Final Recommendation for a Complexity and Innovation Policy

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Health Services Cost Review Commission
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This document contains the final recommendation for the Complexity and Innovation Policy.

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EXECUTIVE SUMMARY

This document puts forth a final recommendation for evaluating and prospectively funding highly complicated and innovative care at the Academic Medical Centers in Maryland, i.e. University of Maryland Medical Center and Johns Hopkins Hospital, in lieu of the current practice of providing a flat funding rate through an annual Intensity Adjustment with no formulaic evaluation methodology to determine the actual use of that funding.

Final Recommendations for the Complexity and Innovation Policy

1. Determine the differential funding needs due to complexity and innovation at the University of Maryland Medical Center and Johns Hopkins Hospital through two measures of clinical significance:
    A. A casemix acuity approach, whereby all cases with a casemix index of less than 1.5 will be excluded from the policy with the exception of newly emergent cases that were not in the base year performance ("Zero to Dominant")
    B. A cell dominance approach, whereby in-state, inpatient cases are deemed highly specialized (referred to as "categorical exclusions") if the two academic medical centers comprise 95% or more of an ICD-10 procedure code.
        - Dominance will be assessed in four capacities:
            a) Dominant, i.e. greater than or equal to 95%, in the Base Period to Dominant in the Performance Period
            b) Zero in the Base Period to Dominant in the Performance Period
            c) Dominant in the Base Period to Non-Dominant in the Performance Period
            d) Dominant in the Base Period to Zero in the Performance Period
2. Prospectively fund a working capital advance in concert with the annual Update Factor that reflects historical annual growth rates for categorical exclusions cases and cumulative funding status.
    A. Funding associated with the working capital advance will be part of the annual guardrail tests.
    B. Non-Academic Medical Centers will be eligible for Complexity and Innovation funding but only retrospectively.
3. Remove categorical exclusions from various methodologies:
    A. Market Shift
    B. Transfers
    C. Demographic Adjustment
    D. Inter-Hospital Cost Comparison
    E. Potentially Avoidable Utilization Shared Savings Program
4. For RY 2021, remove high cost outpatient drugs from the current definition of categorical exclusions and use the same approach currently applied state-wide for high cost outpatient drug growth (the CDS-A adjustment) to regulate volume funding.

INTRODUCTION

Since 2014, the State has operated under a per capita constraint under the All-Payer Model and the Total Cost of Care (TCOC) Model Agreements with the Centers for Medicare and Medicaid (CMS). The Commission has set the Global Budget Revenue (GBR) for hospitals and the annual update factor to manage the per capita growth rate. The GBR limits a hospital's incentive to grow volume unnecessarily. However, volume growth, especially lower acuity, low variable cost care was historically used to finance the additional costs associated with highly complicated cases and healthcare innovation, creating an inherent tension between the incentives of the TCOC Model and the ability for Maryland hospitals to be leaders in highly specialized, innovative care.

Stakeholders have thus expressed concern that there should be a predictable and formulaic methodology for specially funding highly complicated cases and innovative care, one that still comports with the aims of the TCOC Model and requirements specified in the Contract that governs the TCOC Model, as well as the Commissioner's directive that funding be provided only for verifiable differentiated cost growth. This final policy recommendation will outline staff's proposed methodology for funding in-state, inpatient highly complicated cases and healthcare innovation through a prospective budgetary amount that uses historical growth patterns to determine an appropriate working capital advance that will be provided in concert with the annual Update Factor policy recommendation.

BACKGROUND

In the first three years of the All-Payer Model, the Commission addressed the concern that access to highly specialized care and healthcare innovation in Maryland could potentially be restricted under the new Model by carving out these types of cases, known as categorical exclusions, from methodologies that regulate most of the State's hospital volume. Specifically, in-state, inpatient categorical exclusions were removed from the market shift policy and categorical cost growth was funded prospectively based on a 50 percent variable cost per case except for the cost of drugs, supplies, and organ acquisition, where the funding was 100 percent of estimated costs. As this funding mechanism was not meeting the needs of Academic Medical Centers, the Commission moved away from funding categorical exclusions in RY 2017 and instead has provided prospective "Intensity Adjustments" in the annual Update Factor policy recommendation. Below are the annual adjustments provided to University of Maryland Medical Center and Johns Hopkins Hospital for high intensity cases and health care innovation:

Table 1: Intensity Adjustments Provided to Academic Medical Centers

	RY 2017	RY 2018	RY 2019	RY 2020
% Funding provided in rates (applied to Total Revenue)	.5%	.5%	1%	1%
$ Funding provided in rates	$15,852,689	$19,332,282	$40,268,368	$40,995,888

In both the RY 2019 and RY 2020 annual Update Factor policy recommendation, Commissioners expressed concern that continuing to provide funding for assumed growth with no verification is detrimental to a global fixed revenue system. Academic Medical Centers also expressed concern that in the absence of a formulaic methodology that allows for growth in line with advances in medicine, providers of highly specialized, innovative care will erode hospital margins and could be faced with restricting access to tertiary and quaternary care. This is especially true under the larger global budget revenue framework, as Academic Medical Centers were historically able to support the additional costs of highly specialized care by growing lower acuity, low variable cost care in a fee-for-service system, which is undesirable from an affordability standpoint and has been phased out in the Total Cost of Care Model.

Various stakeholders have posited that profitability or additional discretionary funding that was historically supported through volume growth has been substituted with the incentive to reduce Potentially Avoidable Utilization (PAU), and therefore Academic Medical Centers have an opportunity to fund highly specialized care through reduced PAU and do not require a separate volume methodology. However, as you can see from the table below, this opportunity is not uniform across all hospitals.

