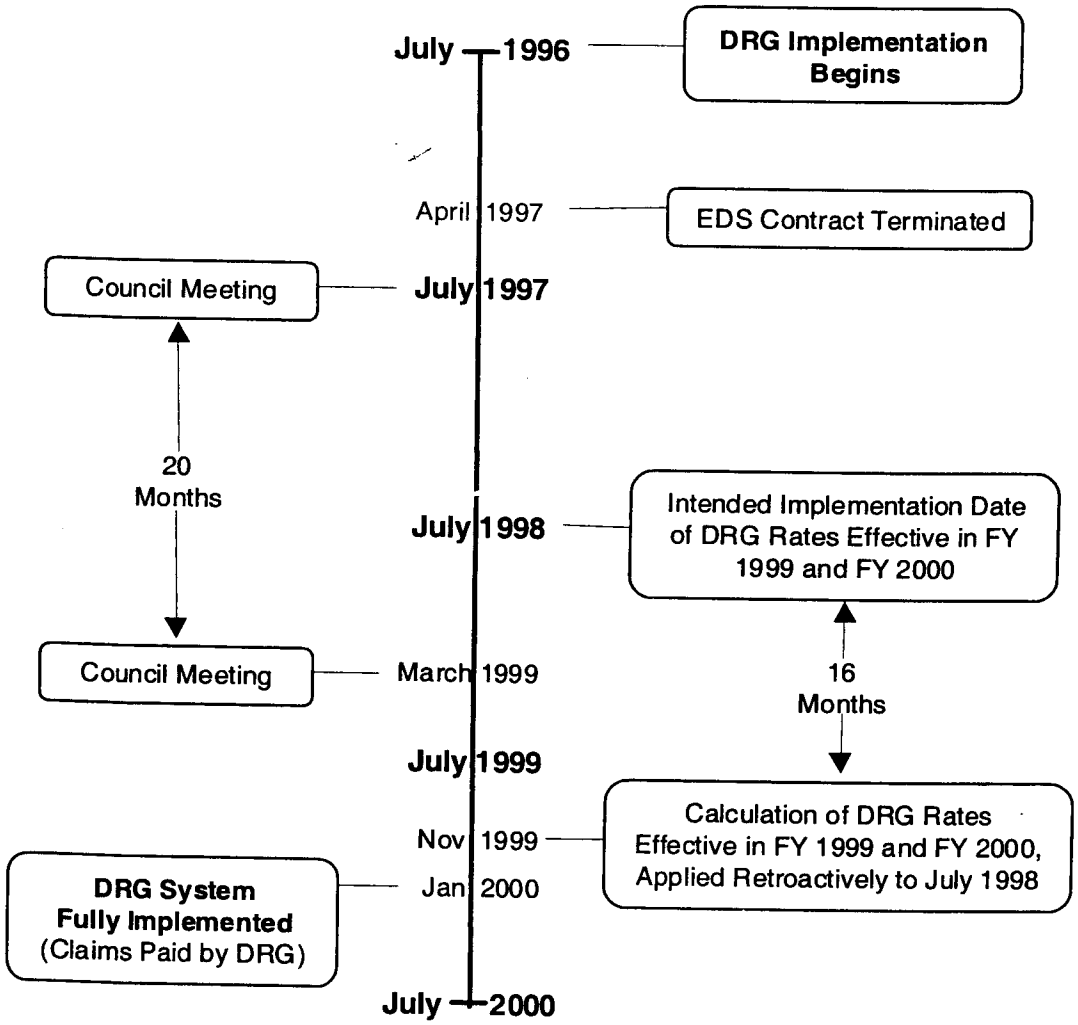
DMAS then hired the company that had previously been maintaining the Medicaid inpatient hospital data, First Health Services, to take over the development of the MMIS. However, most of the institutional knowledge at First Health Services was gone, since many of the company's employees had moved on in anticipation of handing over the maintenance of the data to EDS once the data system was developed. As a result, First Health Services did not complete the data system until the early part of 1999.

Once the data system was operational, DMAS accessed the necessary data and calculated the DRG rates. When the rates were presented to the VHHA in March of 1999, the hospital association discovered an error in the way claims data used to complete the calculations were selected. The department recalculated the rates using the correct data and published the final DRG rates in October of 1999 with an effective date of July 1, 1998.

VHHA challenged the appropriateness of applying the DRG rates retroactively, given that the General Assembly intended the DRG system to be prospective. The issue was especially salient to the hospitals because the final DRG rates were nine percent lower than the rates in effect during the transition years. In interviews with JLARC staff, hospital administrators argue that they had budgeted based on the DRG rates in effect during the transition years because they had no other information on which to budget. According to administrators, finding out in October of 1999 that they would be receiving nine percent less funding for patients treated in the previous 16 months adversely affected business decisions made during that time period.

Figure 8

Implementation of the DRG System Timeline



Source: JLARC staff analysis of Department of Medical Assistance Services documents.

DMAS sought guidance from HCFA in January 2000 on whether the department was required to apply the DRG rates retroactively. At that time, Virginia's State Plan, which is submitted to HCFA and included in the regulations to guide the Medicaid program, stated that the DRG rates were to be rebased every other year, with the first rebasing effective July 1, 1998. HCFA ruled that the State Plan must be honored because amendments to the State Plan can only be effective as of the first day of the quarter in which the amendment is requested. In other words, any amendment requested in the first quarter of 2000 would only be effective as of January 1, 2000.

Therefore, DMAS was correct in asserting that when the rates were calculated, the department was bound by federal rules to apply those rates retroactively.

However, when it became apparent in the spring of 1998 that the MMIS would not be completed in time to rebase the rates by the intended date, the department and VHHA could have suggested amending the State Plan. DMAS staff had until September 30, 1998 to request an amendment that would have been effective on July 1, 1998. The amendment could have extended the transition years' rates until such time as the new AP-DRG rates were calculated. This would have preserved the prospective nature of the AP-DRG reimbursement system as intended by the General Assembly.

Notwithstanding these problems, the delay in setting the rates appears to be a one-time occurrence. The system is currently operational and as of January 1, 2000, claims were being paid on a per-patient basis. In addition, the FY 01-03 rates currently in effect were indeed calculated prospectively. The payment of claims based on AP-DRG and the prospective calculation of AP-DRG rates signal full implementation of the new reimbursement system.

Medicaid Payment Policy Advisory Council. The Medicaid Payment Policy Advisory Council (the council) is mandated by the General Assembly through budget language. Initiated in FY 1996, the council is made up of representatives of DMAS, hospitals, the Department of Planning and Budget (DPB) and the Joint Commission on Health Care (JCHC). According to the budget language and regulation, the council is charged to develop recommendations regarding several issues, including rebasing, updating inflation factors, and the incorporation of capital and medical education costs into the reimbursement system.

The council was convened and met periodically until July of 1997. It was then 20 months until DMAS held another meeting with the council in March of 1999. It was during this period of time that the calculation of the DRG rates effective in FY 1999 and FY 2000 was delayed (Figure 8 shows the timeline of council meetings). VHHA contends that the department inappropriately denied their requests for a meeting given that the council was mandated by the General Assembly.

DMAS staff cite several reasons for the failure to meet with the council. First, during the time the council did not meet, there were three different department directors, one of who was an acting director. The current leadership began its tenure in mid-1998 and immediately faced a large number of staff resignations. Finding the necessary staff replacements was given first priority.

Second, the leadership of the agency at that time believed that meeting with the providers about setting rates from which they would benefit was a conflict of interest. However, the basis for this concern is unclear, as the regulations govern how the rates are calculated, and they are promulgated by DMAS, not by the council.

Nonetheless, JLARC staff could find no evidence indicating that DMAS established major reimbursement policy decisions during this time period that would have required the council's input. The VHHA notes that the department promulgated the final regulations that directed the first rebasing during this time period. While the department did indeed promulgate the regulations, the association had received drafts of the regulations before the council stopped meeting and therefore were aware of the changes the department was making.

The department also indicates that since the delay in developing the data management system prevented access to the data needed to calculate the DRG rates, there was little to discuss even if the council had met. Hospital administrators counter that DMAS could have provided aggregate information on utilization, incidence, number of cases, and other basic indicators. Instead, they were unable to examine the impact of the new DRG system.

Not convening the council was contrary to the intent of the General Assembly, and the failure to do so fractured the relationship that had been forged between the department and the council. Since that time, however, the body has been meeting regularly, and members of the council are satisfied with the department's current willingness to meet with the council.

Now, a larger issue concerns the role of the council since it has been re-convened. DMAS states that the body is advisory only and has no final say in rulemaking. Hospital administrators assert that the council should vote on recommendations to the Board of Medical Assistance Services. The budget language initiating the body required the council to make recommendations to the Board. However, the current regulations state that the "council will be charged with evaluating and developing recommendations on payment policy changes" but does not specify to whom the recommendations should be made.

In order to maintain the working relationship that has been developed between DMAS and the council, clarification on the role of this body is needed. DMAS should better define to whom recommendations should be made and the rules for determining how the council votes on the recommendations. It should also be clarified that recommendations made by the council are not binding. This role should provide the Council with the option of making annual recommendations to the Board of Health on the issues specified in the regulations that initiated this body. The Board and DMAS have the authority to make the final decisions regarding all issues should they disagree with the council's recommendations.

Recommendation (1). **The Department of Medical Assistance Services should better define the role of the Medicaid Payment Policy Advisory Council.**

DMAS Made Several Errors During Implementation of the DRG Reimbursement System

VHHA supports a DRG system of reimbursement for inpatient hospital care and worked with the department to develop procedures by which to transition into such a system. However, VHHA contends that DMAS has been remiss in the implementation process, using inaccurate claims data while delaying completion of an analysis that could have removed as much as $16 million from hospital reimbursements.

Claims Data. VHHA has raised concerns over the accuracy of the claims data used to calculate AP-DRG rates. DMAS concedes that the claims database was flawed in that it did not accept all of the information submitted for some of the more expensive patient claims. Each claim submitted for reimbursement can contain up to nine diagnosis codes and six procedure codes for the patient. These codes define the type and severity of the patient's illness and are used by a software program to assign the correct AP-DRG to the case. The DMAS claims database, however, only accepted up to five diagnosis codes and up to three procedures codes from the claim form. Any additional information was simply dropped. The result of this problem is that the severity of some cases was underestimated, and hospitals received an underpayment for those cases.

DMAS has fixed the claims database, and as of January 1, 2000, it is accepting all diagnosis and procedures codes. DMAS is working with the hospital association to identify the claims for which codes were dropped and will issue an additional payment to hospitals where appropriate. However, no information on the magnitude of this problem is available to DMAS and the department has placed the burden of proof on the hospitals to present evidence that claims were assigned to an incorrect DRG due to diagnosis and procedure codes being dropped.

To accomplish this, hospitals must request claims data from DMAS and resubmit the original (or corrected) patient claim and summary reports indicating the difference between DMAS and hospital DRG assignment and the resulting payment owed to them. Some hospital administrators have declared the requirements to be an unreasonable burden on hospitals without any compensation to correct a problem that was caused entirely by DMAS. Administrators indicate that considerable staff must be allocated to the task of finding original claims and matching them with DMAS data. Furthermore, some hospitals have converted to new data systems and do not have patient claims data from the transition years readily available. Other hospitals assert that they do not have the resources to purchase the software program that groups cases into the correct AP-DRG, making it difficult to find the inconsistencies between DMAS and hospital AP-DRG assignments.

To determine the extent of the problem caused by the inability of DMAS' database to collect all of the information on Medicaid patient claims, JLARC staff contracted with Virginia Health Information (VHI) — a repository of all patient health

claims data in Virginia — to compare the claims information in its database to that collected by DMAS. VHI is required by State law to collect all patient claim information that Virginia hospitals submit to insurers. While there are some limitations to the VHI file that reduce its compatibility with the patient claims data maintained by DMAS, the data can be used to conservatively estimate the magnitude of the error that may have existed in the data used by DMAS to set hospital rates.

As shown in Figure 9, based on the records for which a matching patient claim could be identified, there may be at least 3,810 patient claims from the FY 1997 database used by DMAS for which the number of diagnosis and procedures codes were understated. For the FY 1998, the number is at least 6,711 claims. These numbers are based on patient claims that exist in both the DMAS and VHI databases, had more than five diagnosis codes and three procedure codes according to VHI's data, and were assigned an incorrect AP-DRG by DMAS as a result of the missing information. Based on this comparison, DMAS could potentially have to pay the hospitals represented by these claims a minimum of $1.7 million for FY 1997 cases and $9.6 million for FY 1998 cases. However, the actual number of cases for which DMAS underpaid hospitals is probably higher given that over 18,000 of the DMAS cases were not in the VHI database and therefore could not be checked.

While comparing VHI and DMAS claims data is very useful to pinpoint specific problems and estimate the potential effect of those problems, VHI's data is not a completely reliable of source of verification for DMAS claims data. As Table 5 illustrates, about a quarter of the cases in the DMAS database in FY 1997 were not in the VHI database. The following year, an increased number matched, but eight percent were still not found. There are several possible reasons why a case would be only in the DMAS claims database. Most notably, DMAS pays hospitals in bordering states that treat a Virginia Medicaid patient. These hospitals are not required to submit billing information to VHI, as the organization only collects information from Virginia's hospitals. Also, there are different quality controls in each data file, meaning that invalid data could be present in one of the databases that have not been checked and corrected. The result of this problem is that cases that are the same would not show up as a match.

Table 5

Results of Merging DMAS and VHI Medicaid Inpatient Claims Files

	FY 1997	FY 1998
Total DMAS Cases	54,241	49,087
DMAS Cases in the VHI Claims Database	73%	92%
DMAS Cases Not in the VHI Claims Database	27%	8%
Number of Cases in VHI Claims Database Only	19,406	25,850

Notes: These numbers do not include claims data for children on Medicaid who were born after 1993. Also, data on another 8,373 patients could not be used because their Social Security numbers were invalid.

Source: Virginia Health Information comparison of VHI claims data and Department of Medical Assistance Services claims data.

Figure 9

Effect of the Inability of the DMAS Claims Database to Accept All Diagnosis and Procedure Information Based on a Comparison of VHI and DMAS Claims Data

	Fiscal Year	
	FY 1997	FY 1998
Cases Affected by the Diagnosis/Procedure Problem		
Cases in both the DMAS and VHI Claims Databases	39,567	45,106
Cases with more the five diagnosis and three procedure codes	8,520	9,407
Total Number of Affected Cases: Cases assigned to a less severe DRG by DMAS due to the database problem	3,810 Cases	6,711 Cases
Additional Payment Owed to Hospitals for Affected Cases		
DRG payment for affected cases based on the JLARC assigned AP-DRG (incorporating all diagnosis and procedure information)	$10,325,222	$16,390,360
DRG payment for affected cases based on DMAS assigned AP-DRG	$8,564,742	$6,761,257
The difference is the additional payment owed to hospitals	$1,760,480	$9,629,103
Total for fiscal years 1997 and 1998	Total = $11,389,583	

Notes: The payments are 1/3 of the applicable DRG payment in FY 1997 and 2/3 of the applicable DRG payment in FY 1998 due to the transition years' blended payment methodology. 1,371 cases were assigned a more severe DRG by DMAS due to the computer database problem.

Source: Virginia Health Information comparison of VHI claims data and Department of Medical Assistance Services claims data.

Finally, for reasons that remain unclear, VHI's data contained more than 19,000 Medicaid patient claims in FY 1997 and over 25,000 such claims in FY 1998 that could not be matched with records in DMAS files. These problems would have to be addressed before VHI's data could be used to verify DMAS' claims files.

Length of Stay Analysis. The final issue pertaining to rate-setting for inpatient care addressed in this chapter concerns payment reductions that DMAS is pursuing based on changes in the length of time that Medicaid recipients are staying in hospitals. The regulations promulgated by DMAS state that the DRG rates effective in the transition years could be adjusted for length of stay (LOS) reductions. The language of the regulations reads as follows:

> If it is demonstrated that there are savings directly attributable to LOS reductions resulting from utilization initiatives directed by the 1995 Appropriations Act as agreed to and evaluated by the Medicaid Hospital Payment Policy Advisory Council, these savings, up to a maximum of $16.9 million in SFY1997, shall be applied as a reduction to SFY1997 and 1998 DRG rates used for settlement purposes.

The impetus for this language is a FY 1995 budget amendment reducing DMAS' budget by $16 million for anticipated reductions in length of stay for obstetrics and the aged, blind, and disabled population. To facilitate the reduction, DMAS implemented the following initiatives:

- Required hospitals to submit documentation of medical necessity for admissions that exceed three days, instead of the previously required seven days.
- Required utilization review on all preoperative days for medical necessity, instead of reviewing preoperative days after the first day.
- Redefined weekend admissions (without medical justification) to mean admissions on Saturday or Sunday, instead of Friday and Saturday as previously defined.

