Policies for Controlling Volume

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The Maryland Hospital Association

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Introduction

Under the proposed demonstration model, the HSCRC will move from a regulatory system focused purely on price to a system focused on revenue. Under the model to begin on January 1, 2014, hospital spending for Maryland residents will be limited to per capita growth of 3.58 percent annually with required savings for Medicare totaling $330 million over the five year demonstration period. This agreement provides a budget for hospital system spending that the HSCRC must not exceed for the demonstration model to be successful.

The HSCRC staff has indicated that it intends to put in place several policies for the coming year to achieve the spending target. The purpose of this paper is to describe a variety of policy options related to constraining volume as a method of achieving the spending targets set forth in the Demonstration model.

Fee-for-service incentives

The American health care system is generally fragmented with patients receiving care from a number of different providers without systematic coordination. Patients receive care in physicians' offices, clinics, emergency rooms, hospitals, and nursing homes, and in many cases, the services provided are not coordinated across these different providers. Further, the payment system in health care provides little incentive to improve coordination because fee-for-service payments provide revenue in each setting for performing a service. The clear financial incentive is to "do something" to generate revenue, and under this model, providers have an incentive to drive volume in every delivery setting.

While Maryland's unique rate-setting has constrained growth in hospital spending over the history of the regulatory system, the focus of rate regulation in the State has been on price per unit of service or on the charge per inpatient case. The national focus under Medicare has been similar with the development of prospective payment systems for services in inpatient, outpatient, psychiatric, home health, and hospice settings. A reasonable conclusion from this discussion is that volume growth generated from an increasing population base and increased demand arising from the aging of that population are natural sources of increasing volume, and the provision of these services is a good use of economic resources. The corollary is that volume growth generated from a lack of care coordination and from increased utilization in response to financial incentives to providers is a waste of healthcare resources that could be deployed more effectively in other areas.

In discussions about volume growth in the State, some observers have simplified this discussion by defining good volume versus bad volume. Good volume is presumably medically necessary services provided by hospitals to members of their community while bad volume is overutilization of hospital services that could be provided in a lower cost setting or are not medically necessary at all. This simplistic classification system overgeneralizes the issues of appropriate provision of services and requires further analysis to understand an appropriate policy response for the reimbursement system.

As preparations for the implementation of the demonstration model have progressed, the HSCRC staff has been discussing policies to address specific services that it has termed "potentially avoidable utilization" (PAU). This classification would be the major focus for reducing system utilization.

Categories of Potentially Avoidable Utilization

The HSCRC staff has proposed a definition of potentially avoidable utilization as follows: "Hospital care that is unplanned and can be prevented through improved care coordination, effective primary care and improved population health." (HSCRC staff presentation, 2013) This definition recognizes the interrelationship between pieces of the continuum of care in the delivery of health care services.

In preliminary discussions, the staff has begun to develop a specific definition to measure potentially avoidable utilization in the State.

- The definition begins with inpatient readmissions. The HSCRC currently has over 30 hospitals on a program to reduce readmissions, the Admission Readmission Revenue (ARR) program, in addition to 10 hospitals under the Total Patient Revenue (TPR) program which has strong incentives for overall volume reduction. The staff has discussed a definition of readmissions that builds upon the current methodology. In the current fiscal year, the original methodology was modified to account for planned readmissions in the ARR logic. The staff is discussing the need to expand that logic further to recognize the relationship between admissions, readmissions, visits to the emergency department, and observation status for patients who are never admitted to the hospital.
- In addition to this expanded version of readmissions, the staff is looking to provide financial incentives to reduce unnecessary utilization for potentially preventable conditions. Prevention Quality Indicators (PQIs) are ambulatory sensitive conditions for which hospitalization could be avoided when the patient receives proper primary care. While these services are medically necessary admissions when the patient is hospitalized, the patient's condition should never have deteriorated to that point with access to primary care. This concept can be expanded to hospital outpatient visits as well.
- A final category the staff is considering as part of this definition is for potentially preventable complications. This category is already addressed in the Maryland Hospital Acquired Condition (MHAC) policy.

Preliminary staff estimates suggest that as much as 11 percent of FY2012 revenue ($1.8 billion) could be accounted for by potentially preventable volume (HSCRC staff presentation, 2013).

Readmissions

While the HSCRC has focused on restraining utilization per case to improve hospital efficiency, until recently there has been little focus on the cost of an episode of care. Medicare readmissions in the State were the highest in the nation, and the hospitals faced financial incentives to compress length of stay. The state was also among the highest in the country for cases with 0 or 1 day length of stay.

