MARYLAND
Health Care
Commission

**Randolph S. Sergent, Esq.**, Chairman
**Ben Steffen**, Executive Director

February 13, 2024

The Honorable Guy Guzzone
Chair, Budget and Taxation Committee
Miller Senate Office Building, 3 West Wing
11 Bladen Street
Annapolis, MD 21401

The Honorable Ben Barnes,
Chair, House Appropriations Committee
121 Taylor House Office Building
6 Bladen Street
Annapolis, MD 21401

**Re: HB 200 (Ch. 101) Budget Bill (Fiscal Year 2024), 2023, Section 19, Item 56, page 292, $9.5 Million Distribution Criteria for Trauma Centers**

Dear Chair Guzzone and Chair Barnes,

The Maryland Health Care Commission (MHCC) was directed under FY 2024 budget language to distribute $9.5 million among trauma centers in financial stress. Before making any distribution, MHCC is to submit its methodology to the Senate Budget and Taxation Committee and the House Appropriations Committee. This letter meets that requirement.

**Approach**

In the fall of 2023, MHCC convened two meetings of the 10 trauma centers that are eligible for payment under the budget language. At the first meeting, all trauma centers were asked to describe their financial challenges. All trauma centers pointed to additional physician and other clinical personnel costs linked to operations as a trauma center. A number of trauma centers observed that some trauma center personnel costs associated with the trauma director, trauma registrar and other personnel dedicated to the trauma program were included in HSCRC approved hospital rates, but the allowed costs in HSCRC rates do not include all costs associated

those personnel.[1] There was also a general consensus that all trauma centers were under financial stresses, although the cost drivers differed depending on trauma center level, the complexity of trauma patients being treated, and financial factors unique to specific trauma center hospitals.

The MHCC staff questioned representatives about the availability of profit and loss statements for specific trauma centers. The trauma centers that are situated within an acute care hospital, which constitutes all trauma centers in Maryland except for the R Adams Cowley Shock Trauma Center (RACSTC), explained that their parent hospitals do not construct profit and loss statements for the trauma centers at the respective hospitals. RACSTC is the only trauma center hospital in Maryland for which profit and losses can be solely attributed to a trauma service. As a trauma hospital providing only trauma care, their income statements provide a clear picture of the financial performance of a trauma hospital. RACSTC representatives emphasized that some trauma patients utilize non-trauma points of service when being treated at RACSTSC including radiology, blood bank products, laboratory, therapy services, and certain cardiac services. The more complete information from RACSTC was helpful but shed little light on performance of trauma centers at acute general hospitals.

Given the absence of profit and loss statements specific to most acute care hospital trauma centers. MHCC examined hospital operating margins for regulated business (subject to HSCRC rate-setting rules) and unregulated business (not subject to HSCRC rate-setting) and total margins, which reflect operating revenue and expenses, and charitable contributions and investment revenue, among other sources.

Table 1 presents the recent financial performance at all 10 Maryland trauma centers in the State. The MHCC staff observed that virtually all trauma hospitals except for Johns Hopkins Hospital (academic center) experience significant unregulated operating losses, which tracks with the trauma centers reports that clinical and physician costs are the biggest contributor to trauma service losses. Based on the analysis of overall hospital performance, MHCC concluded that all trauma centers faced financial stress attributable to losses on non-regulated operations, which includes physician costs that must be funded by the hospital. Accordingly, MHCC developed a relatively equitable distribution of funds with some recognition of specific challenges at specific trauma centers.

[1] Incremental trauma costs attributable to MIEMSS requirements are updated on an annual basis and incorporated in HSCRC hospital rates. Standby costs are not updated annual but are adjusted by an annual inflation factor established by HSCRC.

**Table 1 Financial Performance at Maryland Trauma Center Hospitals in FY 2023**

| | Rate-Regulated Operating Margin | Non-Rate Regulated Operating Margin | Total Regulated and Unregulated Operating Margin | Total Margin | Inpatient Trauma Revenue as a % of Total Inpatient Revenue |
|---|---|---|---|---|---|
| Johns Hopkins Hospital | 2% | 9% | 3.% | 4% | 3% |
| Johns Hopkins Bayview | 1% | -6% | 0.4% | -0.4% | 8% |
| Johns Hopkins Suburban | 4% | -181% | -4% | 4% | 5% |
| LifeBridge Sinai Hospital | 11% | -58% | 0.4% | 4% | 22% |
| Meritus Health | 15% | -48% | 10.% | 18% | 8% |
| Tidal Health Peninsula Regional | 12% | -154% | 3% | 9% | 5% |
| UM Capital Region Health | 7% | -2447% | -5.% | -5% | 19% |
| RACSTC | 18 | -194% | 17% | n/a | 100% |
| UPMC Western Maryland | 18% | -61% | 5% | 6% | 1% |
| Trauma Center Hospitals (hospital-weighted) | 8% | -326% | 2% | 5% | |
| **Statewide** | **6.6%** | **-48.4%** | **0.0%** | **2.4%** | |