Because the rates effective in the transition years were calculated using data from FY 1993, any length of stay reductions that were realized due to the initiatives would not be represented in the rates. Therefore, VHHA and DMAS agreed that savings due to length of stay reductions "directly attributable" to the initiatives presented above would be reflected in the DRG rates effective in FY 1997 and FY 1998 during cost settlement. DMAS agreed in the 1996 Joint Task Force Interim Report that the department would complete a length of stay analysis by October of 1996 and changes to the rates would be implemented at cost settlement.

DMAS did not complete the length of stay analysis until July of 2000, three and a half years after they agreed to complete the work, and well after cost settlement was completed. The DMAS analysis did not include the reductions in length of stay for obstetric services in the analysis because legislation since the 1995 budget amendment

removed the length of stay reduction for those services. The funding reduction applicable to the aged, blind, and disabled population was $10 million. The analysis found that between FY 1995 and FY 1996, length of stay decreased by .21 days for this population. After applying the blended payment methodology in effect during the transition years and updating for inflation, DMAS concluded that the department could remove over $1.4 million from the payments made to hospitals during the transition years.

However, there are two problems with DMAS' conclusion. First, the methodology used by the department and the resulting outcomes fall considerably short of the burden of proof required by the regulations. DMAS argues that the department only has to prove that length of stay reductions occurred, not that they were caused by the department's initiatives. If the budget amendment language initiating the reduction stood alone, DMAS would be correct. However, the regulations promulgated by the department clearly indicate that length of stay reductions must be "directly attributable" to initiatives mandated by the 1995 Appropriation Act. This burden of proof is not met by simply comparing reductions in length-of-stay before and after the policies were implemented. As VHHA accurately points out, the reductions cited by DMAS as proof of the impact of the agency's initiatives had already begun to occur before the policies were put in place.

Second, DMAS argues that it can take the savings out of the final payments made to the hospitals for the transition years. However, the regulations require that the savings be applied as a reduction to the DRG rates. It would be administratively prohibitive to adjust the DRG rates effective in FY 1997 and FY 1998 and reopen cost settlements for those years, and DMAS is unable to prove that the length of stay reduction was due to the department's initiatives. Therefore, any payment reduction for lengths of stay savings is unjustified.

Recommendation (2). **The Department of Medical Assistance Services should refrain from reducing the payment rates in effect in FY 1997 and FY 1998 based on changes in the length-of-stay for Medicaid recipients of inpatient care.**

DMAS' Cost Settlement Process Has Been Characterized by Delays, But Significant Progress Has Been Made

As a part of a review of the appropriateness of DMAS' rebasing process, the study mandate directed JLARC staff to examine the agency's performance in completing the cost settlement reports for 1997 and 1998. Cost settlement is the process used by DMAS to examine a hospital's annual reported cost, determine those costs that qualify for reimbursement, and ensure that the proper payments are made based on the State's rate of reimbursement for those costs.

The primary concern about the process and the impetus for the language in the study mandate has been its timeliness. At the time the language for the study

mandate was passed, most of the hospitals had not received a final settlement from DMAS based on the settlement of its cost reports for 1997 and 1998. This was a problem for the industry, according to VHHA staff, because the final settlement of cost reports was needed to determine whether Medicaid owed additional funds to the hospitals, or vice versa, at the end of the fiscal year. For this aspect of the study, interviews were conducted with DMAS staff to explore the reasons for the delays in the cost settlement process and determine the progress being made to resolve those problems.

Impact of Switching to New Reimbursement System. Under current policy, once the fiscal year ends, hospitals have 150 days to submit the cost reports for that fiscal year to DMAS. If the hospitals provide a complete cost report to DMAS within this timeframe, it is agency policy to review the report and settle with the hospital within 180 days. DMAS staff acknowledge that the cost reports that were submitted by the hospitals for FY 1997 and FY 1998 were not settled in a timely manner. The agency completed the final cost settlement for these reports in May of 1999, meaning that some hospitals waited more than two years for the final cost settlement.

According to DMAS staff, the delay in cost settlement was due to the failure of the contractor to produce the patient claims data needed for cost settlement, and the competing workload created by the agency's switch to its new reimbursement system. Exhibit 2 chronicles the chain of events cited by agency staff as factors that slowed the cost settlement process. As shown, during the time period that the agency staff would normally devote to settling the cost reports, staff were involved with a number of activities related to the development of the DRG reimbursement methodology.

Exhibit 2

Competing Work Activities that Slowed the Cost Settlement Process

Date	Activities
July 1, 1996	Decision made to phase-in new DRG system, but DRG methodology would have to be developed
February 1997	Worked on DRG reporting requirements, and system design work for contractors who would develop the Medicaid Management Information System and design the actual DRG methodology.
April 1997 – February 1998	DMAS cancels EDS contract for poor performance and works to find a new contractor to develop data system needed to implement DRG methodology
February 1998	DMAS awards contract to First Health to develop the Medicaid Management Information System to support the development of DRG rates
January 2000	Implementation of DRG payment methodology completed

Source: Structured interview with cost settlement staff.

Since the new payment methodology was put in place, DMAS has made progress in eliminating the backlog of unsettled cost reports. Specifically, all cost reports up to June 1998 have been settled. This has allowed the department to devote staff time to completing the reports from July 1998 forward, which have also been delayed. Moreover, to minimize the impact of the delays, DMAS updates the DRG rates for each hospital on July 1st of each year. In addition, the agency makes quarterly disproportionate share payments and graduate medical education payments regardless of the settlement status of the cost reports.

III. The Adequacy of Medicaid Payment Rates for Inpatient Hospital Care

The issues identified in Chapter II of this report largely focus on the technical merits of DMAS' basic reimbursement system, exclusive of the payment adjustment factor. Once questions about the technical soundness of the basic rate-setting methodology are addressed, a central question pertaining to payment rates for hospitals remains: Do the Medicaid rates paid by the State for inpatient care afford hospitals a reasonable opportunity to recover the costs associated with those services, after the adjustment factor is taken into account?

Unlike issues pertaining to the technical merit of the agency's basic reimbursement methodology, the questions about rate adequacy are largely policy-oriented. This is especially true in Virginia and other states since Congress repealed the Boren Amendment in 1997. As noted in Chapter I, when this amendment was repealed, the guiding principle for Medicaid reimbursement was eliminated. Now, when setting rates, Virginia and other states are only required to follow the regulatory process. This has left to public debate the question of how high Medicaid payment rates should be set.

This chapter examines the issue of rate adequacy by assessing trends in hospital cost coverage rates produced under the new system and by comparing payment levels in Virginia to those of other states with similar reimbursement systems. In addition, trends in hospital costs are examined to determine the reasonableness of DMAS' policy of controlling the growth in hospital expenditures through the use of a rate adjustment factor.

Based on the findings of this review, legitimate questions can be raised about the State's policy of lowering payment rates for Medicaid-financed inpatient hospital care through the use of an adjustment factor. Since 1996, hospitals in Virginia have reduced the length of time that Medicaid recipients are hospitalized, and over a five-year period from 1993 to 1998, hospitals have limited the average annual real growth rate in the cost of care for these patients to less than two percent. Despite these trends, the adjustment factor continues to be used and this contributes to the fact that Virginia's payment levels to hospitals for inpatient care are low relative to other states that operate a DRG system.

Virginia is one of only two states using a DRG reimbursement system that imposes additional rate reductions through an adjustment factor. As would be expected, if this practice were eliminated, the General Assembly would face a considerable increase in the cost of the State's program for Medicaid inpatient hospital care. For example, based on the AP-DRG rates that were established by DMAS for FY 2001, eliminating the adjustment factor could raise the cost of inpatient care by an additional $48 million in payments to private hospitals. Approximately one-half of this amount would have to be paid through general fund dollars.

THE IMPACT OF VIRGINIA'S MEDICAID INPATIENT REIMBURSEMENT POLICY

During the period from 1996 to 1998, against the backdrop of more flexible federal requirements, DMAS redesigned its payment system for inpatient care services and included an adjustment factor to get reimbursements below the level of hospital cost. According to the Task Force report, this policy was needed to ensure that the new system remained "revenue-neutral." At the time, the industry agreed to this recommendation because they considered it temporary and believed it was the best way to stabilize Medicaid payments until changes in the efficiency of hospital operations could be demonstrated. As a result, language was placed in the Task Force report specifying that the downward adjustment in rates would be revisited if changes occurred in, among other factors, hospital efficiency.

Since that time, the State reimbursements have covered only a portion of the operating cost for hospitals that provide inpatient care. These average coverage rates have fluctuated, ranging from a low of 68 percent to a high of 83 percent. These fluctuations have occurred during a period in which the industry has altered its operations to become more efficient providers of healthcare. Specifically, after controlling for differences in the severity of patient illness, the average length of stay for Medicaid patients has dropped by nearly an average of one day over a four-year period. More notably, in the period from 1993 to 1998, hospitals have limited the annual growth rate in per-patient costs to less than two percent.

Notwithstanding this change, current AP-DRG payment rates for hospitals in Virginia appear to be low relative to other states with similar payment systems. For example, after adjustments are made to account for wage differences and other factors that affect payment levels, Virginia's inpatient reimbursement for the most frequently occurring medical procedure is significantly less than the rate observed for four of the five states that reimburse using the DRG system.

Efforts to Control Inpatient Medicaid Cost Have Produced Significant Fluctuations in Cost Coverage Rates of the State's Reimbursement System

In the absence of a legal standard akin to the Boren amendment, both VHHA and DMAS officials agree that cost coverage rates — the portion of hospitals' Medicaid allowable costs that is covered by total Medicaid payments — is a reasonable way to assess one aspect of the State's reimbursement system. This section of the report examines changes in cost coverage rates for Medicaid inpatient care. In addition, the rates paid by Virginia for three of the most frequently occurring AP-DRGs are compared to those paid by other states with similar inpatient reimbursement systems.

Considerable Variation Exists in Cost Coverage Rates. Before the trends in cost coverage rates produced by the State's inpatient reimbursement can be evaluated, the concept of cost coverage needs to be defined. According to DMAS staff, when

developing a coverage rate, all of the payments made by Medicaid for inpatient care must be accounted for and divided by total Medicaid allowable costs. This would include not only the operating payments, but the disproportionate share payments made by Medicaid as well. Capital and medical education payments and costs are included in the coverage rate.

Based on this measure, DMAS staff note that the trend in average cost coverage rates for inpatient care has been increasing since 1993 and is presently higher than hospitals would have experienced had the State left the old per-diem system in place (Figure 10). As shown, in the last three years that the State used the per-diem payment system for inpatient care, the coverage rate for private hospitals increased from 69 to 73 percent. By the second year of the transition to the DRG system (FY 1997), the coverage rate was 79 percent. One year later, this rate had increased to nearly 88 percent.

At the time of this report, final payment and cost data were not available beyond FY 1998, but DMAS staff provided estimates for these figures. This allowed JLARC staff to project the coverage rate using DMAS' definition through FY 2001. As Figure 10 indicates, based on projected data, the coverage rate is expected to drop to 79 percent in FY 1999. However, because the DMAS' payment reduction factor for FY 2001 will be set at 21 percent rather than the previous level of 28 percent, the coverage rate for that year will return to the level (88 percent) observed in FY 98.

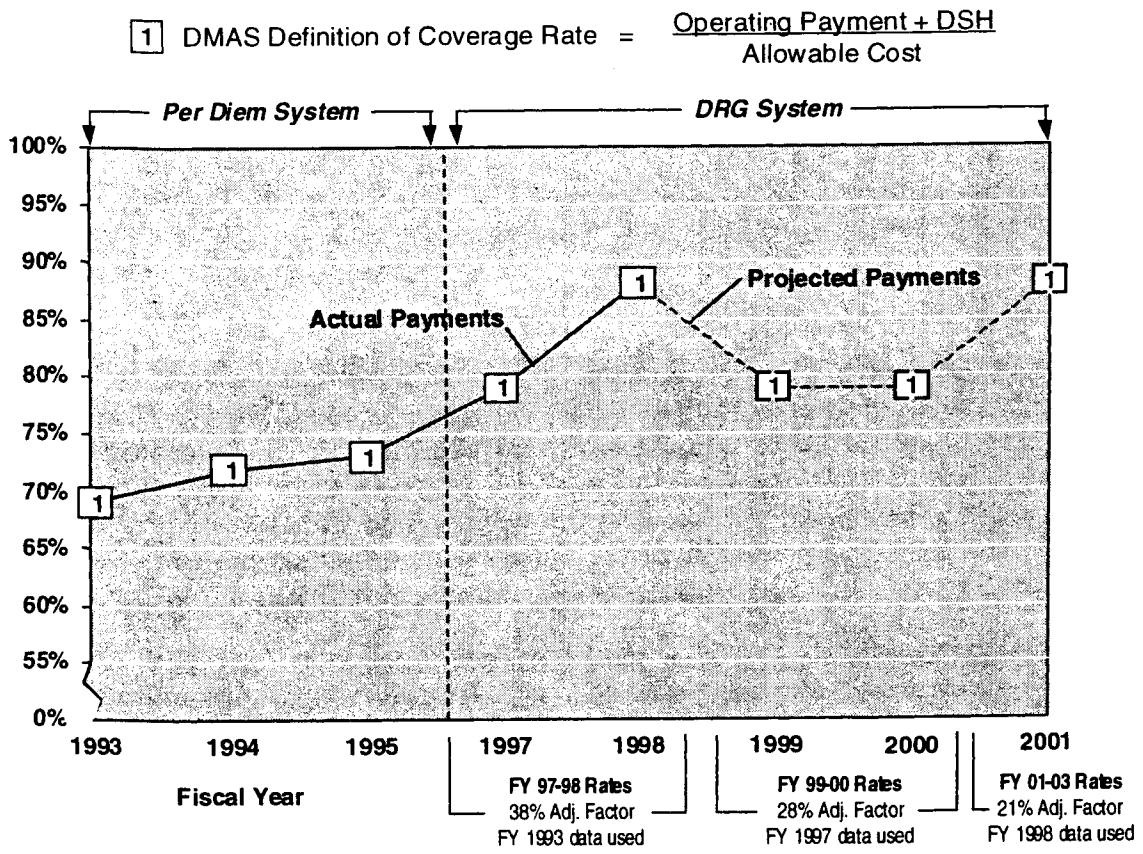
DMAS staff suggests that these patterns are an indication that the current reimbursement system, with the rate adjustment factor, balances the State's need to provide a sufficient level of reimbursement to hospitals while minimizing the cost of the program to the Commonwealth.

Officials from VHHA disagree on two grounds. First, they take exception to the comparison of coverage rates from the old per-diem system to rates produced by the current DRG system. They contend that the State's per-diem system was fundamentally flawed because it was not designed to recognize the trend in inpatient care among private hospitals towards more intensive care over shorter lengths-of-stay. This trend, they contend, actually increased their per-diem costs but this was not reflected in the Medicaid payment rates, which were set in 1982 and adjusted annually for inflation. Consequently, VHHA staff argue that the cost coverage rates experienced by hospitals under the per-diem system were always too low and should therefore not be used as a standard for evaluating the adequacy of rates under a new payment system.

The second point raised by VHHA concerns the method used by DMAS to define coverage rate. They note that DMAS' measure of the coverage rate has problems because it includes the disproportionate share payments in the numerator, but excludes from the denominator, some of the costs for which the disproportionate payments are allocated. This, VHHA staff maintain, overstates the actual size of the coverage rate, thereby giving the impression that Medicaid's payment system is reimbursing hospitals at a higher than actual rate.

Figure 10

Coverage Rates (Medicaid Payments Divided by Hospital Costs) for Fiscal Years 1993-2001 for Private Hospitals



Notes: DSH refers to disproportionate share hospital payments. Only private (type II) hospitals are included in the coverage rates (the Medical College of Virginia and University of Virginia Medical Center are excluded). Fiscal year 1996 is not included in this analysis because DMAS changed from calendar to fiscal year and therefore 1996 only has six months of data. Included in the coverage rates are payments and costs for acute care, neo-natal intensive care units (NICU), rehabilitation, and psychiatric care.

Source: JLARC staff analysis of Department of Medical Assistance Services reimbursement data.

As noted in Chapter II, a portion of the disproportionate share payments from Medicaid is made to pay for hospital charity care - treatment provided to patients who have no insurance and who are unable to pay out of pocket for their healthcare treatment. Because of the problem with DMAS' measure of coverage rate, JLARC staff developed an alternative measure that includes some of the costs for charity care incurred by hospitals. To accomplish this, JLARC staff first determined the portion of hospital charity cost for which the Medicaid program should be responsible. Accordingly, for each hospital, a Medicaid participation rate was calculated, and this figure was multiplied with hospital charity cost. The resulting product was included in the

denominator with the Medicaid allowable cost and used to measure the coverage rates produced by the system.

