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ED Wait Time Reduction Commission
Access and Capacity Subgroup

March 26, 2026
900-1030am
Virtual Meeting Only

Agenda

- CY 2026 Priorities & Subgroup Updates (15 min)
- MHCC Presentation (25 min)
  - Acute and Post-Acute Bed Capacity
  - Post Acute Care Workgroup Overview
- HSCRC Presentation (25 min)
  - ED-Hospital Statistical Modeling Update
  - Other Related Topics
- Open Discussion (15 min)

ED Wait Time Reduction Commission
CY 2026 Priorities

ED Wait Time Reduction Commission Priorities - CY 2026

★ Focus of this subgroup

Standardize Hospital Bed Capacity & Occupancy Metrics

Inputs:
Commission to hear updates from MHCC, MIEMSS, HSCRC on related work.

Action Item:
Commission to develop recommendations re: standardization and uses of metrics for monitoring and making policy recommendations.

★ Focus of this subgroup

Post Acute Access

Inputs:
Commission to review current work in this space from MHCC, MDH, HSCRC.

Action Item:
Commission to develop recommendations and key considerations for regulators developing post acute strategy.

ED-Hospital Throughput Modeling

Inputs:
Commission to review HSCRC modeling work.

Action Items:
Commission to consider the need for additional analyses in order to prioritize interventions/initiatives ripe for policy development.
Commission to consider making initiative recommendations directly to hospital industry.

ED-Hospital Throughput Best Practices

Inputs:
Commission to review summary of results from the HSCRC ED-Hospital Throughput Best Practices Reporting Policy.

Action Item:
Commission to consider recommendations for regulators to utilize other key performance indicators (e.g., intermediate outcomes measures) in policy development.

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Subgroup Updates

Access and Capacity Subgroup

- Priority focus of this group will be acute to post-acute care transitions and completion of bed count and capacity analysis.

Data Subgroup

- ED Modeling optimization is in progress and testing of interventions has begun. Access and Capacity Subgroup will receive an update at today's meeting (March 26)
- ED LOS Dashboard on CRISP is targeted for April 10, 2026 release. Hospital/Health System partners have been asked to review and provide feedback.

HSCRC Best Practices Subgroup

- Priorities of ED WTR Commission have been defined to focus on access, capacity and data modeling. The Best Practice subgroup will continue its work as a designated HSCRC workgroup and can report any relevant updates through the scheduled HSCRC report outs at the ED WTR Commission meetings.
- 2025 Maryland Hospital ED-Hospital Throughput Best Practice Survey Summary and next steps will be shared at April 30th ED Wait Time Reduction Commission Meeting.

Access and Capacity Subgroup

2nd ED WTR Commission report due in November 2026

Meeting Schedule and Proposed Topics

March 26

- Updates from MHCC related to acute and post-acute bed counts and post-acute workgroup
- Updates from HSCRC on ED throughput modeling and other related work
- **Next Steps:** April state bed capacity discussion (HSCRC, MHCC, and MIEMSS) to evaluate opportunities to enhance/expand reporting.

May 28

- Updates on state bed capacity (HSCRC, MHCC, MIEMSS) discussions
  - Access and Capacity group will evaluate potential options for bed capacity and occupancy metrics and provide feedback/recommendations to move this process forward
- Discuss post-acute workgroup findings and recommendations as available
  - Access and Capacity group will evaluate workgroup findings and provide feedback/recommendations on interventions related to post-acute care transitions that could impact ED and IP los

July 29

- Draft Recommendations for ED Commission on bed capacity and occupancy metrics and post-acute care

September 29

- Update on ED Commission reports' final recommendations

November 20

- Strategic Planning Recommendations for CY 2027

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MHCC Presentation

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Acute Care Hospital Bed Capacity

Background

- In 2001 Maryland initiated a standardized annual licensure renewal process to document and track changes in the licensed bed inventory. The MHCC publishes an annual report showing the changes in Maryland hospitals licensed acute care hospital beds.
- The process is based on inpatient census and involves notifying hospitals prior to the beginning of each fiscal year concerning the calculated total number of licensed acute care beds for the coming fiscal year. In turn, the hospitals identify the allocation of the total licensed acute care beds across four (4) service categories:
  - Medical / Surgical / Gynecological / Addictions (“MSGA”);
  - Obstetric;
  - Pediatric; and
  - Acute Psychiatric services.
- Over time, additional information on hospital service capacity has been added to the survey, covering emergency department services, surgical services, obstetric, perinatal services, dental services, observation services, and non-acute care and non-general hospital bed capacity.