Unplanned readmissions can indicate a lack of coordinated care. Some of this problem resides with the hospital – patients and/or their families may not receive clear discharge instructions to maintain patient care and to receive appropriate follow up care. Other issues are outside the hospital's control – the patient may not be able or willing to comply with the discharge instructions. There may be few primary care physicians for appropriate follow up after a hospitalization. As patients are discharged to other settings (nursing homes, for example), care received in that setting can affect the need for further hospitalization. As hospitals are held accountable for readmissions, administrators and clinicians can focus on aspects under their control at present, but administrators will need to invest resources in the future to better coordinate services across the spectrum of care.

The current definition of readmissions used under the ARR program creates a 30 day episode of care. Allowed revenue is generated for the initial or index admission, and the hospital will not generate additional revenue for an unplanned readmission within the 30 day window. Planned admissions and transfers are considered the start of a new episode if they occur within 30 days of a prior admission. While the current ARR program tracks readmission to the same hospital or for readmissions within the same system, current plans are for the Commission to expand the definition of a readmission to any Maryland hospital within the defined time frame using the unique identifier generated by CRISP. This identifier has been under development for some time and is the best opportunity for providing a secure, unique identifier for individual patients.

To recognize differences in delivery systems at hospitals and to reduce the financial incentives to shift from one setting to another, the staff is discussing the possibility of expanding the definition to include emergency department and observation visits that occur within 30 days of the index admission. The staff is further considering the addition of potentially avoidable emergency department visits, although no specific definition for this category has been proposed to date.

Prevention quality indicators

The Agency for Healthcare Research and Quality (AHRQ) has identified a number of conditions where hospitalizations are preventable if the community has access to primary care. These ambulatory sensitive conditions, now known as prevention quality indicators (PQI), include heart failure, bacterial pneumonia, COPD, short term and long term complications from diabetes, etc. The admission itself is medically necessary at the time it occurs, but PQIs are admissions that should have never gotten to that stage. Table 1 below shows the top 15 PQIs for Maryland hospitals.

Table 1: Top 15 Prevention Quality Indicators for Maryland Hospitals (FY2012)

AHRQ Prevention Quality Indicators (PQIs)		2010					
		Maryland		Total U.S.		P-value: State relative to Nation	MD/US Ratio
		Adjusted rate[a]	Standard error	Adjusted rate[a]	Standard error		
PQI 1	Admissions with diabetes with short-term complications per 100,000 population, age 18 and over	73.33	1.34	69.06	1.94	0.069	6%
PQI 2	Admissions with perforated appendix per 1,000 admissions with appendicitis, age 18 and over	296.96	6.73	286.95	2.35	0.161	3%
PQI 3	Admissions with diabetes with long-term complications per 100,000 population, age 18 and over	147.97	1.86	116.24	3.09	0.000	27%
PQI 5	Admissions with chronic obstructive pulmonary disease (COPD) per 100,000 population, age 18 and over	181.97	2.06	212.73	5.34	0.000	-14%
PQI 7	Admissions with hypertension per 100,000 population, age 18 and over	83.86	1.40	61.76	2.10	0.000	36%
PQI 8	Admissions for congestive heart failure (CHF) per 100,000 population, age 18 and over	387.56	3.00	332.26	7.72	0.000	17%
PQI 9	Low birth weight infants per 1,000 newborns	71.94	0.99	65.80	1.16	0.000	9%
PQI 10	Admissions for dehydration per 100,000 population, age 18 and over	71.90	1.31	73.49	1.89	0.489	-2%
PQI 11	Admissions for bacterial pneumonia per 100,000 population, age 18 and over	256.08	2.46	295.84	5.94	0.000	-13%
PQI 12	Admissions for urinary tract infection (UTI) per 100,000 population, age 18 and over	191.49	2.15	193.64	4.40	0.660	-1%
PQI 13	Admissions for angina without cardiac procedure per 100,000 population, age 18 and over	26.88	0.78	18.58	0.86	0.000	45%
PQI 14	Admissions for uncontrolled diabetes without complications per 100,000 population, age 18 and over	18.29	0.66	19.16	0.76	0.386	-5%
PQI 15	Admissions for asthma per 100,000 population, age 18 and over	158.28	1.92	119.34	4.06	0.000	33%
PQI 15B (added)	Admissions for asthma per 100,000 population, age 65 and over	255.08	6.17	221.67	7.68	0.001	15%
PQI 16	Lower extremity amputations among admissions for diabetes per 100,000 population, age 18 and over	37.80	0.93	32.99	1.00	0.000	15%
PQI 17 (added)	Admissions for immunization-preventable pneumococcal pneumonia per 100,000 population, age 65 and over	52.68	2.79	51.16	1.74	0.642	3%
PQI 18 (added)	Admissions for immunization-preventable influenza per 100,000 population, age 65 and over	10.87	1.29	12.93	0.70	0.161	-16%
PQI 90	AHRQ overall Prevention Quality Indicator (PQI) composite per 100,000 population, age 18 and over	1616.86	5.91	1526.08	31.34	0.004	6%
PQI 91	AHRQ acute Prevention Quality Indicator (PQI) composite per 100,000 population, age 18 and over	519.46	3.49	562.96	11.13	0.000	-8%
PQI 92	AHRQ chronic Prevention Quality Indicator (PQI) composite per 100,000 population, age 18 and over	1097.45	4.93	963.16	21.75	0.000	14%

