Economic Impact Analysis
Virginia Department of Planning and Budget

12 VAC 30-70-200 *et seq.* – Methods and Standards for Establishing Payment Rates – Inpatient Hospital Care: Diagnosis Related Groups (DRG) Department of Medical Assistance Services (DMAS)

November 22, 1999

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 9-6.14:7.1.G of the Administrative Process Act and Executive Order Number 25 (98). Section 9-6.14:7.1.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The proposed regulations amend the existing inpatient hospital payment methodology regulations to remove transition period rules and fully implement the new Diagnosis Related Grouping (DRG) methodology. These amendments fulfill a directive by the 1996 General Assembly to implement a DRG methodology (Chapter 912, Item 322.J.), and the settlement terms of a case brought under the federal Boren Amendment which required DMAS and the then Virginia Hospital Association to jointly develop a replacement reimbursement method.

Background

Historically, the Department of Medical Assistance Services (DMAS) paid hospitals on a per diem basis for inpatient hospital services provided to Medicaid patients. On July 1, 1996, (directed by the General Assembly and the terms of a lawsuit settlement) DMAS implemented a new prospective payment methodology for hospital services based largely on Diagnosis Related Groups (DRGs).

The initial DRG regulations called for a two-year transition period, allowing time for hospitals to adjust to the new methodology. During this time, Medicaid payments transitioned by thirds each year from per diem rates to DRG rates. The initial regulations also provided that the DRG rates be rebased every two years, however, they did not describe the methodology to be used for the first rebasing, which was to be effective July 1, 1998. Consequently, DMAS sought and obtained legislative authorization to adopt emergency regulations effective July 1, 1998, which provided the methodology for rebasing DRG rates. Authorization was obtained to continue the emergency regulations for one more year. These emergency regulations will expire on June 30, 2000.

Proposed Changes

The proposed regulation is intended to fully implement the DRG payment system by adopting as a final regulation the rules that have been in place since July 1, 1998, under the authority of an emergency regulation. According to DMAS, the language of the proposed regulation is nearly identical to the emergency regulation that is currently in effect and contains no substantive changes from the emergency regulation. However, as required by the APA, this regulatory package is presented as an amendment to the existing permanent regulation, which was in effect during 1997 and 1998 to govern the transition period. The primary amendments contained in the proposed regulation are as follows:

- A definition section is added;
- Language regarding the phase in of the DRG reimbursement method is deleted;
- Certain technical provisions, such as the version of the Diagnosis Related Grouper to be used in the DRG payment system and the base year used in calculating operating costs, are updated;
- Payments for direct and indirect medical education costs will be made to hospitals in quarterly lump sum amounts rather than as part of the general payment;

- Provisions regarding prior authorization are amended to delete requirements regarding length of stay assignment, admissions prior to surgical date, and weekend admissions for non-psychiatric admissions, as these requirements are obviated under the DRG system utilization review process; and
- The methodology for rebasing the DRG rates is set forth.

Estimated Economic Impact

Many of the proposed amendments are technical in nature and unlikely to have economic consequences. The following proposed changes may have economic effects, however: 1) the completed phase-in of a DRG prospective payment system; 2) the payment of medical education costs on a quarterly basis; 3) the use of prior authorization for utilization review; and 4) the rebasing of DRG rates.

Completed Phase-in of DRG Prospective Payment System

DRG prospective payment systems are not new. Following the federal Tax Equity and Fiscal Responsibility Act of 1982, Medicare changed its method for reimbursing hospitals to a prospective payment system. Under this system, hospitals receive a fixed-fee prospective payment for each patient based on the patient's diagnostic category. Incentives are created to minimize the length of the hospital stay and to use lower-cost services whenever possible; this has led to concern that the quality of care may be compromised following implementation of a prospective payment system. Evidence so far indicates that efficiency in the provision of inpatient hospital services has increased as expected. Although there is no information available to evaluate the effect of the DRG system on quality of care specifically for Medicaid patients in Virginia, extensive research has been conducted nationally that indicates prospective payment systems do not reduce quality of care. By finalizing the conversion to a DRG payment system, the proposed regulation may encourage continued economic benefits.