Table 2: Potentially Avoidable Utilization Opportunity across 17 Maryland Hospitals with Graduate Medical Education

Hospital	PAU Revenue as a % of Eligible Revenue	Statewide Rank
Rehab & Ortho Institute	0.24%	1
University Medical Center	11.79%	3
Mercy Medical Center	13.16%	5
Holy Cross Hospital	14.61%	7
Johns Hopkins Hospital	14.87%	8
Suburban Hospital	14.99%	9
Sinai Hospital	16.57%	11
Greater Baltimore Medical Center	17.02%	12
Prince Georges Hospital	19.37%	20
Union Memorial Hospital	20.20%	22
Johns Hopkins Bayview Medical Center	21.28%	25
Baltimore Washington Medical Center	22.89%	30
Harbor Hospital Center	24.22%	33
Franklin Square Hospital Center	24.44%	34
St. Agnes Hospital	25.56%	38
UMMC Midtown	27.48%	42
Good Samaritan Hospital	30.41%	46
Statewide	18.44%	

In light of all these concerns, staff has developed a methodology that determines highly specialized care through a casemix acuity and cell dominance approach but still maintains the annual prospective funding mechanism, i.e. a working capital advance. In effect, the proposal creates a monitoring methodology to ensure volume growth associated with highly specialized care actually occurs, which in turn can be used to prospectively realign the working capital advance provided to the State's two Academic Medical Centers. Maintaining this funding mechanism ensures that Academic Medical

Centers have an allotment of funding for highly specialized care in line with historical annual growth while at the same time keeping fidelity to Total Cost of Care contract parameter that 95% of all Regulated Revenue for Maryland residents is paid according to a Population-Based Payment methodology.[1]

Establishing a Definition of Academic Medical Centers & Evaluating Non-Academic Medical Center Growth

The intent of this policy is to address the need for a methodology to substantiate the funding provided to the State's two Academic Medical Centers through the annual Intensity Adjustments. However, staff believed it was important to first establish a definition of Academic Medical Centers in Maryland in order to isolate the Complexity and Innovation policy to select hospitals.

National definitions of academic medical centers are descriptive but not prescriptive. For example, the Association of Academic Health Centers cites that "Academic Medical Centers provide tertiary and quaternary healthcare services, specializing in the most complex and difficult diagnoses and treatments while educating the next generation of health professionals. Their research provides important new knowledge leading to advances in understanding and treatment of diseases." Under this definition, one could argue that all of Maryland's seventeen hospitals with graduate medical education could qualify. However, while many of these hospitals provide specialized care, none are providing the level of research, teaching, and range of quaternary care provided by Johns Hopkins Hospital and University of Maryland Medical Center. Staff has therefore determined that to qualify for a prospective adjustment for highly specialized care under this draft policy, hospitals must have more than 500 beds, an intern/resident to bed ratio of .60 or higher, an Inpatient Casemix Index greater than 130% of the statewide average and the presence of a medical school.

[1] Population-Based Payment is defined to mean hospital payment that either (1) is directly population-based, such as prospectively tying hospitals' reimbursement to the projected utilization of services by a specific population or subpopulation of Maryland residents, or (2) establishes a fixed budget for Regulated Maryland Hospitals for services projected to be furnished.

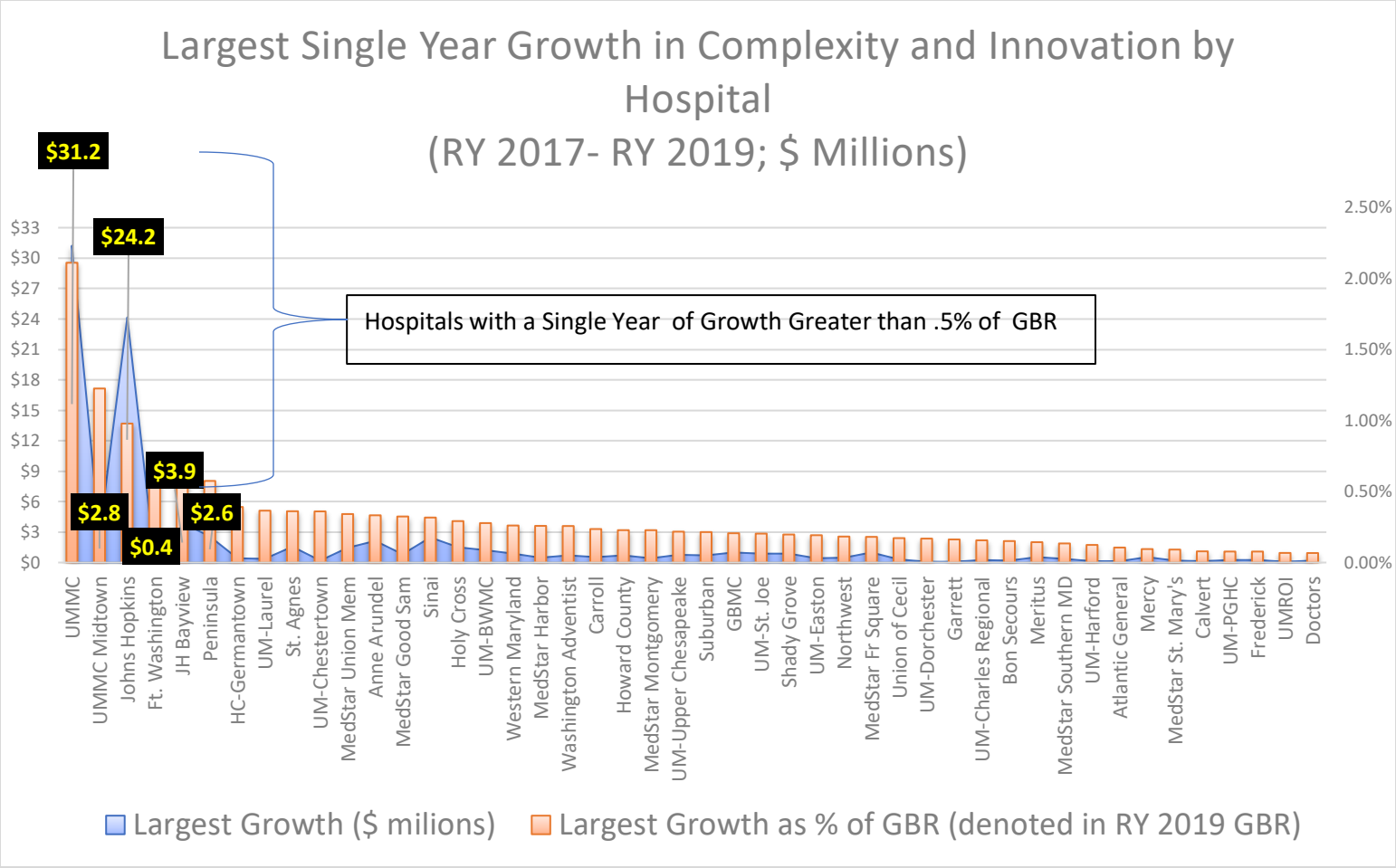
Table 3: Criteria for Prospective Intensity and Innovation Adjustment