The MHCC requested the Maryland Institute for Emergency Medical Services Systems' (MIEMSS's) assistance in deriving an allocation formula that would take into account trauma center readiness levels, patient trauma volume, and patient acuity. MIEMSS provided key injury severity information from the Maryland Trauma Registry. The MHCC and MIEMSS concluded that given the financial stress of all centers, funds should be allocated among the trauma center based on three factors as follows:[2]

- 50 percent of the funds allocated equally in the amount of $475,000 per trauma center.
- 25 percent of funds allocated based on trauma center level in the amount of $327,586 for Level III centers, $245,690 for Level II centers, $163,793 for the Level I center, and $81,897 for PARC; and
- 25 percent allocated based on the average ISS scores of patients treated at each trauma center.

Table 2 presents the overall allocation to each trauma center based on the three factors briefly described above and more thoroughly detailed in Attachment 1. The

[2] The methodology for the allocation process is more fully detailed in Appendix 1.

attachment more fully describes the allocation formula and presents the distribution of funds based on the three allocation factors.

**Table 2 – Fund Allocation Among Maryland Trauma Centers**

| Trauma Level | Trauma Center | Budget Funds available for distribution | |
|---|---|---|---|
| | | Share | Amount |
| PARC | UM RACSTC | 12.9% | $1,221,910 |
| I | Johns Hopkins Adult | 9.1% | $864,086 |
| | **PARC & Level I Total** | **22.0%** | **$2,085,996** |
| II | Johns Hopkins Bayview | 9.8% | $932,303 |
| II | UM Capital Region Health | 10.7% | $1,011,764 |
| II | LifeBridge Sinai Hospital | 9.7% | $923,728 |
| II | Johns Hopkins Suburban | 10.0% | $953,772 |
| | **Level II Total** | **40.2%** | **$3,821,566** |
| III | Meritus Health | 10.8% | $1,030,432 |
| III | Tidal Health Peninsula Regional | 10.2% | $971,981 |
| III | UPMC Western Maryland | 9.1% | $866,600 |
| | **Level III Total** | **30.2%** | **$2,869,013** |
| PED | JOHNS HOPKINS Pediatrics | 7.6% | $723,425 |
| | **Total** | **100.0%** | **$9,500,000** |

As shown in Table 2 and more fully presented in Attachment Table 1, allocations ranged from $723,425 for Johns Hopkins Pediatric Trauma Center to $1,221,910 for University of Maryland RAC Shock Trauma. When the allocation is compared against the four trauma center designations, it become clear that the allocations are relatively equitable.

- RACSTC (PARC) and the Johns Hopkin Level I Trauma Center receive 22 percent of the funds;
- Four level II trauma centers receive 40.2 percent of funds;
- Three Level III trauma centers receive 30.2 percent of funds; and
- Pediatric Trauma Center at Johns Hopkins receives 7.6 percent of funds.

Awards to specific centers ranged from $725,425 at Johns Hopkins Pediatric Trauma Center to $1,221,910 at UM RACSTC. A completely equitable distribution would have

led to awards of $950,000 to each trauma center. The MHCC believes our approach, which divides 50 percent of the funds equally and takes into account trauma center level and patient acuity, is consistent with the Budget Committees directive to consider financial stress.

The MHCC in collaboration with MIEMSS presented the results to the trauma centers and the broader TraumaNet community in December. The MHCC requested written comments or concerns from the trauma centers. The trauma center representative attending the meeting did not raise concerns at the meeting. LifeBridge Sinai submitted a written statement of support after the meeting. Attachment 2 lists the representatives of the trauma centers that attended the meeting convened by MHCC.

The MHCC recognizes the valuable work of Ted Delbridge, M.D., MPH, Executive Director of MIEMSS, in developing the funding algorithm. We are also appreciative of the 10 trauma centers' commitment to an equitable distribution of funds based on the multiple factors creating financial stress throughout the trauma system.

