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DEPARTMENT OF HEALTH AND MENTAL HYGIENE



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**471ST MEETING OF THE HEALTH SERVICES COST REVIEW COMMISSION
EXECUTIVE SESSION**

October 13, 2010

8:30 a.m.

1. Briefing on MCO Alternative Rate Cases

**PUBLIC SESSION OF THE
HEALTH SERVICES COST REVIEW COMMISSION**

October 13, 2010

8:45 a.m.

1. Review of the Public Minutes of September 1, 2010

2. Executive Director's Report

3. Docket Status – Cases Closed

2073A – University of Maryland Medical Center
2077A - Johns Hopkins Health System
2078A – MedStar Health
2079R - Montgomery General Hospital
2082A - University of Maryland Medical Center
2083A - University of Maryland Medical Center
2084A - Johns Hopkins Health System
2085A - Johns Hopkins Health System
2086A - Johns Hopkins Health System

4. Docket Status – Cases Open

2076R – St. Agnes Hospital
2080A – MedStar Health
2081A – Johns Hopkins Health System
2087R – Memorial Hospital at Easton
2088R – Dorchester General Hospital
2089A – Maryland Physicians Care
2090N – Memorial Hospital at Easton
2091A – University of Maryland Medical Center
2092A – Johns Hopkins Health System
2093A – Johns Hopkins Health System
2094A – Johns Hopkins Health System

- 5. Request for Commission to Grant Staff Authority to Extend Approval of Certain Alternative Method of Rate Determination Arrangements.**
- 6. Clarification of Definition of Major Capital Project for 100% Variable Rate Adjustment (NOTE: Agenda Item 6 has been removed.)**
- 7. Draft Recommendation on Potentially Preventable Readmissions Methodology**
- 8. Legal Report**
- 9. Staff Presentation and Discussion Regarding the Commission’s Bundled Payment Initiatives**
- 10. Hearing and Meeting Schedule**

H.S.C.R.C's CURRENT LEGAL DOCKET STATUS (OPEN)

AS OF OCTOBER 4, 2010

A: PENDING LEGAL ACTION : NONE
 B: AWAITING FURTHER COMMISSION ACTION: NONE
 C: CURRENT CASES:

Docket Number	Hospital Name	Date Docketed	Decision Required by:	Rate Order Must be Issued by:	Purpose	Analyst's Initials	File Status
2076R	St. Agnes Hospital	6/22/2010	9/20/2010	11/18/2010	FULL	GS	OPEN
2080A	MedStar Health	8/16/2010	N/A	N/A	ARM	DNP	OPEN
2081A	Johns Hopkins Health System	8/16/2010	N/A	N/A	ARM	DNP	OPEN
2087R	Memorial Hospital at Easton	8/16/2010	10/15/2010	1/13/2011	FULL	GS	OPEN
2088R	Dorcehester General Hospital	8/16/2010	10/15/2010	1/13/2011	FULL	GS	OPEN
2089A	Maryland Physicians Care	8/20/2010	N/A	N/A	ARM	DNP	OPEN
2090N	Memorial Hospital at Easton	9/13/2010	10/13/2010	2/10/2011	FSE	GS	OPEN
2091A	University of Maryland Medical Center	9/24/2010	N/A	N/A	ARM	DNP	OPEN
2092A	Johns Hopkins Health System	9/24/2010	N/A	N/A	ARM	DNP	OPEN
2093A	Johns Hopkins Health System	9/24/2010	N/A	N/A	ARM	DNP	OPEN
2094A	Johns Hopkins Health System	9/24/2010	N/A	N/A	ARM	DNP	OPEN

PROCEEDINGS REQUIRING COMMISSION ACTION - NOT ON OPEN DOCKET

None

IN RE: THE ALTERNATIVE	*	BEFORE THE HEALTH
RATE APPLICATION OF	*	SERVICES COST REVIEW
MEDSTAR HEALTH	*	COMMISSION
SYSTEM	*	DOCKET: 2010
	*	FOLIO: 1890
COLUMBIA, MARYLAND	*	PROCEEDING: 2080A

Final Recommendation

October 13, 2010

I. Introduction

On August 16, 2010, MedStar Health filed an application for an Alternative Method of Rate Determination pursuant to COMAR 10.37.10.06 on behalf of Franklin Square Hospital, Good Samaritan Hospital, Harbor Hospital, and Union Memorial Hospital (the "Hospitals"). MedStar Health seeks renewal for the continued participation of MedStar Family Choice in the Medicaid Health Choice Program. MedStar Family Choice is the MedStar entity that assumes the risk under this contract. The Commission most recently approved this contract under proceeding 2045A for the period from January 1, 2010 through December 31, 2010. The Hospitals are requesting to renew this contract for one year beginning January 1, 2011.

II. Background

Under the Medicaid Health Choice Program, MedStar Family Choice, a Managed Care Organization ("MCO") sponsored by the Hospitals, is responsible for providing a comprehensive range of health care benefits to Medical Assistance enrollees. The application requests approval for the Hospitals to provide inpatient and outpatient hospital services, as well as certain non-hospital services, in return for a State-determined capitation payment. MedStar Family Choice pays the Hospitals HSCRC-approved rates for hospital services used by its enrollees. MedStar Family Choice provides services to about 4% of the total number of MCO enrollees in Maryland.

The hospitals supplied information on their most recent experience and their projected revenues and expenditures for the upcoming year based on the revised Medicaid capitation rates.

III. Staff Review

This contract has been operating under previous HSCRC approval (proceeding 2045A). Staff reviewed the operating performance of the contract as well as the terms of the capitation

pricing agreement. The actual financial experience for CY 2009 was unfavorable; however, estimates reported to staff for CY 2010 show a positive financial outlook. Medstar Family Choice projects to continue favorable performance into CY 2011.

IV. Recommendation

Staff believes that the proposed renewal arrangement is acceptable under Commission policy. However, staff recommends that further periodic monitoring is necessary to ensure sustained favorable performance. Staff, nonetheless, believes the CY 2011 projections to be reasonable based on the information currently available regarding Medicaid rate setting for CY 2011.

Staff Recommendations:

- (1) Staff recommends approval of this alternative rate application for a one-year period beginning January 1, 2011.**

- (2) Since sustained losses over an extended period of time may be construed as a loss contract necessitating termination of this arrangement, staff will continue to monitor financial performance to determine whether favorable financial performance is achieved in CY 2010 and expected to be sustained into CY 2011. Therefore, staff recommends that MedStar Family Choice report to Commission staff (on or before the August 2011 meeting of the Commission) on actual experience for CY 2010, the preliminary estimates for CY 2011 financial performance (adjusted for seasonality) of the MCO, and projections for CY 2012.**

(3) Consistent with its policy paper outlining a structure for review and evaluation of applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the continued adherence to the standard Memorandum of Understanding with the Hospitals for the approved contract. This document formalizes the understanding between the Commission and the Hospitals, and includes provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the managed care contract, quarterly and annual reporting, the confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU also stipulates that operating losses under managed care contracts may not be used to justify future requests for rate increases.

IN RE: THE ALTERNATIVE	*	BEFORE THE HEALTH	
RATE APPLICATION OF	*	SERVICES COST REVIEW	
THE JOHNS HOPKINS HEALTH	*	COMMISSION	
SYSTEM	*	DOCKET:	2010
	*	FOLIO:	1891
BALTIMORE, MARYLAND	*	PROCEEDING	2081A

Final Recommendation

October 13, 2010

I. Introduction

On August 10, 2010 Johns Hopkins Health System (“JHHS,” or the “System”) filed an application for an Alternative Method of Rate Determination pursuant to COMAR 10.37.10.06 on behalf of Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, and Howard County General Hospital (the “Hospitals”). The System seeks renewal for the continued participation of Priority Partners, Inc. in the Medicaid Health Choice Program. Priority Partners, Inc. is the entity that assumes the risk under the contract. The Commission most recently approved this contract under proceeding 2041A for the period from January 1, 2010 through December 31, 2010. The Hospitals are requesting to renew this contract for a one-year period beginning January 1, 2011.

II. Background

Under the Medicaid Health Choice Program, Priority Partners, a provider sponsored Managed Care Organization (“MCO” sponsored by the Hospitals), is responsible for providing a comprehensive range of health care benefits to Medical Assistance enrollees. Priority Partners was created in 1996 as a joint venture between Johns Hopkins Health Care (JHHC) and the Maryland Community Health System (MCHS) to operate an MCO under the Health Choice Program. Johns Hopkins Health Care operates as the administrative arm of Priority Partners and receives a percentage of premiums to provide services such as claim adjudication and utilization management. MCHS oversees a network of Federally Qualified Health Clinics which provide member expertise in the provision of primary care services and assistance in the development of provider networks on an exclusive basis in exchange for an exclusivity payment.

The application requests approval for the hospitals to continue to provide inpatient and

outpatient hospital services, as well as certain non-hospital services, in return for a State-determined capitation payment. Priority Partners pays the Hospitals HSCRC-approved rates for hospital services used by its enrollees. The Hospitals supplied information on their most recent experience and their projected revenues and expenditures for the upcoming year based on the revised Medicaid capitation rates.

Priority Partners is a major participant in the Medicaid Health Choice program, providing managed care services on a statewide basis and serving 26% of the state's MCO population.

III. Staff Review

This contract has been operating under the HSCRC's initial approval in proceeding 2041A. Staff reviewed the operating performance under the contract as well as the terms of the capitation pricing agreement. Staff has analyzed Priority Partner's financial history and net income projections for CY 2010 and CY2011. The statements provided by Priority Partners to staff represent both a stand- alone and "consolidated" view of Priority's operations. The consolidated picture reflects certain administrative revenues and expenses of Johns Hopkins Health Care. When other provider-based MCOs are evaluated for financial stability, their administrative costs relative to their MCO business are included as well; however, they are all included under one entity.

Staff found that Priority Partners (consolidated) financial performance was unfavorable in CY 2009 but was favorable in FY 2010. Profits are expected to continue to improve in CY 2010 and CY 2011.

IV. Recommendation

As noted above, Priority Partners has shown favorable financial performance on a consolidated basis in FY 2010. Based on information currently available on Medicaid rate setting from CY 2011, Priority Partners (Consolidated) is expecting to continue favorable performance into CY 2011.

Therefore, staff makes the following recommendations:

- 1) That approval be granted for participation in the Medicaid Health Choice Program for a one-year period beginning January 1, 2011.**

- 2) Since sustained losses over an extended period of time may be construed as a loss contract necessitating termination of this arrangement, staff will continue to monitor financial performance to determine whether favorable financial performance is achieved in CY 2010 and expected to be sustained into CY 2011. Therefore, staff recommends that Priority Partners report to Commission staff (on or before the August 2011 public meeting of the Commission) on the actual CY 2010, preliminary CY 2011, and projected CY 2012 financial performance (adjusted for seasonality) of the MCO.**

- 3) Consistent with its policy paper outlining a structure for review and evaluation of applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the continued adherence to the standard**

Memorandum of Understanding with the Hospitals for the approved contract. This document formalizes the understanding between the Commission and the Hospitals, and includes provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the managed care contract, quarterly and annual reporting, the confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU also stipulates that operating losses under managed care contracts may not be used to justify future requests for rate increases.

IN RE: THE ALTERNATIVE	*	BEFORE THE HEALTH
RATE APPLICATION OF	*	SERVICES COST REVIEW
MARYLAND GENERAL HOSPITAL	*	COMMISSION
SAINT AGNES HEALTH	*	DOCKET: 2010
WESTERN MARYLAND	*	FOLIO: 1899
HEALTH SYSTEM	*	PROCEEDING: 2089A
WASHINGTON COUNTY HOSPITAL	*	

Final Recommendation

October 13, 2010

I. Introduction

On August 17, 2009, Maryland General Hospital, Saint Agnes Health System, Western Maryland Health System, and Washington County Hospital (the “Hospitals”) filed an application for an Alternative Method of Rate Determination pursuant to COMAR 10.37.10.06. The Hospitals seek renewal for the continued participation of Maryland Physicians Care (MPC) in the Medicaid Health Choice Program. MPC is the entity that assumes the risk under this contract. The Commission most recently approved this contract under proceeding 2046A for the period January 1, 2010 through December 31, 2010. The Hospitals are requesting to renew this contract for one year beginning January 1, 2011.

II. Background

Under the Medicaid Health Choice Program, MPC, a Managed Care Organization (“MCO”) sponsored by the Hospitals, is responsible for providing a comprehensive range of health care benefits to Medical Assistance enrollees. The application requests approval for the Hospitals to provide inpatient and outpatient hospital services as well as certain non-hospital services, in return for a State-determined capitation payment. Maryland Physicians Care pays the Hospitals HSCRC-approved rates for hospital services used by its enrollees. Maryland Physicians Care Priority Partners is a major participant in the Medicaid Health Choice program, and provides services to about 18% of the total number of MCO enrollees in Maryland.

The Hospitals supplied information on their most recent experience and their projected revenues and expenditures for the upcoming year based on the revised Medicaid capitation rates.

III. Staff Review

This contract has been operating under previous HSCRC approval (Proceeding 2046A).

Staff reviewed the operating performance under the contract as well as the terms of the capitation pricing agreement. Staff reviewed financial information and projections for CYs 2009, 2010 and 2011. In recent years, the financial performance of MPC has been favorable. The actual financial experience reported to staff for CY2009 was positive, and MPC profits are expected to improve in CY 2010.

IV. Recommendation

MPC has continued to maintain consistent favorable performance in recent years. Staff believes that the proposed renewal arrangement for MPC is acceptable under Commission policy in that the MCO has been able to sustain reasonable profit margins. Staff will closely monitor actual performance to ensure that the favorable results continue into the future.

Therefore, staff recommends the following:

- (1) Staff recommends approval of this alternative rate application for a one-year period beginning January 1, 2011.**

- (2) Since sustained losses over an extended period of time may be construed as a loss contract necessitating termination of this arrangement, staff will continue to monitor financial performance to determine whether favorable financial performance is achieved in CY 2010 and expected to be sustained into CY 2011. Therefore, staff recommends that Maryland Physicians Care report to Commission staff (on or before the August 2011 meeting of the Commission) on the actual CY 2010 experience and preliminary CY 2011 financial performance (adjusted for seasonality) of the MCO as well as projections for CY 2012.**

(3) Consistent with its policy paper outlining a structure for review and evaluation of applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the continued adherence to the standard Memorandum of Understanding with the Hospitals for the approved contract. This document formalizes the understanding between the Commission and the Hospitals, and includes provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the managed care contract, quarterly and annual reporting, the confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU also stipulates that operating losses under managed care contracts may not be used to justify future requests for rate increases.

**IN RE: THE APPLICATION FOR
ALTERNATIVE METHOD OF RATE
DETERMINATION
UNIVERSITY OF MARYLAND
MEDICAL CENTER
BALTIMORE, MARYLAND**

*** BEFORE THE MARYLAND HEALTH
* SERVICES COST REVIEW
* COMMISSION
* DOCKET: 2010
* FOLIO: 1901
* PROCEEDING: 2091A**

Staff Recommendation

October 13, 2010

**IN RE: THE APPLICATION FOR
ALTERNATIVE METHOD OF RATE
DETERMINATION
JOHNS HOPKINS HEALTH
SYSTEM
BALTIMORE, MARYLAND**

*** BEFORE THE MARYLAND HEALTH
* SERVICES COST REVIEW
* COMMISSION
* DOCKET: 2010
* FOLIO: 1903
* PROCEEDING: 2093A**

Staff Recommendation

October 13, 2010

I. INTRODUCTION

On September 24, 2010, Johns Hopkins Health System (“System”) filed a renewal application on behalf of its member hospitals, Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, and Howard County General Hospital (the “Hospitals”) requesting approval from the HSCRC to continue participation in global rates for cardiovascular procedures with Global Excel Management, Inc. The Hospitals request that the Commission approve the arrangement for an additional year beginning October 1, 2010.

II. OVERVIEW OF APPLICATION

The contract will continue to be held and administered by Johns Hopkins HealthCare, LLC (“JHHC”), which is a subsidiary of the System. JHHC will continue to manage all financial transactions related to the global price contract including payments to the System hospitals and bear all risk relating to regulated services associated with the contract.

III. FEE DEVELOPMENT

The hospital portion of the global rates was developed by calculating mean historical charges for patients receiving the procedures for which global rates are to be paid. The remainder of the global rate is comprised of physician service costs. Additional per diem payments were calculated for cases that exceed a specific length of stay outlier threshold.

IV. IDENTIFICATION AND ASSESSMENT OF RISK

The Hospitals will continue to submit bills to JHHC for all contracted and covered services. JHHC is responsible for billing the payer, collecting payments, disbursing payments to the Hospitals at their full HSCRC approved rates, and reimbursing the physicians. The System contends that the arrangement among JHHC, the Hospitals, and the physicians holds the Hospitals harmless from any shortfalls in payment from the global price contract. JHHC maintains it has been active in similar types of fixed fee contracts for several years, and that

JHHC is adequately capitalized to bear the risk of potential losses.

V. STAFF EVALUATION

Staff found that the actual experience under the arrangement for the last year has been favorable, and staff is satisfied that the Hospitals can continue to achieve favorable performance under this arrangement.

VI. STAFF RECOMMENDATION

The staff recommends that the Commission approve the Hospitals' application for an alternative method of rate determination for cardiovascular services for a one year period beginning October 1, 2010. The Hospitals must file a renewal application annually for continued participation.

Consistent with its policy paper regarding applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the execution of the standard Memorandum of Understanding ("MOU") with the Hospitals for the approved contract. This document would formalize the understanding between the Commission and the Hospitals, and would include provisions for such things as payments of HSCRC- approved rates, treatment of losses that may be attributed to the contract, quarterly and annual reporting, confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU will also stipulate that operating losses under the contract cannot be used to justify future requests for rate increases.

I. INTRODUCTION

The University of Maryland Medical Center (“the Hospital”) filed a renewal application with the HSCRC on September 24, 2010 for an alternative method of rate determination, pursuant to COMAR 10.37.10.06. The Hospital requests approval from the HSCRC for continued participation in global rates for solid organ and blood and bone marrow transplant services with United Resource Networks (URN), for a one-year period, effective November 1, 2010.

II. OVERVIEW OF APPLICATION

The contract will continue to be held and administered by University Physicians, Inc. (UPI), which is a subsidiary of the University of Maryland Medical System. UPI will manage all financial transactions related to the global price contract including payments to the Hospital and bear all risk relating to regulated services associated with the contract.