Hospital	FTE interns and residents	Total beds	IRB ratio	Med School	2018 IP MD Casemix Index
Johns Hopkins Hospital	915	993	0.92	Yes	1.5576
University Medical Center	565	711	0.83	Yes	1.8364
Union Memorial Hospital	86	211	0.40	No	1.4228
Harbor Hospital Center	45	113	0.39	No	0.8083
Johns Hopkins Bayview Medical Center	155	442	0.35	No	1.1327
Sinai Hospital	131	470	0.28	No	1.2899
University of Maryland Medical Center—Midtown	48	187	0.26	No	0.9731
Mercy Medical Center	51	210	0.25	No	1.1980
Prince Georges Hospital	48	249	0.19	No	1.1255
Franklin Square Hospital Center	70	386	0.17	No	0.9404
Good Samaritan Hospital	31	216	0.14	No	0.9958
UMROI	10	125	0.08	No	1.6825
Suburban Hospital	8	220	0.05	No	1.2351
Holy Cross Hospital	25	469	0.04	No	1.0139

Staff acknowledges that other hospitals in the State may provide unique and costly services that do not occur elsewhere in the State, and therefore could be eligible for special consideration under this policy. In light of this acknowledgement, staff recommends that other hospitals be eligible for the Complexity and Innovation policy if the hospital exhibits cell dominance and the cases have a casemix index greater than 1.5, the latter of which is an additional validation metric to ensure classified services are more complicated that average acuity cases that would have a casemix index of 1.0.[2] However, staff does not recommend that the funding mechanism for non-academic medical centers be a working capital advance, as growth among non-academics in these types of cases has been very limited.

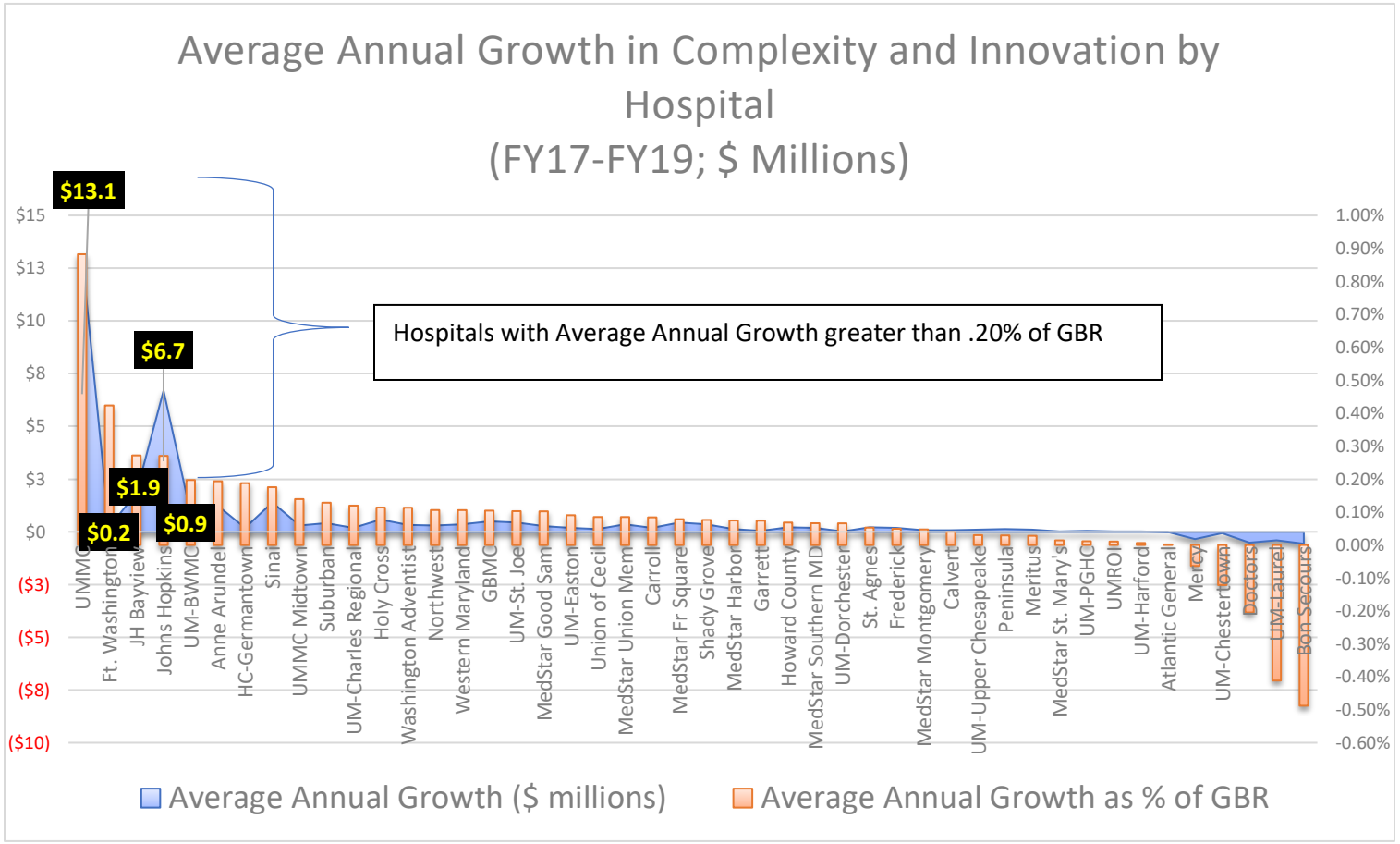
[2] The service line of inpatient rehabilitation has been removed from consideration in this policy despite having a casemix greater than 1.5, because a central aim of this policy is to address cost pressures associated with procedures that have high variable costs and rehabilitation does not.