Sincerely yours,

Ben Steffen

Ben Steffen
Executive Director

cc:
The Honorable Bill Ferguson, President of the Senate
The Honorable Adrienne Jones, Speaker of the House of Delegates
Senate Budget and Taxation Committee
House Appropriations Committee
Phillip Anthony, Committee Counsel, Senate Budget and Taxation Committee
Joe Gutberlet, Committee Counsel, House Appropriations Committee
The Honorable Helene Grady, Secretary Department of Budget and Management
The Honorable Laura Herrera Scott, Secretary, Maryland Department of Health
Theodore R. Delbridge, M.D., Maryland Institute for Emergency Medical Services Systems (MIEMSS)
Marie Grant, Assistant Secretary, Health Policy, Maryland Department of Health
Jonny Dorsey, Deputy Chief of Staff, Governor's Office

June Chung, Deputy Legislative Office, Governor's Legislative Office
Jason Heo, Governor's Office
Sophie Bergmann, Governor's Office
Sarah Albert, Department of Legislative Services (5 hard copies)
Tracey DeShields, Director of Policy Development and External Affairs, MHCC
Patricia Gainer, Government Affairs, MIEMSS

**Attachment 1. Trauma Center Financial Stress Allocation Methodology**

**Even Distribution (50 Percent)**

Fifty percent of the 9.5 million is distributed equally in the amount of $475,000 to each of the 10 trauma centers. Distributing 50 percent of the funds equally reflects MHCC's assessment that all hospitals with trauma centers, including RACSTC, experienced financial pressure due to the requirements of operating as a trauma center and absorbed costs that could not be captured in Maryland hospital rate-setting. Those costs are more fully documented in a report issued by the Commission on Trauma Funding.

**Trauma Readiness Adjustment (25 Percent)**

The Trauma Readiness Adjustment allocates 25 percent of the $9.5 million in shares dictated by the Trauma Center Level. Trauma readiness costs are less likely to be absorbed through trauma reimbursements at lower-level trauma centers, which experience lower volumes and therefore less reimbursements, which would otherwise offset readiness costs. Yet trauma readiness is an absolute necessity due to the unpredictable nature of the arrival of the next injured patient. Readiness represents a key requirement for a trauma center. This readiness also incurs a defined, fixed cost for the trauma center that is independent of the number of injured patients who arrive at the facility.

Level III centers were estimated to have the greatest unrecovered readiness cost; these centers received a greater share because of lower trauma patient volumes. Likewise, Level II centers were judged to have greater unrecovered costs than the Level I Center and RACSTC for the same reason. Accordingly, a distribution scale that weighted scores in reverse order from the level of each trauma center follows:

- 4 points for Level III,
- 3 Points for Level II,
- 2 points for Level I,
- 1 point for PARC

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The concept of readiness presents challenges to traditional hospital and physician billings based on ICD-10-CM diagnosis and procedures and the Current Procedural Terminology (CPT) coding. Readiness is also as easily defined in the payment system based on global budgeting principles. For example, CPT code 99360 is used to report physician standby service that is requested by another physician and involves prolonged physician attendance without direct (face-to-face) patient contact. Generally, this code is used for situations such as a pathologist on standby for a specimen or neonatologists on standby for a delivery. It has a low payment level because of the relative value units (RVUs) of 1.2, but it is not routinely reimbursed by Medicare, Medicaid, and most commercial payers for trauma care.

The approach to funding readiness developed for the allocation of the $9.5 million produced a distribution ranging from $81,896 to PARC, $163,793 for the Level I center at Johns Hopkins Hospital, 163,793 for the Pediatric Trauma Center also at Johns Hopkins Hospital, $245,690 each for four Level II centers, and $327,586 each for the three Level III centers.

**Acuity-Based (25 Percent) using the Injury Severity Score**

Injury Severity Score (ISS) -- The injury severity score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. Each injury is assigned an abbreviated injury scale (AIS) score and is allocated to one of six body regions. The highest AIS score in each body region is used. The three most severely injured body regions have their score squared and added together to produce the ISS score.

The ISS score takes values from 0 to 75. If an injury is assigned an AIS of 6 (Unsurvivable injury), the ISS score is automatically assigned to 75. The ISS score is virtually the only anatomical scoring system in use and correlates linearly with mortality, morbidity, hospital stay and other measures of severity. The MHCC used

the categorization developed by Bolorunduro et al[3] to categorize ISS scores into broader groups as follows:

- <9 = Mild
- 9 – 15 =Moderate
- 16–24 = Severe
- >/=25 = Profound

ISS scores are summed for each trauma center then divided by total Dampened ISS scores for all trauma centers. Payments for the acuity-based adjustment ranged from $64,014 to $665,013. Level -weighted points (25 percent)

The complete distribution of funds for the 10 trauma centers eligible to receive funds are shown in Table 3 on the following page.