Enhanced Efficiency

One of the primary benefits of a DRG payment system is that it promotes efficiency. Under the previous per diem payment system used by DMAS to reimburse hospitals for Medicaid patients,

hospitals faced a disincentive regarding efficiency-related reductions in medical costs. Efficiency-generated reductions in the average length of patient stays more typically eliminate "low cost" patient days than "high cost" patient days. Because hospitals were reimbursed according to a flat per diem, such efficiency enhancements tended to reduce Medicaid reimbursements more than Medicaid related costs. As a result, hospitals were often actually penalized for efficiency enhancements. Moreover, hospitals faced a perverse incentive to increase Medicaid patient lengths of stay if doing so increased the number of "low cost" days associated with the stay.

In a DRG system, hospitals whose existing costs fall below the system-wide average for specific DRGs are rewarded (*i.e.*, they are reimbursed at the system-wide average even though their current costs are below that average). On the other hand, hospitals whose existing costs exceed the system-wide average for specific DRGs have a continuing economic incentive to lower costs (*i.e.*, they are reimbursed at the system-wide average even though their costs are above that average). This incentive provides a strong inducement for hospitals with high costs of treatment for certain DRGs, relative to their peers, to substantially reduce those costs or, if that option is not achievable, specialize away from the treatment of that particular diagnosis (*i.e.* quit providing those services). The desirable effect of such specialization is that it reduces overall medical costs by encouraging hospitals to produce only those services that they are able to provide efficiently.

The empirical evidence to date largely substantiates the efficiency enhancing qualities of DRG payment systems. Hospitals subject to DRG systems have been shown to exhibit greater decreases in average length of patient stay than hospitals subject to other payment systems.[1] In fact, this effect has already begun to be observed in Virginia. Between 1993 and 1997, DMAS reports that the average length of stay per case declined 12.6 percent.

Distributional Equity

Another economic benefit of shifting from a per diem to a DRG payment method is that it is intended to enhance distributional equity in hospital reimbursements for Medicaid patients. DMAS's

[1]*See* Judy Feder, Jack Hadley, and Stephen Zuckerman, "How Did Medicare's Prospective Payment System Affect Hospitals?," *New England Journal of Medicine*, vol. 317 (October 1 1987) pp. 867-73; or Stuart Guterman and Allen Dobson, "Impact of the Medicare Prospective Payment System for Hospitals," *Health Care Financing Review*, vol. 7 (Spring 1987) pp. 97-114; for examples of empirical studies that demonstrate this point.

current per diem ceilings were calculated in 1981 and were subsequently adjusted only for inflationary increases. This implies that under a per diem payment system, hospitals experiencing significant changes in case mix, and consequently significant changes in average costs, were compensated at rates that no longer reflected their actual costs. Depending on the circumstances, some hospitals benefited by this error while others did not. Because DRG payment systems specifically recognize that not all cases cost the same to treat, and because they control for the case mix of individual hospitals by disaggregating reimbursements according to case category, they more accurately compensate hospitals for the true costs of their Medicaid patient loads. Thus, a DRG payment system will serve to eliminate distributional inequities that may have been present in a per diem payment system.

Incentive to Undertreat

A widely cited criticism of DRG prospective payment systems is that shorter lengths of stay result from incentives for hospitals to undertreat patients and release them "quicker and sicker" instead of resulting from more efficiently-delivered care. Given the strong incentives for cost reduction in DRG systems, this is a valid concern. Some empirical studies have demonstrated, however, that even though DRG systems are generally associated with reduced lengths of stay, they are also associated with increased levels of hospital and doctor service intensity.[2] One implication of this finding is that observed reduced lengths of stay in hospitals subject to DRG payment systems are, potentially, reflective of increased levels of service intensity rather than undertreatment. In addition, competitive pressures and liability concerns should also serve to mitigate incentives to reduce costs at the expense of patient well being.