Table 4: Non-Academic Complexity and Innovation Growth



As demonstrated in Table 4, only a handful of hospitals (including the academic medical centers) experienced growth in a single year since RY 2017 that surpassed .50% of its global budget. This amount (.50% of a hospital's GBR) is relevant because it was considered by the Commission to be a significant threshold, meriting targeted prospective funding for the academic medical centers for Complexity and Innovation in RY 2017 and RY 2018. (The amount of prospective funding for the academic medical centers was increased to 1% of their GBRs for RY 2019 and RY 2020.) Moreover, of these six hospitals, two of the hospitals are academic medical centers, for which this policy is intended, and only two other hospitals (Fort Washington and Bayview Medical Center) exhibited significant, sustained growth across the last three fiscal years (that is, average annual growth of at least .2% of their GBR), as demonstrated in Table 5 below:

Table 5: Non-Academic Complexity and Innovation Growth



Because the academic medical centers demonstrated significant growth both in terms of a single year and over the course of the last three fiscal years, staff believes it is important to create a volume methodology that prospectively estimates growth in highly complicated, innovative services. For all other hospitals, including Bayview Medical Center, which experienced significant growth exclusively because of burn cases, and Fort Washington, which experienced growth due to potential coding anomalies, staff recommends that a retrospective adjustment be provided on ad-hoc basis once staff has validated growth and deducted funding from any realized gains due to the market shift methodology as well as associated Demographic Adjustment funding - see *Stakeholder Comments* section for more details.

Determining Highly Specialized Care (Cell Dominance & Casemix Threshold)

Staff considered several approaches to determining highly specialized care, including using preexisting lists of healthcare innovation, most notably the Center for Medicare and Medicaid Services (CMS) list of procedures from the New Technology Add-On Payments (NTAP) policy. Two prevailing concerns

prevented staff from using this type of approach. First, HSCRC staff is not comprised of clinical experts who can differentiate between regular acute care and highly specialized acute care at the procedure code level. This is especially true for emerging technologies that would not have charges to develop case weights for and which would require a clinical significance evaluation similar to the NTAP policy:

> "(1) The technology offers a treatment option for a patient population unresponsive to, or ineligible for, currently available treatments.
>
> (2) The technology offers the ability to diagnose a medical condition in a patient population where that condition is currently undetectable or diagnose a medical condition earlier in a patient population than allowed by currently available methods. There must also be evidence that use of the device to make a diagnosis affects the management of the patient.
>
> (3) Use of the technology significantly improves clinical outcomes for a patient population as compared to currently available treatments."[3]

Secondly, available preexisting lists only enumerated a handful of procedures as new or innovative, and none of these lists covered the historical high specialized cases that academic medical centers perform with enhanced cost based reimbursement, e.g. organ transplant cases.[4]

As such, staff proposes to identify cases for the Complexity and Innovation policy by isolating cases where Academic Medical Centers perform 95% of all procedures statewide, based on the presence of an International Classification of Disease (ICD-10) procedure code. Evaluation will allow cost plus markup for drugs, supplies and organ acquisition (similar to select CMS payment methodologies) and 50% for all other charges, which equates approximately to a 70% variable cost factor.[5]

Staff elected to use procedure codes in lieu of diagnosis related groupings (DRGs), as the latter is more prone to subjectivity. All procedure codes will be used to determine dominance and no hierarchy will be considered, e.g. the primary procedure code or the secondary procedure code on a record may be used to determine dominance. Finally, it is important to note that staff will consider four types of dominance across the base fiscal year period and performance fiscal year period:

1. Dominant in the Base Period to Dominant in the Performance Period – all growth will be evaluated and cases will be removed from the market shift policy
2. Zero in the Base Period to Dominant in the Performance Period – this type of dominance will ensure that the Commission accounts for new emerging innovation. All growth will be evaluated and cases will be removed from the market shift policy.
3. Dominant in the Base Period to Non-Dominant in the Performance Period – this type of dominance will ensure that the evaluation of cost growth properly accounts for volume declines with a ~70% variable cost factor. All growth will be evaluated and cases will be placed into the market shift policy to ensure non-academic hospitals receive credit for market shifts.

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[3] Health Affairs: *Experience With Medicare's New Technology Add-On Payment Program* https://www.healthaffairs.org/doi/full/10.1377/hlthaff.27.6.1632

[4] "Approved transplant centers are paid a PPS rate based on a MS-DRG for the actual organ transplant and they are also reimbursed for the reasonable and necessary costs associated with acquiring the organ (that is, organ acquisition costs)." - https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM11087.pdf

[5] 50% represents the statewide average of variable costs, which is incorporated in the market shift policy.