III. FEE DEVELOPMENT

The hospital component of the global rates was developed by calculating mean historical charges for patients receiving the procedures for which global rates are to be paid. The remainder of the global rate is comprised of physician service costs. Additional per diem payments were calculated for cases that exceed a specific length of stay outlier threshold.

IV. IDENTIFICATION AND ASSESSMENT OF RISK

The Hospital will continue to submit bills to UPI for all contracted and covered services. UPI is responsible for billing the payer, collecting payments, disbursing payments to the Hospital at its full HSCRC approved rates, and reimbursing the physicians. The Hospital contends that the arrangement between UPI and the Hospital holds the Hospital harmless from any shortfalls in payment from the global price contract. UPI maintains that it has been active in similar types of fixed fee contracts for several years, and that UPI is adequately capitalized to bear risk of potential losses.

V. STAFF EVALUATION

The staff found that the actual experience under this arrangement for the prior year has been favorable.

VI. STAFF RECOMMENDATION

Based on the favorable experience in the last year, staff recommends that the Commission approve the Hospital's application for an alternative method of rate determination for solid organ and blood and bone marrow transplant services for a one year period beginning November 1, 2010.

Consistent with its policy paper regarding applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the execution of the standard Memorandum of Understanding ("MOU") with the Hospital for the approved contract. This document would formalize the understanding between the Commission and the Hospital, and would include provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the contract, quarterly and annual reporting, confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU will also stipulate that operating losses under the contract cannot be used to justify future requests for rate increases.

**IN RE: THE APPLICATION FOR
ALTERNATIVE METHOD OF RATE
DETERMINATION
JOHNS HOPKINS HEALTH
SYSTEM
BALTIMORE, MARYLAND**

*** BEFORE THE MARYLAND HEALTH
* SERVICES COST REVIEW
* COMMISSION
* DOCKET: 2010
* FOLIO: 1904
* PROCEEDING: 2094A**

Staff Recommendation

October 13, 2010

I. INTRODUCTION

On September 24, 2010, Johns Hopkins Health System (“System”) filed a renewal application on behalf of its member hospitals, Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, and Howard County General Hospital (the “Hospitals”) requesting approval to continue to participate in an existing global price arrangement with Life Trac (a subsidiary of Allianz Insurance Company of North America) for solid organ and bone marrow transplants. The Hospitals request that the Commission approve the arrangement for one year beginning October 1, 2010.

II. OVERVIEW OF APPLICATION

The contract will continue to be held and administered by Johns Hopkins HealthCare, LLC (“JHHC”), which is a subsidiary of the System. JHHC will continue to manage all financial transactions related to the global price contract including payments to the System hospitals and to bear all risk relating to regulated services associated with the contract.

III. FEE DEVELOPMENT

The hospital portion of the global rates, which was originally developed by calculating mean historical charges for patients receiving the procedures for which global rates are to be paid, has been adjusted to reflect recent hospital rate increases. The remainder of the global rate is comprised of physician service costs. Additional per diem payments, calculated for cases that exceed a specific length of stay outlier threshold, were similarly adjusted.

IV. IDENTIFICATION AND ASSESSMENT RISK

The Hospitals will continue to submit bills to JHHC for all contracted and covered services. JHHC is responsible for billing the payers, collecting payments, disbursing payments to the Hospitals at their full HSCRC approved rates, and reimbursing the physicians. The System

contends that the arrangement among JHHC, the Hospitals, and the physicians holds the Hospitals harmless from any shortfalls in payment from the global price contract. JHHC maintains that it has been active in similar types of fixed fee contracts for several years, and that JHHC is adequately capitalized to bear the risk of potential losses.

V. STAFF VALUATION

The staff found that the actual experience under the arrangement for the last year has been favorable. Staff is satisfied that the hospital component of the global price is sufficient for the Hospitals to continue to achieve favorable performance under this arrangement.

VI. STAFF RECOMMENDATION

The staff recommends that the Commission approve the Hospitals' application for an alternative method of rate determination for solid organ and bone marrow transplant services for the period beginning October 1, 2010. The Hospitals must file a renewal application annually for continued participation.

Consistent with its policy paper regarding applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the execution of the standard Memorandum of Understanding ("MOU") with the Hospitals for the approved contract. This document would formalize the understanding between the Commission and the Hospitals, and would include provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the contract, quarterly and annual reporting, confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU will also stipulate that operating losses under the contract cannot be used to justify future requests for rate increases.

REQUEST FOR COMMISSION TO GRANT STAFF AUTHORITY TO EXTEND APPROVAL OF CERTAIN

ALTERNATIVE METHOD OF RATE DETERMINATION (ARM) ARRANGEMENTS

October 13, 2010

Background

The Health Services Cost Review Commission (the “Commission” or “HSCRC”) is authorized by law to approve Alternative Method of Rate Determinations (ARMs) that are of an experimental nature in order to promote the most efficient use of hospital services. ARMs have been utilized to encourage innovative and cost-savings payment arrangements and to allow hospitals to participate in managed care arrangements without compromising the Commission’s principles of equity and access. To preserve equity, a hospital must be paid HSCRC-approved rates and may not directly take financial risk. However, hospitals may take risk through a related entity.

The vast majority of ARMs approved by the Commission are global price (bundled prices for hospital and physician services for certain medical procedures) and capitation arrangements (per member per month payment arrangements to deliver medical services to a particular group of patients). However, because of the risk associated with these arrangements they are typically approved for one year only, and the experience under these arrangements is monitored on a quarterly basis.

Staff Request

Since most global price and capitation arrangements between the hospital risk-taking entity and the purchaser of health care services are “evergreen” contracts, i.e., the basic contract has no expiration date but is amended periodically for changes in services and prices, the Commission’s one-year approval policy sometimes presents a problem. The problem arises when negotiations between the parties to amend the contract are not completed before to the expiration of the HSCRC’s one-year approval period. When this happens, because the contract is evergreen and does not end at the end of the approval period, services can and do continue to be provided to patients under the contract terms already in place. Consequently, when negotiations are completed after the end of the one-year approval period and the ARM renewal application for the amended contract is submitted for HSCRC approval there is a gap between the effective date of the amended contract and the end of the one-year approval period. In such cases, staff recommends that the Commission approve the application for renewal of the amended arrangement retro-active to the end of the one-year approval period to cover the gap. However, as a practical matter, during the gap period, the purchaser continues to pay based on the previously approved contract arrangement and not on the basis of the retroactively approved amended contract and, thus, is not in compliance with the Commission’s approval.

In order to rectify this situation, staff requests that the Commission grant staff the authority to extend the Commission’s approval on ARM arrangements when necessary to cover the gap between the end of the one-year approval period and the effective date of the amended contract. If granted, such permission to extend would be limited to 90 days and would be limited to ARM arrangements that have experienced favorable performance in the most recent 12 months.

**Clarification of the Variable Cost Adjustment for Major Capital
Projects approved by the Commission on June 9, 2010**

Health Services Cost Review Commission
4160 Patterson Avenue
Baltimore, MD 21215
(410) 764-2605
(410) 358-6217

October 13, 2010

This clarification of existing policy requires affirmation by the Commission.

The Issue

On June 9, 2010, the Health Services Cost Review Commission adopted a series of recommendations to revise to its Reasonableness of Charges (ROC) methodology. One of the recommendations concerned how, or whether, the Commission's 85% variable cost factor should apply to major capital projects. Because some questions have been raised, this paper clarifies the policy with respect to what constitutes a major project as it relates to the variable cost factor. This paper does not change the June 9 recommendation.

Below are the approved June 9 recommendations with the appropriate clarifications.

Variable Cost Adjustment and Forward Funding for Major Capital Projects

The HSCRC's variable cost factor is currently 85%. This means that the Commission recognizes 85% of a volume increase in rates. During the ICC/ROC Workgroup deliberations, representatives from CareFirst and Kaiser Permanente proposed that Certificate of Need (CON) eligible projects be permitted to receive a different variable cost factor for three years after first use of a newly constructed facility.¹ In proposing this policy change, CareFirst and Kaiser Permanente recognized the difficulty faced by hospitals that were engaged in major capital projects just before the Commission's decision to move from a full 100% recognition of variable cost to a more restrictive 85% variable cost adjustment for volume. Facilities that committed to these major projects when the variable cost factor was 100% were relying on these additional revenues to help fund the projects as their volumes increased over time. The recommendation also permits hospitals that take the "Pledge" for certain major projects (whether previously or in the future) to receive the 100% variable cost factor.²

Under this proposed policy change, the following variable cost factors would apply to hospitals as follows:

- a) 100% variable cost adjustment if a hospital takes the Pledge and, thus, does not file a rate application;
- b) 100% variable cost for hospitals issued a CON when the variable cost factor was 85%, and the hospital did not file a rate application; and
- c) The current variable cost adjustment (85%) will be applied for hospitals that filed a rate application that generated additional dollars in rates for capital. These hospitals will not be eligible for the 100% variable cost adjustment.

¹ The Commission also approved standards and policies whereby new hospitals are provided 100% variable costs during their first years of operation. That policy is not discussed in this clarification.

² The "Pledge" refers to circumstances where a hospital agrees, for a capital project with an expenditure level that falls above the spending threshold requiring a CON but no other elements that require CON review, not to request an increase in rates from the HSCRC greater than \$1.5 million associated with the capital project over the life of that project. In exchange for this Pledge, the hospital project is exempted from CON review by the Maryland Health Care Commission ("MHCC"). For purposes of this policy, the Pledge also applies to hospitals that need to file a CON for statutory reasons, but still commit not to seek a rate increase.

Additional amounts provided to hospitals as a result of these circumstances would be accounted for as slippage in the update factor in future years – as per current Commission policy.

Staff Response

Staff supports the idea of a less restrictive variable cost factor to fund capital projects in lieu of funding capital through rate increases. Commission staff believes it is appropriate to recognize the impact of the policy change from 100% to 85% variable cost on major capital projects. As noted, if a CON was filed and approved (along with the related Comfort Order) under the 100% variable cost policy, it was assumed that the incremental margin on additional volume could be used to help fund the capital requirements. When the HSCRC changed the variable cost policy to 85%, the hospitals' ability to generate incremental margins on additional volume was restricted. Staff further believes that hospitals that take the Pledge on major capital projects should also be considered for the 100% variable cost factor under this recommendation. In addition, staff proposes that the 100% variable cost factor policy be applied to efficient hospitals, under the Commission's ROC methodology, that filed a major capital project CON when the variable cost factor was 85% on a forward-funded basis.

Recommendations

Variable Cost Factor - In an attempt to recognize the impact that the change in the variable cost policy had on major capital projects and to encourage hospitals to take the Pledge, staff recommends that certain CON eligible projects (as defined below), where no rate application to generate additional dollars for capital has been filed, would be eligible for 100% variable cost for three years. The three-year eligibility period will begin during the month in which the capital project was placed in use for services regulated by the HSCRC. A hospital shall formally apply to the Commission to be considered for 100% variable costs under this recommendation.

A "major capital project" is defined as a capital project, the major portion of which includes space regulated by the HSCRC, that receives a CON from the Maryland Health Care Commission, or for which the hospital takes the Pledge and for which the actual project capital cost at the time the capital project is placed into service exceeds 50% of the hospital's net patient revenue (excluding markup) during the year in which the capital project is placed into service.³

The three scenarios where the 100% variable cost adjustment would apply to a hospital undertaking a major capital project include:

1. A project for which a hospital takes the Pledge;

³ "Actual project capital cost" is based on "capital costs" as defined in Part II, Project Budget, of the Hospital CON Application form used by MHCC and updated for the actual costs when the capital project is placed in use. It does not include financing cost or other cash requirements associated with the capital project and does not include working capital or start-up costs associated with the project.

2. A project previously authorized through an approved CON, when the variable cost factor was 85% and the CON was filed prior to October 13, 2010, if the hospital did not file a rate application; or
3. A project previously authorized through an approved CON, when the variable cost factor was 100%, if the hospital did not file a rate application.

A hospital that filed a rate application and received funding under the rate application will continue to receive the current variable cost factor of 85%.

Proposed Forward Funding Modification: In addition to the recommendation above, staff recommends implementing a mechanism where hospitals may formally apply to the Commission to receive a portion of the variable cost funding up-front (“forward funding”) if they meet certain standards. Forward funding would apply to a hospital that is eligible for the variable cost factor for a capital project under the recommendation above and:

1. has an approved CON that was filed prior to the 85% variable cost policy change;
2. has a major capital project as defined in the recommendation above; and
3. is considered an efficient provider, as determined by staff, under the HSCRC’s ROC methodology.

This forward funding recommendation does not apply to new projects.

If the above qualifying criteria are met, the hospital would be eligible to have a portion of the projected volume adjustments forward funded. The forward-funding amount would be determined by the HSCRC staff after considering the following factors:

- Cumulative volume adjustment applied to the hospital since 85% policy went into effect;
- The average state-wide cumulative volume adjustment for the same time period; and
- Anticipated volume changes over the prospective three-year period.

An eligible hospital could receive forward funding in the amounts approved beginning the month in which the capital project is placed into use for services regulated by the HSCRC. The Commission will then reduce rates in each of the subsequent three years commensurate with the forward funding amount (excluding the variance in the volume adjustment between 85% and 100%). Any volume adjustment for which a hospital is eligible that is *in excess* of the amounts received through forward-funding would be awarded in the future under the same timeline as provided under the recommendation above.

**Draft Staff Recommendation on Rate Methods and Financial Incentives
relating to Reducing Maryland Hospital Preventable Readmissions
(MHPRs)**

Health Services Cost Review Commission

October 13, 2010 Revised

This document represents a revised draft recommendation to be presented to the Commission on October 13, 2010. Comments on this recommendation should be directed to Robert Murray, Executive Director of the HSCRC, by Tuesday October 27, 2010.

1.0 - Background

Inpatient hospitalizations are one of the most costly categories of health care costs in the United States accounting for between 20-25% percent of total health care expenditures.¹ The Institute of Medicine has estimated that approximately 3% of US hospitalizations result in adverse events, and almost 100,000 patients die annually due to medical errors.² Reducing rates of hospital readmissions has, thus, attracted considerable attention from policy-makers as a way of improving quality and reducing costs.

Until recently, there has been limited information on the frequency and pattern of hospital readmissions and little ability to appropriately link hospital performance to payment in a responsible and meaningful way. Also, standard prospective payment systems, such as Medicare's Inpatient Prospective Payment System (IPPS) or Maryland's Charge per Case system (CPC) fail to provide incentives for hospitals to appropriately control the frequency of readmissions. Although the HSCRC incorporated a volume-related payment adjustment in 2008, there are few financial incentives for hospitals to invest in the necessary infrastructure to reduce unnecessary readmissions by reducing medical errors during the inpatient stay (that may lead to a repeat admission) or more actively cooperate with other providers to improve coordination of care post discharge.

Cost Implications of Readmissions and Wide Variation of Readmission Performance

In the Medicare program, inpatient care accounts for 37 percent of spending,³ and readmissions contribute significantly to that cost: 18 percent of all Medicare patients discharged from the hospital have a readmission within 30 days of discharge, accounting for \$15 billion in spending.⁴

In Maryland, the rate of readmissions is based on analysis of 2007 readmission data using the Potentially Preventable Readmissions (PPR) methodology:

- The top performing hospitals had risk/severity adjusted 15-day rates of readmission just below 4%
- The bottom performing hospitals had risk/severity adjusted 15-day rates of readmission just above 8%
- The 15-day readmission rate overall was 6.74%
- The 30-day readmission rate overall was 9.81%
- For readmissions in 15 days, there were \$430.4 million (5.3%) estimated associated charges
- For readmissions in 30 days, there were \$656.9 million (8.0%) estimated associated charges

¹ Catlin, A. et al. "National Health Spending in 2006: A Year of Change for Prescription Drugs," *Health Affairs*, January/February 2008, Vol. 27, No. 1, pp. 14-29.

² To Err is Human, The Institute of Medicine, November, 1999.

³ Medicare Payment Advisory Commission. 2006. Healthcare Spending and the Medicare Program: A Data Book. Washington DC: Medicare Payment Advisory Commission, p.9.

⁴ Medicare Payment Advisory Commission. 2007. Report to the Congress: *Promoting Greater Efficiency in Medicare*. Washington, DC: Medicare Payment Advisory Commission, p. 103.

According to a recent national study on readmissions of Medicare patients, Maryland appeared to have the second highest readmission rate (22%) of any jurisdiction in the U.S., with the District of Columbia at 23.2% (see **Appendix I** for a copy of this article and analysis).⁵

Factors Contributing to Unnecessary Readmissions

Multiple factors contribute to the high level of hospital readmissions in the U.S. generally and in Maryland in particular. They may result from poor quality care or from poor transitions between different providers and care settings. Such readmissions may occur if patients are discharged from hospitals or other health care settings prematurely; if they are discharged to inappropriate settings; or if they do not receive adequate information or resources to ensure a continued progression of services. System factors, such as poorly coordinated care and incomplete communication and information exchange between inpatient and community-based providers, may also lead to unplanned readmissions.

Hospital readmissions may also adversely impact payer and provider costs and patient morale. Some hypothesized in the 1980s that Medicare's implementation of IPPS would encourage physicians to discharge patients "sicker and quicker." That did not turn out to be a significant problem for the quality of inpatient care; yet, patients were discharged earlier, which may theoretically increase the risk of readmissions, resulting in greater costs to payers. Moreover, preliminary analysis suggests that the majority of readmissions are for medical services rather than surgical procedures, suggesting that hospital readmissions may not be profitable to hospitals.⁶

Reducing readmissions, then, represents a unique opportunity for policymakers, payers, and providers to reduce health care costs while increasing the quality of patient care. Identifying best practices and policy levers to reduce avoidable readmissions would likely improve quality, reduce unnecessary health care utilization and costs, promote patient-centered care, and increase value in the health care system. Moreover, as some individuals are at greater risk of readmissions as a result of individual characteristics, care coordination efforts that reduce hospital readmissions may help eliminate disparities in health care.

Clearly, there is an urgent need at both a state and national level to develop a set of payment reforms that can provide strong financial incentives for hospitals to reduce their rates of Potentially Preventable Readmissions (PPRs).⁷ The increasing focus in linking payment and quality (i.e., the

⁵ Jenks SF, Williams MV, Coleman EA, Rehospitalizations among Patients in the Medicare Fee-for-Service Program. *New England Journal of Medicine*. 360:1418-28, April 2, 2009.