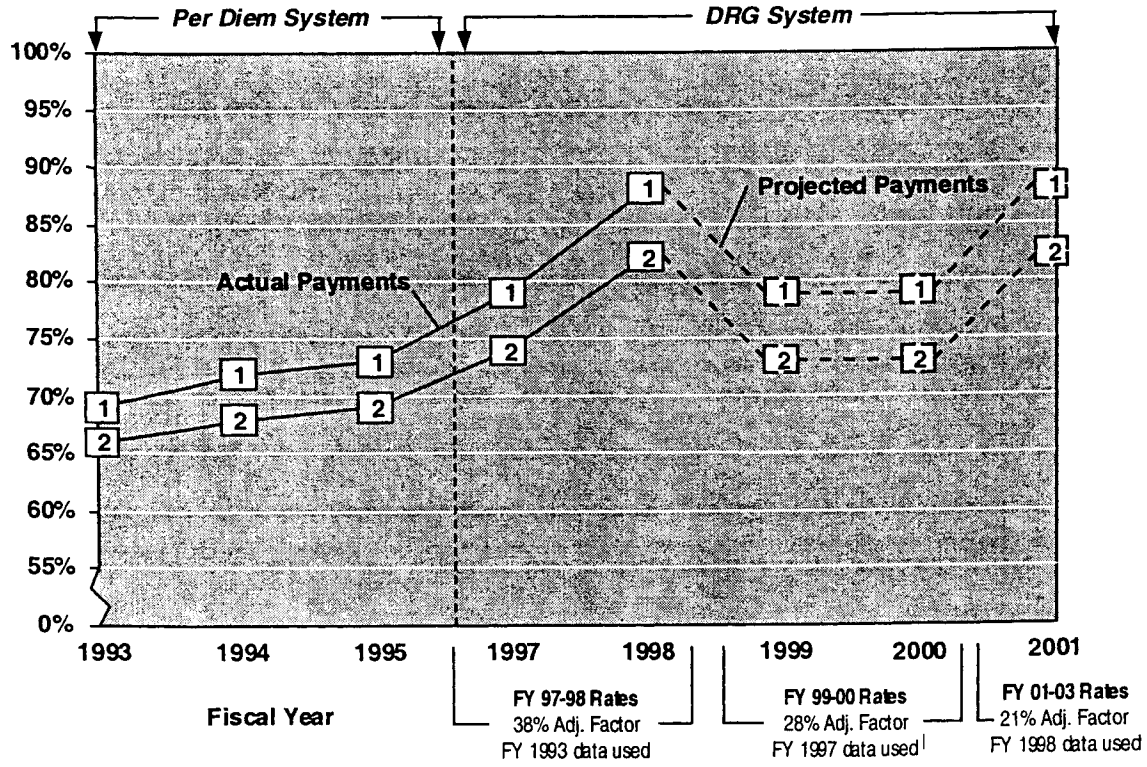
Figure 11 compares the trends for the JLARC staff definition of coverage rate with the measure used by DMAS. As would be expected, the trends for the two measures are similar, but the coverage rates calculated by JLARC staff are lower. In FY 1997, payments from Medicaid using the JLARC definition averaged 74 percent. This was approximately eight percent less than the DMAS average coverage rate. In FY

Figure 11

Coverage Rates (Medicaid Payments Divided by Hospital Costs) for Fiscal Years 1993-2001 for Private Hospitals

1 DMAS Definition of Coverage Rate = $\frac{\text{Operating Payment + DSH}}{\text{Allowable Cost}}$

2 JLARC Definition of Coverage Rate = $\frac{\text{Operating Payment + DSH}}{\text{Allowable Cost + A Portion of Charity Costs}}$



Notes: DSH refers to disproportionate share hospital payments. Only private (type II) hospitals are included in the coverage rates (the Medical College of Virginia and University of Virginia Medical Center are excluded). Fiscal year 1996 is not included in this analysis because DMAS changed from calendar to fiscal year and therefore 1996 only has six months of data. Included in the coverage rates are payments and costs for acute care, neo-natal intensive care units (NICU), rehabilitation, and psychiatric care.

Source: JLARC staff analysis of Department of Medical Assistance Services reimbursement data.

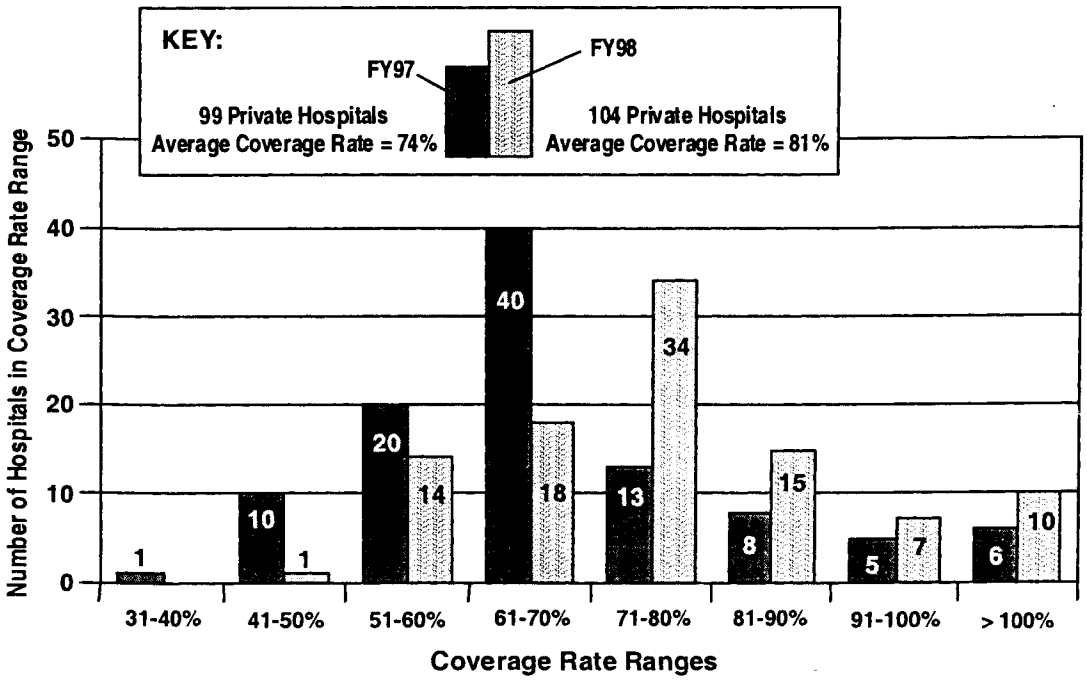
1999, JLARC staff project that the coverage rate will fall by nine percent to 73 percent, which is less than DMAS' 79 percent average rate. The projected rates calculated for both measures increase for FY 2001, but the differences in the rates remain.

It should also be emphasized that these are average coverage rates. The actual coverage rate for some hospitals will be substantially below the average, while others will be noticeably higher. Figure 12 illustrates the distribution of private hospitals based on the JLARC staff definition of coverage rate. In FY 1997, 72 of the 99 private hospitals in the State had 70 percent or less of their Medicaid cost covered by payments from DMAS. A total of six private hospitals had more than 100 percent of their allowable cost covered by payments from the system. The coverage rates improved for hospitals in FY 1998 and, in fact, 10 hospitals received more than 100 percent of their costs. These are typically private hospitals that serve a large percentage of Medicaid patients and a disproportionate number of patients who have more complex illnesses. At the other end of the spectrum, however, a total of 33 hospitals still

Figure 12

Coverage Rates for Hospitals in FY 1997 and FY 1998 Using the JLARC Definition of Coverage

$$\text{Coverage Rate} = \frac{\text{Medicaid Payment + DSH}}{\text{Allowable Costs + A Portion of Charity Care Costs}}$$



Notes: DSH refers to disproportionate share hospital payments.
Source: JLARC staff analysis of Department of Medical Assistance Services data.

had 70 percent or less of their Medicaid allowable costs covered by payments from the program.

Comparison of Virginia's Rates with Those Paid by Other States. Another method for judging the adequacy of the State's inpatient payment rates is through a comparison of Virginia's payment rates for its AP-DRGs with those of other states. To collect the data for comparison purposes, JLARC staff conducted a mail survey of each state in the nation. The response rate for the survey was 84 percent. Based on these responses, it was determined that 15 states used a DRG system to set payment rates for Medicaid patient care. Of these states, six use the same set of DRG codes — AP-DRGs — that is used in Virginia. JLARC staff were able to collect data from five of these states for this analysis.

Because there are more than 600 different AP-DRG codes in this system, it was not feasible to conduct cross-state comparisons in payment rates for each code. As an alternative, JLARC staff selected three of the most frequently used AP-DRG codes for comparison in this analysis. Two of these were basic medical codes — one for normal newborn diagnosis and the other for vaginal births — that together accounted for 33 percent of the AP-DRG cases. A third code, cesarean sections without complications, was selected to represent the surgical side of the AP-DRG system, as it is the most frequently occurring surgical procedure among Medicaid recipients of inpatient care.

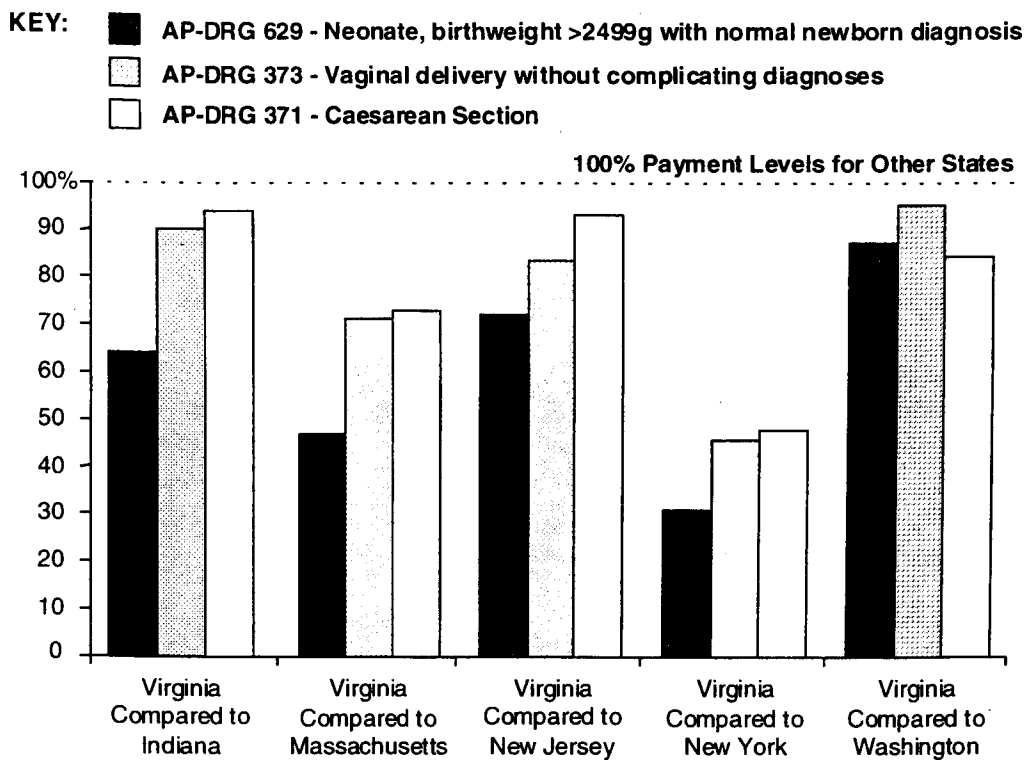
To facilitate a reliable cross-state comparison, JLARC staff replicated a model developed by Pace Management Services. For this analysis, the general purpose of this model was to adjust Virginia's baseline operating payment rate so that it would be analogous to rates for each of the five states considered in this analysis. To accomplish this, adjustments were made to reflect cross-state differences in labor cost and any differences in the basic components of operating payments. For example, one of the states used in the comparison may have included payments for indirect medical education in its operating payment rate. Because Virginia does not, its baseline operating would have to be adjusted upward to account for this difference. By adjusting Virginia's baseline payments in this way for each state, it is possible to determine how much more or less Virginia pays for certain procedures relative to other states.

The results of this analysis are summarized in Figure 13. As shown, in no case does Virginia pay as much for the three selected procedures as other states with similar systems. For a normal newborn diagnosis — the most frequently used procedure — Virginia's payment rates are substantially less when compared to rates paid in Indiana, Massachusetts, and New York. Specifically, Virginia paid slightly more than 60 percent of Indiana's rate, 49 percent of Massachusetts' rate, and only 30 percent of the payment rate for New York.

The rates are more comparable, but still lower, for the cesarean section surgical procedure. For example, Virginia pays more than 90 percent of the payment level witnessed in Indiana and New Jersey for this procedure and approximately 85 percent

Figure 13

Adjusted Virginia Payments as a Percent of Actual Payments Made in Other States for Three AP-DRGs



Notes: The following rate adjustment factors were applied to Virginia's baseline payment rate as needed: capital cost - 16 percent; outliers - 5.4 percent; indirect medical education - 2 percent; direct medical education - 3 percent; disproportionate share - 8 percent. New Jersey does not use relative weights, but assigns a payment for each DRG adjusted for regional wage differences. New Jersey is only compared to Virginia's urban hospitals because all New Jersey hospitals are located in urban areas. Washington, DC and West Virginia also use AP-DRGs but were excluded from this comparison due to lack of information.

Source: JLARC staff analysis of survey data using methodology developed by PACE Management Service.

of the rate for the state of Washington. However, when compared to New York, the State's rate is considerably lower at 50 percent.

The Continued Use of a Rate Adjustment Factor for Medicaid Inpatient Care Services Is Not Supported by Trends in Hospital Cost

In 1996, when the Medicaid Task Force agreed to establish a payment reduction factor as a part of the State's transition into the proposed DRG system, the parties did not consider the rate adjustment to be a permanent fixture in the face of changing circumstances. As the following language from the Task Force report indicates, this rate adjustment was to remain in place to protect the State from a surge in the cost of

inpatient care and stabilize payments, but could be revisited if significant changes could be observed in hospital efficiency or other factors:

> The spirit of the Wilder settlement was to halt the erosion in [Medicaid] payment relative to cost under then current restrictions on funds available and stabilize [payments] at a level both sides found reasonable – for inpatient services with all payments considered this relationship is approximately 75% in 1996. The intent of the parties committing to this agreement is that absent a Virginia financial crisis, intervening federal actions or demonstrable change in hospital efficiency that this approximate 75% relationship should be preserved in any future budget neutrality negotiations calculations.

VHHA asserts that since that agreement was established, "demonstrable changes" have occurred in hospital efficiency. Moreover, since the State has fully implemented its DRG system, VHHA officials question the need for additional payment reductions. As they note, the DRG system already limits the amount a hospital will be paid based on the illness of each patient. Hospitals that provide more care than the system recognizes incur a financial loss and the industry sees no reason for additional "financial penalties."

Therefore, when DMAS was rebasing the DRG system for FY 2001 and included a rate adjustment of 21 percent, officials from VHHA accused the agency of reneging on the 1996 agreement. As the following comments made by the President of VHHA in a letter to a delegate of the General Assembly indicate, the hospital industry is unequivocal in its view about the lack of fairness of this adjustment:

> Virginia Medicaid has paid less than the cost of care since 1975.... When the hospital community agreed to a DRG-based system, we assumed the additional risk (of patients staying longer than average) in return for an opportunity to recover more of our costs by becoming more efficient and reducing the length of stay. Hospitals have become significantly more efficient under a DRG-based system, holding their cost below the rate of general inflation (to say nothing of medical inflation) and cutting length-of-stay. As a result, hospitals expect to be rewarded for their efficiency. This is the point of a DRG-based system to have hospitals recover a greater percentage of the cost of care (but still not the full cost of care). Instead, DMAS proposes a system where "heads" the hospital community loses and tails the hospitals still lose. Because hospitals were able to improve efficiency and reduce length of stay more than Medicaid expected, the agency now wants to renege on the agreement we reached in 1996 in order to pay no more than 79 percent of the cost of care. This is driven by DMAS' own cash flow position, not any kind of sound health policy.

According to DMAS staff, the question of whether the State's DRG system should continue to include a rate adjustment is largely a policy issue. Further, while they believe the rate adjustment is calculated in a manner to reward the industry for reductions they achieve in operating costs, they agree that the policy should be reexamined. This final section of the report examines recent changes in the cost of Medicaid inpatient care and estimates the additional costs that the State would face if the payment reduction factor were eliminated.