While specific evidence on Virginia's Medicaid program is not available, research on quality of care has been conducted nationally and those results can be extended to other prospective payment systems with a high degree of confidence. A study sponsored by the Health Care Financing Administration (HCFA) examined the effects of Medicare's prospective payment system (PPS) on the quality of hospital care and found that, overall, PPS had no negative effect on patient outcomes and did not alter an already existing trend toward improved process of care. The only negative post-PPS

[2] *See* Richard J. Willke, William S. Custler, James S. Moser, and Robert A. Musacchio, *Collaborative Production and Resource Allocation: The Consequences of Prospective Payment for Hospital Care*, Quarterly Review of Economics and Business, vol. 31, no. 1 (Spring 1991) pp. 28-47.

change was an increase in the number of patients discharged in unstable condition. However, the impact on mortality of discharge in unstable condition did not outweigh other quality improvements, because overall mortality fell.[3]

Dumping

Another common disadvantage of prospective payment systems is that they create an incentive for hospitals to "dump" --- either refuse to treat or transfer --- patients with relatively high costs of care. Because hospitals are reimbursed according to the average cost for each diagnosis related group, they have an incentive to avoid treating patients whose cost of care significantly exceeds the average. There are two reasons to believe that the proposed regulation is unlikely to produce such adverse effects. First, it is very unlikely that a hospital would be able to accurately identify patients in advance who would have a high cost of treatment relative to their DRG category, even if the hospital had a policy that encouraged such identification. The second reason that the proposed regulation is unlikely to generate dumping is that it provides a mechanism that allows hospitals to receive additional compensation in the case of "outliers." Allowing hospitals to recoup the additional costs imposed by outliers weakens the incentive for hospitals to dump these patients.

Research conducted on Medicare's prospective payment system examined whether the change in financial incentives resulted in fewer sick patients being admitted to the hospital. The study found that hospitalized patients were more ill on average than they used to be, leading the authors to hypothesize that better paramedical services may keep more ill people alive to be hospitalized, and financial incentives to increase admission of patients who are not as ill may be less important than are activities of professional review organizations, increased external review of appropriateness of hospitalizations, or shifts from inpatient to outpatient settings for treatment.[4]

Direct and Indirect Medical Education Costs

[3] The complete results of this study are documented in a series of articles by Katherine L. Kahn, Lisa V. Rubenstein, David Draper, Jacqueline Kosecoff, William H. Rogers, Emmett B. Keeler, and Robert H. Brook in the October 17, 1990, issue of JAMA, Vol. 264, No. 15, pp. 1956-1994.

[4] *See* Emmett. B. Keeler, Katherine L. Kahn, Marjorie J. Sherwood, Lisa V. Rubenstein, Ellen J. Reinisch, Jacqueline Kosecoff, and Robert H. Brook, "Changes in Sickness at Admission Following the Introduction of the Prospective Payment System," *The Journal of the American Medical Association*, vol. 264 (October 17, 1990) pp. 1962-69.

Another provision of the proposed regulation that is likely to have an economic consequence is the payment of direct and indirect medical education costs on a quarterly basis. Under the prior system, payments for medical education costs were combined with normal per diem payments. Aggregating these payments and disbursing them on a quarterly basis will slightly reduce hospital revenue (put simply, a dollar today is worth more than a dollar three months from now because a dollar today can earn interest over those three months). A representative of the Virginia Hospital and Healthcare Association (VHHA), contacted by DPB to obtain input from the regulated community, agreed that the quarterly payment of medical education costs would slightly reduce hospital revenue. Overall, however, he felt that due to the enhanced efficiency and distributional equity provided by a DRG system, the net financial effect of the proposed regulation would likely be positive.[5]

Prior Authorization

Provisions regarding prior authorization are amended to delete requirements regarding length of stay assignment, admissions prior to surgical date, and weekend admissions for non-psychiatric admissions. These requirements are unnecessary under the DRG system utilization review process, which requires prior authorization of all admissions. Under the per diem payment system, hospitals were required to obtain authorization only after seven days. However, if an admission was determined to be medically unnecessary, the hospital received no reimbursement.