⁶ Interviews with Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D. and Eric A. Coleman, M.D., M.P.H. May 2005.

⁷ Potentially Preventable Readmissions (PPRs) represent a categorical model developed by 3M Health Information Systems which categorizes and identifies return hospitalizations that may have resulted from the process of care and treatment or lack of post admission follow-up rather than unrelated events that occur post discharge.

overall value of the care provided) is motivated by the dramatic escalation in health care costs and the past inability of policymakers to measure and compare health outcomes.

If readmission rates are to serve as an overall measure of both quality and cost, it is necessary to apply an analytic approach that focuses on those readmissions that could have potentially been prevented. As the nation's only "All-Payer" rate setting system, and with its current use of the highly sophisticated All-Payer-Refined Diagnostic Related Grouping risk-adjustment and case mix classification system (APR-DRGs), the Maryland hospital payment system is uniquely positioned to make use of these readmission measurement systems and link relative hospital performance to financial incentives in a meaningful and productive way.

The following recommendation is intended to describe an approach for incorporating such a system of incentives into the Maryland hospital "All-Payer" payment system beginning in FY 2011.

2.0 - Using Payment Incentives to Reduce Unnecessary Readmissions in Maryland

Basic Principles for the Establishment of Payment Incentives

In developing its method for the incorporation of payment incentives for hospitals to reduce unnecessary readmissions, the HSCRC first identified a set of basic principles to help guide the Commission's overall effort.

1) Fairness in Measurement: First, there should be a focus on the development of appropriate adjustment factors to take into account systematic and less-controllable issues and factors that influence readmission rates that all hospitals may experience. Factors that were found to significantly influence readmission rates include age, the presence of mental health and substance abuse secondary diagnoses, disproportionate share effects (Medicaid status), and hospital location (hospitals near the state border will naturally have a higher proportion of their patients readmitted to hospitals outside of Maryland).

2) Broad Level of Applicability and Fairness in the Application of Rewards and Penalties: As the HSCRC learned during the course of development of its Maryland Hospital Acquired Conditions (MHACs) initiative, basing payment rewards and penalties on a hospital's relative rate of performance avoids problems generated by a focus on individual cases. Since readmissions are often the result of problems in the care processes relating to coordination and communication between hospitals and post-discharge care providers, a focus on systematic differences in readmission rates across hospitals (comparison of actual readmission rates relative to expected readmission rates by hospital) is appropriate and allows for a much broader level of application. However, a reward/penalty system that applies only to relative hospital performance in a given year does not address year to year changes in individual hospital readmission rates. The Commission may wish to consider the

application of a hybrid system of rewards and penalties, focusing both on relative hospital performance and year to year changes in hospital performance.

3) Prospective Application: During the process of the MHAC development, the HSCRC also realized the importance of prospective application of payment incentive programs linked to quality improvement. Individual hospital PPR rates should be compared to expected PPR rates (risk adjusted), and established targets should be set from a previous year so they are known in advance.

4) Emphasis on Infrastructure Development to Assist Hospitals in Reducing PPRs: A substantial effort should be made to facilitate hospitals' development of infrastructure and knowledge regarding best PPR-reducing mechanisms/strategies. The HSCRC and other entities (the Hospital Association - as demonstrated in states like Florida) can play a vital role in providing infrastructure support to hospitals to help them identify and implement best practices associated with readmission reduction.

5) Appropriate Level of Financial Incentive: Another important realization from the MHAC policy development process was the need to arrive at an appropriate level of financial risk for providers when establishing the link between provider payment and performance. For MHACs, the Commission decided to place hospitals under only a moderate level of risk in the early stages of the initiative. This was because the HSCRC wanted to give hospitals sufficient time to understand the methodology and make use of the available data tools to analyze their performance and put in place the clinical and operational changes necessary to improve performance.

The same arguments also apply to the introduction of payment incentives related to reducing PPRs. However, unlike MHACs, the incentives for reducing readmissions must take into consideration the significant counter-incentives the hospital will face in lost revenue from fewer readmissions. Eventually, the amount of revenue at risk for reducing PPRs must be sufficiently large to counterbalance loss of revenue due to reduced readmissions.

3.0 - Maryland Uniquely Positioned to Link Payment to Reduced Readmissions

Given the HSCRC's use of and experience with the APR-DRGs mechanism for both risk adjustment and revenue constraint, it is natural that the HSCRC might wish to consider the use of a complementary tool (Potentially Preventable Readmissions) as the basis for linking payment to performance related to the reduction of Maryland hospital readmissions. APR-DRGs and PPRs are products of 3M Health Information Systems and have been used in a number of other jurisdictions to measure and monitor rates of preventable hospital readmissions rates.

The following sections briefly identify and define the key components and steps involved in the application of the PPR methodology to measure relative hospital performance on their ability to reduce preventable readmissions.

Potentially Preventable Readmissions and PPR Logic

A **Potentially Preventable Readmission** is a readmission (return visit to a hospital within a specified period of time) that is clinically-related to an **Initial Hospital Admission**. For readmissions to be **“Clinically-Related”** to an initial admission, it is necessary that the underlying reason for readmission be plausibly related to the care rendered during or immediately following a prior hospital admission.

A clinically-related readmission may have resulted from the process of care and treatment during the prior admission (e.g., readmission for a surgical wound infection) or from a lack of post admission follow up (lack of follow-up arrangements with a primary care physician) rather than from unrelated events that occurred after the prior admission (broken leg due to a car accident) within a specified readmission window.

The **Readmission Window** (sometimes also referred to as the Readmission Interval) is the maximum number of days allowed between the discharge date of a prior admission and the admit date of a subsequent admission in order for the subsequent admission to be a readmission. Readmission analyses have traditionally focused on 30, 15, and 7 day readmission windows.

The Initial Admission is an admission that is followed by a clinically-related readmission within the specified readmission window. Subsequent readmissions relate back to the care rendered during or following the Initial Admission. The Initial Admission initiates a **“Readmission Chain.”**

Readmission Chains are a sequence of PPRs that are all clinically-related to the Initial Admission. A readmission chain may contain an Initial Admission and only one PPR, which is the most common situation, or may contain multiple PPRs following the Initial Admission. In addition to the “clinically-related” PPR APR-DRGs matrix, all readmissions with a principal diagnosis of trauma are considered not potentially preventable.

Use of APR-DRGs

Under this approach, APR-DRGs can be used as the basis for establishing the clinic relationship between the Initial Admission and the Readmission. In developing the PPR logic, a matrix was created in which there were 314 rows representing the possible base APR-DRGs of the Initial Admission, and 314 columns representing the base APR-DRGs of the readmission. Each cell in the matrix then represented a unique combination of a specific type of Initial Admission and readmission. Clinical panels applied criteria for clinical relevance and preventability to the combination of base APR-DRGs and each cell. The end result was that each of the 98,596 cells contain a specification of whether the combination of the base APR-DRGs for the Initial Admission and for the readmission were clinically-related, and, therefore, potentially preventable. This matrix operationalized the definition of “clinically-related” in the PPR logic.

Exclusions and Non-Events

There are certain circumstances in which a readmission cannot be considered potentially preventable. Some types of admissions require follow-up care that is intrinsically clinically-complex and extensive, and for which preventability is difficult to assess. For these reasons, admissions for major or metastatic malignancies, multiple trauma, and burns are not considered preventable and are globally excluded as an Initial Admission or readmission.

A second type of global exclusion relates to the discharge status of the patient in the Initial Admission. A hospitalization with a discharge status of “left against medical advice” is excluded as either an Initial Admission or readmission because under these circumstances, the hospital has limited influence on the care rendered to the patient. All types of globally-excluded admissions are classified as Excluded Admissions.

The following admissions are classified as Non-events: admissions to non-acute care facilities; Admissions to an acute care hospital for patients assigned to the base APR-DRG for rehabilitation, aftercare, and convalescence; Same-day transfers to an acute care hospital for non-acute care (e.g., hospice care).

Readmission Rates

The 3M PPR Grouper Software classifies each hospital admission as a PPR, Initial Admission, Transfer Admission, Non-event, Excluded Admission, or an Only Admission. The output from the PPR Grouper software can be used to compute PPR rates by computing the ratio of the number of PPR chains divided by the sum of admissions classified as an Initial Admission or an Only Admission.

Non-events, Transfer Admissions, Only Admissions that died, and Excluded Admissions are ignored in the computation of a PPR rate. PPR rates can be computed for readmission to any hospital or can be limited to readmissions to the same hospital only.

Since a hospital PPR rate can be influenced by a hospital’s mix of patient types and patient severity of illness during the Initial Admission, any comparison of PPR rates must be adjusted for case mix and severity of illness. A risk adjustment system such as APR-DRGs is necessary for proper comparisons of readmission rates. As discussed, higher than expected readmission rates can be an indicator of quality of care problems during the initial hospital stay or of the coordination of care between inpatient and outpatient settings.

Summary of PPR Logic

A readmission that is clinically-related to the prior Initial Admission or clinically-related to the Initial Admission in a readmission chain is a Potentially Preventable Readmission. A higher than expected rate of PPRs means that the readmissions could reasonably have been prevented through any of the following:

- 1) provision of quality care in the initial hospitalization;
- 2) adequate discharge planning;
- 3) adequate post discharge follow-up; and
- 4) coordination between the inpatient and outpatient health care team.

The end result of the application of the PPR logic is the identification of the subset of Initial Admissions that were followed by PPRs. Admissions that are at risk for having a readmission but were not followed by a subsequent readmission (such as Only Admissions) are also identified by the logic. The identification of Initial Admissions, PPRs, and at-risk Only Admissions allows meaningful PPR rates to be computed. A description of the PPR logic with definition of terms and concepts is provided in **Appendix II** to this recommendation.

4.0 – Primary Considerations in Deciding on a Payment Model

Evaluating Readmissions to the Same Hospital or All Hospitals?

The first question that should be addressed is whether to focus on readmissions to the same hospital that treated the initial admission or to evaluate readmissions to all hospitals. Using only readmissions to the same hospital (“intra-hospital admissions”) would capture most of the readmissions, and not require extensive additional risk-adjustments (given that the profile of a hospital’s patient population--age, mental health and indigent mix-- would likely be relatively stable from year to year). A focus on readmissions to the same hospital would also avoid most of the problems associated with attempting to track unique patients across different institutions and also encourage hospitals to improve their absolute rate of intra-hospital readmissions year to year.

However, focus exclusively on intra-hospital readmissions does not capture patients who were so dissatisfied with the initial treatment that they decided to go to a different hospital. Using admissions to all hospitals (“inter-hospital” readmissions) is clearly a more comprehensive approach.

In analyzing intra- and inter-hospital readmission rates, staff has identified patient-level data concerns that hinder the accurate tracking of patients over time within the same hospital, and

technical difficulties greater still across all hospitals. These concerns and technical difficulties encountered are discussed in the section below entitled Challenges to and Alternatives for Tracking Patients Within and Across Hospitals.

Challenges to and Alternatives for Tracking Patients Within and Across Hospitals

As noted above, data challenges have been identified and are a barrier to accurately tracking patient readmissions within and across hospitals, ultimately causing a delay in the implementation of the MHPR initiative in 2010.

Within Hospital Data Issues

To calculate intra-hospital (within the same hospital) readmission rates staff ran the PPR grouper on data using the assigned medical record number (MRN) to match patients over time. Concurrent with the running of the grouper, staff learned that hospitals were not consistently assigning a unique MRN that is constant over time in compliance with HSCRC inpatient and outpatient data submission requirements. Multiple MRN assignments cause readmissions rates to be under-represented and render hospital specific rates inaccurate.

Across Hospital Data Issues

Since there is no unique identifier (ID) assigned for Maryland hospitalized patients, staff has developed a method for assigning unique IDs for matching patients across hospitals who are readmitted using a probabilistic matching approach. The core premise of the algorithm used is to identify unique patients and assign unique IDs to patients with the same gender, date of birth and zip code who are hospitalized within the window of time specified in the MHPR policy (e.g., 30 days).

To further validate the algorithm, the aggregate results yielded from the matching algorithm have been compared with patient matching results from Florida where a unique patient ID is used, and Maryland estimates of aggregate readmission rates fit within the expected relationships of statewide within vs. across hospital readmissions, total readmission rates, and differences by payer. Although these errors do not appear to disproportionately affect one group/class of hospitals over another, staff continues to have the following concerns:

- based on data analysis, the algorithm produces false negative (an individual patient is incorrectly assigned more than one ID) and false positive (different patients are incorrectly assigned the same unique ID) results;
- the data errors are further amplified to the extent that hospitals have assigned multiple MRNs to a unique patient, and have errors in the patients' dates of birth (DOB), and zip code;
- the patient-level case mix data submitted to HSCRC by hospitals does not, staff believe, contain a sufficient amount of patient identifying information (e.g., last four digits of SSN, first

name, last name, etc.) to construct an algorithm that diminishes false negatives and false positives sufficiently to calculate statistically accurate hospital-specific readmission rates.

Out of State Data Issues

Comparable data are not available for admissions out-of-state. As mentioned, failure to account for out-of-state readmissions would reduce the readmission rates for hospitals located close to the border with other states or for hospitals such as large academic centers that draw larger percentages of out-of-state patients for initial treatment who may be readmitted in their home states.

Staff Efforts to Address Identified Data Issues

To address multiple MRN assignments to unique individuals for FY 2010:

- Staff issued a memorandum to hospitals on 5/24/10 advising hospitals of the MRN error and directing hospitals to identify those patients with changed MRNs to HSCRC by 9/28/10, consistent with the final closing date for submission of the Qtr 4 of the case mix data.
- Hospitals were directed to identify patients for whom they purposefully changed the MRN (e.g., changing a social security number MRN to a number that does not contain patient identifying information) and for those whom they inadvertently assigned more than one MRN (e.g., the registration clerk did not identify the MRN previously assigned when the patient presents for care and assigns a new MRN, but the billing department reconciles the patient identity in the patient accounts system).
- Based on the data HSCRC staff receives back from hospitals, staff will be able to make a determination as to the adequacy of the data corrections and whether it is sufficient to calculate accurate within hospital PPR rates for FY 2010 in early October 2010.
- Going forward, staff will identify data mismatch thresholds to identify hospitals likely to have more than an acceptable number of unique patients with multiple MRNs assigned.

Regarding the across hospital readmission data concerns, staff has worked over the last several months to identifying best practices in constructing unique patient IDs and on considering what options are plausible in Maryland. Staff interviewed 15 states that use statewide unique patient ID numbers. Staff has also discussed with AHRQ Maryland's interest in participating as one of ten states in an AHRQ technical assistance effort to support states in developing unique statewide patient IDs. If an algorithm cannot be constructed in the near term to identify patients such that the PPR grouper yields accurate hospitals-specific readmission rates across hospitals, a potential approach to address this is through the use of other comprehensive data that account for admissions and readmissions across hospitals in Maryland (see section entitled "Medicare and BlueCross Adjustment Factors" on Page 14).

To address the out of state readmission issue, staff again proposes the use of other comprehensive data that account for admissions and readmissions both in and out of Maryland (see section entitled “Medicare and BlueCross Adjustment Factors” on Page 14).

Additional Adjustment Considerations

If the Commission is to use an analysis that ranks hospitals on the basis of relative rates of readmissions within a given year, it will need to apply a series of adjustments for variations in the rate of potentially preventable readmissions among hospitals. The rate of readmissions would be calculated using the PPR software developed by 3M, with additional adjustments that are described in this section.

It would be appropriate to adjust for differences in age, mental health status, and Medicaid status, which have been found to be substantially correlated with the case mix adjusted readmission rate. Finally readmission rates should also be adjusted to reflect readmissions from Maryland hospitals to facilities outside of the State. This latter adjustment is necessary to account fairly for the natural outmigration of patients from Maryland hospitals located near the Maryland border. Failure to adjust for this outmigration would unfairly advantage Maryland hospitals in the Metropolitan DC area and other border areas of the State.

Calculation of Chain Weights

Previous PPR calculations were based on the number of readmissions, with all readmissions weighted equally. Clearly the costs associated with readmissions will vary by the type of initial admission. The calculation described in this section modifies the calculation of the relative PPR rates of the hospitals to take into account the chain weights as well as mix of initial admissions in chains by APR-DRG and Severity of illness (SOI).

The APR-DRG and SOI output by the PPR grouper are the standard ones, and not the groupings as modified by the HSCRC to split the mental health admissions based on voluntary/involuntary, and the splitting of the rehabilitation APR-DRGs. The weights developed for the HSCRC APR-DRGs were consolidated to produce weights that would be applicable to the standard APR-DRGs.

The weight for a re-admission chain was calculated by summing the APR-DRG/SOI weights for each readmission in the chain (not including the initial admission). These weights were then assigned to all readmission chains as the "actual" weight for the chain. The chain weights were then summarized by calculating the mean chain weight for all chains following an initial or only admission in a given APR-DRG/SOI. The resulting weight is the expected weight for readmissions following the initial or only admission in the particular APR-DRG/SOI. The rankings were then recalculated using these weights.

Options for Level of Adjustment to be Applied

1) Option 1 is to simply use the PPR rates themselves (counts of actual vs. expected readmissions). This is what has been presented in previous meetings.

2) Option 2 attempts to factor in the relative costliness of readmissions that follow an initial admission. As such it is most analogous to the MHAC methodology utilized by the Commission when attempting to differentiate hospital performance on the basis of Potentially Preventable Complications. In this instance, the PPR rate would be weighted by the expected weight associated with chains starting with the particular APR-DRG/SOI in the initial admission. This is the method used in the preceding discussion.

3) Option 3 would carry this logic of weighting the readmission chain by the actual weights of each readmission chain. In this option the PPR rate would be adjusted to account for the actual weight of readmissions in the subsequent chain.

4) Option 4, uses the Option 3 approach, but with some outlier threshold applied to limit the weight for which the initial hospital was accountable.

Each of the subsequent options beyond Option 1, are an attempt to refine the PPR rate analysis to make it fairer to individual hospitals and also to be a more accurate representation of actual and preventable additional resource use associated with preventable readmissions.

The HSCRC staff believes that Option 2 is the best compromise between accuracy and simplicity, and because it is the most consistent with the way in which the PPC calculations are being done. The following examples of each of these options should make them clearer. An expanded discussion of the four readmission chain weight options and the formulae for calculation of chain weights, and actual and expected values are shown in **Appendix II**.