Changes in the Lengths-of-Stay for Medicaid Patients. One of the major criticisms of the Virginia hospital industry during the 1980s was that its doctors did not exercise proper control over patient length-of-stays. This was thought to be especially true for Medicaid patients because of the per-diem reimbursement system that was used by DMAS to pay for their care. As noted earlier, this system rewarded hospitals for keeping patients longer and generally encouraged a less efficient delivery of healthcare. Even though the hospitals agreed to move to a patient-based reimbursement system in 1996, there was some concern that many of the practices that fueled higher hospital cost in the 1980s had not been curtailed.

Although the amount of time that has elapsed since 1996 is relatively brief, it does appear that hospitals have been reducing the length-of-stay for Medicaid patients. As shown in Figure 14, the average total days spent in hospital from 1996 to 1999 are highest for Medicare patients. This is not surprising because of the age of this population. Medicaid recipients have the second longest average hospital stay over this time period. However, since 1996, the average length-of-stay for Medicaid patients has declined from an average of 4.94 days in 1996, to an average of 4.27 days in 1999. By comparison, the average lengths-of-stay for Medicare patients, persons with commercial insurance, and persons who pay for their own care have all dropped as well and at rates that are comparable with those observed for Medicaid patients.

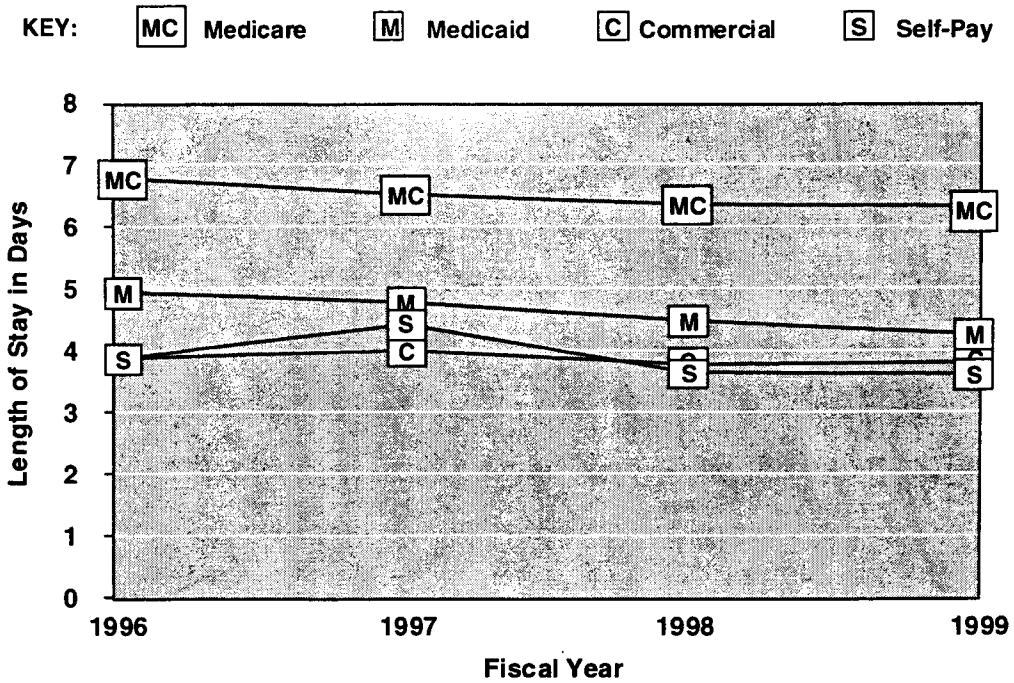
Because differences among patients in length-of-stay are driven by the severity of their illnesses, changes in hospital stays were examined after controls for patient acuity were implemented. Using data provided by VHI, this was accomplished by dividing the actual length of stay for each patient by the average number of days a patient who received similar care was predicted to stay in the hospital.

As illustrated in Figure 15, the resulting ratios appear highest for both Medicaid and Medicare patients compared to persons with commercial insurers and those who are self-pay. However, the trend in the average adjusted lengths- of-stay for both Medicaid and Medicare patients is slightly downward and is consistent with the changes observed for recipients with other payors.

Changes in Medicaid Allowable Costs. Another assessment of whether the hospital industry is making improvements in the efficient delivery of healthcare to Medicaid recipients can be made through an analysis of the hospitals' data on Medicaid allowable costs. Currently, all hospitals are required to maintain cost accounting records for the Medicaid program and to submit those records annually to DMAS using standard cost report forms. As an initial part of a more extensive cost settlement

Figure 14

Changes in Average Lengths of Stay for Persons Who Received Inpatient Hospital Care, by Type and Payer



Source: JLARC staff analysis of data provided by Virginia Health Information.

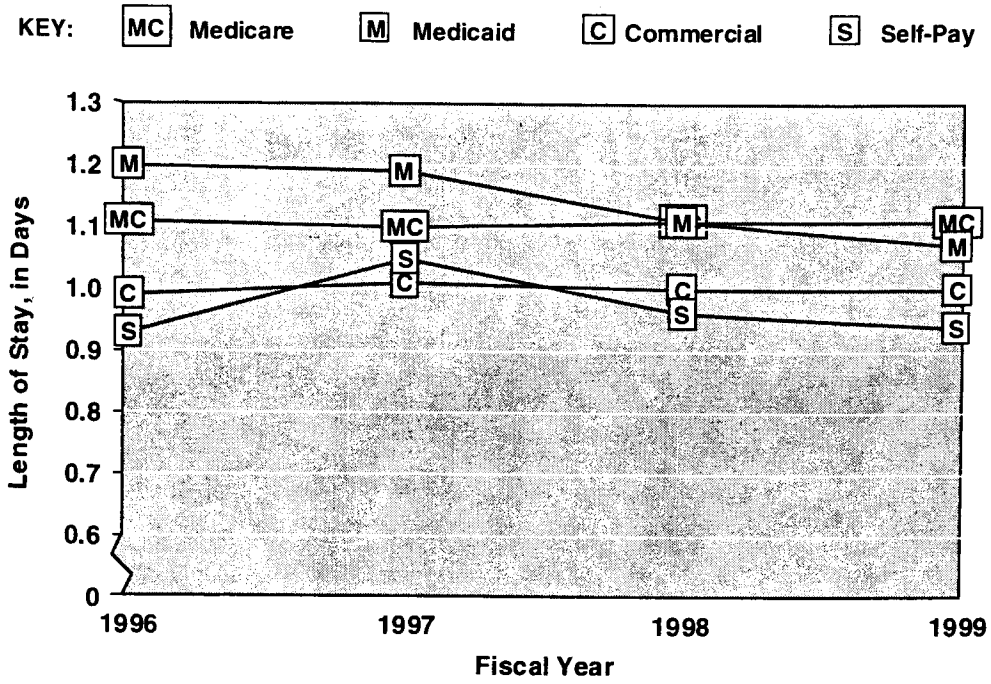
process, each hospital's reported total Medicaid allowable costs are examined. Using these data, along with information on patient volume and casemix, it is possible to evaluate changes in the cost of inpatient care that the industry has provided to Medicaid recipients from FY 1993 to FY 1998.

Several steps were conducted to complete this analysis. First, because the cost data used in the analysis were measured over time, it was necessary to correct for the distortion in the data caused by medical inflation. This was achieved by constructing new cost variables for each year included in the analysis, expressing the cost data in real or constant 1998 dollars. Second, these converted cost data were then standardized by the number of adjusted patient days to account for differences in the number of patients treated by hospitals. Finally, these inflation-adjusted and standardized cost figures were further adjusted based on the severity of each hospital's patient casemix. This was necessary to hold hospitals harmless for any cost increases they experienced due to an increase in the seriousness or complexity of the illnesses of their patients.

Figure 16 reports the results of the analysis and indicates the success the industry has experienced in limiting the growth in Medicaid inpatient cost. In terms of real cost, (with no volume or patient casemix adjustment), the data indicate that hos-

Figure 15

Adjusted Changes in Average Lengths of Stay for Persons Who Received Inpatient Hospital Care, by Type and Payer



Source: JLARC staff analysis of data provided by Virginia Health Information.

pitals actually spent less on Medicaid inpatient care in FY 1998 than they did in FY 1993. Specifically, over this five-year period, real Medicaid allowable costs decreased by 2.1 percent.

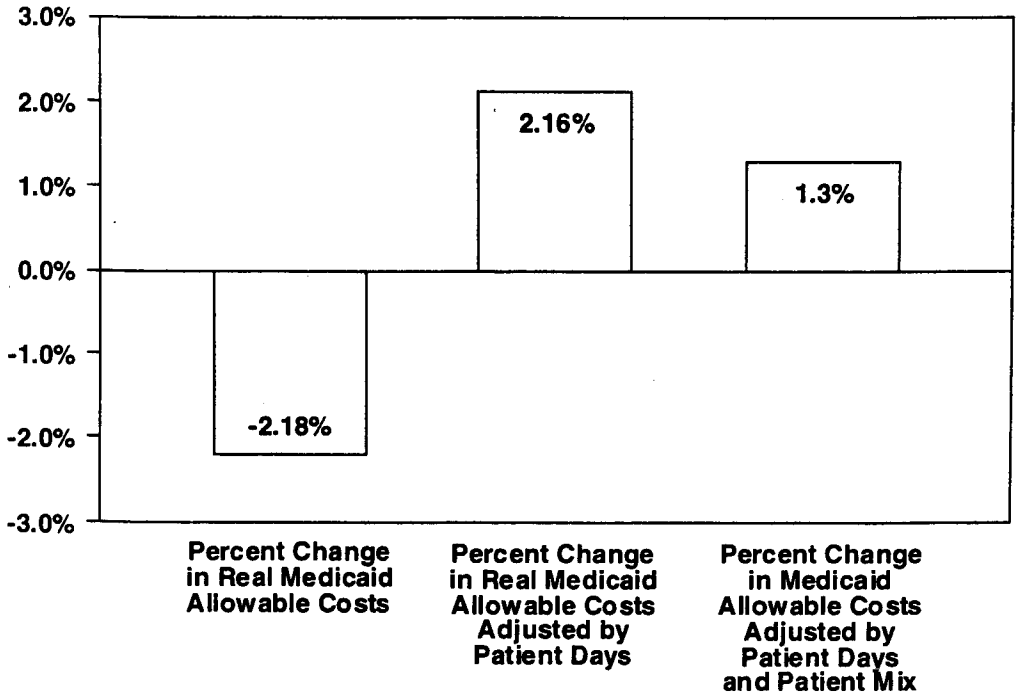
This does not mean that it was less expensive for hospitals to provide inpatient care during this time period. Rather, this decline reflects the decrease in patient volume experienced by the hospitals. Accordingly, when the change in the number of patients treated from FY 1993 to FY 1998 is accounted for through the use of adjusted patient days, an increase in the real cost of the inpatient program is evident. However, as the second bar in the graph illustrates, this growth rate was only two percent.

The last bar in the graph further illustrates the success hospitals have experienced in holding the line on Medicaid inpatient cost. This bar summarizes the change in real Medicaid inpatient cost after adjustments were made for both patient volume and hospital casemix. As shown, after accounting for these factors, the growth in the real cost of Medicaid inpatient care in Virginia is less than two percent.

Fiscal Impact of Eliminating the Rate Adjustment Factor. When the Medicaid Joint Task Force crafted the initial agreement to create a new reimburse-

Figure 16

Percent Change in Allowable Costs Adjusted for Patient Days and Patient Mix From FY 1993 to FY 1998



Note: Data reflects percent change after inflation is taken into account.
Source: JLARC staff analysis of Department of Medical Assistance Services and Virginia Health Information data.

ment system for Medicaid inpatient care, there were legitimate reasons to cap expenditures at levels that were below the rates suggested by the new system. Namely, years of rising hospital costs and the State's previous budget problems were factors that supported the budget neutral approach pursued for the new payment system.

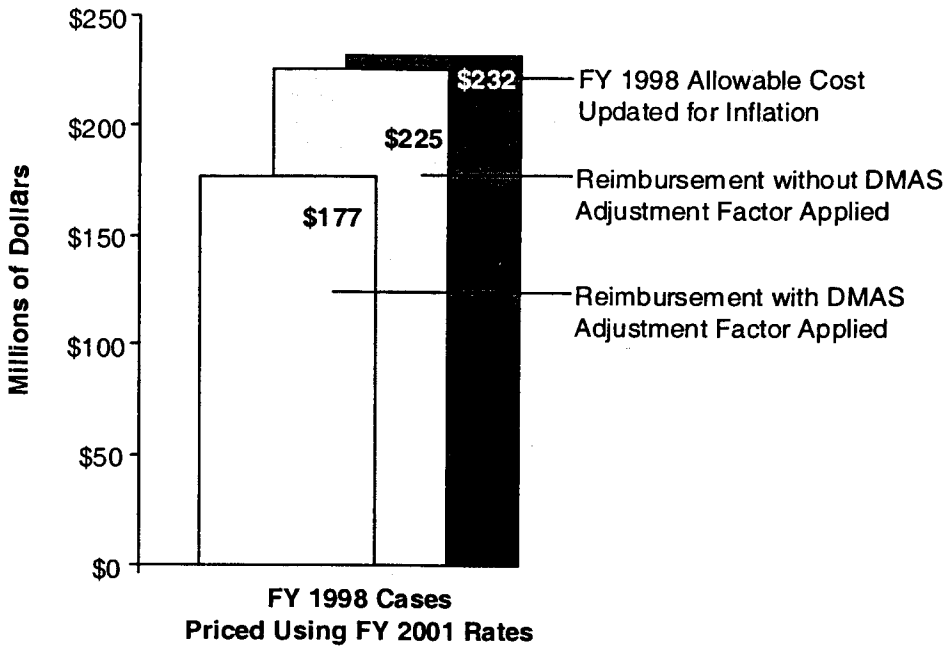
Now, the previously discussed trends in hospital costs, considered together with the data on lengths-of-stay for Medicaid patients, raise questions about the appropriateness of the rate cuts that have been built into the State's DRG payment system. While future hospital costs are predicted to increase for reasons beyond the control of the industry — labor shortages and the rising cost of prescription drugs — there is little evidence that supports the State's current policy of lowering payments to hospitals based on historical inefficiencies.

It should be emphasized, however, that elimination of the rate adjustment factor would significantly increase the operating cost of the inpatient care program. To illustrate this, JLARC staff used the rates that have been set for FY 2001 and estimated the total operating payments that the State would have to make if the reimbursement were based only on the DRG rates. (This analysis assumes that no changes occur in either the number of patients treated or patient casemix from FY 1998.)

As shown in Figure 17, under the current system, projected operating payments for FY 2001 total $177 million, reflecting the use of a 21 percent rate reduction factor. Without this policy, operating payments for this year would rise to $225 million, or approximately 97 percent of the industry's operating cost. This reflects an increase of $48 million. Because the federal government assumes 50 percent of the cost of Virginia's Medicaid program, the cost to the State would be an additional $24 million. If this rate adjustment factor is eliminated, DMAS would have to ensure that when added to the payments received for disproportionate share, the increased reimbursements for hospitals do not exceed allowable federal or State limits.

Figure 17

Total DRG Payment for Cases Settled in FY 1998 Using the DRG Rates from FY 1998 Through FY 2001



Notes: There were 70,888 cases settled in private hospitals in FY 1998 that were assigned a DRG code. The DRG payment does not include outlier or transfer payments, DSH payments, capital payments, or payments for indirect medical education.

Source: JLARC staff analysis of Department of Medical Assistance Services payment and claims data.

The general criticism of this approach is that the State would lose its ability to control inpatient spending for Medicaid. This, DMAS notes, could be especially problematic if the State is experiencing budget problems similar to those witnessed during the late 1980s and early to mid 1990s. This criticism mistakenly assumes that by

eliminating the adjustment factor, the State is prevented from making across the board payment reductions should budget and economic conditions worsen. Under these circumstances, the General Assembly would retain its authority to alter the amount appropriated for inpatient hospital care based on the available revenue, and could direct DMAS to promulgate regulations that authorized across-the-board payment reductions. Thus, the sole purpose of eliminating the rate adjustment factor is to remove from the DRG system, the automatic rate decreases that occur with little regard to economic conditions or changes in the efficiency of hospital operations.

Recommendation (3). Prior to February 1 2001, the Department of Medical Assistance Services should submit a plan to the House Appropriation and Senate Finance Committees outlining a strategy to phase out the rate adjustment factor by FY 2003.