4. Dominant in the Base Period to Zero in the Performance Period – this type of dominance is a subset of Dominant in the Base Period to Non-Dominant in the Performance Period and is a new development since the Draft Recommendation. Staff have developed this additional criteria because under the Dominant to Non-Dominant growth analysis, staff is developing a list of procedures that cannot be eligible for Complexity and Innovation funding in future years, as cases have diffused out of the academic medical centers and can be performed in non-academic medical centers—that is, these cases do not deserve a unique funding mechanism. Without an identification of cases that go from dominant to zero, most likely due to select procedures only occurring in rare circumstances, staff would be suggesting diffusion to non-academic medical centers as opposed to the phenomenon of select highly specialized procedures occurring infrequently.

Commissioners and stakeholders raised concerns that while the cell dominance does serve as a good initial proxy for clinical significance, it is possible that only identifying cases as highly complicated and innovative through such an approach may be too broad. As such, staff have added an additional criteria that all cases that with a casemix less than 1.5 will be excluded from the policy. The lone exception to this exclusion are Zero to Dominant cases that did not exist in the base and therefore could not influence the weights associated with a casemix index analysis. This approach comports with staff's initial determination that academic medical centers should have access to a standalone volume methodology due to having higher casemix indices relative to other State hospitals, and it provides an additional validity analysis to determine clinical significance.

Implications for Other Methodologies

As mentioned, the Complexity and Innovation policy has material impact on the market shift policy, as cases deemed to be highly complicated and/or innovative will be removed from the market shift algorithm. Similarly, these cases will also be removed from the State's transfer policy and the Demographic Adjustment to ensure that funding is not provided twice for volume growth.

Staff will also remove existing innovative high cost outpatient drugs from the categorical exclusion definition and by extension the Complexity and Innovation policy, as these cases can be more properly regulated through the existing CDS-A methodology, which provides partial cost based reimbursement for high cost outpatient drugs. Existing outpatient drugs classified as categorical exclusions, such as Spinraza and Lutathera, will be included in the retroactive analyses outlined in the *Assessment* section that will help determine the appropriate working capital advance for RY 2021, but moving forward will be removed from future consideration in the Complexity and Innovation policy. Staff will continue to monitor the appropriateness of CDS-A inflation and increases each year to address high cost outpatient and infusion drugs.

Finally, staff will continue to remove categorical exclusions from the Inter-hospital Cost Comparison methodology (ICC) used to determine hospital's efficiency relative to its peers, and staff will also remove categorical exclusions from the current Potentially Avoidable Utilization Shared Savings policy.

ASSESSMENTS

In this section, staff provides modeling back to RY 2017 when Intensity Adjustment funding was first put into rates. In doing so, staff will be able to provide an appropriate RY 2021 working capital advance for University of Maryland Medical Center and Johns Hopkins University that is in line with historical growth patterns. This calculated figure is an estimate and subject to revision; the final working capital advance will be included in the RY 2021 Update Factor Recommendation.

When determining the working capital advance associated with the newly proposed Complexity and Innovation policy for RY 2021, staff had to vet various important modelling decisions in order to most accurately account for the funding and volume growth that occurred between RY 2017 and RY 2019. The specifications are enumerated below:

Table 6: Modelling Specifications for Creating RY 2021 Working Capital Advance Estimate

Modelling Specification	Additional Comments
Used actual historical funding put into rates	Differed slightly from calculating percentage of funding approved by Commission for Intensity Adjustment
Used base year of 2016; stopped analysis at RY 2019	Incorporated OP Drugs Spinraza and Lutathera in retroactive analysis; will be excluded moving forward
Only included cases that exhibited >=95% cell dominance	Academics assessed as one collective; all other hospitals assessed individually
Excluded all cases with a casemix of less than 1.5	Exception were cases flagged as zero to dominant because these cases did not exist in the base
Procedures that met criteria were put into hierarchy such that procedure code sequencing determines allocation of charges	Necessary to ensure charges are not double counted
Identified cases through four categories and assessed growth in revenue through total charges or base year charge per case	Dom-Dom Growth (total charge growth) Dom-Zero Growth (total charge growth) Zero to Dom Growth (total charge growth) Dom-Non Dom Growth (charge per case)
Charges were converted to costs by using Experience Report cost-to-charge ratio for drugs, supplies, and organ acquisition; 50% for all other charges	Analyses of Level I and Level II cost-to-charge ratios from annual filings demonstrated greater volatility between years and therefore were not used
Utilized evergreen list to preclude procedures previously marked as non-dominant from being included in the policy, thereby removing truly diffused services	Created new growth category of zero to dominant to ensure small volume cases that did not diffuse to community hospitals were not put into evergreen list
Used combined AMC simple average to determine average annual growth	Necessary as dominance categories are determined across University of Maryland Medical Center and Johns Hopkins Hospital, i.e. they are treated as one hospital, and simple average removes influence of inflation
Developed pro rata market shift analyses based on associated ECMAD growth in policy to calculate share of Complexity and Innovation of volume recognized in historical market shift adjustments	Calculated Market Shift Charge Per ECMAD (Market Shift Adjustment / Shifted ECMADS) - Already takes into account 50% VCF and inflation factor

	Calculated Innovation MS assuming 100% recognized MS (MS Charge Per ECMAD X Innovation ECMAD Growth) Calculated Innovation Market Shift to account for unrecognized shifts (Innovation Market Shift X IP % of ECMAD Growth Recognized in MS)
Historical Over Funding was deducted from RY 2021 working capital advance.	While the growth rate was determined by the combined average of the two hospitals, it was important to deduct individual hospital funding status from the RY 2021 working capital advance.

Tables 7a and 7b below demonstrate the cumulative funding status of University of Maryland Medical Center and Johns Hopkins Hospital, respectively, based on the aforementioned modelling specifications. It is important to note again that these estimates are subject to revision and will be finalized during the RY 2021 Update Factor Recommendation process.