Additional Adjustments Required

The following analysis used option 2 above for weighting purposes, data for fiscal years 2008 and 2009, the version 27.0 of the PPR grouper, and focused on readmissions within a 30-day readmission window. A longer readmission window would provide a more comprehensive approach to this analysis – as it captures cases that are potentially preventable but do not present immediately to hospitals in the form of a readmission.

PPR rates, adjusted by the weights of the readmission chains, were calculated by APR-DRG/SOI (risk adjusted) using the entire data set for both years. These statewide readmission rates were then used as the expected values in the analysis.

Adjustment for Age Category and Mental Health Status

The actual to expected, chain weight adjusted, PPR rates were calculated by age category and mental health status, and the ratio of the two was used as an adjustment factor for age category and mental health status. The age categories used were 0-17, 18-64, and 65 and older. The adjustment factors were as follows in Table 1:

Table 1 – Adjustment Factors for Age, Mental Health/Substance Abuse Secondary Diagnosis, and Medicaid Presence

Age category	Mental health diagnosis	Calculated factor
0 – 17	No	0.73
0 – 17*	Yes	0.73
18 – 64	No	0.95
18 – 64	Yes	1.05
65 and older	No	1.05
65 and older	Yes	1.07

* There are a small number of cases in age category 0 with positive mental health status, so the difference between the values is not significant. A combined factor of 0.73 should be used for all age category 0 cases independent of mental health status.

Adjustment for Medicaid as Primary of Secondary Payer

A chain was determined to be a Medicaid count if the principal or secondary payer was Medicaid or Medicaid HMO for any discharge for that patient in the data set. Using this definition of Medicaid, the Medicaid patients were found to have a substantially higher PPR rate than non-Medicaid patients. The adjustment factor for Medicaid was 1.188, and for non-Medicaid was 0.937 – a 25% difference. Given these results, adjustments should be made for age category, mental health status, and the patient's Medicaid status.

For patients with Medicaid as primary or secondary payer anywhere in the chain of readmissions, there was a significantly higher actual rate compared to the expected rate of readmissions than was explained solely by the APR DRG SOI category.

Medicare and Blue Cross Adjustment factors

In order to adjust for out-of-state readmissions, which would be expected to be higher for hospitals close to borders with other states, Medicare data was obtained for federal fiscal years 2007 and 2008.

The rate of PPRs was calculated by hospital, along with the expected rate using the statewide expected rates developed previously using all payers, and the age and mental health adjustment factors previously listed. The ratio of the actual to the expected was calculated by hospital, first using discharges to hospitals in any state, and then using just discharges from Maryland hospitals. The ratio of these two was the adjustment factor to be applied to adjust for out-of-state Medicare readmissions.

Staff also secured similar multi-state data from CareFirst Blue Cross of Maryland. This readmission factor calculated for Medicare data will be combined with the corresponding factor developed by Blue Cross to calculate an estimated adjustment factor for out-of-state readmissions.

For a majority of hospitals, the out of state readmission rates across the Medicare and CareFirst data were very consistent. In the case of a few hospitals, there are inconsistencies between the Medicare and CareFirst migration adjustment factors calculated. It may be necessary, therefore, to calculate an alternative out-of-state adjustment factor for these hospitals. Staff continues to work with the Department of Health and Mental Hygiene to develop a clean data set sufficient to calculate similar cross-state readmission rates from the Medicaid data. Thus far, it has not been possible to develop a similar adjustment using Medicaid data.

Staff can use the above-outlined methodology to calculate inter-hospital readmission rates within the state if an alternative to using HSCRC data is necessary in the short term, and will continue to work on these and other outstanding technical issues, but we believe that the data for out-of-state readmission rates will be sufficient to establish meaningful adjustment factors to allow for a fair and reasonable comparison across hospitals.

Proposed Payment Methodology

Staff believes that the first phase of a PPR-based payment policy in Maryland can be implemented with a structure similar to the payment structure used in linking payment to performance for MHACs and the Quality-Based Reimbursement (QBR) initiatives. This means that PPR payment would be structured by scaling a magnitude of at-risk system revenue, either positive or negative, across all hospitals at the time of the application of the annual update factor (in the case of MHACs, this

amount has been modeled using 0.5% of system revenue). As with MHACs and QBR, this first phase would be implemented in a revenue-neutral way with the precise magnitude of at-risk revenue determined in the context of anticipated future updates and the need to offset “counter-incentives” faced by the hospital, and other considerations.

Hybrid Model Recognizing Both Improvement and Attainment

While MHA has indicated it supports measurement of intra-hospital (within) readmissions that bases rewards and penalties on hospital improvement year-to-year, a model that focuses only on improvement will not recognize hospital performing relatively well on readmissions whose improvement levels may not be as high as those hospitals starting with worse readmission rates. Therefore, consistent with the Commission’s approach for the Quality Based Reimbursement initiative, staff believes the Commission should consider a reward/penalty system for readmissions that takes into consideration both hospital improvement year to year by measuring intra-hospital readmissions, and hospital attainment or “relative performance” by measuring inter-hospital performance. The pros and cons of each approach are illustrated in the table below.

Table 2. Intra- and Inter-Hospital Readmission Measurement Pros and Cons

	Pros	Cons
MHA Proposal: Intra-Hospital Readmission Measurement	<ul style="list-style-type: none"> • Less data challenges • Recognizes improvement • Lesser need for adjustments 	<ul style="list-style-type: none"> • Less fair: all readmissions not considered • Greater potential for gaming (e.g. readmit to another same system hospital)
Inter-Hospital Readmission Measurement	<ul style="list-style-type: none"> • Focus on attainment • Fairer: captures all readmissions • Recognizes attainment 	<ul style="list-style-type: none"> • Relatively more data challenges, particularly due to lack of unique patient ID • More complex/ need for adjustments

Appendix III shows the unadjusted readmission rates for intra-hospital, inter-hospitals and total readmission rates including those occurred out of state using Medpar 2008 data. Overall, 30% of readmissions within 15 days and 26% of readmissions within 30 days have at least one readmission in a hospital other than the original hospital where the initial admission occurred. In some hospitals this rate is as low as 2% while in others it is more than 50%. Compared to inter-hospital readmission rates, out of state migration is smaller and has less variation. Overall, only 4% of readmissions have at least one readmission in an out of state hospital, with a range of 0 to 25% among hospitals. These data illustrate the need to include inter-hospital readmission rates as well as out of state adjustments in measuring hospital relative performance.

Timing Considerations Related to Base and Performance Measurement Periods

MHA and HSCRC staff agree that it is of great import that we implement the MHPR initiative during the current fiscal year if it is technically possible to do so. Implementation of this initiative by January

1, 2011 necessitates that the initial measurement period begin this year starting December 1 using six months of performance. As the measurement period would be 12/1/10 to 6/30/11 (with one month additional in order to capture readmissions from the end of each period during the course of the 15-day readmission window), and the base period would be the same period the previous year, this would constitute overlap with the base and measurement periods recommended for the first full fiscal year. HSCRC staff will continue to work with the industry to identify and address the issues and implications of these potentially overlapping periods.

Infrastructure Development Considerations

The HSCRC staff believe it will be extremely appropriate and helpful to the MHPR initiative for the HSCRC to assist in the development of a MHPR Improvement Infrastructure to assist hospitals in their attempt to improve upon the processes of transitioning patients out of the hospital after an admission and otherwise decreasing the rates of readmission within the targeted Readmission Window (currently recommended to be 30 days post initial discharge).

The staff intends to recommend an approach that would at first be funded by means of a small assessment on hospital rates (0.01% is anticipated – generating approximately \$1 -1.2 million per year for at least the first two years). These funds are proposed to be used to obtain the technical assistance the state would need to establish an infrastructure using the Institute for Healthcare Improvement's State Action on Avoidable Rehospitalizations (STAAR) approach.

STAAR Overview

In May 2009, the Institute for Healthcare Improvement (IHI) launched State Action on Avoidable Rehospitalizations (STAAR). Initially funded through a grant from The Commonwealth Fund, STAAR is a multi-state, multi-stakeholder approach to dramatically improve the delivery of effective care at a regional scale.

The initiative aims to reduce rehospitalizations by working across organizational boundaries in a state or region. The work requires not only front-line process improvement, but also identification and mitigation of barriers to system-wide improvement, especially policy and payment reforms that will reduce fragmentation and encourage coordination across the continuum of care. The initiative has three high leverage opportunities for action:

- improving transitions for all patients, proactively addressing the needs of high risk patients, and
- engaging patients and their caregivers in assuming a proactive role in their plans.

STAAR was initially implemented in three states— Massachusetts, Michigan, and Washington— by engaging payers, state and national stakeholders, patients and families, and caregivers at multiple care sites and clinical interfaces. The work in the first three states is anticipated as a four year project.

As this work has progressed for one year, IHI has offered to make programming and information learned from the initiative available to Maryland. The initiative would provide both technical

assistance at the policy level and support provider efforts at the front line. Additional information about a proposed STAAR Initiative for Maryland may be found in **Appendix IV**.

During this two-year period of State support the HSCRC would contract with IHI to provide technical assistance to establish and run the initiative, a collaborative style model. After the first two years HSCRC would assess the ongoing need to fund ongoing technical assistance or other features of the STAAR initiative, and would seek matching and/or replacement funding from Federal or outside foundation sources as needed for the ongoing work..

Other Related Activity and Next Steps

Since the early spring of this year, HSCRC staff has convened a series of educational, technical and clinical vetting sessions for representatives of the Maryland hospital and payer industries.

HSCRC convened a clinical vetting session on September 28, 2010 with hospital clinical and coding personnel, HSCRC staff, and the developers of the 3M Health Information System tools utilized in the proposed MHPR methodology. The responses to comments requested and received in advance of the meeting were reviewed as well as other clinical questions raised. As a result of the session, a clinical subgroup of mental health and substance use clinical representatives, including the Maryland Psychiatric Society, will be convened by HSCRC toward the end of October to focus on specific clinical issues raised by the group. In addition, a second clinical vetting session is planned for late October/early November.

Starting this fall, staff is scheduling a series of meetings with MHA DHMH and the Maryland Patient Safety Center, the first of which is October 14, 2010, to discuss the organization, development, and funding of the MHPR Infrastructure Initiative as described above that would be designed to establish a Quality Improvement Program to assist Maryland hospitals in analyzing their own PPR performance and reducing their rates of Readmissions.

Staff will also re-convene the MHPR Technical Finance Work Group in order to address the outstanding technical and payment model issues identified.

Staff anticipates presenting a final recommendation for implementation of the MHPR payment methodology at the December Commission meeting.

Staff Draft Recommendations

Based on the staff work chronicled above and the input received thus far from the Maryland Hospital Preventable Readmission Work Group, for Rate Year FY 2011, the HSCRC staff makes the following draft recommendations:

1. Implement a rate-based approach for measuring PPRs where hospitals are evaluated both on their relative ranking in a given on inter-hospital readmission rates and on their year-to-year performance on intra-hospital readmissions rates;
2. Implement a hybrid system of rewards and penalties that will give equal weight to absolute attainment and year-to-year improvement in readmission rates;
3. For measuring performance on annual attainment, base the calculation of relative performance on inter-hospital readmission rates on an actual vs. expected PPR rates on a 15-day Readmissions Window;
4. Adjust individual hospital inter-hospital PPR performance by adjustment factors relating to: a) age splits; b) presence of mental health/substance abuse secondary diagnoses; c) disproportionate share effects; and d) out-of-state migration;
5. Base the relative hospital performance for purposes of scaling at-risk revenue on the actual number of weighted readmissions over the expected number of weighted readmissions (weighted by the chain weight), divided by the total case mix weight associated with the included initial or only admission at the hospital;
6. Also use PPR rates for evaluating within-hospital (intra-hospital) readmissions rate of performance that measures hospital readmission rate improvement in the performance period compared with the base period;
7. Implement scaling of hospital payment adjustments so that a hospital's performance on the PPR methodology, either positive or negative, is reflected at the time of its update factor - the magnitude of funds scaled (at-risk revenue) should be established in the context of future rate discussions;
8. Regarding base and performance measurement periods, consistent with the case mix lag recommendation approved by the Commission in the June 9, 2010 meeting, for future fiscal year adjustments, staff recommends incorporating a three month lag into the data periods used for readmission base and performance measurement. This would go into effect for rate year 2012. The base measurement period would be the thirteen month period of March 1, 2010 through March 31, 2011. The performance measurement period would be the thirteen month period from March 1, 2011 through March 31, 2012. Performance-based adjustments would be applied rate year 2013. The base and performance periods will be 13 months in duration, in order to capture readmissions from the end of each period during the course of the 15-day readmission window. Further, future measurement will recognize and incorporate needed adjustments related to the most current methodologies such as denials and one day stays. Any technical implementation issues, including the implications of overlap in measurement periods with the initial implementation and first fiscal year that follows, will be vetted with the MHPR Technical Finance Work Group and MHA's Financial Technical Issues Task Force as needed;

9. Consistent with the process for the establishment of the HSCRC's MHAC initiatives, provide a mechanism on an ongoing basis to receive input and feedback from the industry and other stakeholders to refine and improve the PPR logic;

10. Make a tracking tool reasonably accessible to hospitals so that they may track their performance throughout the measurement year;

11. Beginning in the Fall of 2010 and forward, work with the Institute for Healthcare Improvement, MHA, DHMH, the Maryland Patient Safety Center and representatives of the Maryland hospital and payer industries to develop and secure funding for a state-wide initiative Maryland Hospital Preventable Readmission Infrastructure and Quality Improvement Project utilizing the STAAR initiative model, which will provide technical assistance to implement the best methods to reduce preventable readmissions, provide assistance to hospitals to improve processes of transitioning patients out of the hospital after an acute care admission, and otherwise decrease the rate of hospital readmissions within the specified readmission time intervals.

Appendix I – NEJM Jencks Article on Readmissions

SPECIAL ARTICLE

Rehospitalizations among Patients in the Medicare Fee-for-Service Program

Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D.,
and Eric A. Coleman, M.D., M.P.H.

ABSTRACT

BACKGROUND

From an independent consulting practice, Baltimore (S.F.J.); the Division of Hospital Medicine, Northwestern University Feinberg School of Medicine, Chicago (M.V.W.); and the Care Transitions Program, Division of Health Care Policy and Research, University of Colorado at Denver, Denver (E.A.C.).

Reducing rates of rehospitalization has attracted attention from policymakers as a way to improve quality of care and reduce costs. However, we have limited information on the frequency and patterns of rehospitalization in the United States to aid in planning the necessary changes.

METHODS

We analyzed Medicare claims data from 2003–2004 to describe the patterns of rehospitalization and the relation of rehospitalization to demographic characteristics of the patients and to characteristics of the hospitals.

RESULTS

Almost one fifth (19.6%) of the 11,855,702 Medicare beneficiaries who had been discharged from a hospital were rehospitalized within 30 days, and 34.0% were rehospitalized within 90 days; 67.1% of patients who had been discharged with medical conditions and 51.5% of those who had been discharged after surgical procedures were rehospitalized or died within the first year after discharge. In the case of 50.2% of the patients who were rehospitalized within 30 days after a medical discharge to the community, there was no bill for a visit to a physician's office between the time of discharge and rehospitalization. Among patients who were rehospitalized within 30 days after a surgical discharge, 70.5% were rehospitalized for a medical condition. We estimate that about 10% of rehospitalizations were likely to have been planned. The average stay of rehospitalized patients was 0.6 day longer than that of patients in the same diagnosis-related group whose most recent hospitalization had been at least 6 months previously. We estimate that the cost to Medicare of unplanned rehospitalizations in 2004 was \$17.4 billion.

CONCLUSIONS

Rehospitalizations among Medicare beneficiaries are prevalent and costly.

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MEDICARE CURRENTLY PAYS FOR ALL rehospitalizations, except those in which patients are rehospitalized within 24 hours after discharge for the same condition for which they had initially been hospitalized. Recent policy proposals would alter this approach and create payment incentives to reduce the rates of rehospitalization. The Medicare Payment Advisory Commission (MedPAC) recommended to Congress in its report in June 2008 that hospitals receive from the Centers for Medicare and Medicaid Services (CMS) a confidential report of their risk-adjusted rehospitalization rates and that after 2 years, rates should be published. MedPAC also recommended complementary changes in payment rates, so that hospitals with high risk-adjusted rates of rehospitalization receive lower average per case payments. The commission reported that Medicare expenditures for potentially preventable rehospitalizations may be as high as \$12 billion a year.¹ In July 2008, the National Quality Forum adopted two measures of hospital performance based on the rate of rehospitalization,² and the CMS indicated an interest in making the rehospitalization rate a measure for value-based hospital payment.³ Reducing rehospitalization is an important element of President Barack Obama's February 2009 proposal for financing health care reform.⁴ Such proposals would radically change the accountability of hospitals for patients' outcomes after discharge.

These proposals addressing all-cause rehospitalization highlight the importance of understanding the factors that influence the disparate causes of rehospitalization. Although there is extensive literature on rehospitalization attributed to particular conditions, especially heart failure,⁵ there is very limited research addressing the broader issues involving the multitude of diseases and processes that contribute to rehospitalization. Until the 2007 MedPAC report (cited in the 2008 MedPAC report¹), there was, to our knowledge, no follow-up of the measurement of the overall Medicare rehospitalization rate that Anderson and Steinberg made in their seminal study in 1984.⁶ Building on the 2007 MedPAC report, we undertook this study to examine three key questions: What is the frequency of unplanned and planned rehospitalizations within 30 days after discharge? How long does the elevated risk of rehospitalization persist? What is the frequency of follow-up

outpatient visits with a physician after a patient's discharge from a hospital?

METHODS

DATA SOURCES

We used data from the Medicare Provider Analysis and Review (MEDPAR) file for the 15-month period from October 1, 2003, through December 31, 2004; the MEDPAR file does not contain any discharges from 855 critical access hospitals or discharges of patients who were enrolled in managed-care plans. Inpatient claims for individual patients were linked with the use of the Health Insurance Claim Number–Beneficiary Identification Code. To study follow-up visits, we used the 5% national sample of linked physician and hospital claims for 2003 that is maintained in the CMS Chronic Condition Data Warehouse.⁷ We used data from different intervals depending on the amount of previous or follow-up data that we needed for the analysis. The study design and procedures were approved by the Colorado Multiple Institutional Review Board.