Appendixes

Page

Appendix A: Study Mandate A-1

Appendix B: Virginia's Rate-Setting Methodology Based on Diagnosis-Related Groups B-1

Appendix C: Summary of Coverage Rates in FY 1997 and FY 1998 ..... C-1

Appendix D: Coverage Rates in FY 1997 Based on the DMAS Definition D-1

Appendix E: Coverage Rates in FY 1997 Based on the JLARC Definition E-1

Appendix F: Coverage Rates in FY 1998 Based on the DMAS Definition F-1

Appendix G: Coverage Rate in FY 1998 Based on the JLARC Definition G-1

Appendix H: Comparison of Medicaid and Medicare Rate-Setting Methodology Based on Diagnosis-Related Groups H-1

Appendix I: Glossary I-1

Appendix J: Acronymns J-1

Appendix K: Agency Response K-1

Appendix A

Study Mandate

Item #20 K of the 2000 Appropriation Act:

The Joint Legislative Audit and Review Commission shall examine the Virginia Medicaid program's methodology for determining hospital inpatient rates. The review shall consider past General Assembly intent and direction concerning the implementation of a prospective hospital payment system and the extent to which it is reflected in the current reimbursement system. The review also shall include (i) a comparison of Virginia's reimbursement for hospital inpatient care with other states and other payors; (ii) the accuracy of the Department of Medical Assistance Services' claims data base; (iii) the appropriateness of the Department's rate setting and rebasing processes and the cost settlement of the 1997 and 1998 cost reports; (iv) the application of retroactive changes in reimbursement for services rendered during fiscal years 1998, 1999, and 2000, and options for addressing them, if warranted; (vi) a comparison of Diagnosis Related Groupings rates applied to hospital payments during fiscal years 1998, 1999, and 2000; (vii) the adequacy of current hospital rates, including whether they afford hospitals a reasonable opportunity to recover their costs; and (viii) other issues as may seem appropriate. The Department shall cooperate fully as requested by JLARC and its staff. The Commission shall report its findings and recommendations to the Chairmen of the Senate Finance and House Appropriations Committees by November 15, 2000.

Appendix B

Virginia's Rate-Setting Methodology Based on Diagnosis-Related Groups

The General Assembly required DMAS to implement a prospective reimbursement system for inpatient hospital care that is based on Diagnosis-Related Groups, or DRGs. DMAS has designed a generally sound methodology that provides a DRG payment for each Medicaid patient and includes a process for determining each component of the payment. The main components are the relative weights, which account for the differences between illnesses, and the hospital base operating rates, which account for the differences between hospitals.

Virginia's DRG methodology also recognizes that there are costs associated with treating patients other than the direct costs of a particular patient's care. Therefore, DMAS has incorporated reimbursements for capital and medical education into the payment structure. The state pays each hospital a percentage of these costs equal to the percentage of the hospital's business that is Medicaid. This type of payment is considered a "pass-through." Table B-1 summarizes the different payments provided for in Virginia's DRG reimbursement system.

The process of calculating each component of the DRG system is dictated by regulations promulgated by DMAS. The remainder of this appendix explains that process in detail. The calculation of each component is similar in two ways. First, each component is calculated separately for private and state teaching hospitals (Medical College of Virginia and the University of Virginia Medical Center). Second, the data used to complete the calculations are from what is called the "base year," defined by the regulations as the year from which the patient claims data and hospital cost data are

Table B-1

Medicaid Payments for Inpatient Hospital Care Under the DRG Reimbursement System

Payments	Unit	Description
DRG Payment	Patient	Hospital Specific Base Rate * Relative Weight
Outlier Payment	Patient	Based on cost of patient's case
Transfer Payment	Patient	Discharging hospital = Full DRG payment Original hospital = a percentage of DRG payment based on length of stay
Capital Payment	Hospital	Pass-Through at Cost Settlement
Indirect Medical Education (IME) Payment	Hospital	Prospective, quarterly payments pass through at cost settlement
Direct Medical Education Payment	Hospital	Prospective, quarterly payments pass through at cost settlement
Disproportionate Share Hospital (DSH) Payment	Hospital	Prospective, quarterly payments

Source: *Virginia Administrative Code.*

used. Table B-2 summarizes the base years for the three sets of rates calculated since the DRG system began.

Table B-2

Patient Claims Data and Hospital Cost Data Used to Calculate DRG Rates

DRG Rates	Cost Data	Claims Data
FY 97-98 rates	FY 1993	FY 1993
FY 99-00 rates	Trended FY 1991 – 1995	FY 1997
FY 01-03 rates	FY 1998	FY 1998

Source: *Virginia Administrative Code.*

DRG Relative Weights. To account for differences between illnesses, the DRG methodology determines a set of relative weights that are specific to each DRG. These weights measure the relative cost of treating a patient in theDRG compared to the cost of treating all other patients. The set of groups used by Virginia to differentiate between illnesses is the All-Patients Diagnosis Related Groups, or AP-DRGs, chosen because it includes a comprehensive breakdown of obstetric cases.

To calculate the relative weights, DMAS first determines what portion of the hospital charges is the actual operating cost of treating each Medicaid patient. As Table B-3 illustrates, this is accomplished by multiplying the charges for each case times the treating hospital's ratio of cost to charges (RCC), which is obtained from hospital cost reports in the base year. DMAS then applies the Medicare wage index to the labor portion of the operating cost to remove the effect hospital labor costs have on the cost of treating a patient. This effect is removed because the hospital base operating rates will account for the labor cost differences in the DRG payment. The regulations define the labor portion of cost to be just over half of the total cost in the current biennium.

Cases are then grouped into DRGs and the average operating cost is determined for each DRG. The relative weight for each DRG is equal to average operating cost for that DRG divided by the average operating cost for all cases.

Hospital Base Operating Rate. The hospital base operating rate is used to find the operating payment for DRG cases and accounts for the differences between hospitals due to regional labor costs. Figure B-3 also summarizes the methodology used by DMAS to calculate the hospital base operating rates.

Since the relative weights explained above account for the differences between illnesses , patient costs are adjusted to remove these differences in the calculation of the base rates. The adjustment is made by applying a case-mix index (CMI) to patient costs. The CMI is a hospital specific measure of the severity of patients

Table B-3

DRG Reimbursement Methodology

DRG Payment	=	Relative Weight	*	Hospital Base Operating Rate

Relative Weight	Hospital Base Operating Rate
1. Determine operating costs for each case by multiplying the total charges by the ratio of cost to charges, or RCC, for each hospital (obtained from cost report in the base year). 2. Divide the labor portion of the operating costs by the Medicare wage index to remove the effects of regional wage differences between hospitals. 3. Sort cases by DRG and find the average cost for each DRG. Also, find the average cost for all cases. 4. Calculate the relative weight by dividing the average cost for each DRG by the average cost for all cases.	1. Calculate Case-Mix Index (CMI) for each hospital to measure the severity of patients treated at each hospital. CMI = $\frac{\Sigma \text{ (\# of cases * RW)}}{\Sigma \text{ \# of cases}}$ (summed over DRGs) 2. Divide operating cost for each case by the CMI to remove the effects of variation in illness. 3. Find the statewide average cost. 4. Update the statewide average cost for inflation. 5. Apply the adjustment factor to the statewide average cost, effectively reducing it by 21 percent in the current biennium (38 percent in FY 97-98 and 28 percent in FY 99-00). 6. Adjust for regional wage differences using the Medicare wage index from the base year to find the hospital base operating rates.

Note: This table summarizes the current methodology effective July 1, 2000. The regulations guiding the previous rate-setting for FY 97-98 rates and FY 99-00 rates were very similar, and are available in previous editions of the *Virginia Administrative Code.*

Source: *Virginia Administrative Code.*

treated by each hospital. DMAS then finds the average cost for all cases in the state. This statewide average cost is updated for inflation and then multiplied by the adjustment factor to effectively lower the average cost by 21 percent in the current biennium. The adjustment factor is equal to the operating payments in the base year divided by the allowable cost of treating Medicaid patients in that same year.

The final adjustment for wage differences produces the hospital base operating rates used to determine DRG payments. DMAS adjusts the statewide average by a nationally accepted measure of regional wage differences, the Medicare wage index from the base year. HCFA publishes the wage index in the *Federal Register* each year.

Outlier Payments. Patient cases are considered "outliers" if the cost for treating that patient is substantially greater than the applicable DRG payment due to the difficult nature of the case. An additional payment is issued for these extraordinary cases to reimburse hospitals for the financial risk involved in taking on the patient. It is an effort to mitigate the incentive for hospitals to avoid these cases due to the associated high costs.

The decision rule for a case to be considered an outlier is if the estimated cost of the case is greater than the DRG payment for the case plus a fixed loss threshold. The fixed loss threshold is currently just over $26,000, or 5.1 percent of the total operating costs for all DRG cases in the base year. The calculation to determine the payment for these cases is quite dense and therefore is not reproduced here. Generally, DMAS reimburses the treating hospital a portion of the cost of the case that is greater than the DRG payment.

Additional Payments to Hospitals. In addition to receiving DRG payments and outlier payments, hospitals can receive disproportionate share hospital (DSH) adjustments, and reimbursements for medical education and capital costs.

A hospital is eligible for DSH payments if it has a Medicaid utilization rate greater than 15 percent or a low-income utilization rate greater than 25 percent. The utilization rates are the ratios of the number of patient days for either Medicaid patients or low-income patients to the total number of patient days in the hospital. The hospital must also have at least two obstetricians with staff privileges who are willing to provide obstetric services to Medicaid patients. DSH payments do not apply to hospitals where inpatients are predominantly under 18 or that do not offer non-emergency obstetric services.

DSH payments are calculated differently based on two criteria: (1) the utilization rate by which the hospital is eligible (Medicaid utilization rate or low-come utilization rate) and (2) the type of hospital, either private or state-teaching. A hospital's DSH payment cannot exceed a hospital specific cap, set such that a hospital cannot receive a payment that when added to the operating cost reimbursement exceeds the combined cost of treating Medicaid patients and treating indigent patients who are unable to pay for their care.

Table B-4 shows an example of a DSH calculation for the Richmond Community Hospital, a private hospital that is eligible for a DSH payment because its Medicaid Utilization Rate is greater than 15 percent. The payment based on the current methodology is $848,977.

Table B-4

Disproportionate Share Hospital Payment Example

Children's Hospital of the King's Daughter

- Private Hospital
- 55.45 percent Medicaid Utilization Rate (MUR)
- $6,792,318 in estimated Medicaid payments

Calculation of DSH Payment With Current Methodology

DSH =	**(MUR – 10.5%) * Medicaid Payment * DSH Factor**	
	(55.45% – 10.5%) * $6,792,318 * 1.2074	$3,686,370
+	**(MUR – 21%) * Medicaid Payment * DSH Factor**	
	(55.45% – 21%) * $6,792,318 * 1.2074	+$ 2,825,260
	Total DSH Payment	**$6,511,630**

Notes:

- For state-teaching hospitals, the DSH payment is multiplied by a factor of 17
- If a hospital's MUR is greater than 15 percent but less than 30 percent the second part of the equation is not completed
- DSH payments can also be calculated if a hospital is eligible because its low-income utilization rate is greater than 25 percent. The calculation includes only the first part of the equation, without multiplying by a DSH factor.

Source: *Virginia Administrative Code.*

For the past several years, total calculated DSH payments for hospitals have been greater than the DSH funds available in the relevant year. To make up the difference, DMAS has been using DSH fund balances from previous years when the calculated DSH payments were lower than the funds available. Within two years, DMAS predicts that the balances will be depleted.

Prior to FY 1997, states received federal dollars for DSH based on a cash match, the percentage of which is fixed for each state. However, the 1997 Balanced Budget Act changed that cash match to a fixed DSH payment to states that will decrease each fiscal year through 2002. Between FY 1999 and FY 2002, the federal contribution to DSH payments for Virginia will decrease from $70 million to $59 million.

In addition to DSH payments, hospitals can be reimbursed for medical education and capital costs. DMAS currently reimburses hospitals a percent of these costs equal to the percent of the hospital's business that is Medicaid. The indirect medical education payments are prospective, quarterly payments. The capital payments are made during the end of the year costs settlement but will be incorporated into DRG rates in the future.

Appendix C

Summary of Coverage Rates in FY 1997 and FY 1998

A hospital's coverage rate is the percent of the hospital's Medicaid costs that are reimbursed by the State. DMAS defines State payments to include Medicaid operating payments and payments made to disproportionate share hospitals (DSH). A hospital's allowable costs are those costs associated with treating Medicaid patients after removing the unnecessary costs that are defined as such by the Medicare program. The DMAS definition of the coverage rate is as follows:

$$\text{DMAS Coverage Rate} = \frac{\text{Medicaid Operating Payment + DSH Payment}}{\text{Allowable Costs}}$$

DSH payments are intended to provide additional funding to hospitals that treat a disproportionate share of the Medicaid population. The payments are also intended to provide hospitals a chance to recover the costs of treating indigent patients who do not have insurance and who are unable to pay out-of-pocket for care. Because DMAS includes the DSH payment in the numerator of the coverage rate, it is appropriate to include a portion of charity care costs in the denominator. The portion of charity care costs included for each hospital is equal to the hospital's Medicaid utilization rate, or the percent of the hospital's total patients that were Medicaid in that year. Therefore, JLARC defines the coverage rate as follows:

$$\text{JLARC Coverage Rate} = \frac{\text{Medicaid Operating Payment + DSH Payment}}{\text{Allowable Costs + a Portion of Charity Care Costs}}$$

* Hospitals closed in FY 1998.

	DMAS Coverage Rate		JLARC Coverage Rate	
	FY 97	FY 98	FY 97	FY 98
Alexandria Hospital	73%	77%	66%	69%
Alleghany Regional Hospital	66%	77%	63%	73%
Arlington Hospital	71%	87%	65%	80%
Augusta Hospital	65%	83%	59%	77%
Bath County Community Hospital	66%	64%	65%	64%
Bedford County Memorial Hospital	50%	63%	47%	58%
Bristol Memorial Hospital	71%	103%	71%	103%
Buchanan General Hospital	91%	100%	86%	92%
Chesapeake General Hospital	74%	76%	72%	74%
Children's Hospital	88%	103%	86%	100%
Children's Hospital NMC	91%	107%	91%	107%
Children's Hospital of The King's Daughters	156%	145%	156%	145%
Chippenham Hospital	96%	95%	95%	91%

	DMAS Coverage Rate		JLARC Coverage Rate	
	FY 97	FY 98	FY 97	FY 98
Clinch Valley Hospital	78%	95%	75%	90%
Columbia Pentagon City Hospital	50%	*	50%	*
Community Hospital Roanoke Valley	84%	106%	84%	106%
Community Memorial Hospital	85%	104%	76%	93%
Culpeper Memorial Hospital	75%	74%	70%	68%
Cumberland Hospital	113%	104%	113%	104%
Danville Regional Medical Center	68%	73%	61%	63%
Depaul Hospital	71%	97%	61%	76%
Dickenson County Medical Center	83%	82%	67%	79%
Duke University Medical Center	54%	56%	54%	56%
Fair Oaks Hospital	61%	77%	58%	72%
Fairfax Hospital	82%	91%	74%	79%
Fauquier Hospital	66%	81%	62%	76%
Franklin Memorial Hospital	55%	79%	51%	73%
George Washington University Hospital	35%	63%	35%	63%
Georgetown University Hospital	64%	73%	64%	73%
Giles Memorial Hospital	52%	61%	50%	54%
Greensville Memorial Hospital	73%	103%	70%	92%
Halifax-South Boston Community Hospital	65%	75%	62%	72%
Health South Of Virginia, Inc.	70%	73%	70%	73%
Healthsourth Rehab Hospital Of Virginia	120%	*	120%	*
Henrico Doctors Hospital	62%	74%	61%	73%
Holston Valley Hospital	65%	69%	65%	69%
Indian Path Hospital	61%	*	61%	*
John Randolph Hospital	94%	90%	93%	87%
Johnson City Medical Center	83%	81%	83%	81%
Johnston Memorial Hospital	74%	88%	70%	83%
Lee County Community Hospital	74%	88%	65%	84%
Lewis Gale Hospital	75%	91%	74%	90%
Lonesome Pine Hospital	71%	84%	66%	79%
Loudoun Memorial Hospital	70%	78%	68%	76%
Louise Obici Memorial Hospital	78%	78%	72%	75%
Lychburg General Hospital	67%	*	67%	*
MCV Hospital	140%	153%	84%	95%
Martha Jefferson Hospital	67%	78%	64%	76%
Mary Immaculate Hospital	50%	60%	48%	56%
Mary Washington Hospital	70%	70%	67%	67%
Maryview Hospital	92%	90%	82%	53%
Memorial Hospital Martinsville Henry County	52%	66%	50%	65%
Metropolitan Hospital	126%	121%	123%	118%
Montgomery Regional Hospital	59%	74%	57%	67%
Mount Vernon Hospital	72%	81%	65%	72%
Norfolk Community Hospital	102%	124%	102%	124%
North Carolina Baptist Hospital	84%	94%	84%	94%
Norton Community Hospital	67%	62%	66%	61%
Page Memorial Hospital	74%	85%	64%	84%
Portsmouth General Hospital	68%	93%	60%	90%
Potomac Hospital Corp.	62%	74%	58%	69%