Table 7a: Historical Funding Status Calculation (UMMC & Shock Trauma)

	FY17	FY18	FY19	TOTAL	ALGEBRA
GBR	$ 1,603,012,672	$ 1,673,488,785	$ 1,781,319,834		A
FUNDING PUT INTO RATES	$ 7,555,330	$ 7,862,166	$ 16,342,534	$ 31,760,030	B
VOLUME GROWTH	$ 5,503,331	$ 26,904,030	$ 843,932	$ 33,251,292	C
OP VOLUME GROWTH	$ -	$ -	$ -	$ -	D
DIFFERENCE	$ 2,052,000	$ (19,041,864)	$ 15,498,602	$ (1,491,262)	E=B-(C+D)
GROWTH AS % OF GBR	0.34%	1.61%	0.05%		F=(C+D)/A
CONCLUSION	Over Funded	Under Funded	Over Funded		
MARKET SHIFTS				$ 6,285,741	G
CUMULATIVE FUNDING STATUS	Over Funded	By		$ 4,794,479	H=E Total -G Total

Table 7a demonstrates that from RY 2017 through RY 2019, University of Maryland Medical Center was under funded $1.5 million when strictly accounting for funding put into rates and volume growth associated with highly specialized cases. When accounting for market shift, however, University was over funded by $4.8 million.

Table 7b: Historical Funding Status Calculation
(Johns Hopkins Hospital)

HOPKINS	FY17	FY18	FY19	TOTAL	ALGEBRA
GBR	$ 2,352,306,792	$ 2,412,311,008	$ 2,476,494,742		A
FUNDING PUT INTO RATES	$ 8,297,358	$ 11,470,116	$ 23,925,835	$ 43,693,309	B
VOLUME GROWTH*	$ (3,764,049)	$ 16,352,753	$ (596,774)	$ 11,991,930	C
OP VOLUME GROWTH	$ 132,000	$ 5,837,000	$ 1,767,600	$ 7,736,600	D
DIFFERENCE	$ 11,929,407	$ (10,719,637)	$ 22,755,009	$ 23,964,779	E=B-(C+D)
GROWTH AS % OF GBR	-0.15%	0.92%	0.05%		F=(C+D)/A
CONCLUSION	Over Funded	Under Funded	Over Funded		
MARKET SHIFTS				$ (1,005,961)	G
CUMULATIVE FUNDING STATUS	Over Funded		by	$ 22,958,818	H=E Total -G Total

Johns Hopkins Hospital, on the other hand, has been over funded by approximately $23.9 million and this value is slightly reduced to $22.9 million when market shift is accounted for. Following calculating historical funding statistics inclusive of market shift, the next step to estimate the RY 2021 working capital advance is to calculate the historical average growth using a simple average approach across both hospitals – see Table 8.

Table 8: Historical Growth Rate Calculation
(UMMC & Shock Trauma and Johns Hopkins Hospital)

		1	2	3	4	
ALGEBRA	**Descriptions**	**FY17**	**FY18**	**FY19**		
A	GBR	$ 3,955,319,464	$ 4,085,799,793	$ 4,257,814,576		
B	Funding Put into Rates	$ 15,852,689	$ 19,332,282	$ 40,268,368		
C	Volume Growth*	$ 1,739,282	$ 43,256,783	$ 247,158		
D	OP Volume Growth	$ 132,000	$ 5,837,000	$ 1,767,600		
E=B-(C+D)	Difference	$ 13,981,407	$ (29,761,500)	$ 38,253,610		
F=(C+D)/A	Growth as % of GBR	0.05%	1.20%	0.05%	0.43%	F4=average(F1-F3)

As demonstrated in Table 8, the historical average growth rate for Johns Hopkins Hospital and University of Maryland Medical Center when using a simple average and treating both hospitals as one, which is necessary because dominance is determined across both hospitals, is .43%. Incorporating this value into each hospital's RY 2021 estimated GBR and deducting out prior funding status yields the RY 2021 estimated working capital advance itemized in Table 9.

Table 9 Tentative RY 2021 Working Capital Advance

		UMMC & SHOCK TRAUMA	HOPKINS
ALGEBRA	**Descriptions**	**RY 2021**	**RY 2022**
A=RY2020 GBR *1.03	RY 2021 Base GBR (calculated)	$ 1,717,988,387	$ 2,707,159,456
B=C/A	RY 2021 Recommendation %	0.15%	-0.42%
C=A*D-E	RY 2021 Recommendation $	$ 2,628,379	$ (11,262,080)
D	Average Annual Growth	0.43%	0.43%
E	Over (Under Funding)	$ 4,794,479	$ 22,958,818

As previously mentioned, this calculation of the RY 2021 working capital advance is subject to revision and will be finalized once global budgets are better established for the RY 2021 rate year. A final calculation of the working capital advance will be provided in the Update Factor Recommendation.

STAKEHOLDER COMMENTS

Staff received 5 comment letters from the following organizations: MedStar Health, University of Maryland Medical System and Johns Hopkins Health System (combined letter), Maryland Hospital Association, CareFirst, and the Rockburn Institute. All letters were generally supportive of a policy to specially recognize complex and innovative procedures, but did seek additional clarification and proposed various considerations for the final policy. Support was expressed for the following:

A) Using cell dominance as means to determine complex and innovative cases
B) Acknowledging this policy should be applied to the state's two academic medical centers
C) Prospectively adjusting hospitals global budgets in recognition of historical average growth

Comments that required staff feedback can be categorized into four areas:

A) Rebranding
B) Broaden Policy
C) Additional Clarification
D) Additional Assurances

Rebranding

1) The Rockburn Institute recommended changing the name of the policy from the Intensity and Innovation Policy to the Complexity and Innovation Policy, because "intensity is usually associated with the amount of effort or cost or quantity of services." Whereas, "complexity has salience and is associated with: medical factors; socioeconomic and mental illness factors; and patient behaviors and traits."