ASSESSMENT OF REHOSPITALIZATION AND DIAGNOSES

We defined the rate of rehospitalization in the following way: the number of patients who were discharged from an acute care hospital and readmitted to any acute care hospital within 30 days divided by the total number of people who were discharged alive from acute care hospitals. We counted no more than one rehospitalization for each discharge. We excluded from the numerator and denominator patients who were transferred on the day of discharge to other acute care hospitals, including patients who were admitted to hospital specialty units, inpatient rehabilitation facilities, and long-term care hospitals (we included all other same-day rehospitalizations in our analyses). We also excluded patients who were rehospitalized for rehabilitation (diagnosis-related group [DRG] 462) within 30 days after discharge. We calculated rates over a 12-month period for the cohort that was discharged between October 1 and December 31, 2003, after determining that seasonal variation was less than 0.2 percentage point. In this calculation, data for a patient were censored when he or she was rehospitalized or died before hospitalization.

To examine the patterns of diagnoses at discharge and rehospitalization, we identified the five medical and five surgical DRGs that accounted for the largest number of rehospitalizations within 30 days after discharge and tabulated the 10 most frequent reasons for rehospitalization for each DRG. To estimate the fraction of rehospitalizations that might have been planned, we examined the 100 DRGs that are most frequently assigned to rehospitalized patients and ranked them according to whether planning was clinically plausible (e.g., rehospitalization for pneumonia is very unlikely to have been planned, whereas rehospitalization for placement of a stent could well be) and whether the rate of rehospitalization for the DRG showed the exponential rate of decrease that is characteristic of most DRGs when planned rehospitalization is unlikely (for details, see the Supplementary Appendix, available with the full text of this article at NEJM.org).

We calculated a hospital's expected rehospitalization rate as the rehospitalization rate expected if each of its Medicare discharges had the same rehospitalization risk as the national average for Medicare discharges in the same DRG (indirect adjustment). We used the ratio of observed to expected hospitalizations to stratify hospitals into quartiles and calculated differences in rehospitalization rates among hospitals with 1000 or more Medicare discharges.

We used the Medicare provider number to assess whether the patient was readmitted to the same hospital from which he or she had been discharged. We also tabulated length of stay and Medicare payment weights for DRGs (which are based on the average use of hospital resources for treatment of Medicare patients) for rehospitalized patients and for those who had not been hospitalized in the previous 6 months.

RELIABILITY OF DATA

Published definitions of DRGs include a classification of the diagnosis as medical or surgical. The CMS systematically audits the coding of DRGs. Dates of admission and discharge are tied to hospital billing systems, and errors may trigger audits or payment reviews. Whether a beneficiary is receiving dialysis treatment or is disabled is determined in the Medicare eligibility process. Discharge disposition is generally not used for payment and is often unreliable. We used black race, which is reported to be reliably coded, as a co-

variate but did not use Hispanic ethnic group, which is reported to be seriously undercoded.^{8,9}

STATISTICAL ANALYSIS

We used the Cox proportional-hazards model to assess patient-level predictors of rehospitalization. The number of days before rehospitalization represented the survival time, data were censored at the time of death or the end of the observation period, and covariates were the patient characteristics that were available in the MEDPAR file or that could be calculated from the information in it: the hospital's ratio of observed to expected hospitalizations, the national rehospitalization rate for the patient's DRG, race (black or nonblack), use or nonuse of dialysis, presence or absence of disability, sex, Supplemental Security Income (SSI) status, length of stay as compared with the national average for the DRG, number of hospitalizations in the preceding 6 months, and age group. We included the hospital's ratio of observed to expected hospitalizations as a covariate so that differences among hospitals would not obscure the effects of other predictors. Hospital-level characteristics, such as the number of beds, urban or rural location, and teaching or nonteaching status — characteristics that Anderson and Steinberg used in their analyses⁶ — are not available in the MEDPAR file, but their effect should be captured in the hospital's ratio of observed to expected hospitalizations. For this analysis we used discharges from April 1 through September 30, 2004, to allow 6 months for identifying previous hospitalizations. We performed all analyses with SAS software.¹⁰

RESULTS

FREQUENCY OF REHOSPITALIZATION

A total of 13,062,937 patients enrolled in the Medicare fee-for-service program were discharged from 4926 hospitals between October 1, 2003, and September 30, 2004; 516,959 of these patients were recorded as having died, and 690,276 went to other acute care settings, leaving 11,855,702 (90.8%) at risk for rehospitalization. Table 1 shows the cumulative percentage of rehospitalizations and outpatient deaths before rehospitalization by 30, 60, 90, 180, and 365 days after discharge for the cohort of Medicare patients discharged between October 1 and December 31, 2003; 19.6% of the patients were rehospitalized within 30 days,

Table 1. Rehospitalizations and Deaths after Discharge from the Hospital among Patients in Medicare Fee-for-Service Programs.

Interval after Discharge	Patients at Risk at Beginning of Period	Cumulative Rehospitalizations by End of Period <i>number (percent)</i>	Cumulative Deaths without Rehospitalization by End of Period
All discharges			
0–30 days	2,961,460 (100.0)	579,903 (19.6)	103,741 (3.5)
31–60 days	2,277,816 (76.9)	834,369 (28.2)	134,697 (4.5)
61–90 days	1,992,394 (67.3)	1,006,762 (34.0)	151,901 (5.1)
91–180 days	1,802,797 (60.9)	1,325,645 (44.8)	177,234 (6.0)
181–365 days	1,458,581 (49.3)	1,661,396 (56.1)	200,852 (6.8)
>365 days	1,099,212 (37.1)		
Discharges after hospitalization for medical condition			
0–30 days	2,154,926 (100.0)	453,993 (21.1)	87,736 (4.1)
31–60 days	1,613,197 (74.9)	653,998 (30.3)	113,188 (5.3)
61–90 days	1,387,740 (64.4)	788,535 (36.6)	127,274 (5.9)
91–180 days	1,239,117 (57.5)	1,032,141 (47.9)	147,851 (6.9)
181–365 days	974,934 (45.2)	1,280,579 (59.4)	166,561 (7.7)
>365 days	707,786 (32.8)		
Discharges after hospitalization for surgical procedure			
0–30 days	806,534 (100.0)	125,910 (15.6)	16,005 (2.0)
31–60 days	664,619 (82.4)	180,371 (22.4)	21,509 (2.7)
61–90 days	604,654 (75.0)	218,227 (27.1)	24,627 (3.1)
91–180 days	563,680 (69.9)	293,504 (36.4)	29,383 (3.6)
181–365 days	483,647 (60.0)	380,817 (47.2)	34,291 (4.3)
>365 days	391,426 (48.5)		

34.0% within 90 days, and 56.1% within 365 days. About two thirds (62.9%) of Medicare fee-for-service beneficiaries who were discharged (67.1% after hospitalization for a medical condition and 51.5% after hospitalization for a surgical procedure) were rehospitalized or died within a year. To avoid double counting, we do not report deaths that occurred during or after rehospitalization. When we omitted cases of end-stage renal disease and included same-day readmissions, as Anderson and Steinberg did,⁶ the 60-day rate of rehospitalization was 31.1%.

REASONS FOR REHOSPITALIZATION

Table 2 shows the five medical and five surgical reasons for the index (i.e., initial) hospitalization that were associated with the largest number of

rehospitalizations and the top 10 reasons for rehospitalization for each index reason. Most rehospitalizations (84.4% among patients who were discharged after initial hospitalization for medical conditions and 72.6% among patients who were discharged after surgical procedures) were for medical diagnoses. The 100 most frequent rehospitalization DRGs accounted for 73.2% of total rehospitalizations. Among the rehospitalizations ascribed to these 100 DRGs, 10% belonged to 19 DRGs, such as chemotherapy and stent insertion, for which we estimated that planned rehospitalizations were probably an important part of total rehospitalizations (see the Supplementary Appendix). We did not attempt to estimate the percentage of these rehospitalizations that were actually planned.

Table 2. Highest Rates of Rehospitalization and Most Frequent Reasons for Rehospitalization, According to Condition at

Condition at Index Discharge	30-Day Rehospitalization Rate	Proportion of All Rehospitalizations		
			Most Frequent	2nd Most Frequent
			<i>percent</i>	
Medical				
All	21.0	77.6	Heart failure (8.6)	Pneumonia (7.3)
Heart failure	26.9	7.6	Heart failure (37.0)	Pneumonia (5.1)
Pneumonia	20.1	6.3	Pneumonia (29.1)	Heart failure (7.4)
COPD	22.6	4.0	COPD (36.2)	Pneumonia (11.4)
Psychoses	24.6	3.5	Psychoses (67.3)	Drug toxicity (1.9)
GI problems	19.2	3.1	GI problems (21.1)	Nutrition-related or metabolic issues (4.9)
Surgical				
All	15.6	22.4	Heart failure (6.0)	Pneumonia (4.5)
Cardiac stent placement	14.5	1.6	Cardiac stent (19.7)	Circulatory diagnoses (8.5)
Major hip or knee surgery	9.9	1.5	Aftercare (10.3)	Major hip or knee problems (6.0)
Other vascular surgery	23.9	1.4	Other vascular surgery (14.8)	Amputation (5.8)
Major bowel surgery	16.6	1.0	GI problems (15.9)	Postoperative infection (6.4)
Other hip or femur surgery	17.9	0.8	Pneumonia (9.7)	Heart failure (4.8)

* Index conditions listed within medical and surgical groups are in order of decreasing total number of rehospitalizations within 30 days after discharge. The diagnosis-related group (DRG) numbers for the conditions listed are as follows: acute myocardial infarction: 121, 122, 123, 516, 526; arrhythmias: 138, 139; amputation: 113; cardiac stent: 517, 527; chest pain: 143; circulatory disorders: 124; COPD: 088; depression: 429; drug toxicity: 449; drug or alcohol misuse: 521; fracture of hip or pelvis: 236; gastrointestinal bleeding: 592; gastrointestinal problems: 182, 183, 184; heart failure: 127; major bowel surgery: 148, 149; major hip or knee problems: 209; nutrition-related or metabolic issues: 296, 297, 298; operation for infection: 415; organic mental conditions: 429; other hip or femur surgery: 210; other circulatory diagnoses: 144; other vascular surgery: 478, 479; pneumonia: 79, 80, 81, 89, 90, 91; postoperative infection: 418; psychoses: 430; pulmonary edema: 087; rehabilitation: 462; renal failure: 316; respiratory or ventilation issues: 475; septicemia: 416, 417; and urinary tract infection: 320, 321, 322. COPD denotes chronic obstructive pulmonary disease, and GI gastrointestinal.

Index Discharge.*			
Reason for Rehospitalization			
3rd Most Frequent	4th Most Frequent	5th to 10th Most Frequent	Less Frequent
<i>percent of all rehospitalizations within 30 days after index discharge</i>			
Psychoses (4.3)	COPD (3.9)	GI problems, nutrition-related or metabolic issues, septicemia, GI bleeding, renal failure, urinary tract infection (17.0)	All other (58.9)
Renal failure (3.9)	Nutrition-related or metabolic issues (3.1)	Acute myocardial infarction, COPD, arrhythmias, circulatory disorders, GI bleeding, GI problems (14.0)	All other (36.9)
COPD (6.1)	Septicemia (3.6)	Nutrition-related or metabolic issues, GI problems, respiratory or ventilation problems, pulmonary edema, GI bleeding, urinary tract infection (14.9)	All other (38.9)
Heart failure (5.7)	Pulmonary edema (3.9)	Respiratory or ventilation problems, GI problems, nutrition-related or metabolic issues, arrhythmias, GI bleeding, acute myocardial infarction (12.5)	All other (30.3)
Drug or alcohol misuse (1.6)	Pneumonia (1.6)	Chest pain, nutrition-related or metabolic issues, depression, GI problems, COPD, organic mental conditions (7.0)	All other (20.6)
Pneumonia (4.3)	Heart failure (4.2)	Major bowel surgery, urinary tract infection, septicemia, GI bleeding, COPD, chest pain (13.4)	All other (52.1)
GI problems (3.3)	Septicemia (2.9)	Nutrition-related or metabolic issues, postoperative infection, placement of cardiac stent, GI bleeding, operation for infection (14.6)	All other (68.7)
Chest pain (6.1)	Heart failure (5.7)	Atherosclerosis, acute myocardial infarction, GI bleeding, GI problems, arrhythmias, other vascular surgery (19.4)	All other (40.6)
Pneumonia (4.2)	Postoperative infection (3.1)	GI problems, GI bleeding, heart failure, operation for infection, rehabilitation, nutrition-related or metabolic issues (15.8)	All other (60.6)
Heart failure (5.0)	Other circulatory problems (4.4)	Postoperative infection, other circulatory procedures, operation for infection, peripheral vascular disorders, pneumonia, septicemia (19.0)	All other (51.0)
Nutrition-related or metabolic issues (5.6)	GI Obstruction (4.3)	Pneumonia, major bowel surgery, renal failure, septicemia, operation for infection, GI bleeding (15.4)	All other (52.4)
Septicemia (4.7)	GI bleeding (4.0)	Urinary tract infection, fracture of hip or pelvis, other hip or femur surgery, aftercare, nutrition-related or metabolic issues, major hip or knee problems (20.7)	All other (56.1)

GEOGRAPHIC PATTERN

Figure 1 shows the geographic pattern of rates of rehospitalization within 30 days after discharge in the United States and two of its territories. The rehospitalization rate was 45% higher in the five states with the highest rates than in the five states with the lowest rates.

HOSPITALS

Except as noted, the following results are for hospitals with 1000 or more annual Medicare discharges. The correlation of the number of patients discharged with rehospitalization rates was low ($r = -0.11$, $P < 0.001$). Hospitals with a ratio of observed to expected hospitalizations in the high-

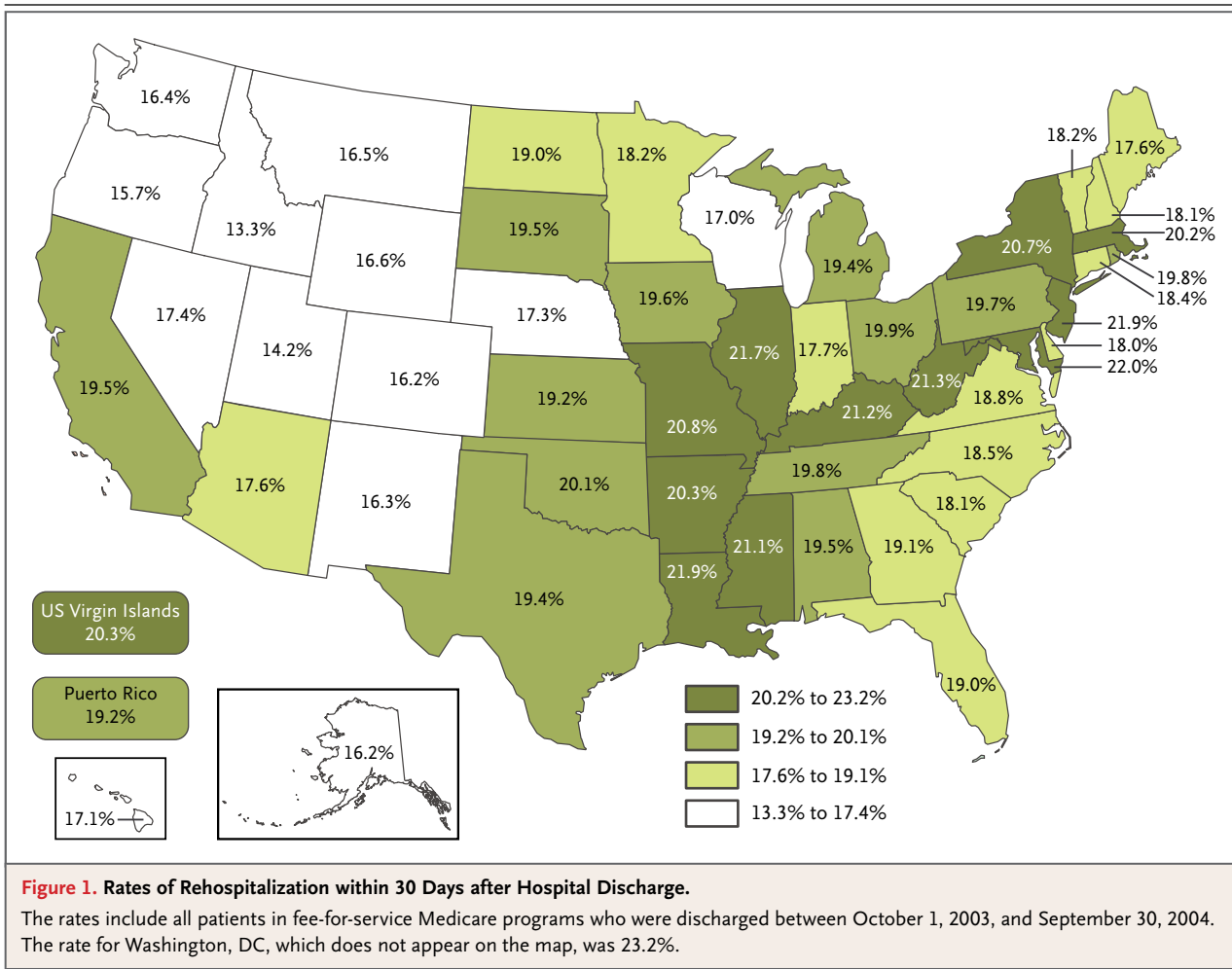


Figure 1. Rates of Rehospitalization within 30 Days after Hospital Discharge.

The rates include all patients in fee-for-service Medicare programs who were discharged between October 1, 2003, and September 30, 2004. The rate for Washington, DC, which does not appear on the map, was 23.2%.

est quartile had an expected 30-day rehospitalization rate of 20.6%, as compared with their observed rate of 26.1%. The corresponding rates for hospitals in the lowest quartile were 18.7% and 14.3%, respectively. One quarter (25.1%) of the admissions in hospitals in the highest quartile came from rehospitalizations within 30 days after discharge (as compared with 17.0% of admissions in all hospitals and 13.1% of admissions in hospitals in the lowest quartile).

The rehospitalization rate that was expected on the basis of DRGs strongly predicted the observed rate ($R^2=0.276$, $P<0.001$). Unadjusted hospital rates correlated strongly with DRG-adjusted rates ($r=0.975$, $P<0.001$); rehospitalization rates 30 and 90 days after discharge also correlated strongly ($r=0.953$, $P<0.001$). In the case of hospitals with 1000 or more Medicare discharges, 24.4% (interquartile range, 17.4 to 29.5) of the

patients who were rehospitalized within 30 days were admitted to another hospital; in the case of hospitals with fewer than 1000 discharges, 44.2% (interquartile range, 23.6 to 60.0) of the patients were admitted to another hospital.