	DMAS Coverage Rate		JLARC Coverage Rate	
	FY 97	FY 98	FY 97	FY 98
Prince William Hospital	71%	76%	69%	72%
Pulaski Community Hospital	58%	86%	55%	79%
R. J. Reynolds Patrick County Memorial	50%	76%	50%	76%
Radford Community Hospital	49%	65%	46%	60%
Rappahannock General Hospital	65%	73%	62%	69%
Rehabilitation Institute of VA	98%	116%	98%	116%
Reston Hospital Center	67%	81%	65%	80%
Retreat Hospital	60%	76%	60%	73%
Richmond Community Hospital	119%	118%	113%	111%
Richmond Eye & Ear Hospital	50%	64%	42%	42%
Richmond Memorial Hosptial	73%	92%	70%	87%
Riverside Hospital	92%	95%	82%	83%
Riverside Middle Penninsula	71%	87%	68%	83%
Riverside Tappahannock	57%	82%	55%	80%
Roanoke Memorial Hosptial	75%	85%	69%	70%
Rockingham Memorial Hospital	54%	57%	52%	56%
Russell County Medical Center	103%	127%	100%	121%
Sentara Bayside Hospital	72%	82%	63%	73%
Sentara Hampton General Hospital	77%	79%	62%	67%
Sentara Leigh Hospital	79%	81%	73%	78%
Sentara Norfolk General Hospital	90%	96%	75%	78%
Sheltering Arms Day Rehab Program	76%	73%	76%	73%
Shenandoah County Memorial Hospital	64%	69%	59%	60%
Shore Memorial Hospital	71%	83%	64%	74%
Smyth County Community Hospital	59%	80%	55%	70%
Southampton Memorial Hospital	77%	96%	77%	86%
Southside Community	54%	55%	51%	52%
Southside Regional Medical Center	77%	85%	72%	79%
St Marys Hospital Richmond	67%	84%	64%	81%
St. Marys Hospital Norton	61%	64%	56%	56%
Stonewall Jackson Hospital	57%	69%	54%	66%
Stuart Circle Hospital	65%	81%	62%	77%
Tazewell Community Hospital	72%	99%	68%	95%
Twin County Community Hospital	55%	60%	50%	55%
UVA Medical Center	134%	153%	104%	128%
Vencor Hospital	70%	80%	64%	77%
Virginia Baptist Hospital	83%	88%	78%	83%
Virginia Beach General Hospital	65%	63%	60%	55%
Warren Memorial Hospital	57%	67%	54%	63%
Washington Hospital Center	54%	62%	54%	62%
Williamsburg Community Hospital	62%	84%	61%	80%
Winchester Medical Center	61%	68%	53%	59%
Wise ARH	85%	85%	82%	82%
Wythe County Community Hospital	47%	58%	43%	53%

Appendix D

Coverage Rates in FY 1997 Based on the DMAS Definition

This appendix provides the distribution of hospital coverage rates in FY 1997 based on the DMAS definition of coverage rate. DMAS defines the numerator of the coverage rate to include Medicaid operating payments and payments made to disproportionate share hospitals (DSH). The associated costs in the denominator include Medicaid allowable costs. The DMAS definition of the coverage rate is as follows:

$$\text{DMAS Coverage Rate} = \frac{\text{Medicaid Operating Payment} + \text{DSH Payment}}{\text{Allowable Costs}}$$

	Coverage Rate	
31-40 Percent		
George Washington University Hospital	35%	urban
41-50 Percent		
Wythe County Community Hospital	47%	rural
Radford Community Hospital	49%	rural
Columbia Pentagon City Hospital	50%	urban
Bedford County Memorial Hospital	50%	urban
Richmond Eye & Ear Hospital	50%	urban
Mary Immaculate Hospital	50%	urban
R. J. Reynolds Patrick County Memorial	50%	rural
51-60 Percent		
Giles Memorial Hospital	52%	rural
Memorial Hospital Martinsville Henry County	52%	rural
Washington Hospital Center	54%	urban
Southside Community	54%	rural
Duke University Medical Center	54%	urban
Rockingham Memorial Hospital	54%	rural
Twin County Community Hospital	55%	rural
Franklin Memorial Hospital	55%	rural
Stonewall Jackson Hospital	57%	rural
Riverside Tappahannock	57%	rural
Warren Memorial Hospital	57%	urban
Pulaski Community Hospital	58%	rural
Montgomery Regional Hospital	59%	rural
Smyth County Community Hospital	59%	rural
Retreat Hospital	60%	urban
61-70 Percent		
Winchester Medical Center	61%	rural
St. Marys Hospital Norton	61%	rural
Fair Oaks Hospital	61%	urban
Indian Path Hospital	61%	urban
Henrico Doctors Hospital	62%	urban
Potomac Hospital Corp.	62%	urban

Williamsburg Community Hospital	62%	urban
Shenandoah County Memorial Hospital	64%	rural
Georgetown University Hospital	64%	urban
Stuart Circle Hospital	65%	urban
Rappahannock General Hospital	65%	rural
Holston Valley Hospital	65%	urban
Halifax-South Boston Community Hospital	65%	rural
Augusta Hospital	65%	rural
Virginia Beach General Hospital	65%	urban
Bath County Community Hospital	66%	rural
Alleghany Regional Hospital	66%	rural
Fauquier Hospital	66%	urban
St Marys Hospital Richmond	67%	urban
Martha Jefferson Hospital	67%	urban
Lychburg General Hospital	67%	urban
Norton Community Hospital	67%	rural
Reston Hospital Center	67%	urban
Danville Regional Medical Center	68%	urban
Portsmouth General Hospital	68%	urban
Mary Washington Hospital	70%	urban
Vencor Hospital	70%	urban
Loudoun Memorial Hospital	70%	urban
Health South Of Virginia, Inc.	70%	urban

71-80 Percent

Shore Memorial Hospital	71%	rural
Arlington Hospital	71%	urban
Lonesome Pine Hospital	71%	rural
Depaul Hospital	71%	urban
Riverside Middle Penninsula	71%	urban
Bristol Memorial Hospital	71%	urban
Prince William Hosptial	71%	urban
Sentara Bayside Hospital	72%	urban
Mount Vernon Hospital	72%	urban
Tazewell Community Hospital	72%	rural
Alexandria Hospital	73%	urban
Greensville Memorial Hospital	73%	rural
Richmond Memorial Hosptial	73%	urban
Johnston Memorial Hospital	74%	urban
Lee County Community Hospital	74%	rural
Page Memorial Hospital	74%	rural
Chesapeake General Hospital	74%	urban
Roanoke Memorial Hosptial	75%	urban
Culpeper Memorial Hospital	75%	urban
Lewis Gale Hospital	75%	urban
Sheltering Arms Day Rehab Program	76%	urban
Sentara Hampton General Hospital	77%	urban
Southampton Memorial Hospital	77%	rural
Southside Regional Medical Center	77%	urban
Louise Obici Memorial Hosp	78%	urban
Clinch Valley Hospital	78%	rural
Sentara Leigh Hospital	79%	urban

81-90 Percent

Fairfax Hospital	82%	urban
Johnson City Medical Center	83%	urban
Virginia Baptist Hospital	83%	urban
Dickenson County Medical Center	83%	rural
North Carolina Baptist Hospital	84%	urban
Community Hospital Roanoke Valley	84%	urban
Community Memorial Hospital	85%	rural
Wise ARH	85%	rural
Children's Hospital	88%	urban
Sentara Norfolk General Hospital	90%	urban

91-100 Percent

Children's Hospital NMC	91%	urban
Buchanan General Hospital	91%	rural
Maryview Hospital	92%	urban
Riverside Hospital	92%	urban
John Randolph Hospital	94%	urban
Chippenham Hospital	96%	urban
Rehabilitation Institute of VA	98%	urban

Over 100 Percent

Norfolk Community Hospital	102%	urban
Russell County Medical Center	103%	rural
Cumberland Hospital	113%	urban
Richmond Community Hospital	119%	urban
Healthsourth Rehab Hospital Of Virginia	120%	urban
Metropolitan Hospital	126%	urban
UVA Medical Center	134%	urban
MCV Hospital	140%	urban
Children's Hospital of The King's Daughters	156%	urban

Appendix E

Coverage Rates in FY 1997 Based on the JLARC Definition

This appendix provides the distribution of hospital coverage rates in FY 1997 based on the JLARC definition of coverage rate. JLARC defines the numerator of the coverage rate to include Medicaid operating payments and payments made to disproportionate share hospitals (DSH). The associated costs in the denominator are allowable costs and a portion of charity care costs equal to the hospital's Medicaid utilization rate. The JLARC definition of coverage rate is as follows:

$$\text{JLARC Coverage Rate} = \frac{\text{Medicaid Operating Payment} + \text{DSH Payment}}{\text{Allowable Costs} + \text{a Portion of Charity Care Costs}}$$

31-40 Percent	**Coverage Rate**	
George Washington University Hospital	35%	urban
41-50 Percent		
Richmond Eye & Ear Hospital	42%	urban
Wythe County Community Hospital	43%	rural
Radford Community Hospital	46%	rural
Bedford County Memorial Hospital	47%	urban
Mary Immaculate Hospital	48%	urban
Giles Memorial Hospital	50%	rural
Columbia Pentagon City Hospital	50%	urban
R. J. Reynolds Patrick County Memorial	50%	rural
Twin County Community Hospital	50%	rural
Memorial Hospital Martinsville Henry County	50%	rural
51-60 Percent		
Southside Community	51%	rural
Franklin Memorial Hospital	51%	rural
Rockingham Memorial Hospital	52%	rural
Winchester Medical Center	53%	rural
Stonewall Jackson Hospital	54%	rural
Washington Hospital Center	54%	urban
Warren Memorial Hospital	54%	urban
Duke University Medical Center	54%	urban
Smyth County Community Hospital	55%	rural
Riverside Tappahannock	55%	rural
Pulaski Community Hospital	55%	rural
St. Marys Hospital Norton	56%	rural
Montgomery Regional Hospital	57%	rural
Potomac Hospital Corp.	58%	urban
Fair Oaks Hospital	58%	urban
Shenandoah County Memorial Hospital	59%	rural

Augusta Hospital	59%	rural
Virginia Beach General Hospital	60%	urban
Retreat Hospital	60%	urban
Portsmouth General Hospital	60%	urban

61-70 Percent

Danville Regional Medical Center	61%	urban
Henrico Doctors Hospital	61%	urban
Williamsburg Community Hospital	61%	urban
Depaul Hospital	61%	urban
Indian Path Hospital	61%	urban
Fauquier Hospital	62%	urban
Stuart Circle Hospital	62%	urban
Rappahannock General Hospital	62%	rural
Sentara Hampton General Hospital	62%	urban
Halifax-South Boston Community Hospital	62%	rural
Alleghany Regional Hospital	63%	rural
Sentara Bayside Hospital	63%	urban
Martha Jefferson Hospital	64%	urban
St Marys Hospital Richmond	64%	urban
Page Memorial Hospital	64%	rural
Shore Memorial Hospital	64%	rural
Georgetown University Hospital	64%	urban
Vencor Hospital	64%	urban
Reston Hospital Center	65%	urban
Arlington Hospital	65%	urban
Holston Valley Hospital	65%	urban
Mount Vernon Hospital	65%	urban
Bath County Community Hospital	65%	rural
Lee County Community Hospital	65%	rural
Lonesome Pine Hospital	66%	rural
Alexandria Hospital	66%	urban
Norton Community Hospital	66%	rural
Lychburg General Hospital	67%	urban
Mary Washington Hospital	67%	urban
Dickenson County Medical Center	67%	rural
Loudoun Memorial Hospital	68%	urban
Riverside Middle Penninsula	68%	urban
Tazewell Community Hospital	68%	rural
Roanoke Memorial Hosptial	69%	urban
Prince William Hosptial	69%	urban
Johnston Memorial Hospital	70%	urban
Greensville Memorial Hospital	70%	rural
Health South Of Virginia, Inc.	70%	urban
Richmond Memorial Hosptial	70%	urban
Culpeper Memorial Hospital	70%	urban

71-80 Percent

Bristol Memorial Hospital	71%	urban
Chesapeake General Hospital	72%	urban
Louise Obici Memorial Hosp	72%	urban
Southside Regional Medical Center	72%	urban
Sentara Leigh Hospital	73%	urban
Lewis Gale Hospital	74%	urban
Fairfax Hospital	74%	urban
Sentara Norfolk General Hospital	75%	urban
Clinch Valley Hospital	75%	rural
Sheltering Arms Day Rehab Program	76%	urban
Community Memorial Hospital	76%	rural
Southampton Memorial Hospital	77%	rural
Virginia Baptist Hospital	78%	urban

81-90 Percent

Wise ARH	82%	rural
Riverside Hospital	82%	urban
Maryview Hospital	82%	urban
Johnson City Medical Center	83%	urban
North Carolina Baptist Hospital	84%	urban
MCV Hospital	84%	urban
Community Hospital Roanoke Valley	84%	urban
Children's Hospital	86%	urban
Buchanan General Hospital	86%	rural

91-100 Percent

Children's Hospital NMC	91%	urban
John Randolph Hospital	93%	urban
Chippenham Hospital	95%	urban
Rehabilitation Institute of VA	98%	urban
Russell County Medical Center	100%	rural

Over 100 Percent

Norfolk Community Hospital	102%	urban
UVA Medical Center	104%	urban
Richmond Community Hospital	113%	urban
Cumberland Hospital	113%	urban
Healthsourth Rehab Hospital Of Virginia	120%	urban
Metropolitan Hospital	123%	urban
Children's Hospital of The King's Daughters	156%	urban

Appendix F

Coverage Rates in FY 1998 Based on the DMAS Definition

This appendix provides the distribution of hospital coverage rates in FY 1998 based on the DMAS definition of coverage rate. DMAS defines the numerator of the coverage rate to include Medicaid operating payments and payments made to disproportionate share hospitals (DSH). The associated costs in the denominator include Medicaid allowable costs. The DMAS definition of the coverage rate is as follows:

$$\text{DMAS Coverage Rate} = \frac{\text{Medicaid Operating Payment} + \text{DSH Payment}}{\text{Allowable Costs}}$$

51-60 Percent	**Coverage Rate**	
Southside Community	55%	Rural
Duke University Medical Center	56%	Urban
Rockingham Memorial Hospital	57%	Rural
Wythe County Community Hospital	58%	Rural
Twin County Community Hospital	60%	Rural
Mary Immaculate Hospital	60%	Urban
61-70 Percent		
Giles Memorial Hospital	61%	Rural
Washington Hospital Center	62%	Urban
Norton Community Hospital	62%	Rural
Virginia Beach General Hospital	63%	Urban
George Washington University Hospital	63%	Urban
Bedford County Memorial Hospital	63%	Urban
Richmond Eye & Ear Hospital	64%	Urban
St. Marys Hospital Norton	64%	Rural
Bath County Community Hospital	64%	Rural
Radford Community Hospital	65%	Rural
Memorial Hospital Martinsville Henry County	66%	Rural
Warren Memorial Hospital	67%	Urban
Winchester Medical Center	68%	Rural
Shenandoah County Memorial Hospital	69%	Rural
Stonewall Jackson Hospital	69%	Rural
Holston Valley Hospital	69%	Urban
Mary Washington Hospital	70%	Urban
71-80 Percent		
Rappahannock General Hospital	73%	Rural
Sheltering Arms Day Rehab Program	73%	Urban
Georgetown University Hospital	73%	Urban
Health South Of Virginia, Inc.	73%	Urban
Danville Regional Medical Center	73%	Urban
Montgomery Regional Hospital	74%	Rural
Potomac Hospital Corp.	74%	Urban
Henrico Doctors Hospital	74%	Urban

Culpeper Memorial Hospital	74%	Urban
Halifax-South Boston Community Hospital	75%	Rural
Retreat Hospital	76%	Urban
Prince William Hosptial	76%	Urban
Chesapeake General Hospital	76%	Urban
R. J. Reynolds Patrick County Memorial	76%	Rural
Alleghany Regional Hospital	77%	Rural
Alexandria Hospital	77%	Urban
Fair Oaks Hospital	77%	Urban
Martha Jefferson Hospital	78%	Urban
Loudoun Memorial Hospital	78%	Urban
Louise Obici Memorial Hosp	78%	Urban
Sentara Hampton General Hospital	79%	Urban
Franklin Memorial Hospital	79%	Rural
Vencor Hospital	80%	Urban
Smyth County Community Hospital	80%	Rural