Requiring authorization prior to admission reduces some of the risk faced by hospitals but also may affect access to inpatient hospital care. Given that the same criterion was used to determined the medical appropriateness of hospitalization under both payment systems (per diem and DRG), the change in utilization review will only have a negative impact on patients if hospitals were routinely admitting individuals whose hospitalization was later determined to be medically unnecessary. DMAS reports that, of the 51,879 admissions for medical/surgical reasons between October 1998 and September 1999, only 4.9 percent were denied. Since these cases become charity care, the proposed regulation may actually even increase access to inpatient care, as there is less risk associated with admissions for hospitals.

[5] This information was provided by Chris Bailey, VHHA Executive Vice President, in a telephone interview with DPB staff.

Rebasing of DRG Rates

When DMAS initiated the DRG payment methodology for hospital services effective July 1, 1996, the rates were calculated to be cost neutral with respect to the per diem payment system. The new DRG methodology was implemented in stages. In FY97, hospitals were paid 2/3 per diem, 1/3 DRG. In FY98, the reimbursement shifted to 1/3 per diem and 2/3 DRG. During the phase-in period, DMAS continued to process claims exclusively according to the per diem methodology and conducted end of the year cost settlements where the DRG rates were retroactively applied.

During the transition period (FY97- FY98) payments exceeded what would have been made solely under the per diem system. According to DMAS, the additional expenditure appears to be the result of two things. First declining length of stay caused payments under the per diem interim rates to fall, while declining lengths of stay do not reduce DRG payments. The 12.6 percent reduction in average LOS per case between 1993 to 1997 may have been due to a combination of previous policies initiated by the General Assembly (e.g., case management measures) and efficiency improvements resulting from implementation of the DRG system.

Secondly, the DRG "case-mix" index increased after the implementation of DRGs. The case mix index measures the average complexity of cases under given DRG case codes. The initial DRG rates were set using 1993 data. Data indicates that between 1993 and 1997, the case mix index rose by 8.3 percent. According to DMAS, this increase does not necessarily mean that patients are actually sicker. When a DRG system is first implemented, it is expected that measured case-mix (as opposed to real case-mix) will increase as hospitals report diagnosis and procedure codes more consistently and thoroughly.

The proposed regulation sets the methodology for the DRG rates to be periodically "rebased" (updating the base year on which the DRG rates are calculated on) to reflect current costs. It is expected that this rebasing will neutralize the effects of changes in the length of stay and case-mix index. In the short term, the move to a DRG payment system may increase inpatient hospital expenditures. However, in the long term, if experience with the federal Medicare program holds for Virginia, we

would expect to find that the transition to a prospective payment system would have a moderating influence on Medicaid hospital expenditures.[6]

Businesses and Entities Affected

The proposed regulation will affect any of the 99 hospitals in Virginia that provide inpatient care to Medicaid patients.

Localities Particularly Affected

No localities are particularly affected by the proposed regulation.

Projected Impact on Employment

The proposed regulation is not anticipated to have a significant effect on employment.

Effects on the Use and Value of Private Property

The proposed regulation is not anticipated to have a significant effect on the use and value of private property.

Summary

The proposed regulation amends existing regulations governing the method used by DMAS to reimburse hospitals for Medicaid patients to complete the transition to a Diagnosis Related Grouping (DRG) methodology. DPB anticipates that the primary economic impact of completing the transition to a DRG payment method will be to enhance economic efficiency in the provision of inpatient hospital services and enhance distributional equity among hospitals with respect to payment for Medicaid patient services. In the short term, the move to a DRG payment system may increase inpatient hospital expenditures. However, in the long term, if experience with the federal Medicare program holds for Virginia, empirical evidence suggests that the transition to a prospective payment system would have a moderating influence on Medicaid hospital expenditures without causing any significant reduction in the quality of care provided.

[6] *See* Gail R. Wilensky, "Medicare at 25: Better Value and Better Care," *The Journal of the American Medical Association*, vol. 264 (October 17, 1990) pp. 1996-7.