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample and AHRQ Quality Indicators, modified version of 4.1. State estimates are from the State Inpatient Databases (SID), and not all States participate in HCUP. Estimates for the total U.S. are from the Nationwide Inpatient Sample, which is drawn from the SID and weighted to give national estimates.

a Adjustment varies across the different PQIs. For all but PQI 2 and PQI 9, rates are adjusted by age and gender using the total U.S. population for 2000 as the standard population. For PQI 2 and PQI 9, rates are adjusted by age and gender using total U.S. inpatient discharges for 2000 as the standard population.

Source: HSCRC staff presentation, 2013

Under today's system, hospitals are not paid for this type of care coordination. Fee-for-service payments actually penalize such care coordination by reducing volumes to hospitals. To the degree that PQIs are admissions that hospitals should seek to eliminate, payment models must align the financial incentives that currently penalize such care coordination.

Potentially Preventable Conditions

Another category of services the staff is proposing to include in the definition of PAU are PPCs, defined as harmful events or harmful outcomes that may result from the process of care and treatment rather than from a natural progression of an underlying disease. These conditions are currently addressed in the Maryland Hospital Acquired Condition (MHAC) program. PPCs rely on present-on-admission indicators for secondary diagnoses to determine whether a condition was acquired after hospitalization. The HSCRC uses the methodology developed by 3M Health Information Systems, Inc. for the PPC logic. In this methodology, 65 PPCs are identified by the methodology.

Currently, 2 percent of inpatient revenue can be at stake for poor performing hospitals, while hospitals that score well will receive revenue redistributed from penalized hospitals. This at-risk amount is increasing to 3 percent of inpatient revenue by FY2015 under the MHAC program, with new measures for improvement. The at-risk revenue under MHACs presents an important policy issue. Depending on how the Commission treats PAU related revenue, can the hospital be penalized multiple times under different policies? Alternatively, will the current MHAC program be modified and integrated with the

overall initiative on PAU. Table 2 below shows the top 15 PPCs in the State for FY2012 under the current policy to provide a sense of the magnitude of revenue being discussed.

Table 2: Top 15 Potentially Preventable Conditions in Maryland

		CY 2012 PPC COUNTS AND TOTAL COST						
PPC NUMBER	PPC NAME	TOTAL PPC COUNT	Cost per Case	Number of Hospitals with PPC	Total Cost	Total Case Rank	Cost per Case Rank	Total Cost Rank
Total PPCs		**37,933**	**$12,456**		**$472,508,200**			
PPC4	Acute Pulmonary Edema and Respiratory Failure with Ventilation	1273	$33,117	44	$42,157,941	6	4	1
PPC24	Renal Failure without Dialysis	3933	$9,356	46	$36,795,559	1	32	2
PPC65	Urinary Tract Infection without Catheter	2423	$14,678	47	$35,564,794	3	23	3
PPC14	Ventricular Fibrillation/Cardiac Arrest	1401	$21,879	46	$30,652,479	5	6	4
PPC5	Pneumonia & Other Lung Infections	1354	$20,448	47	$27,686,592	7	10	5
PPC35	Septicemia & Severe Infections	1136	$19,342	47	$21,972,512	9	7	6
PPC9	Shock	1262	$20,943	44	$26,430,066	8	12	7
PPC3	Acute Pulmonary Edema and Respiratory Failure without Ventilation	2527	$9,205	46	$23,262,083	2	36	8
PPC40	Post-Operative Hemorrhage & Hematoma without Hemorrhage Control Procedure or I&D Proc	1685	$10,065	43	$16,959,525	4	33	9
PPC16	Venous Thrombosis	688	$17,955	41	$12,353,040	18	15	10
PPC6	Aspiration Pneumonia	936	$15,706	46	$14,700,816	11	25	11
PPC1	Stroke & Intracranial Hemorrhage	661	$12,075	43	$7,981,575	15	26	12
PPC48	Other Complications of Medical Care	428	$15,926	42	$6,816,328	24	13	13
PPC37	Post-Operative Infection & Deep Wound Disruption Without Procedure	536	$16,720	44	$8,961,920	22	21	14
PPC7	Pulmonary Embolism	508	$15,019	42	$7,629,652	23	22	15