81-90 Percent

Mount Vernon Hospital	81%	Urban
Johnson City Medical Center	81%	Urban
Stuart Circle Hospital	81%	Urban
Fauquier Hospital	81%	Urban
Sentara Leigh Hospital	81%	Urban
Reston Hospital Center	81%	Urban
Sentara Bayside Hospital	82%	Urban
Riverside Tappahannock	82%	Rural
Dickenson County Medical Center	82%	Rural
Shore Memorial Hospital	83%	Rural
Augusta Hospital	83%	Rural
St Marys Hospital Richmond	84%	Urban
Williamsburg Community Hospital	84%	Urban
Lonesome Pine Hospital	84%	Rural
Roanoke Memorial Hosptial	85%	Urban
Southside Regional Medical Center	85%	Urban
Page Memorial Hospital	85%	Rural
Wise ARH	85%	Rural
Pulaski Community Hospital	86%	Rural
Riverside Middle Penninsula	87%	Urban
Arlington Hospital	87%	Urban
Lee County Community Hospital	88%	Rural
Johnston Memorial Hospital	88%	Urban
Virginia Baptist Hospital	88%	Urban
John Randolph Hospital	90%	Urban
Maryview Hospital	90%	Urban

91-100 Percent

Lewis Gale Hospital	91%	Urban
Fairfax Hospital	91%	Urban
Richmond Memorial Hosptial	92%	Urban
Portsmouth General Hospital	93%	Urban
North Carolina Baptist Hospital	94%	Urban
Clinch Valley Hospital	95%	Rural
Riverside Hospital	95%	Urban

Chippenham Hospital	95%	Urban
Sentara Norfolk General Hospital	96%	Urban
Southampton Memorial Hospital	96%	Rural
Depaul Hospital	97%	Urban
Tazewell Community Hospital	99%	Rural
Buchanan General Hospital	100%	Rural

Over 100 Percent

Greensville Memorial Hospital	103%	Rural
Children's Hospital	103%	Urban
Bristol Memorial Hospital	103%	Urban
Cumberland Hospital	104%	Urban
Community Memorial Hospital	104%	Rural
Community Hospital Roanoke Valley	106%	Urban
Children's Hospital NMC	107%	Urban
Rehabilitation Institute of VA	116%	Urban
Richmond Community Hospital	118%	Urban
Metropolitan Hospital	121%	Urban
Norfolk Community Hospital	124%	Urban
Russell County Medical Center	127%	Rural
Children's Hospital of The King's Daughters	145%	Urban
UVA Medical Center	153%	Urban
MCV Hospital	153%	Urban

Appendix G

Coverage Rate in FY 1998 Based on the JLARC Definition

This appendix provides the distribution of hospital coverage rates in FY 1998 based on the JLARC definition of coverage rate. JLARC defines the numerator of the coverage rate to include Medicaid operating payments and payments made to disproportionate share hospitals (DSH). The associated costs in the denominator are allowable costs and a portion of charity care costs equal to the hospital's Medicaid utilization rate. The JLARC definition of coverage rate is as follows:

$$\text{JLARC Coverage Rate} = \frac{\text{Medicaid Operating Payment} + \text{DSH Payment}}{\text{Allowable Costs} + \text{a Portion of Charity Care Costs}}$$

41-50 Percent	**Coverage Rate**	
Richmond Eye & Ear Hospital	42%	urban
51-60 Percent		
Southside Community	52%	rural
Maryview Hospital	53%	urban
Wythe County Community Hospital	53%	rural
Giles Memorial Hospital	54%	rural
Twin County Community Hospital	55%	rural
Virginia Beach General Hospital	55%	urban
Rockingham Memorial Hospital	56%	rural
Duke University Medical Center	56%	urban
St. Marys Hospital Norton	56%	rural
Mary Immaculate Hospital	56%	urban
Bedford County Memorial Hospital	58%	urban
Winchester Medical Center	59%	rural
Radford Community Hospital	60%	rural
Shenandoah County Memorial Hospital	60%	rural
61-70 Percent		
Norton Community Hospital	61%	rural
Washington Hospital Center	62%	urban
Warren Memorial Hospital	63%	urban
George Washington University Hospital	63%	urban
Danville Regional Medical Center	63%	urban
Bath County Community Hospital	64%	rural
Memorial Hospital Martinsville Henry County	65%	rural
Stonewall Jackson Hospital	66%	rural
Mary Washington Hospital	67%	urban
Montgomery Regional Hospital	67%	rural
Sentara Hampton General Hospital	67%	urban

Culpeper Memorial Hospital	68%	urban
Alexandria Hospital	69%	urban
Holston Valley Hospital	69%	urban
Rappahannock General Hospital	69%	rural
Potomac Hospital Corp.	69%	urban
Smyth County Community Hospital	70%	rural
Roanoke Memorial Hospital	70%	urban

71-80 Percent

Mount Vernon Hospital	72%	urban
Fair Oaks Hospital	72%	urban
Halifax-South Boston Community Hospital	72%	rural
Prince William Hosptial	72%	urban
Sheltering Arms Day Rehab Program	73%	urban
Georgetown University Hospital	73%	urban
Retreat Hospital	73%	urban
Health South Of Virginia, Inc.	73%	urban
Henrico Doctors Hospital	73%	urban
Sentara Bayside Hospital	73%	urban
Alleghany Regional Hospital	73%	rural
Franklin Memorial Hospital	73%	rural
Shore Memorial Hospital	74%	rural
Chesapeake General Hospital	74%	urban
Louise Obici Memorial Hosp	75%	urban
Martha Jefferson Hospital	76%	urban
R. J. Reynolds Patrick County Memorial	76%	rural
Loudoun Memorial Hospital	76%	urban
Fauquier Hospital	76%	urban
Depaul Hospital	76%	urban
Stuart Circle Hospital	77%	urban
Augusta Hospital	77%	rural
Vencor Hospital	77%	urban
Sentara Norfolk General Hospital	78%	urban
Sentara Leigh Hospital	78%	urban
Lonesome Pine Hospital	79%	rural
Dickenson County Medical Center	79%	rural
Fairfax Hospital	79%	urban
Southside Regional Medical Center	79%	urban
Pulaski Community Hospital	79%	rural
Arlington Hospital	80%	urban
Williamsburg Community Hospital	80%	urban
Reston Hospital Center	80%	urban
Riverside Tappahannock	80%	rural

81-90 Percent

St Marys Hospital Richmond	81%	urban
Johnson City Medical Center	81%	urban
Wise ARH	82%	rural
Johnston Memorial Hospital	83%	urban
Riverside Middle Penninsula	83%	urban
Riverside Hospital	83%	urban
Virginia Baptist Hospital	83%	urban
Page Memorial Hospital	84%	rural
Lee County Community Hospital	84%	rural
Southampton Memorial Hospital	86%	rural
John Randolph Hospital	87%	urban
Richmond Memorial Hosptial	87%	urban
Lewis Gale Hospital	90%	urban
Clinch Valley Hospital	90%	rural
Portsmouth General Hospital	90%	urban

91-100 Percent

Chippenham Hospital	91%	urban
Buchanan General Hospital	92%	rural
Greensville Memorial Hospital	92%	rural
Community Memorial Hospital	93%	rural
North Carolina Baptist Hospital	94%	urban
Tazewell Community Hospital	95%	rural
MCV Hospital	95%	urban
Children's Hospital	100%	urban

Over 100 Percent

Bristol Memorial Hospital	103%	urban
Cumberland Hospital	104%	urban
Community Hospital Roanoke Valley	106%	urban
Children's Hospital NMC	107%	urban
Richmond Community Hospital	111%	urban
Rehabilitation Institute of VA	116%	urban
Metropolitan Hospital	118%	urban
Russell County Medical Center	121%	rural
Norfolk Community Hospital	124%	urban
UVA Medical Center	128%	urban
Children's Hospital of The King's Daughters	145%	urban

Appendix H

Comparison of Medicaid and Medicare Rate-Setting Methodologies Based on Diagnosis-Related Groups

The Medicare payment system for inpatient hospital care is operated by the Health Care Financing Administration (HCFA) and is based on Diagnosis-Related Groups (DRG) methodology. This appendix compares how the Medicare payment methodology differs from Virginia's Medicaid methodology. For simplicity, only the operating payment is discussed here. Information on how HCFA determines other payments, such as those for outlier and transfer cases, can be found in the August 1, 2000 *Federal Register.*

Virginia's Medicaid methodology is similar to HCFA's Medicare methodology because both follow the basic tenets of a DRG system. The DRG payment is defined by both systems as the relative weight of the DRG assigned to the case times the base operating rate specific to the treating hospital. Relative weights measure the severity of different illnesses and hospital base operating rates account for differences between treating hospitals. The difference between the two systems lies in the details of how each component is calculated.

Medicare Relative Weights. The Medicare system has defined a set of DRGs that is commonly referred to as either the Medicare DRGs or the HCFA DRGs. Because this set of groups is defined for an elderly population, it does not break down complexity of neo-natal care very well. Therefore, DMAS has chosen to use a set of groups called the All Patient DRGs (AP-DRGs), which have almost 200 additional groups, most of which are for different conditions associated with neo-natal care. Both Medicare and Medicaid use a software program to assign the appropriate DRG to each patient's case based on diagnosis and treatment information submitted on the patient's claim.

The relative weight for each DRG measures the cost of treating a case assigned to that DRG as compared to the cost of treating cases assigned to all other DRGs. HCFA's calculation of the Medicare relative weights is similar in several ways to DMAS' calculation of Medicaid relative weights. Both methodologies standardize charges for wages and eliminate statistical outliers. However, once the relative weight is calculated, HCFA makes an additional adjustment such that the average relative weight before rebasing equals the average relative weight after rebasing. The *Federal Register* indicates that this adjustment is done to "ensure that rebasing by itself neither increases nor decreases total payments under the prospective payment system." There are several other minor differences between Medicare and Medicaid calculation of relative weights, which are summarized in Table H-1.

Medicare Federal Rate. What is referred to as the hospital base operating rate in Virginia's Medicaid system is referred to as the federal rate by Medicare. This is the component that takes into account wage differences between hospitals. As illustrated in Figure H-1, HCFA makes an additional adjustment for small rural and sole community hospitals that DMAS does not incorporate into the Medicaid methodology. A hospital is considered a sole community hospital if it is more than 35 miles from another like hospital.

Table H-1

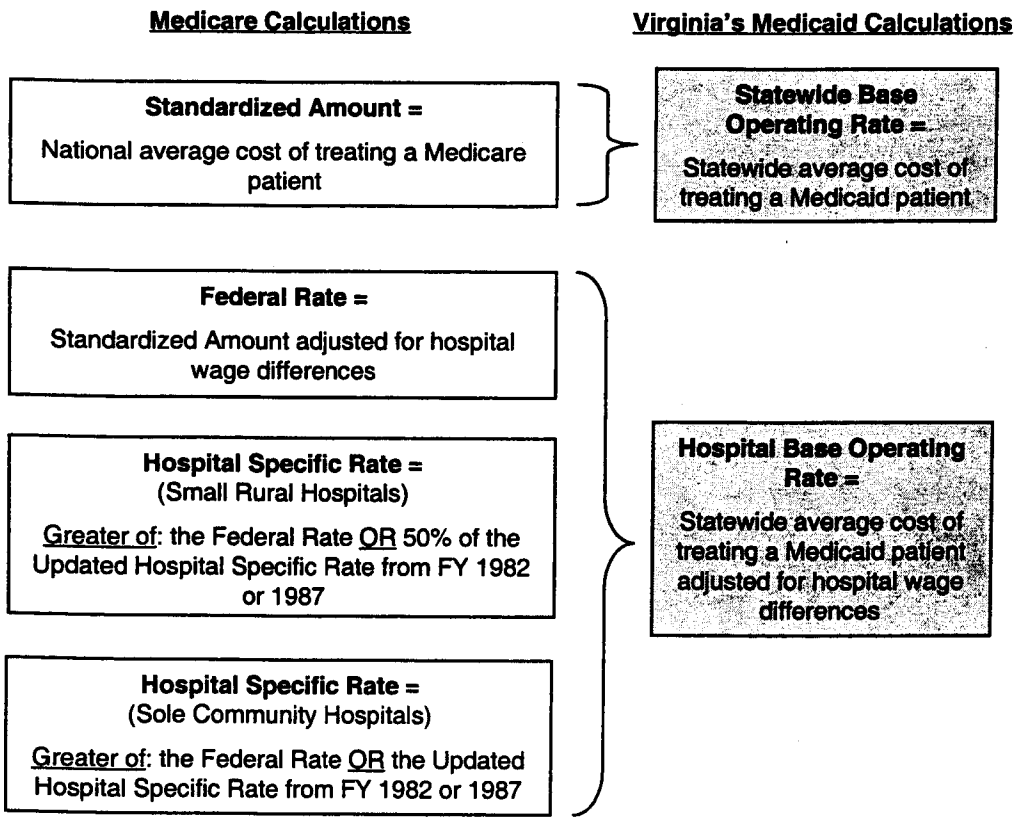
Differences Between the Medicare and Medicaid Calculation of Relative Weights

Medicare Relative Weights	Virginia's Medicaid Relative Weights
Rebase Annually	Rebase every 3 years
Adjust the DRGs with fewer than 10 cases using previous years relative weights	Adjust the DRGs with fewer than 5 cases using New York relative weights
Adjust relative weights such that the average relative weight before calibration equals the relative weight after recalibration	No such adjustment

Source: *Federal Register*, July 30, 1999 and *Virginia Administrative Code.*

Figure H-1

Calculation of Medicare's Federal Rate Compared to the Calculation of Medicaid's Hospital Base Operating Rate



Source: *Virginia Register of Regulations, Federal Register.*

In addition, HCFA uses a more recent measure of wage differences to calculate the federal rate than is used by DMAS. For example, the FY 2001 rates are adjusted using the FY 2001 Medicare wage index to account for differences between hospital labor costs. The rate-setting process for Medicaid calls for the use of the Medicare wage index from the base year. So for the FY 2001 Medicaid rates, the wage index is from the base year of FY 1998.

Budget Neutral Adjustment Factor. HCFA incorporates a budget neutrality adjustment into the DRG rates "in a manner that ensures that aggregate payments to hospitals are not affected." The factor is calculated by using historical discharge data to simulate payments and comparing total payments before reclassification (including DSH and IME) to total payments after reclassification. The budget neutral adjustment factor for FY 2001 is .993799.

The budget adjustment built into the Medicare system should not be confused with the adjustment factor applied by DMAS to the Medicaid rates, which is calculated quite differently. As illustrated in Table H-2, Medicaid's adjustment factor is calculated by finding the ratio of operating costs to operating payments in a base year. HCFA's budget neutrality factor is the ratio of payments before the rates are adjusted to payments after the rates are adjusted and does not include costs in the calculation.

Table H-2

Difference between the HCFA Budget Neutral Adjustment Factor and the DMAS Adjustment Factor

HCFA Budget Neutral Adjustment Factor	DMAS Adjustment Factor
Ratio of payments before rebasing to payments after rebasing for a set of discharges	Ratio of operating payments to operating costs in the base year
Includes operating payments, DSH and Indirect Medical education payments	Includes only operating payments
FY 2001 = .996506	FY 2001 = .7882
FY 2000 = .997808	FY 2000 = .7237

Source: *Virginia Register of Regulations* and the *Federal Register.*

Appendix I

Glossary of Terms

Term	Definition
Adjustment Factor	The ratio of total Medicaid operating payments to total Medicaid operating costs in a given year.
All Patient Diagnosis Related Groups (AP-DRGs)	The 641 diagnoses groups that Virginia uses to classify medical and surgical inpatient hospital cases for reimbursement (except transplants).
Base Year	The year of cost and claims data that were used to calculate the relevant set of DRG rates. For example, the current DRG rates have a base year of state fiscal year 1998.
Blended Methodology	A combination of revised per diem methodology and DRG methodology used to determine the final reimbursements during cost settlement in the transition years (state fiscal years 1997 and 1998).
Case Mix Index (CMI)	A measure of the severity of cases handled by each hospital. The CMI is calculated for each hospital by summing over all DRGs the number of cases in the DRG times the relative weight and dividing the sum by the total Medicaid cases.
Cost Settlement	During the transition years, the costs settlement occurred at the end of the fiscal year when DMAS determined the final reimbursement to each hospital and either issued a payment or requested a refund from the hospital. Payments for capital costs are also made at this time.
Diagnosis-Related Groups (DRGs)	A set of groups taking into account the type and severity of the patient's illness that are used for the purpose of reimbursing hospitals under the new methodology implemented in Virginia in FY 1997.
DRG Rates	A general term referring to the set of rates used by DMAS in a particular year to calculate hospitals' final reimbursements (including relative weights, hospital base operating rates, capital percentages, etc.)
FY 97-98 Rates	The DRG rates effective in state fiscal years 1997 and 1998. These years were also referred to as transition years. The base year for these rates is FY 1993.
FY 99-00 Rates	The DRG rates effective in state fiscal years 1999 and 2000. The base year for these rates is FY 1997.