PATIENTS

The average hospital stay for rehospitalized patients was 0.6 day (13.2%) longer than the stay for patients in the same DRG who had not been hospitalized within the previous 6 months (2,962,208 patients) ($P<0.001$). The average Medicare payment weight is 1.41 for index hospitalizations and 1.35 for rehospitalizations. Table 3 shows the relative risk of rehospitalization within 30 days after discharge that was associated with each of the variables we analyzed. The reason for the index hospitalization (i.e., the DRG), the number of previous hospitalizations, and the length of stay had more

influence on the risk of rehospitalization than demographic factors such as age, sex, black race, SSI status, and presence or absence of disability.

OUTPATIENT VISITS

Figure 2 shows the percentage of patients discharged to the community after hospitalization for medical conditions and subsequently rehospitalized for whom there was no bill for an outpatient physician visit between the time of discharge and rehospitalization; both the percentage on each day after discharge and the cumulative percentage are shown. There was no associated bill for an outpatient visit for 50.1% of the patients who were rehospitalized within 30 days after discharge and for 52.0% of those who were rehospitalized for heart failure within 30 days after discharge.

DISCUSSION

The 19.6% rate of rehospitalization within 30 days after discharge that we report for Medicare beneficiaries in 2003–2004 is consistent with the rate in MedPAC's 2008 report of 2005 data (17.6% at 30 days),¹ and the difference probably reflects methodologic differences rather than a temporal trend. We found that the rehospitalization rate at 60 days was 31.1% when we analyzed the data in the same way as Anderson and Steinberg, who reported a rate of 22.5% at 60 days for the 1976–1978 period.⁶ This larger difference is more likely to indicate an actual increase in rehospitalization rates over time, perhaps owing to a shorter duration of index hospitalization or to the increase in ambulatory surgery over the past 30 years. Friedman and Basu found that among persons 18 to 64 years of age in five states, the rate of rehospitalization for any reason within 6 months after discharge was 81% of the rate among those older than 64 years of age,¹¹ which is consistent with our finding that the rehospitalization rate was only weakly related to age.

Our analysis also shows that the risk of rehospitalization after discharge persists over time (Table 1). Further studies will be needed to understand the relative contributions to this risk of failures in discharge planning, insufficient outpatient and community care, and severe progressive illness.

This study was limited by our reliance on Medicare billing data, which provide an incom-

Table 3. Predictors of Rehospitalization within 30 Days after Discharge.*

Variable	Hazard Ratio (95% Confidence Interval)
Hospital's ratio of observed to expected hospitalizations†	1.097 (1.096–1.098)
National rehospitalization rate for DRG†	1.268 (1.267–1.270)
No. of rehospitalizations since October 1, 2003	
0	1.00
1	1.378 (1.374–1.383)
2	1.752 (1.746–1.759)
≥3	2.504 (2.495–2.513)
Length of stay	
>2 times that expected for DRG	1.266 (1.261–1.272)
0.5–2 times that expected for DRG	1.00
<0.5 times that expected for DRG	0.875 (0.872–0.877)
Race‡	
Black	1.057 (1.053–1.061)
Other	1.00
Disability	1.130 (1.119–1.141)
End-stage renal disease	1.417 (1.409–1.425)
Receipt of Supplemental Security Income	1.117 (1.113–1.122)
Male sex	1.056 (1.053–1.059)
Age	
<55 yr	1.00
55–64 yr	0.983 (0.978–0.988)
65–69 yr	0.999 (0.989–1.009)
70–74 yr	1.023 (1.012–1.035)
75–79 yr	1.071 (1.059–1.084)
80–84 yr	1.101 (1.089–1.113)
85–89 yr	1.123 (1.111–1.136)
>89 yr	1.118 (1.105–1.131)

* Data are for patients in Medicare fee-for-service programs who were discharged from the hospital between April 1, 2004, and September 30, 2004, and were followed until October 31, 2004. Data were analyzed with the use of the Cox proportional-hazards model. $P < 0.001$ for all variables except an age of 65 to 69 years. DRG denotes diagnosis-related group.

† These estimates are standardized.

‡ Race was determined from MEDPAR files.

plete picture and contain some unreliable elements, and on DRGs, which are not fully adjusted for severity of illness. Unmeasured differences in severity of illness might bias comparisons of rehospitalization rates across states, hospitals, and demographic groups. However, DRG adjustment is a moderately strong predictor of the rehospitalization rate ($R^2 = 0.276$), so the very high

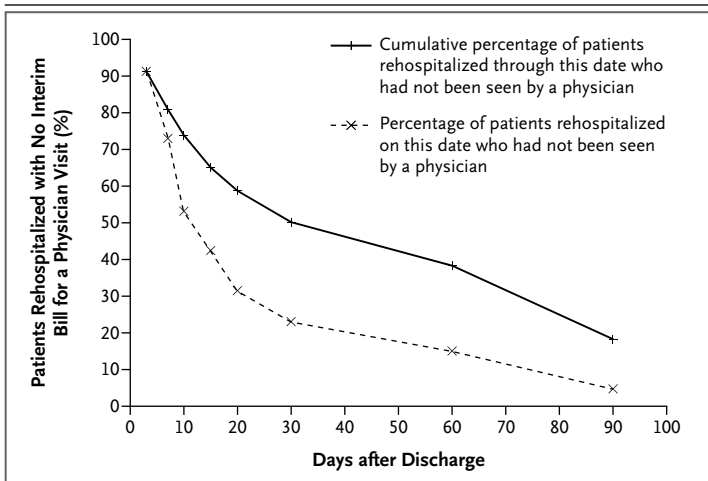


Figure 2. Patients for Whom There Was No Bill for an Outpatient Physician Visit between Discharge and Rehospitalization.

Data are for patients in fee-for-service Medicare programs who were discharged to the community between January 1, 2003, and December 31, 2003, after an index hospitalization for a medical condition. Data are derived from claims maintained in the Chronic Condition Data Warehouse of the Centers for Medicare and Medicaid Services.

correlation between unadjusted and DRG-adjusted hospital-level rates suggests that additional adjustment for risk may not add greatly to the analysis of rehospitalization rates. In addition, our assessment of outpatient follow-up was limited by the use of billing data that do not capture most visits to nonphysician providers.

Fisher et al.¹² have argued that the availability of hospital beds induces demand without improving health and that the availability of a bed may also facilitate hospitalization if a patient's condition deteriorates, but we were unable to link measures of the number of hospital beds in a community to the data analyzed here. Nevertheless, their argument bears directly on the question of whether higher rehospitalization rates are evidence of better care or just more care. Similarly, better access to primary care and better continuity of care may reduce the number of rehospitalizations, but we have no data on where in the United States these features are provided, nor do we know where a "medical home"¹³ — an enhanced primary care coordinator for all of a patient's care — has been adopted.

Five lines of evidence suggest that rates of rehospitalization might be reduced. First, controlled studies¹⁴⁻¹⁶ have shown that certain interventions at the time of discharge sharply reduce the rates

of rehospitalization among patients with heart failure and other Medicare beneficiaries, and preliminary reports suggest that these and other interventions are more effective when used more widely. In contrast, coordination-of-care interventions that are limited to community settings appear to be ineffective in reducing rehospitalization.¹⁷ Research also shows that supportive palliative care can reduce rehospitalization and increase patient satisfaction.¹⁸ In addition, the Quality Improvement Organizations appear to have reversed a national trend of increased hospitalizations from home settings by working with individual agencies that provide home health care.¹⁹

Second, the absence of a bill for an outpatient physician visit in the case of more than half of the patients with a medical condition who were readmitted within 30 days after discharge to the community is of great concern and suggests a considerable opportunity for improvement. Our concern is heightened by the same finding among patients with heart failure, who are known to have a response to intensified care.²⁰ Hospitals and physicians may need to collaborate to improve the promptness and reliability of follow-up care.

Third, although claims data are less informative about follow-up care after surgical procedures (because of the global surgical fee), many patients who are discharged after a surgical procedure may benefit from earlier medical follow-up, since a substantial majority of postsurgical rehospitalizations are for medical conditions.

Fourth, our estimate that 90% of rehospitalizations within 30 days after discharge are unplanned suggests that rehospitalization is probably not primarily driven either by clinical practices (e.g., staged surgery) that cannot be efficiently rendered in one hospitalization or by profit-seeking division of services into multiple hospitalizations.

Fifth, the variation among states (Fig. 1) and hospitals suggests that improvement on a national scale may be possible, but the data do not show which practices cause the differences or whether the differences are exportable.

Medicare payments for unplanned rehospitalizations in 2004 accounted for about \$17.4 billion of the \$102.6 billion in hospital payments from Medicare,²¹ making them a large target for cost reduction. (This cost estimate is derived by multiplying the 19.6% rehospitalization rate by 90%,

which represents the percentage of unplanned rehospitalizations, and multiplying that product by 96%, since DRG-based payments for rehospitalizations are 4% lower than those for index hospitalizations.) Convincing estimates of potential savings must await evaluation of large-scale improvement efforts.

Although the care that prevents rehospitalization occurs largely outside hospitals, it starts in hospitals. In a quarter of the hospitals, about 25% of the admissions are rehospitalizations that occur within 30 days after discharge. Cynics may suggest that preventing rehospitalization is not in the financial interest of hospitals, but our analysis suggests a more complex picture. Rehospitalizations may not be profitable for many hospitals. Although the average length of stay for rehospitalized patients was 0.6 day more than that for patients in the same DRG whose most recent hospitalization had been at least 6 months previously, DRG-based payments would be largely the same. For a hospital with excess capacity, there may be as much financial benefit from rehospitalizations as from first-time admissions, but for a hospital that manages its capacity more carefully, there may not.

Almost all hospitals will need help in gauging their performance with respect to rehospitalizations, because they have no access to data on the 20 to 40% of their patients who are rehospitalized elsewhere. Only holders of all-hospital discharge data, such as governments and other third-party payers, have the ability to track patients across providers and systems. Medicare could help by providing data on all Medicare rehospitalizations (suitably de-identified) to help hospitals and communities better understand their performance.

Our analysis generally confirms Anderson and Steinberg's findings regarding the value of demographic factors in predicting the risk of rehospitalization,⁶ but it shows that previous rehospitalization, a longer index hospitalization as compared with the norm for the DRG, the need for dialysis, and the DRG to which the patient is assigned at the end of the stay are more powerful predictors. However, when the typical patient has almost two chances in three of being rehospitalized or of dying within a year after discharge, it is probably wiser to consider all Medicare pa-

tients as having a high risk of rehospitalization. For example, ensuring that a follow-up appointment with a physician is scheduled for every patient before he or she leaves the hospital is probably more efficient than trying to identify high-risk patients and arranging follow-up care just for them.

Rehospitalization is a frequent, costly, and sometimes life-threatening event that is associated with gaps in follow-up care. We are beginning to understand that the rate of rehospitalization can be reduced with the implementation of more reliable systems, but it would be premature to predict how much reduction can be achieved. Although the rehospitalization rate is often presented as a measure of the performance of hospitals, it may also be a useful indicator of the performance of our health care system.²² From a system perspective, a safe transition from a hospital to the community or a nursing home requires care that centers on the patient and transcends organizational boundaries. Our purpose in this report has been to strengthen the empirical foundation for designing and providing such care.

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Appendix II – Chain Weight Options and formulae for calculation of chain weights, and actual and expected values

Formulae for calculation of chain weights, and actual and expected values

Let W_i be the case mix weight for a case in APR-DRG/SOI i .

If chain j has n readmissions with weights w_{jk} , $k=1, \dots, n$, then:

$$c_j = \text{chain weight for chain } j = \sum_k w_{jk}$$

where the index k runs from 1 to n .

The expected chain weight for a chain starting with a discharge with an initial APR-DRG/SOI of i is:

$$e_i = \sum_j c_j / n_i$$

where the summation runs over all the readmission chains starting with an initial APR-DRG/SOI of i and n_i is the number of readmission chains starting with an initial APR-DRG/SOI of i .

Assign an expected chain weight to each readmission chain, and an expected chain weight of zero to each only admission, call these g_i .

Calculate the statewide expected chain weight for each only or initial admission in APR-DRG/SOI i . This is:

$$f_i = e_i \times \frac{(\# \text{ initial admissions with APR-DRG/SOI } i)}{(\# \text{ of initial or only admissions with } i)}$$

For all APR-DRG/SOI i , assign f_i to each initial or only admission i .

The readmission index for a hospital is then:

$\sum g_n / \sum f_n$, where n runs over all initial or only admissions at the hospital.

It should be noted that this calculation does not take account of the adjustment factors for age category, mental health status or Medicaid status. These factors can be applied to the individual expected numbers f_i before the final summation.

Option 1: PPR rate

In this option all readmission chains are counted, and they all have equal weight. The APR-DRG/SOIs will have different proportions of readmissions associated with them, and the expected readmission rate for a hospital is adjusted using these different proportions.

In each of the options we will consider the same 2 cases with initial admissions in:

Case 1: APR-DRG/SOI 811.1 - allergic reaction / minor

Case 2: APR-DRG/SOI 161.4 - cardiac defibrillator and heart assist implant/ extreme.

Under Option 1 readmission chains following either of these initial admissions are counted as equal.

Option 2: Expected chain weight

The chain weight is the mean case mix weight associated with readmissions following a given APR-DRG/SOI. The chain weights are used to calculate both the actual and expected PPR rates for each hospital. Thus, the hospital is being held accountable for the proportion of readmission chains within each APR-DRG/SOI, and these are weighted by the expected chain weight for the APR-DRG/SOI, but not for the actual case mix weights of the readmissions.

The expected chain weights vary from .3 to 7.6. with a median value of 1.26.

APR-DRG/SOI 811.1 (minor allergic reaction) has a chain weight of 0.53, while 161.4 (cardiac defibrillator and heart assist implant) has a chain weight of 1.93. Under Option 1 a readmission chain following 811.1 would have the same impact as a readmission chain following an initial admission in 161.4. Under Option 2 the readmission chain following 161.4 would be weighted with the chain weight of 1.93.

In neither case would any account be taken of the actual case mix weights of the readmissions that occurred.

Case 1: Expected and actual weight is 0.53

Case 2: Expected and actual weight is 1.93

Option 3: Actual and expected chain weights

The chain weight is the mean case mix weight associated with readmissions following a given APR-DRG/SOI. The chain weights are used to calculate the expected PPR rates for each hospital. The actual case mix weights for the readmissions would be used to calculate the actual PPR rate for the hospital. Thus, the hospital is being held accountable for both the proportion of readmission chains within each APR-DRG/SOI, and the case mix weights for the actual readmissions.

A chain with an initial APR-DRG/SOI of 161.4 would have an expected chain weight of 1.93, but its actual chain weight would be the sum of the case mix weights for the readmissions that actually occurred following that particular initial admission.

Since some chains can be quite long, and the case mix weights associated with some of the readmissions can be high, it would be desirable to place a limit, or outlier threshold, on the chain weights used in the actual PPR rate calculation, which leads to option 4. The individual chain weights range from 0 to 35.

Case 1: Expected weight is 0.53, actual weight anywhere from 0.26 to 0.76.

Case 2: Expected weight is 1.93, actual weight anywhere from 0.45 to 8.5.

Option 4: Option 3 with an outlier

The non-zero individual chain weights range from 0.16 to 35. Only 1% have a chain weight greater than 10. To reduce the risk an outlier threshold should be applied if option 3 is selected.

Appendix III – Inter- and Intra- hospital Rates of Preventable Readmissions (Medpar Data 2008)