[3] Bolorunduro OB, Villegas C, et al. Validating the Injury Severity Score (ISS) in different populations: ISS predicts mortality better among Hispanics and females. J Surg Res. 2011 Mar; 166((1):):40-–44.. [PubMed] [Google Scholar]

**Attachment Table 1: Distribution of $9.5 Million weighted by Equity, Readiness, and Patient Acuity Factors**

| Trauma Level | Trauma Center | Acuity-Weighted Share (Based on Injury Severity Scale) | | Level-Weighted Share (Level III =4, Level II=3 Level 1=2,PARC=1) | | Equitable Distribution Share | Total | |
|---|---|---|---|---|---|---|---|---|
| | | Share | Amount | Share | Amount | Amount | Share | Amount |
| PARC | UM RAC Shock Trauma | 28.0% | $665,013 | 3.4% | $81,897 | $475,000 | 12.9% | $1,221,910 |
| I | Johns Hopkins Adult | 9.5% | $225,293 | 6.9% | $163,793 | $475,000 | 9.1% | $864,086 |
| | **PARC & Level I Total** | **37.5%** | **$890,305** | **10.3%** | **$245,690** | **$950,000** | **22.0%** | **$2,085,996** |
| II | Johns Hopkins Bayview | 8.9% | $211,613 | 10.3% | $245,690 | $475,000 | 9.8% | $932,303 |
| II | UM Capital Region Health | 12.3% | $291,074 | 10.3% | $245,690 | $475,000 | 10.7% | $1,011,764 |
| II | LifeBridge Sinai Hospital | 8.5% | $203,038 | 10.3% | $245,690 | $475,000 | 9.7% | $923,728 |
| II | Johns Hopkins Suburban | 9.8% | $233,082 | 10.3% | $245,690 | $475,000 | 10.0% | $953,772 |
| | **Level II Total** | **39.5%** | **$938,807** | **41.2%** | **$982,759** | **$1,900,000** | **40.2%** | **$3,821,566** |
| III | Meritus Health | 9.6% | $227,846 | 13.8% | $327,586 | $475,000 | 10.8% | $1,030,432 |
| III | Tidal Health Peninsula Regional | 7.1% | $169,395 | 13.8% | $327,586 | $475,000 | 10.2% | $971,981 |
| III | UPMC Western Maryland | 2.7% | $64,014 | 13.8% | $327,586 | $475,000 | 9.1% | $866,600 |
| | **Level III Total** | **19.4%** | **$1,400,062** | **41.4%** | **$1,965,517** | **$3,325,000** | **30.2%** | **$2,869,013** |
| PED | Johns Hopkins Pediatrics | 3.6% | $84,632 | 6.9% | $163,793 | $475,000 | 7.6% | $723,425 |
| | **Total** | **100%** | **$2,375,000** | **100%** | **$2,375,000** | **$4,750,000** | **100.0%** | **$9,500,000** |

**Attachment 2: Representatives for Trauma Centers Attending the Meetings on the** Allocation of $9.5 Million

| Name | Title | Representing |
|---|---|---|
| Austin Morris | Government Affairs Manager | Childrens National Medical Center |
| Jennifer Fritzeen | Trauma Program Manager | Children's National Medical Center |
| Katina Williams | Vice President of Finance, Chief Financial Officer | Johns Hopkins Hospital |
| Scott Perrin | Director of Finance | UPMC Western Maryland Medical Center |
| Ray Fang | Associate Professor of Surgery, President of TraumaNet | TraumaNet, Johns Hopkins Bayview |
| George Sprinkel | Senior Vice President and Chief Financial Officer | University of Maryland Medical Center |
| Kimberly Elyanow | Vice President, Finance and Chief Financial Officer | Johns Hopkins Suburban Hospital |
| Brian Rayme | Chief Financial Officer at Johns Hopkins Bayview Medical Center | Johns Hopkins Bayview Medical Center! |
| James Gannon | Trauma Program Manager | LifeBridge Sinai Hospital |
| Michael Pennacchia | Director of Finance | Children's Center at Johns Hopkins University |
| Kristie Snedeker | Vice President | R Adams Cowley Shock Trauma Center |
| Stephanie Gary | Chief Financial Officer | TidalHealth Peninsula Regional |
| Tom-Medka Archinard | Senior Vice President & Chief Medical Officer | UM Capital Region Health |