Source: HSCRC staff presentation, 2013

General use rates

Practice patterns vary substantially across the nation, even across small areas with close geographical proximity. These small area variations indicate overutilization of some services across geographic regions. Use rates in Maryland are generally high compared to the nation, as are the surrounding states in the mid-Atlantic region. There is substantial variation across small areas that reflect differences in practice patterns, much of which does not reflect evidence-based practices. While small area variations reflect opportunities for improved delivery models, established best practices are not universally established and generally disseminated for many clinical conditions, even common ones. Further, new standards take substantial time to be adopted by physicians, resulting in some portion of the observed small area variation.

Options for controlling volume

Hospital accountability for PAU

While formal proposals have not been issued by the staff, there have been a number of discussions about the treatment of PAU under various methodologies to be implemented under the demonstration model. The ideas have ranged from not providing inflation on PAU revenues to reducing allowable revenue for hospitals with high levels of PAU.

Some organizations (most notably Kaiser Permanente) have successfully integrated services to coordinate care and can claim to coordinate services for beneficiaries; otherwise, few insurers have successfully offered coordinated health care services. In the 1990s, the managed care revolution moved in that direction, but the emphasis focused on negotiating lower prices and improving some measures of utilization—length-of-stay, for example. For the most part, health care services remain uncoordinated across the spectrum of care in most of the nation in the face of beneficiary resistance to patient direction and limits on care options.

No one can reasonably argue that medically unnecessary services, ineffective procedures, and uncoordinated care are good for individual patients or for population health. However, any policy to remove inefficiency in existing utilization patterns must also recognize that the existing system has been built with an infrastructure to address demand for services generated from this system–capacity was built to accommodate patients from this structure and so was the mix of services. The HSCRC policy is attempting to shift the incentives to achieve a new system. A radical shift in incentives is likely necessary to produce this result, but that result cannot be instantaneous. The existing system has to adapt, transforming existing infrastructure, technology, and personnel.

The hospital industry is being asked to accomplish the care coordination that payers have not been able to achieve. The question is what must occur for this approach to be successful. If financial incentives can be structured to provide incentives to hospitals to engage in care coordination to reduce PAU, what systems and infrastructure need to be in place?

Enhanced variable cost factor

As the State moves toward implementation of the demonstration model, other policy options have been discussed as options to address volume. Currently, the HSCRC uses a variable cost factor (VCF) to reduce the incentive for volume growth in the system. Under this policy, the hospital keeps as permanent revenue 85% of the revenue associated with incremental volume over those in the rate base. In the current year, the hospital keeps 100% of the revenue, and the adjustment for incremental volume growth is made in the following rate year. The hospital keeps the one time increase in the current year. When hospitals experience volume declines under this policy, the facility experiences the full decline in the current year, but prospectively, the hospital retains 15% of the decline in volume associated with presumed fixed costs as defined by the policy. This policy is more stringent for clinics, where the same mechanism is in place, but the VCF is 50% with 50% fixed, not 85%/15%.

A discussion for a higher variable cost factor has been taking place for some time. Some payers have advocated a much lower variable cost factor to encourage hospitals to focus on better care coordination

as the benefits to volume growth became much less attractive. CareFirst has advocated a 40% variable cost factor, arguing that the 60% fixed cost factor for declining volumes would provide incentives for facilities to change from a culture of volume growth.

The variable cost factor tool is a blunt instrument, however. It does not recognize the source of changes in volume. Increases in incremental volume are treated in the same fashion whether the source is population growth, aging of the population, increased readmissions, or higher utilization rates for preventable admissions and visits. As a financial incentive to restrict volume growth, it can clearly be calibrated to make additional volume less attractive. The potential for unanticipated consequences, however, suggests that this policy's use should be limited and the outcomes monitored.