**UNADJUSTED INTRA AND INTER HOSPITAL AND OUT OF STATE READMISSION RATES,
CY2008 MEDICARE DATA**

PROVIDER NAME	15 DAY READMISSION INTERVAL			30 DAY READMISSION INTERVAL			ADJUSTMENT FACTORS			
	INTRA HOSPITAL	INTRA & INTER HOSPITAL	TOTAL W/ OUT OF STATE	INTRA HOSPITAL	INTRA AND INTER HOSPITAL	TOTAL W/ OUT OF STATE	INTRA/INTER HOSPITAL		OUT OF STATE	
							15 DAY	30 DAY	15 DAY	30 DAY
Washington County Hospital	7.20%	7.48%	7.76%	11.11%	11.54%	11.96%	1.028	1.024	1.055	1.04
Univ. of Maryland Medical System	6.36%	12.16%	12.48%	9.29%	17.32%	17.72%	1.864	1.798	1.044	1.04
Prince Georges Hospital	7.70%	11.39%	12.19%	11.41%	17.03%	18.63%	1.429	1.417	1.134	1.15
Holy Cross Hospital of Silver	5.71%	8.20%	8.62%	9.27%	13.08%	13.50%	1.397	1.354	1.088	1.06
Frederick Memorial Hospital	7.90%	8.63%	8.84%	12.42%	13.44%	13.71%	1.082	1.067	1.038	1.03
Harford Memorial Hospital	8.75%	11.29%	11.47%	13.25%	16.09%	16.28%	1.248	1.150	1.028	1.02
St. Josephs Hospital	6.20%	9.22%	9.39%	9.03%	13.67%	13.83%	1.456	1.471	1.024	1.01
Mercy Medical Center, Inc.	6.03%	9.77%	9.86%	8.98%	13.89%	14.06%	1.561	1.466	1.015	1.01
Johns Hopkins Hospital	6.40%	9.98%	10.56%	9.52%	14.60%	15.45%	1.520	1.481	1.099	1.09
St. Agnes Hospital	5.96%	8.49%	8.57%	9.13%	12.96%	13.06%	1.385	1.359	1.016	1.01
Sinai Hospital	5.49%	8.99%	9.06%	8.15%	13.45%	13.52%	1.588	1.577	1.017	1.01
Bon Secours Hospital	6.93%	13.26%	13.19%	10.71%	19.73%	19.78%	1.736	1.600	0.995	1.00
Franklin Square Hospital	7.26%	9.37%	9.45%	11.69%	14.24%	14.36%	1.253	1.169	1.013	1.01
Washington Adventist Hospital	6.05%	9.50%	10.43%	9.30%	14.06%	15.35%	1.519	1.438	1.156	1.14
Garrett County Memorial Hospital	5.73%	5.97%	6.91%	9.11%	9.28%	10.29%	1.035	1.012	1.186	1.12
Montgomery General Hospital	7.89%	10.13%	10.38%	11.21%	14.53%	14.86%	1.253	1.252	1.043	1.03
Peninsula Regional Medical Center	6.76%	7.33%	7.78%	10.46%	11.28%	11.96%	1.078	1.068	1.093	1.08
Suburban Hospital Association, Inc	6.57%	8.07%	8.69%	9.28%	11.65%	12.57%	1.214	1.231	1.112	1.10
Anne Arundel General Hospital	6.63%	7.57%	7.74%	9.93%	11.46%	11.73%	1.123	1.126	1.033	1.03
Union Memorial Hospital	5.23%	9.46%	9.54%	8.18%	14.40%	14.50%	1.746	1.674	1.012	1.01
The Memorial Hospital	7.38%	8.79%	9.11%	11.02%	13.31%	13.56%	1.172	1.179	1.052	1.03
Sacred Heart Hospital	7.58%	8.71%	8.85%	11.42%	12.98%	13.28%	1.139	1.116	1.028	1.03
St. Marys Hospital	9.59%	10.56%	11.25%	14.85%	16.04%	16.63%	1.092	1.065	1.090	1.05
Johns Hopkins Bayview Med.	8.64%	12.52%	12.65%	13.08%	18.02%	18.15%	1.386	1.295	1.022	1.01
Chester River Hospital Center	7.80%	8.18%	8.28%	11.76%	11.82%	12.00%	1.034	0.988	1.025	1.02
Union Hospital of Cecil County	9.60%	10.18%	11.05%	14.33%	15.17%	15.95%	1.055	1.049	1.122	1.08
Carroll County General Hospital	7.72%	8.54%	8.73%	12.05%	13.05%	13.43%	1.079	1.046	1.030	1.03
Harbor Hospital Center	6.53%	9.54%	9.62%	10.33%	14.34%	14.37%	1.406	1.311	1.012	1.00
Civista Medical Center	8.70%	10.01%	10.34%	13.35%	15.55%	15.87%	1.129	1.135	1.053	1.03
Memorial Hospital at Easton	7.94%	8.27%	8.31%	12.23%	12.69%	12.79%	1.031	1.022	1.012	1.01
Maryland General Hospital	8.39%	13.85%	13.93%	13.56%	21.30%	21.43%	1.516	1.393	1.012	1.01
Calvert Memorial Hospital	5.81%	7.24%	7.53%	9.72%	12.14%	12.28%	1.221	1.217	1.060	1.02
Northwest Hospital Center, Inc.	7.23%	10.07%	10.23%	11.52%	15.95%	16.16%	1.337	1.296	1.023	1.01
Baltimore Washington Medical	7.56%	9.88%	10.09%	12.15%	15.41%	15.66%	1.272	1.216	1.025	1.02
Greater Baltimore Medical Center	5.12%	7.15%	7.35%	7.69%	10.88%	11.11%	1.358	1.351	1.035	1.02
McCready Foundation, Inc.	5.75%	9.09%	9.06%	8.51%	12.50%	12.46%	1.550	1.429	1.000	1.00
Howard County General Hospital	6.27%	8.19%	8.39%	10.24%	12.84%	13.09%	1.275	1.207	1.036	1.02
Upper Chesapeake Medical Center	6.87%	8.50%	8.67%	10.95%	12.99%	13.24%	1.204	1.138	1.029	1.02
Doctors Community Hospital	6.96%	9.93%	10.40%	10.52%	15.02%	15.59%	1.391	1.378	1.080	1.06
Southern Maryland Hospital	7.77%	9.59%	10.62%	11.82%	14.43%	15.76%	1.215	1.188	1.161	1.13
Laurel Regional Hospital	7.06%	9.99%	10.54%	11.18%	15.17%	15.91%	1.358	1.261	1.084	1.07
Good Samaritan Hospital	8.19%	10.05%	10.11%	12.77%	15.79%	15.88%	1.175	1.164	1.010	1.00
Shady Grove Adventist Hospital	6.38%	7.28%	7.60%	9.92%	11.38%	11.79%	1.117	1.112	1.065	1.05
James Lawrence Kernan Hospital	1.23%	5.13%	5.08%	1.30%	6.31%	7.14%	4.000	4.667	1.000	1.14
Fort Washington Medical Center	4.61%	8.46%	9.99%	7.17%	11.54%	13.73%	1.795	1.547	1.253	1.25
Atlantic General Hospital	6.79%	7.98%	8.04%	10.58%	12.41%	12.87%	1.162	1.149	1.026	1.05
MD TOTAL	6.92%	9.23%	9.52%	10.61%	13.91%	76.24%	1.300	1.263	1.049	1.04

Appendix IV-- Maryland Proposed STAAR Initiative

Proposed Approach for a Maryland State Action on Avoidable Rehospitalizations (STAAR) Initiative October 2010

Background

In May 2009, the Institute for Healthcare Improvement (IHI) launched State Action on Avoidable Rehospitalizations (STAAR). Funded through a grant from The Commonwealth Fund, STAAR is a multi-state, multi-stakeholder approach to dramatically improve the delivery of effective care at a regional scale.

The initiative aims to reduce rehospitalizations by working across organizational boundaries in a state or region. The work requires not only front-line process improvement, but also identification and mitigation of barriers to system-wide improvement, especially policy and payment reforms that will reduce fragmentation and encourage coordination across the continuum of care. The initiative has three high leverage opportunities for action:

- improving transitions for all patients,
- proactively addressing the needs of high risk patients, and
- engaging patients and their caregivers in assuming a proactive role in their plans.

STAAR was initially implemented in three states— Massachusetts, Michigan, and Washington— by engaging payers, state and national stakeholders, patients and families, and caregivers at multiple care sites and clinical interfaces. The work in the first three states is anticipated as a four year project. As this work has progressed for one year, IHI has offered to make programming and information learned from the initiative available to Maryland. The initiative would provide both technical assistance at the policy level and support provider efforts at the front line.

ROLE AND OPTIONS FOR MARYLAND STAAR LEADERSHIP PARTNERS

The role of the key leadership group for STAAR is to identify strategies to address systemic barriers to improving transition of care and to establish an ongoing feedback loop with providers on the progress of addressing the barriers. Specifically, STAAR leaders are to address barriers in the following areas:

- State-wide data/ measurement,
- Payment/policy reforms,
- Financial implications on providers, and
- Working / communicating across the care continuum.

To build upon the success of the initial group of states implementing STARR, a public-private partnership of four key stakeholders is proposed as the leadership group. The proposed entities include:

- The Health Services Cost Review Commission
- The Maryland Hospital Association
- Maryland Patient Safety Center

- DHMH Office of the Secretary or designee

ROLE & POTENTIAL ENTITIES TO BE REPRESENTED ON THE STEERING COMMITTEE

The role of the Steering Committee for STAAR is to work with the key leadership group of STAAR to fully identify the systemic barriers and flesh out the potential strategies for addressing the barriers as well as engaging in the action steps to put the agreed upon strategies in place. Entities to consider for representation on the Steering Committee include:

- Maryland Health Care Commission
- Delmarva QIO
- Health Services Cost Review Commission
- Hospital association
- State medical society
- Maryland equivalent of osteopathic association?
- Department of health
- Blue Cross Blue Shield plan
- State association of health plans
- Aging services
- Maryland Patient Safety Center
- Key hospital industry representatives
- Institute for Healthcare Improvement Medicaid program operations and quality assurance
- Hospice and palliative care association
- State association of nurse executives
- Large nursing home provider-Genesis or Erickson?
- Consumer organizations
- Home health association
- Health Information exchange- CRISP
- Senior health organizations

STAAR CORE SET UP FEATURES FOR PROVIDERS

For Maryland to implement a STAAR initiative, provider participants must agree to engaging in three areas of activity, including:

- Conducting initial and ongoing measurement of 30-day all-cause readmission rates;
- Establishing cross-continuum teams comprising physician office, skilled nursing facility; hospital, home care and patient/family members;⁸ and,
- Performing a readiness diagnostic by conducting at least five interviews and root cause analysis where readmission has occurred within the 30 day window in the measurement “base” period.

STAAR CORE IMPROVMENT PROCESSES FOR PROVIDERS

Key improvement processes that STARR participants must agree to implement include:

- Conducting enhanced readmission assessment that includes social and logistic information/factors for patients and families that impact risk for readmissions.
- Employing enhanced learning and coaching “teach-back” techniques with patients and families that includes facilitating their understanding and responding back regarding:
 - The reason they are admitted to the hospital.
 - How to do self care after discharge.
 - What to do if their symptoms worsen after they leave the hospital.
- Employing systematic methods to ensure timely communication with the next setting of care such that information is transferred the day of discharge.

⁸ To date, 67 cross continuum teams have been established across MA, MI and WA, 38 of which include patient and family representatives/participants.

- Employing systematic methods to ensure timely follow up with patients and families at moderate risk for readmission.

Next Steps

To move forward in determining whether STAAR is an appropriate fit for Maryland, the following next steps and timelines are proposed:

- Meet with proposed key leadership entities to discuss the proposal and next steps.
- Review and modify as needed the proposed list of leadership and steering committee participants.
- Should we determine it appropriate to go forward, convene a meeting with the proposed key leadership organizations and IHI staff.

**Appendix A:
IHI STAAR Resources Currently Available**

The blue text below are URL links currently posted on STAAR to the IHI website.

[How-to Guide: Creating an Ideal Transition Home](#)

This guide was created to support participating organizations in their work over the course of the STAAR initiative and beyond to improve transitions in care.

- [How-to Guide Summary and Strategies for Getting Started](#)

[STAAR Project Summary](#)

A one-page summary of the STAAR initiative.

[STAAR: A State-Based Strategy to Reduce Avoidable Rehospitalizations](#)

This document reflects the work of IHI to date to develop a state-wide strategy for reducing avoidable rehospitalizations.

As part of the *Effective Interventions to Reduce Rehospitalizations* project, which preceded the STAAR initiative, IHI produced materials to highlight promising approaches to reduce avoidable rehospitalizations.

- **[A Survey of the Published Evidence](#)**

This document is a survey of the published literature regarding the effective interventions to reduce avoidable rehospitalizations.

- **[A Compendium of Promising Interventions](#)**

This companion document to the Published Evidence provides information regarding current best programs and practices to reduce rehospitalizations.

[STAAR: A Tool for State Policy Makers](#)

The checklist provided in this tool focuses on aspects of the health care system that policy makers can influence and for which data is available to assess their state’s performance regarding hospital readmission rates.

[Decreasing Avoidable 30-Day Rehospitalizations](#)

This Minicourse presentation at the December 2009 IHI National Forum describes key drivers of rehospitalization rates, how national data compares to state and regional findings, high-leverage changes to reduce hospitalizations, and characteristics of the STAAR multistakeholder quality initiative that crosses organizational boundaries.

STAAR Issue Briefs on Reducing Barriers to Care Across the Continuum

Measuring Rehospitalizations at the State Level

The Financial Impact of Readmissions on Hospitals

Engaging Payers

Working Together in a Cross-Continuum Team

STATE OF MARYLAND
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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HEALTH SERVICES COST REVIEW COMMISSION

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Memorandum

TO: Interested Parties

FROM: Robert Murray, Executive Director

DATE: October 11, 2010

RE: Comments on the Health Services Cost Review Commission's
Proposed Bundled Payment Initiatives

On October 13, 2010, the Maryland Health Services Cost Review Commission ("HSCRC") will facilitate a discussion regarding several proposed bundled payment initiatives. The initial presentation by HSCRC staff will begin at approximately 9:15 AM in the HSCRC's public meeting room (Room 100), located at 4160 Patterson Avenue, Baltimore, Maryland 21215. An outline of the presentation may be found under "ALERTS" at <http://www.hsrcr.state.md.us>.

Key members of the health care community and other interested parties are encouraged to attend and make comments in order to generate a productive initial discussion on the topics itemized in the attached document. This will be the first of multiple opportunities to provide input on these matters.

Interested parties who wish to make brief verbal comments during the Commission meeting are requested to provide their name, affiliation, and contact information on a sign-up sheet that is available until the COB on Tuesday, October 12 on the HSCRC website at <http://www.hsrcr.state.md.us>. If you are unable to sign up in advance, please do so as you enter the hearing room prior to 9:00AM on the day of the meeting. If you have any questions, please feel free to contact Steve Ports at 410-764-2605 or sports@hsrcr.state.md.us.

Presentation and Discussion Session

**Commission-Directed Initiative to Establish a System of
Bundled Payment Structures to Promote Coordinated
Care Delivery and Access to Affordable and High-
Quality Care**

*Presentation to the Maryland Health Services Cost Review
Commission*

October 13, 2010

Presented by Robert Murray (BMurray@HSCRC.State.Md.US)

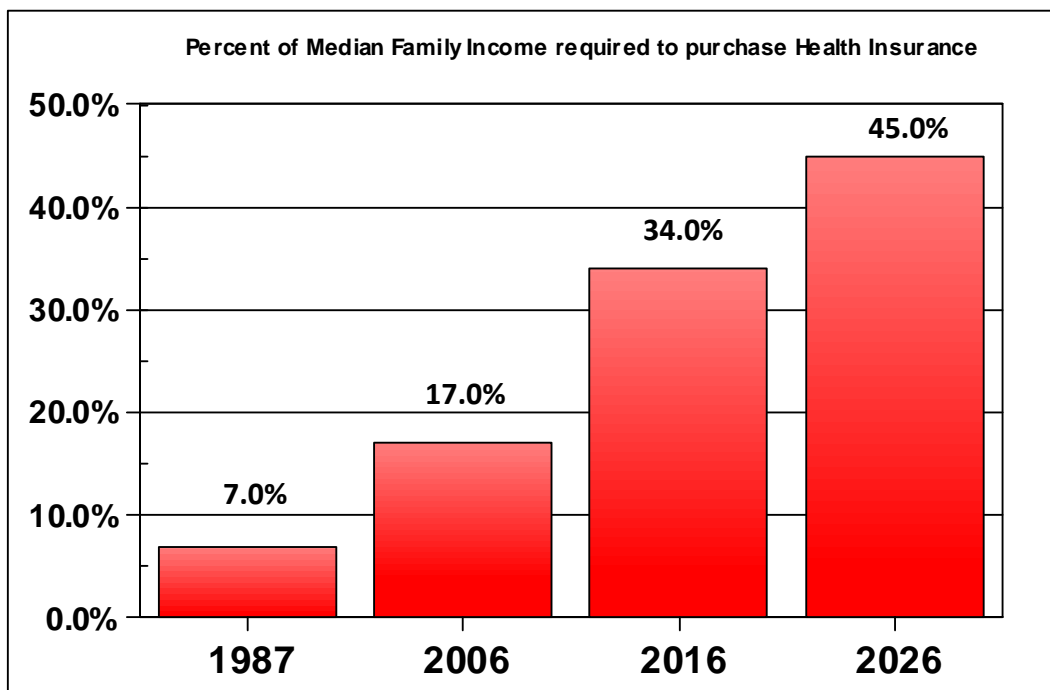
OVERVIEW

- The purpose of this session is to engage the Commission and key stakeholders on potential ways to promote more effective and comprehensive payment systems to better achieve the fundamental system goals of Affordability, Access to Care, Equity, Fairness, Accountability, Financial Stability, and Quality of Care and ensure the long-term sustainability of the Maryland Health Care System.
- There are a number of economic and environmental factors motivating this effort – including the recent passage of National Health Insurance reform and concerns about the affordability of care and financial sustainability of our current health care system.
- There is a recognized need to transition the US health care toward a coordinated care model, focusing on promoting health of populations and, at the same time, improving efficiency and quality of the care delivered.
- Given the existence of the All-Payer rate setting system, a more organized hospital system, and other key regulatory and market dynamics, the State of Maryland has a unique opportunity to restructure the health care delivery system to achieve these overarching goals.
- The purpose of this presentation is to provide background information to help structure and guide the initial discussions with the goal of developing a specific proposal for the aforementioned more effective and comprehensive payment system.
- The Commission encourages and recognizes the need for input from all affected parties in order to achieve this goal.
- The Commission is directing Staff to hold discussions with all affected parties between now and the December 8th Commission meeting, sufficient for staff to be able to propose to the Commission specific parameters and goals for a Commission-initiated effort to transition the hospital industry and the larger Maryland health care system toward the more effective and comprehensive payment system.

BACKGROUND

- The health care delivery system across the US and in Maryland faces significant cost and quality-related issues and challenges.
- The inability to address these issues (sufficient to create an affordable and high value system) relates to our fragmented payment system, continued presence of failures in the market for health services, and the inability to measure performance relating to both efficiency and quality (or value of care provided for dollar spent).

- The focus of this current review and initiative is to find a way to ensure the long-term financial sustainability of the Maryland hospital and health care system, while simultaneously achieving better outcomes and more efficient care delivery along with better overall population health over the long term.
- The sustainability challenge is front and center for a variety of reasons:
 - We have a long history in the US of rapid health care growth relative to GDP. We compare unfavorably to other health care systems, and the current trajectory is not sustainable economically. This phenomenon has been discussed for decades, but now the lack of affordability of care in this country has reached a critical point;
 - Current projections show that if nothing is done, our current trajectory will place the cost of health insurance far beyond the reach of most people (see chart based on analysis of current spending trends performed by the economist Len Nichols at the New American Foundation, May 2010).



- We face an unprecedented increase in the portion of the population that is old and uses dramatically more healthcare services across the US and in Maryland as well.
- National Health Reform will add 30+ million individuals to the insured rolls. While most receive some care today, experience/research shows that fully insured individuals use more health care services.
- Efforts to reduce federal and state-budget deficits must focus on reducing health care expenditures. Failure to do so will mean health care will be unaffordable for large segments of the population and will also undermine long-term economic stability and growth potential.

- There is not likely to be just one answer to the sustainability challenge – however, it is unlikely that severe restrictions on payment rates alone will produce a balanced, long-term solution.