Staff concurs with this recommendation.

Additional Clarification

1) Commissioners and CareFirst expressed concern about how rebates and discounts would be handled in the policy, most notably 340B rebates.

Staff notes that the Complexity and Innovation policy is purposely restricted to inpatient service; therefore, the 340B rebates are not relevant to this policy as they are only applied to outpatient drugs. Staff would also note that 340B costs are considered in the CDS-A methodology.

Staff would also point out that the Complexity and Innovation Policy is using the invoice cost-to-charge ratio from HSCRC experience reports to approximate costs, and these costs are net of any other rebates. Finally, staff notes that because markup is not uniform across all drugs, staff will implement an annual special audit process to ensure that cost-to-charge ratios do not over time become higher for innovative cases, thereby allowing the AMCs to collect a greater increase in revenues from charge variation as opposed to actual volume growth.

2) CareFirst requested that staff provide greater clarification on funding calculations. Specifically, CareFirst asked that staff address the following aspects of the calculation:

A) What years will be included in the average run rate?
The years included for the calculation of the average annual growth rate for the RY 2021 working capital advance will be RY 2016 base, RY 2017, 2018 and 2019 growth. RY 2022

working capital advance will include the same years but also RY 2020. In effect, the working capital advance will always be based on growth from RY 2016 and will not include the most recent rate year growth because of data lag.

B) Whether the average will be weighted or simple?
The historical annual average growth rate will be based on a simple average. This ensures that more recent years with greater inflation do not have larger influence on the calculation purely because of inflation and not growth trends.

C) If the calculated average will directly match the up-front working capital advance?
The working capital advance will be equivalent to the historical average growth rate expressed as a percentage of GBR multiplied by the current GBR.

D) If UMMC and JHH will have the same working capital advance or if it will be calculated individually?
Because the historical analysis is limited to 3 years of growth and the dominance determination of greater than or equal to 95% is calculated across both hospitals, staff is recommending using the average of the two academic medical centers' historical average growth. Staff believes that using the combined average growth for both academic medical centers will create more stability in the statistic and prevent an individual hospital from driving additional volume in order to increase its working capital advance. In future years, staff may develop the growth rate independently for each hospital once more data is available and trends normalize.

E) Whether drugs will be included or excluded from this calculation?
Inpatient drugs are included in the Complexity and Innovation policy provides partial cost based reimbursement for high cost outpatient drugs. . Outpatient drugs are excluded from the policy moving forward, but Spinraza and Lutathera will be included in retroactive analyses to determine historical over/under funding, as these drugs were purposely removed from the existing CDS-A methodology, which Moving forward these drugs will be included in the CDS-A methodology.

Broaden Policy

1) The Rockburn Institute recommended utilizing Information Theory to derive a hospital's complexity and supplement that to staff's cell dominance approach, thereby ensuring clinical significance through additional validating analyses.

Staff concurred with this recommendation but with modifications, as aforementioned. Specifically, staff amended its recommendation such that the Complexity and Innovation Policy may only be accessed if:

A) Procedure code cell dominance is exhibited – that is, greater than 95% – AND
B) Cases have a casemix index of 1.5 or greater

Staff notes that the casemix index consideration will not be applied to cases that did not exist in the base and occur in the performance period – that is, zero to dominant – as these cases do not have casemix weights.

Staff also notes that the service line of inpatient rehabilitation will be removed from consideration despite having a casemix greater than 1.5, because a central aim of this policy is to address cost pressures associated with procedures that have high variable costs and rehabilitation does not.

2) MedStar, Maryland Hospital Association, and CareFirst requested that the Complexity and Innovation Policy be extended to all Hospitals.

Staff concurs with this recommendation but with modifications:

A) Staff recommends that other hospitals be eligible for the Complexity and Innovation policy if an individual hospital exhibits cell dominance and the cases have a casemix index greater than 1.5.

B) Based on review of hospitals statewide that meet this criteria, growth is very limited, as demonstrated in Tables 4 and 5. Therefore, staff recommends that in lieu of a prospective adjustment, hospitals that meet the criteria for this policy present to HSCRC staff, prior to the Update Factor Recommendation, growth that occurred during the prior fiscal year. To better assist hospitals, staff will provide six months after the close of fiscal year dominant procedures for the prior fiscal year by facility. See below for an example timeline of this process

Table 10: Example Timeline for Non-Academic Complexity and Innovation Funding

Rate Year 2020	Rate Year 2021				Rate Year 2022			
Q1-Q4	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Growth Assessed		**Staff provides Dominance codes for RY 2020 by Hospital**	**Hospitals submit RY 2020 Complexity and Innovation Growth Proposal**	**Staff validates and makes recommendation for RY 2022 Update Factor**	**Rate Orders issued for RY 2022 inclusive of ad hoc Complex and Innovation Policy Recommendation for non-AMC's**			**Staff provides Dominance codes for RY 2021 by Hospital**

Following submission from a hospital, staff will then validate the growth and provide funding in the upcoming fiscal year equivalent to 100% funding for drugs, supplies, and organ acquisition costs plus 50% for all other charges. Staff will also deduct from this funding any realized gains from the market shift methodology that occurred due to growth in the select highly specialized volume as well as associated Demographic Adjustment funding.

3) University of Maryland Medical Center and Johns Hopkins Health System recommended that staff consider extending the policy to outpatient services. Additionally, the two academic medical centers also expressed concerns that the CDS-A methodology, which provides funding for growth in high cost

outpatient drugs, only covers 50% of the actual drug cost and even with the enhanced inflation factor on high cost drugs, only 70% of costs would be covered. Therefore, it is important to monitor the adequacy of funding in the CDS-A program.