Volume governor

A volume governor is another tool for allocating a limited pot of revenue when the State is experiencing increasing demand for hospital services. The HSCRC's experience with a volume governor to date has been the use of a case mix governor, first used with the introduction of APR-DRGs to address potential revenue growth associated with coding improvements. Under this methodology, the State's hospital revenue would be projected with assumed growth in volume based on historic levels, and an annual update factor would be established to achieve the desired growth levels under the proposed demonstration model.

A volume governor would be applied if revenue growth exceeded expected levels from the annual update process and could be implemented in much the same way that the case mix governor has been implemented. If the enforcement mechanism worked in the same manner as the case mix governor, hospitals with volume decreases would experience the revenue decline associated with their declining volumes, and hospitals with increases in volumes would receive proportional reductions in incremental revenue to bring State hospital spending into line.

If the volume governor were used in conjunction with a variable cost factor, the adjustment for incremental volume increases would need to take into account the fact that hospitals with declining volumes retain some portion of their revenue. The governor would imply a larger adjustment in the event that the State exceeded anticipated aggregate volume growth.

Global budgets

The staff has indicated that a possible methodology under the demonstration model is to move a number of institutions to a global budget. Currently, ten hospitals in the State are under a special form of the global budget, referred to as the Total Patient Revenue (TPR) model. These hospitals have negotiated global budget arrangements in three year increments with pre-determined adjustments for population growth and aging of the population.

In its purest form, the global budget is a special form of the VCF policy, where the variable cost factor is 0% -- the hospital keeps all of its current revenue if it is able to reduce utilization. What is to prevent the hospital from dumping patients, keeping the revenue and boosting profitability by stenting on services? First, the hospital cannot serve its community and fulfill its mission if it inappropriately dumps services and patients, and hospital boards are likely to require management to provide appropriate community

services. Second, the HSCRC will likely monitor market share and service provision to be sure that inappropriate reductions do not occur, although identifying these shifts in the aggregate can be difficult except in extreme cases.

Ideally, hospitals would work to coordinate care with primary care providers, nursing homes, etc. to reduce readmissions and potentially avoidable cases that are better treated outside the hospital. Administrators would identify other services that could be treated less expensively outside the hospital as well, leaving their current budget intact but reducing utilization in the system. An open question, however, is how administrators see adjustments that realign the budget at the end of the year. While the global budget has the advantage of providing fixed revenue to the hospital and a predictable revenue flow from the regulatory point of view, will administrators actively reduce volumes when rebasing in the future could represent losses in permanent revenue? Even if administrators do not aggressively pursue volume reductions, will the incentives under the global budget be sufficient to slow volume growth and bring use rates in the State in line with national norms?

Population allocation with capitated revenue

Another possible policy option is to measure hospital performance by measuring each facility's charge per capita. Because the State is to be measured by a per capita all payer growth rate, judging each hospital's performance on a per capita basis provides the most direct alignment of measurement and incentives to control spending.

Because hospitals do not have discrete catchment areas, this approach is technically challenging. A possible approach would be as follows:

- Match services in the State to a unique identifier (from CRISP)
    - When a patient receives services from multiple hospitals, the hospital where the plurality of the services was performed would get credit for the patient. Alternatively, fractions could be assigned to create full time equivalent patients.
    - Divide the portion of the population not using hospital services according to the proportions for those using services.
- Compute hospital regulated revenue per capita based on the above population assignment.
- Determine the growth in per capita spending as determined relative to the previous year.
- Construct rewards and penalties to provide hospitals incentives to improve utilization and assist in achieving the per capita performance required under the demonstration model.

This discussion is a simplified version of the analysis that must occur under this process. While the approach is theoretically elegant, it faces a number of operational challenges at the moment. A true measurement of per capita hospital costs for Maryland residents would include the use of all hospital services, not just those rendered in the State. In a number of markets, particularly in the State's DC suburbs, many residents seek hospital services in the District. These patients do not appear in the State's data and make use rates for services appear much lower in these areas than they actually are. Further, it is hard to foresee how such a model would affect attribution of regional tertiary services.

Conclusions

The first goal under the demonstration model is to meet the revenue expectations established for the hospital system in the State. As the HSCRC creates new methodologies to operate under the demonstration model incentives, clear goals should be established for each policy and a plan for evaluation established to be sure that first the goals are achieved and second that the unintended consequences are minimized.

REFERENCES

Getzen, Thomas (2010) *Health Economics and Financing, Edition 4* (John Wiley & Sons, Inc.)

HSCRC staff (2013) "Potentially Avoidable Utilization," presentation, November 2013.