HEALTH CARE REFORM – GALVANIZING EVENT

- The Accountable Care Act (ACA) represents significant legislation that goes a long way in addressing the chronic problem of the uninsured and underinsured in this country.
- There was, however, a political calculation to start with Insurance Reform first, before addressing Cost Containment issues (this strategy was highly criticized).
- One key benefit of the reform effort was that it provided a very clear signal that “business as usual” has ended – there is now a clearer mandate to expand access as well as an economic imperative to make the system financially sustainable.
- This will involve changing old business models based on risk selection and fee for service pay for volume – and transition to ways of promoting access, efficiency and quality (emphasis on promoting ways to increase the “value” of health care expenditures).
- There are however, only vague concepts in the bill on how the health system should move in this direction, (e.g., Accountable Care Organizations, bundled payments) and few operational road-maps for how to get from here to there.
- States with more organized health care systems, have the opportunity to chart their own course and systematically transition to a more functional and sustainable system.

MARYLAND UNIQUELY POSITIONED TO BRING ABOUT THIS TRANSITION

- There is a consensus among policy makers and stakeholders that Maryland should not rely solely on payment cuts to ensure fiscal sustainability, and that modifying hospital utilization trends and strengthening quality and efficiency must be important elements of any successful strategy.
- It is clear that Maryland has advantages in implementing such a strategy. These include the following:
 - Robust data infrastructure (all-payer hospital data, medical care data MHCC, potential to collaborate with private payers/Medicaid/Medicare);
 - Experience with sophisticated risk-adjustment tools/mechanisms and payment system expertise;

- Flexible HSCRC statute that allows for payment structure experimentation;
- A high organized hospital system under the uniform All-Payer payment structure;
- Strong hospitals and hospital systems that provide a natural locus of care and potential locus of coordinated care;
- The existence of provider-based entities in the State able to assume increasing levels of “financial” risk/reward;
- The existence of broad-based quality measures (process measures, hospital complications, preventable readmissions);
- The leverage and harmonization of incentives under All-Payer payment system.

TIMING IS RIGHT

- As noted, Health Care Reform has provided the urgency and necessary signals sufficient to push all parties in the direction of providing more value for our health care dollar.
- Increasingly, providers also realize that financial stability will not be derived from increasing volumes and annual price increases.
- Nationally, in absence of a systematic strategy/oversight – danger of further provider consolidation/integration, which will bend the cost curve even higher.
- There is a concern being expressed nationally that increased provider integration and consolidation under the guise of ACO development will result in increased costs with this increased market leverage being used to negotiate higher payments.
- The State of Maryland, however, has the unique ability to channel savings associated with reducing waste back to providers and drive delivery system change through payment system change.
- These factors are now focusing Maryland hospitals and the HSCRC on a strategy of broadening payment, increasing risk, and realizing surpluses from reducing excess waste.
- Maryland health care providers can also see the advantages of changing the incentives to allow them to expand coordinated care systems and reward them financially for “doing the right thing.”
- The system also continues to enjoy the benefits associated with the presence of the Medicare waiver (enhanced payment levels, harmonized payment incentives across all payers) and there is

sufficient cushion under our waiver test to give Maryland time to develop new and more productive payment structures.

- The State will also benefit from an increased receptivity on the part of the federal government (the Department of Health and Human Services, the Centers for Medicare and Medicaid Services (CMS) and the soon to be created Center for Medicare and Medicaid Innovation (CMI)) to experiment and potentially provide a model for the rest of the US.
- The State also advantaged by our proximity to Washington DC, strong Congressional delegation, and positive relationships with key members of the current Administration and leaders in the health care policy arena.
- We must leverage these advantages and use this window of opportunity to move forward in the short term with our eyes towards ultimately creating a payment system comprehensive enough to actually meet the legitimate healthcare needs of Marylanders.

FOUR AREAS OF POTENTIAL FOCUS

1) Increased Emphasis on Quality Measurement and Accountability

- In a transformed delivery system that places providers more “at-risk” for efficiency and quality broadly defined, the Quality of Care and general Accountability of providers for the Value of the care they provide will take on increasing importance.
- The HSCRC has achieved success in broad-based quality measurement (complications & readmissions) – these programs depart from national approaches by virtue of their broad-based and normative methodologies and are superior in their capacity to produce positive change.
- HSCRC should continue to work to expand its efforts to measure Quality and Patient Satisfaction and structure very strong incentives related to improved quality directly into provider payment.

2) Need to Align Incentives across Providers

- Physician/Hospital decision-making directly or indirectly controls a substantial proportion of health care spending in Maryland (70%+ of health care expenditures).
- Hospitals and physicians, however, have traditionally faced different financial incentives. This misalignment acts as a significant barrier to achieving the goals of improved efficiency, quality, and the health of populations.

- A closer linkage of providers could also greatly increase the potential for developing more coordinated care models.
- Policy-makers need to work to align the financial incentives of hospitals and physicians and make them compatible with coordinated care systems and collectively “at-risk” for improved efficiency and quality.

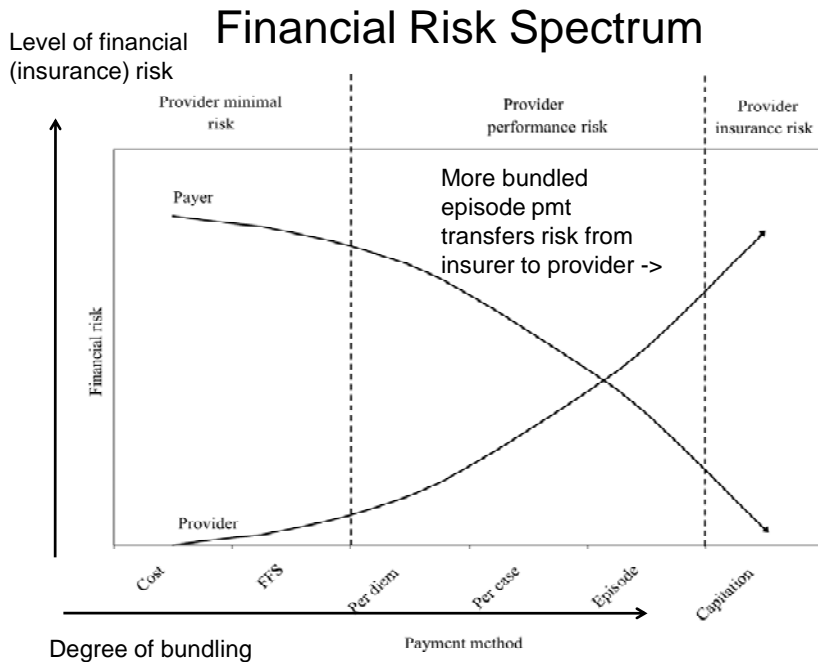
3) Continuing need to Keep Payment Level Growth Constrained

- At the same time – it is important that the Commission continue to keep the payment levels constrained – in response to national trends and much tighter Medicare updates.
- There is significant evidence (both from Maryland experience and nationally) that the magnitude of hospital costs (their expenditures) directly correlate to level of payments & the amount of revenue hospitals receive.

4) Need to Incrementally Expand the Scope and Window of Provider Payments

- As noted, the HSCRC recognizes the need to actively develop opportunities for providers to voluntarily participate in more bundled payment structures by “building out” from the acute event and expanding the payment bundle to expanded episode-based (and at-risk) payment structures.
- This requires a “Patient Centered” approach that focuses payment on total services provided to a patient and not limited to the services associated with the specific hospitalization.
- It also involves expanding both the “Scope” of service (beyond just the hospitalization) and also the “Window” of time over which services are provided.
- Moving in this direction will transfer more financial risk to providers.

PROVIDERS WILL BE REQUIRED TO ASSUME MORE FINANCIAL RISK



9

J Ambulatory Care Manage, Vol. 32 No. 3 pp 241-251. Averill, et. al.

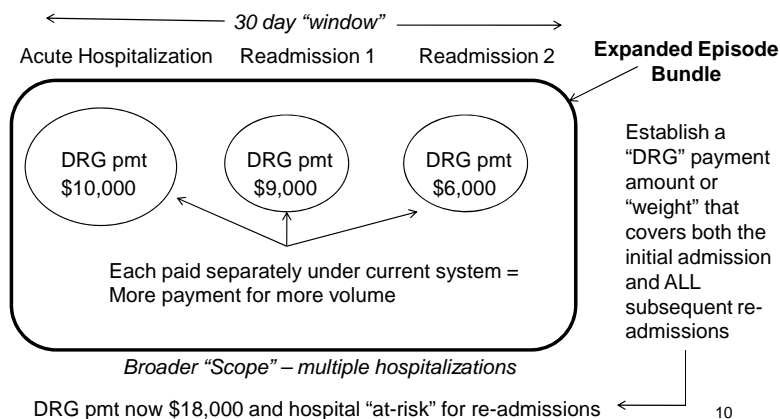
- As shown above, movement along the horizontal axis from highly disaggregated payment structures (cost based reimbursement, fee-for-service payment) to more bundled payment structures (per case payment, per expanded episode payment, and capitation) results in a transfer of financial risk from payer to provider.
- This transfer of risk presents both an opportunity and a risk for providers. Yet, if properly incentivized, providers are in a far more advantageous position to care appropriately for the health care needs of the populations they serve.
- This transition to assuming more risk is similar to what was experienced previously in transitioning from Unit Rates (Fee for service rate setting) to the Guaranteed Inpatient Revenue System (GIR).
- Rate System also experienced this phenomenon in mid-1990s when Managed Care was more dominant (in many cases during this period, however, the transfer of financial risk was not accompanied by sufficient pricing accuracy and advancements in risk-adjustment, and many facilities lost money on these arrangements).
- With this increased financial risk, however, comes the potential for reward if hospitals are successful in reducing the excess waste in the current system.

- HSCRC strategy (just as it was under the GIR) would be to allow providers to initially retain all of the savings associated with this activity – but eventually ensure savings to the public.

EXAMPLES OF BUNDLED PAYMENTS (EXPANDED SCOPE AND WINDOW)

Examples of Broader Episode Bundling

- Establish a bundled payment that covers both the initial admission and any subsequent re-admission



1) Characteristics

- Instead of being paid incrementally for each admission and subsequent readmission, a hospital may be placed at risk for an admission/readmission "chain," with a payment weight established for that chain.
- Under such a payment (constraint) structure, a hospital would now be "at-risk" or at partial risk for readmissions and readmission chains.
- In this example, there is an expanded Scope of services under the bundle (admission and readmission) over an expanded Window of time (over 30 days).
- Depending on how this payment is structured, with the expanded scope and window, the HSCRC may need to incorporate additional risk-adjustments to account for factors that influence resource beyond the acute event (e.g., adjustments for the age profile of patients, the presence of mental health or substance abuse, and the level of indigence – all of which influence rates of readmissions).¹

¹ Note: Such Provider specific at-risk arrangements may not require extensive risk adjustment of this nature if the profile of a specific provider remains relatively constant year-to-year.

- The HSCRC can establish this type of bundled payment now under existing authority.
- Ability to enhance this effort exists if HSCRC can receive approval from CMS for physician gain-share demonstration. This would significantly assist hospital efforts to reduce both cost per case and control readmissions.
- Provider entity should retain majority of the savings initially (as under the GIR originally) and in order to invest in care coordination/quality of care infrastructure and alignment necessary to succeed

2) Other Examples of Bundled Payment Structures

- The Commission could also allow hospitals to contract for care on a Global Case Rate basis -- package that would include both Hospital and Physician fees as has been allowed under our Alternative Rate Setting authority in the past.
 - Very successful for Transplants – but could be extended to other procedures (cardiac, orthopedics, OB);
 - Expanded Scope: (hospital/physician);
 - Expanded Window: (pre- and post hospitalization).
- Building out the payment bundle also could include hospital/physician and all ambulatory care post-hospitalization out 30 days.
- The bundle could eventually expand to cover all care (except long-term care) out 60-90 days.
- As noted, expanded bundling requires recognition of risk factors & chronic illness burden, accountability for quality, and monitoring of risk assumed.

OTHER ACTIVITIES SUPPORTIVE OF ESTABLISHING STRONGER INCENTIVES FOR IMPROVED EFFICIENCY AND

1) Total Patient Revenue (TPR) Payment Structures

- The Commission’s innovative Total Patient Revenue structure, also authorized under its Alternative Rate Setting authority, is an example of another fixed payment arrangement that provides very strong incentives for hospitals to control the cost of inpatient and outpatient cases, avoid marginal admissions, shift care to more cost-effective settings, and promote the overall health of the communities they serve.

- TPR hospitals receive a “Global Budget” for inpatient and outpatient services. That budget is adjusted for the demographics of their key service area and updated for inflation year-to-year.
- The HSCRC currently has two hospitals operating under Total Patient Revenue structures but is negotiating with six other facilities interested in operating under TPR constraints.
- The structure is most applicable to isolated hospitals – serving well-defined communities.
- Again – same principles apply as under bundled payments – hospitals are given up-front savings/inducement sufficient to allow transition of incentives and infrastructure to support a fixed cost model.
- Allowing providers to retain the savings associated with these cost improvements will allow Maryland to ensure a more financially viable provider sector over both the short and long run and, at the same time, give the State the ability to bend the cost curve. This is the dynamic that occurred in the early days of the system when hospitals voluntarily adopted the GIR and generated and captured savings by reducing length of stay and ancillary use per case.
- Over time, a proportion of these savings will be shared with first party payers (government, employers, labor, and households).
- The TPR concept can be expanded (scope and window) – to include non-hospital services/providers.

2) Other Payment Structures Contemplated

- HSCRC staff also has contemplated the development of a “per member per month” based model for bundling payment for individual hospitals or groups of hospitals in more densely overlapping service areas.
- Eventually, these models can similarly be expanded to cover more services beyond just hospital care.

3) These Strategies are Consistent with other Innovative Provider Payment Strategies in Maryland

- The principles and incentives embodied in the newly created/contemplated Patient Centered – Advanced Medical Home initiative in the State are also consistent with goals in payment structure and associated delivery system changes contemplated by this effort.

OTHER CONSIDERATIONS/CONCERNS

- It is clear there are other approaches that Maryland could incorporate to move in the direction of rewarding quality and efficiency – many possibilities have been identified, including over twenty by the HSCRC staff. There is wide variation in the breadth of the impact of each of these approaches, as well as in the requirements for implementing them.
- For example, some can be accomplished within existing Maryland law and regulation; others require changes in those laws and/or regulations; and some require federal demonstration authority or even federal legislative changes.
- There is also wide variation in the specificity of these options – some are already far more clearly defined than others. Some are hospital specific; others require impacting other segments of the healthcare delivery system (e.g., doctors, long-term care providers, etc.).
- If we are to move ahead with a strong, effective program with strong support from key stakeholders, we must have rules or algorithms, which will help us decide among the many options. Clearly, it is possible to overload the system with too many initiatives, which will not produce the best outcomes.
- The HSCRC and the hospital industry should also seek to learn from previous efforts to move the system in this direction. In the mid-1990s, many hospitals sought to take on financial risk in reaction to the growth in managed care. In the rush to position themselves in this changing financing paradigm, many facilities assumed excessive levels of financial risk, committing huge capital investments in facilities along with the purchase of primary care physician practices.
- The system must also have the operational wherewithal to restructure payment, develop sufficient risk adjustment mechanisms, expand our Quality measurement and monitoring capabilities, and oversee the financial risk assumed by providers. The HSCRC is currently understaffed, with a number of key positions vacant despite multiple attempts to recruit and hire into this positions, while also facing a number of retirements. Additional investments in personnel and consulting assistance will be required to position the Agency to move in a responsible and deliberate manner.

GOING FORWARD

- The process needs a goal, a framework, a timetable, and process for soliciting the input of affected parties and stakeholders.
- Establishing Cost and Quality goals for the Maryland System may be useful in helping drive this effort (i.e., Maryland will target healthcare spending of a specified amount per risk adjusted population - absolute amount relative to U.S., or percentage change over time, and specific goals associated with the major quality metrics currently used in the system – infection rates, complications, and readmissions).
- The HSCRC also needs to create a general framework for evaluating options, including:
 - How much impact does the option have on achieving the goal (bias toward fewer initiatives with greater impact);
 - How simple is the option to implement (bias toward using existing legislation, toward lower administrative complexity and cost, and toward fewer “moving parts”);
 - Timelines (bias toward a mix with enough interventions front loaded to balance longer-term, possibly more impactful initiatives).
- Structuring this process must provide ample opportunity for input and discussion, while including a clear timetable for completion.
- There is, understandably, a great deal of interest in the waiver and how and when the State will move to seek revisions.
- While we are working toward creating new methods of payment for healthcare services within the rate setting system, we should begin the waiver discussion on a parallel track. That discussion would benefit from deliberations regarding:
 - How it should relate to our overarching goals for our payment and delivery system;
 - What the waiver should measure and why, and;
 - The mechanics and process for moving forward with waiver revisions.
- The clarity of focus in this initiative is crucial to our ability to craft a viable strategy for restructuring payment, achieving our goals, and reaching a working consensus.
- Today will be the first opportunity to discuss these issues with the Commission and begin a process of encouraging all stakeholders to provide input to the HSCRC in a way that places the Commission in the best possible position to structure this effort.

- Staff will recommend that the HSCRC also provide multiple additional forums for the Commission to receive input from stakeholders. The purpose of these forums will be to gather information and input from those most impacted by these potential payment reforms.
- Ultimately, the staff will propose a plan of action for the Commission. This plan will include;
 - An articulation of the over-arching objectives and key principles of such an initiative;
 - A set of 2-4 well-defined bundled payment pilot options for hospitals;
 - The criteria for review and approval of these options for the Commission;
 - A strategy to pursue additional and necessary demonstration authority from the Department of Health and Human Services/Centers for Medicare and Medicaid Services – to enable further experimentation and structuring of bundled payment systems that can apply to public payers;
 - A strategy to identify how our current waiver arrangement with the federal government can best be revised, modified, and/or restructured to ensure continuation of our All-Payer rate setting authority.
- By initiating this process of restructuring the payment system and ultimately the delivery system in Maryland, we seek to ensure the sustainability and viability of health care delivery to Marylanders for generations to come.

STATE OF MARYLAND



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www.hscrc.state.md.us

TO: COMMISSIONERS

FROM: LEGAL DEPARTMENT

DATE: OCTOBER 6, 2010

RE: COMMISSION MEETING START TIME

Public Session

November 3, 2010 Time to be determined, 4160 Patterson Avenue, HSCRC Conference Room

December 8, 2010 Time to be determined, 4160 Patterson Avenue, HSCRC Conference Room

Please note, Commissioner packets will be available at the Commission offices at 8:00 a.m.

The agenda for the Executive and Public Sessions will be available for your review on the Commission's website, on the Monday before the Commission meeting. To review the agenda, visit the website at <http://www.hscrc.state.md.us>.