Staff believes the main driver of complexity and innovation in outpatient care is drugs and there is already a methodology available to all hospitals to address high cost drugs. Also, while staff agrees that it is important to monitor the adequacy of funding through the CDS-A program, several contextual points are important:

- **A) The CDS-A program in the initial year covers 50% of costs permanently, and 50% of the costs on a one time basis, such that 100% of costs are covered in year one**
- **B) The CDS-A program, through the combination of providing 50% of costs on a permanent basis and providing a differential update factor for high cost drugs (10%), has covered the increased costs associated with growing and static drugs with escalating prices.**
- **C) The complexity and innovation policy should be reserved for inpatient only services, as:**
    - **a. the vast majority of highly specialized tertiary and quaternary cases occur in inpatient settings,**
    - **b. the casemix index differential for inpatient services is far starker than for outpatient services, and**
    - **c. Johns Hopkins Hospital and University of Maryland Medical Center are not among the top 10 hospitals for OP casemix acuity (excludes high cost drugs).**

4) CareFirst recommended that non-academic medical center "innovation" volume that decreases due to referrals to academic medical centers and not picked up in the market shift policy should result in an offset to the update factor. CareFirst also recommended the policy have a revenue-neutral offset against statewide inflation equivalent to any incremental innovation funding provided prospectively.

Staff does not believe inflation offsets for non-academic medical centers are necessary, as volume evaluated in the Complexity and Innovation policy will be included in the market shift methodology but will be flagged, similar to the current categorical exclusion flag. Staff will be able to evaluate any declines at non-academic medical centers that occur through this flag. Declines will be defunded through the market shift policy; the corollary increases at the academic medical centers will be addressed through the Complexity and Innovation policy. Staff expects this to be a fairly small amount of volume, as the 95% cell dominance rule will, by definition, reduce the extent to which non-academics have volume in this policy

Staff also does not believe the funding associated with growth in highly specialized cases should be automatically deducted from statewide hospital inflation, because staff will continue to use total cost of care guardrails, as well as the State GDP growth to evaluate the adequacy of the annual update factor. In short, staff does not agree that automatically reducing inflation to offset growth in innovative volume is appropriate given the larger cost trends hospitals are held accountable to.

Additional Assurances

1) CareFirst indicated that the policy uses relatively low potential avoidable utilization volume as justification for the Complexity and Innovation policy, and that there is no mention of revisiting this

statistic to ensure the same inelasticity of academic medical centers budgets is maintained. Furthermore, CareFirst recommended using a more holistic measure of efficiency, such as the Integrated Efficiency policy, to determine a hospital's eligibility for the Complexity and Innovation policy. MedStar similarly requested that the policy include national utilization and reimbursement/charge benchmarking to ensure growth in both are reasonable.

In future reports on the Complexity and Innovation policy, staff will update the Commission on the academic medical centers' standing in terms of potentially avoidable utilization as a percentage of eligible revenue. Staff would note though that this statistic will be widely distributed, as it forms the basis of the potentially avoidable utilization credit in the capital methodology.

While staff appreciates CareFirst's support of the Integrated Efficiency policy, which was developed to evaluate both hospital cost per case and total cost of care performance for purposes of scaling the annual update factor, staff recommends not conflating analyses. Instead, staff recommends handling efficiency concerns through the Integrated Efficiency policy and adjusting funding for highly specialized care through the Complexity and Innovation policy.

2) Maryland Hospital Association recommended that staff annually Report on Innovation funding at a public meeting and validate the impact of innovation funding in market shift adjustments.

Staff intends to recommend to the Payment Model Work Group each year a prospective amount for complexity and innovation in line with historical average growth. During these public meetings and at the Commission meeting when staff recommends inflation for the Update Factor, staff will provide a report on volume, spending and funding for services under this policy.

For the RY 2022 Update Factor Recommendation, staff will include a validation analysis of the interplay between Market Shift and the Complexity and Innovation policy.

3) CareFirst recommended building in appropriate sampling and clinical input to validate the qualifying procedures year over year to ensure volume is truly innovative and bringing incremental value to patients.

Staff have added a second proxy for clinical significance in the complexity and innovation policy: All volume that has a casemix index less than 1.5 will be excluded from the policy. In doing so, staff believes there is not a need for additional sampling and clinical input to validate the qualifying procedures.

RECOMMENDATIONS

Final Recommendations for the Complexity and Innovation Policy

1. Determine the differential funding needs due to complexity and innovation at the University of Maryland Medical Center and Johns Hopkins Hospital through two measures of clinical significance:
    A. A casemix acuity approach, whereby all cases with a casemix index of less than 1.5 will be excluded from the policy with the exception of newly emergent cases that were not in the base year performance ("Zero to Dominant")
    B. A cell dominance approach, whereby in-state, inpatient cases are deemed highly specialized (referred to as "categorical exclusions") if the two academic medical centers comprise 95% or more of an ICD-10 procedure code.
        - Dominance will be assessed in four capacities:
            a) Dominant, i.e. greater than or equal to 95%, in the Base Period to Dominant in the Performance Period
            b) Zero in the Base Period to Dominant in the Performance Period
            c) Dominant in the Base Period to Non-Dominant in the Performance Period
            d) Dominant in the Base Period to Zero in the Performance Period
2. Prospectively fund a working capital advance in concert with the annual Update Factor that reflects historical annual growth rates for categorical exclusions cases and cumulative funding status.
    A. Funding associated with the working capital advance will be part of the annual guardrail tests.
    B. Non-Academic Medical Centers will be eligible for Complexity and Innovation funding but only retrospectively.
3. Remove categorical exclusions from various methodologies:
    A. Market Shift
    B. Transfers
    C. Demographic Adjustment
    D. Inter-Hospital Cost Comparison
    E. Potentially Avoidable Utilization Shared Savings Program
4. For FY 2021, remove high cost outpatient drugs from the current definition of categorical exclusions and use the same approach currently applied state-wide for high cost outpatient drug growth (the CDS-A adjustment) to regulate volume funding.