Term	Definition
FY 01-03 Rates	The DRG rates effective in state fiscal years 2001 through 2003. The base year for these rates is FY 1998.
Grouper	The software program developed by 3M and used by DMAS to assign each case to a DRG based on the diagnoses and procedures listed on the case.
HCFA Medicare Diagnosis Related Groups (DRGs)	HCFA Medicare DRGs are the most commonly used set of Diagnosis Related Groups. However, as these DRGs are intended to serve an elderly population and do not break down obstetric care with as much detail as the AP-DRGs used in Virginia.
Hospital Base Operating Rate	Average cost of treating a Medicaid patient in Virginia adjusted for a measure of the hospital's labor costs.
Medicaid Utilization Rate	The ratio of the Medicaid patient days to the total inpatient days (including all payers).
Medicare Wage Index	The index calculated by the Health Care Financing Administration (HCFA) and published in the *Federal Register* as a comparison of the "relative hospital wage level in the geographic area of the hospital compared to the national average hospital wage level." This measure of wage differences across regions is used in the calculation of Virginia's DRG rates.
Operating Cost Ceiling	Under the old per diem reimbursement system, this was the highest per diem payment a hospital could receive. Hospitals were paid the lower of this ceiling, the total charges, and the reported per diem cost for each claim.
Outlier	A patient's case is considered an outlier if the cost of treating the patient is substantially higher than the cost of treating other cases within the same DRG. Outlier cases are issued an outlier payment in addition to the standard DRG payment.
Payment Adjustment Fund	The $100 million the state was required to pay hospitals over four years as a result of the lawsuit settlement in 1991.
Per diem Methodology	The methodology used by DMAS to calculate inpatient hospital reimbursements between fiscal years 1984 and 1996. This system issued a payment for each patient day, regardless of the patient's condition.
Ratio of Costs to Charges (RCC)	The ratio of a hospital's total costs to total charges of treating Medicaid patients. The RCC is used by DMAS to determine the operating cost of treating a Medicaid patient.

Term	Definition
Rebasing	The general term for the process of re-calculating the DRG rates using more recent cost and claims data.
Relative Weight	The cost of treating a patient in a particular DRG compared to the costs of treating patients in all other DRGs.
Revised Per Diem Methodology	Methodology used to pay claims as they were submitted by hospitals from July 1, 1996 through December 31, 1999. This methodology was also used during cost settlement in the transition years (state fiscal years 1997 and 1998), when hospital payments were based on a blended methodology of revised per diem and DRG. This methodology was entirely phased out as of December 31, 1999.
State Plan	The portion of the regulations that is submitted and approved by HCFA to guide Virginia's Medicaid program.
Transition Years	State fiscal years 1997 and 1998. During these years, Virginia transitioned from the per diem system of reimbursement into the DRG system. Hospitals received a blended payment of revised per diem and DRG methodology for treating Medicaid patients.

Appendix J

Acronyms

Acronym	Full Name
ABD	Aged, Blind and Disabled (Medicaid population)
AP-DRG	All-Patient Diagnosis-Related Groups
CHPS	Center for Health Policy Studies
CMI	Case Mix Index
DMAS	Department of Medical Assistance Services
DPB	Department of Planning and Budget
DRG	Diagnosis-Related Groups
DSH	Disproportionate Share Hospitals
EDS	Electronic Data Systems
GAF	Geographic Adjustment Factor
GME	Graduate Medical Education
HCFA	Health Care Financing Administration
HHS/OIG	Health and Human Services Office of the Inspector General
IME	Indirect Medical Education
JCHC	Joint Commission on Health Care
JLARC	Joint Legislative Audit and Review Commission
LOS	Length of Stay
MMIS	Medicaid Management Information System
MWI	Medicare Wage Index
NICU	Neo-Natal Intensive Care Unit
PAF	Payment Adjustment Fund
RCC	Ratio of Costs to Charges
VHHA	Virginia Healthcare and Hospital Association
VHI	Virginia Health Information

Appendix K

Agency Response

As part of the extensive data validation process, State agencies involved in a JLARC assessment effort are given the opportunity to comment on an exposure draft of the report. Appropriate technical corrections resulting from written comments have been made in this version of the report. Page references in the responses relate to an earlier exposure draft and may not correspond to page numbers in this version.

This appendix contains the response of the Department of Medical Assistance Services.

NOV 08 2000

COMMONWEALTH of VIRGINIA

Department of Medical Assistance Services

DENNIS G. SMITH
DIRECTOR

SUITE 1300
600 EAST BROAD STREET
RICHMOND, VA 23219
804/786-7933
804/225-4512 (Fax)
800/343-0634 (TDD)

November 7, 2000

Mr. Philip A. Leone, Director
Joint Legislative Audit and Review Commission
Suite 1100, General Assembly Building
Capitol Square
Richmond, Virginia 23219

Dear Phil:

I want to thank the Joint Legislative Audit and Review Commission (JLARC) for the opportunity to comment on the study of the Medicaid hospital inpatient reimbursement system. I particularly appreciate the time and effort JLARC staff invested in reviewing the history and the technical details of the hospital payment system and for their patience in reviewing DMAS' many comments and questions concerning the Exposure Draft.

There remain a few points of clarification I would like to offer. These are provided in the attached document.

Thank you again for the opportunity to review and comment on the study. If there are any questions related to the hospital payment system or about the attached document, please do not hesitate to call on me.

Sincerely,

Dennis G. Smith

Dennis G. Smith

Attachments

DMAS RESPONSE
JLARC STUDY: REVIEW OF THE MEDICAID HOSPITAL INPATIENT REIMBURSEMENT SYSTEM

The following comments are based on the exposure draft dated October 20, 2000, and on communication between DMAS and JLARC staff since that date.

I. FISCAL IMPACT OF ELIMINATING THE ADJUSTMENT FACTOR

In the Report Summary and elsewhere in the Report it is estimated that the elimination of the adjustment factor would increase expenditures by about $48 million. It is noted (Figure 17) that this estimate does not include the impact on Disproportionate Share Hospital (DSH) or Indirect Medical Education (IME) payments of eliminating the adjustment factor. In addition, we understand that this estimate does not include the impact on psychiatric or rehabilitation payments, or the payments to health maintenance organizations, of eliminating the adjustment factor. Under the methodology now in place, the adjustment factor directly affects all these payments. Therefore, eliminating the adjustment factor would potentially increase these payments as well.

DMAS estimates that if psychiatric, rehabilitation and health maintenance organization cases were included in the analysis, eliminating the adjustment factor would increase payments by $78.1 million per year rather than $48 million. The impact of this action on Indirect Medical Education payments would be $1.0 million, and on Disproportionate Share Hospital (DSH) payments it would be $4.6. The total estimated impact is approximately $83.7 million. While the study mandate did not require JLARC to review the psychiatric, rehabilitation, and health maintenance organization rates, the elimination of the DRG adjustment factor has a direct impact on these rates. Therefore, the decision-makers must take the total fiscal impact into consideration. Some of the DSH-related increase might not be realized because of federal caps on DSH payments. To determine this however would require hospital specific analysis.

II. RESPONSE TO ALLEGATIONS ABOUT DMAS ATTRIBUTED TO VHHA

In different sections of the Report there are allegations about DMAS actions that are reported as statements made by the Virginia Hospital and Healthcare Association (VHHA). In some cases these statements are reported because they were the reason why the General Assembly directed JLARC to conduct the study. Since they are thus reported by way of background and are not necessarily the subject of the study, it is understandable why JLARC may not feel it necessary to directly address the merits of each of these statements. However, when these statements appear in a published study, DMAS does not wish to leave them unanswered. Therefore the following summarizes the allegations concerning DMAS and the responses DMAS wishes to make.

1. In the Report Summary it says "(VHHA) contends that at a time when hospital costs were beginning to increase, DMAS made retroactive cuts to the inpatient reimbursement rates using databases that contained many errors", and "VHHA asserts that a decision by DMAS to perpetuate the use of a rate "adjustment factor" unfairly reduces the Medicaid reimbursement...by a current rate of 21%."

   The lower rates in SFY1999 and 2000 were the direct result of application of regulations developed in consultation with the Hospital Council, which included representatives of the VHHA. Further, although the preliminary rates first shared with the VHHA were based on flawed data, this data was corrected in cooperation with the hospitals, and the VHHA has not made any objection to the data on which the final rates are based. Finally, the adjustment factor is calculated according to regulations that were developed in consultation with the Hospital Council and during these discussions (in 1997) no hospital representative made any objection to the use of the adjustment factor or to how it was calculated.

2. On page 1 and 2 it says "According to VHHA...DMAS made retroactive cuts to the inpatient reimbursement rates using a database that contained many errors. These rate cuts, VHHA contends, were based on regulations that DMAS promulgated without consulting the industry, as the law required. More damaging, according to the VHHA, was the decision by DMAS to perpetuate the use of a rate "adjustment factor" which, the association contends, unfairly reduces the Medicaid reimbursement for inpatient care by 21 percent."

   Claims from the final corrected database, on which the published rates are based, were shared with any hospitals that were willing to participate in a validation effort. No hospital has identified any problem with the database. DMAS absolutely denies that the regulations were promulgated without consulting the industry, and cites minutes from Hospital Council meetings from December 1996 to July 1997, when the regulations were being drafted. The adjustment factor was specifically provided for in the regulations that were discussed at those meetings of the Council.

3. On page 17 (Exposure Draft) three specific allegations are:
   - "Rates were set based on claims data that excluded some of the most expensive cases."
   - "Implementation of the new system was delayed by 18 months and the new lower rates were applied retroactively."
   - "Payments have been adjusted downward, thereby eliminating any reasonable opportunity for hospitals to recover the cost of treating Medicaid patients."

   DMAS would respond that:
   - The database that excluded certain high cost cases was corrected before the rates were finalized. Hospitals examined and made no objection to the final database. DMAS does not believe that this allegation is still the position of the VHHA.

- DMAS does not deny that the rates were effective on a date well in advance of the date they were released. This was not by design and at the time was unfortunately unavoidable.
- The reference to rates being adjusted downward concerns the adjustment factor, an element of the reimbursement system was developed in consultation with the industry when the regulations were developed in 1996 and 1997.

4. On page 42 (Exposure Draft) it says the "VHHA contends that no such adjustment (the adjustment factor) is necessary because the AP-DRG system only pays a certain amount for a specific patient diagnosis, regardless of how long the patient remains in the hospital."

   From the state's perspective the purpose of the adjustment factor is to ensure spending within available funds and provide access to needed services for Medicaid recipients at the best price. DMAS agrees that a DRG system has incentives for efficiency, but does not believe this is the only factor determining the policy rationale for the adjustment factor.

5. On page 51 (Exposure Draft) it says the "VHHA contends that DMAS has been remiss in the implementation process, using inaccurate claims data while delaying completion of an analysis that could have removed as much as $16 million from hospital reimbursements."

   The inaccurate claims data was corrected before rates were issued, and hospitals have reviewed and have not reported problems with the data that was used for the final rates.

JLARC Staff

Director: Philip A. Leone
Deputy Director: R. Kirk Jonas

Division I Chief: Glen S. Tittermary
● *Division II Chief:* Robert B. Rotz

Section Managers:
Patricia S. Bishop, Fiscal and Administrative Services
John W. Long, Publications and Graphics
Gregory J. Rest, Research Methods

Project Team Leaders:
Craig M. Burns
Linda Bacon Ford
Harold E. Greer, III
Cynthia B. Jones
● Wayne M. Turnage

Project Team Staff:
Aris W. Bearse
● Kelly D. Bowman
Ashley S. Colvin
Gerald A. Craver
Scott F. Demharter
Lisa V. Friel
Eric H. Messick
Anne E. Oman
● Jason W. Powell
Christine D. Wolfe

Fiscal Analysis Section:
Walter L. Smiley, Section Manager
Daniel C. Oney
Kimberly A. Maluski

Administrative and Research Support Staff:
Kelly J. Gobble
Joan M. Irby
Betsy M. Jackson
Becky C. Torrence
Lise E. Venning
Intern: Melissa L. Vandawalker

● *Indicates JLARC staff with primary assignment to this project*

Recent JLARC Reports

The Feasibility of Modernizing Land Records in Virginia, January 1997
Review of the Department of Corrections' Inmate Telephone System, January 1997
Virginia's Progress Toward Chesapeake Bay Nutrient Reduction Goals, February 1997
VRS Oversight Report No. 8: Semi-Annual VRS Investment Report, May 1997
Services for Mentally Disabled Residents of Adult Care Residences, July 1997
Follow-Up Review of Child Day Care in Virginia, August 1997
1997 Report to the General Assembly, September 1997
Improvement of Hazardous Roadway Sites in Virginia, October 1997
Review of DOC Nonsecurity Staffing and the Inmate Programming Schedule, December 1997
VRS Oversight Report No. 9: Semi-Annual VRS Investment Report, December 1997
Technical Report: Gender Pay Equity in the Virginia State Workforce, December 1997
The Secretarial System in Virginia State Government, December 1997
Overview: Review of Information Technology in Virginia State Government, December 1997
Review of the Comprehensive Services Act, January 1998
Review of the Highway Location Process in Virginia, January 1998
Overview: Year 2000 Compliance of State Agency Systems, January 1998
Structure of Virginia's Natural Resources Secretariat, January 1998
Special Report: Status of Automation Initiatives of the Department of Social Services, February 1998
Review of the Virginia Fair Housing Office, February 1998
Review of the Department of Conservation and Recreation, February 1998
VRS Oversight Report No. 10: Semi-Annual VRS Investment Report, July 1998
State Oversight of Commercial Driver-Training Schools in Virginia, September 1998
The Feasibility of Converting Camp Pendleton to a State Park, November 1998
Review of the Use of Consultants by the Virginia Department of Transportation, November 1998
Review of the State Board of Elections, December 1998
VRS Oversight Report No. 11: Semi-Annual VRS Investment Report, December 1998
Review of the Virginia Department for the Aging, January 1999
Review of Regional Criminal Justice Training Academies, January 1999
Interim Report: Review of the Health Regulatory Boards, January 1999
Interim Report: Review of the Functional Area of Health and Human Resources, January 1999
Virginia's Welfare Reform Initiative: Implementation and Participant Outcomes, January 1999
Legislator's Guide to the Virginia Retirement System, 2nd Edition, May 1999
VRS Oversight Report No. 12: Semi-Annual VRS Investment Report, July 1999
Preliminary Inquiry, DEQ and VDH Activities to Identify Water Toxic Problems and Inform the Public, July 1999
Final Report: Review of the Health Regulatory Boards, August 1999
1999 Report to the General Assembly, September 1999
Competitive Procurement of State Printing Contracts, September 1999
Review of Undergraduate Student Financial Aid in Virginia's Public Institutions, October 1999
Review of Air Medevac Services in Virginia, October 1999
Alternatives to Stabilize Regional Criminal Justice Training Academy Membership, November 1999
Review of the Statewide Human Services Information and Referral Program in Virginia, November 1999
The Impact of Digital TV on Public Broadcasting in Virginia, November 1999
Review of the Impact of State-Owned Ports on Local Governments, December 1999
Review of the Use of Grievance Hearing Officers, December 1999
Review of the Performance and Management of the Virginia Department of Health, January 2000
Virginia's Medicaid Reimbursement to Nursing Facilities, January 2000
Interim Report: Review of the Virginia Housing Development Authority, January 2000
Interim Report: Child Support Enforcement, January 2000
Interim Special Report: Revolutionary War Veteran Gravesites in Virginia, February 2000
VRS Oversight Report No. 14: Semi-Annual VRS Investment Report, July 2000
Final Report: Review of the Virginia Housing Development Authority, August 2000
Technical Status Report: An Overview of Expenditure Forecasting in Four Major State Programs, August 2000
Virginia's Welfare Reform Initiative: Follow-Up of Participant Outcomes, October 2000
Final Report: Child Support Enforcement, November 2000
Technical Report: The Cost of Raising Children, November 2000
Review of the Medicaid Inpatient Hospital Reimbursement System, December 2000