Process – Licensed Bed Survey (prospective)

- In May, HSCRC calculates the average daily census (ADC) of acute care patients for each hospital for the 12-month period ending with the first quarter of each calendar year and total licensed acute care bed capacity is established for the next fiscal year at 140% of the hospital's average daily census.*
- By June 1, MHCC notifies each hospital of its licensed bed allotment, as calculated by HSCRC, for the upcoming fiscal year. Subsequently, the hospitals specify to MHCC how they ***plan*** to allocate their total licensed acute care beds across the four (4) service categories in the ***upcoming*** fiscal year.
- The MHCC publishes the annual survey results on the website: https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/hcfs_hospital_acute_services.aspx
  - Licensed Acute Care Beds by Hospital and Service
- July / August – Updated Hospital License transmitted to facility by OHCQ

**Md. Code Ann. Health General §19-307.2(b)*

Process – Supplemental Surveys (retrospective)

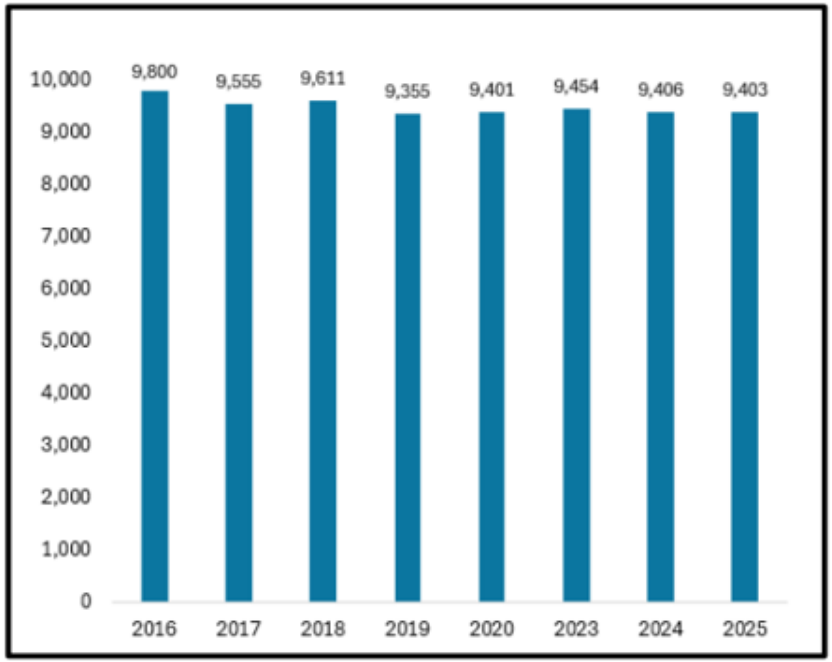
- Hospitals provide data on beds, rooms and other resources that ***were available in the prior fiscal year*** and how they were used
- A hospital completes anywhere from 1 – 8 Supplemental Surveys Depending on the facility type and services offered:
  - Dental Services
  - Emergency Department
  - Monitored Beds / Bassinets
  - Obstetric Services
  - Observation Services
  - Psychiatric Services
  - Rehabilitation Services
  - Surgical Services
- The MHCC publishes the annual survey results on its website: https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/hcfs_hospital_acute_services.aspx
  - Chartbook of Maryland General and Special Hospital Facilities and Services

Survey Respondents

- MHCC's Annual Hospital Surveys are completed by 4 types of hospitals:
  - 42 - Acute Care General Hospitals
  - 8 - Freestanding Medical Facilities (FMFs)
  - 10 - Special Psychiatric Hospitals
  - 10 - Special Rehabilitation Hospitals
- Only Acute Care General Hospitals complete the Licensed Bed Survey (prospective).
- All facilities complete the supplemental surveys (retrospective).

Trends in Total Licensed Acute Care Beds

Figure 2: Total Licensed Acute Care Beds: Maryland Hospitals, FY 2016 – FY 2025



Source: MHCC ACHIs, FY 2016 – FY 2025

- MD experienced an overall 4.1% decline in licensed acute care beds (LBs) between FY 16 and FY 25; it appears relatively flat over a 9-yr period
- Changes in bed capacity were regional rather than uniform statewide
- Trends may reflect restructuring, service reconfiguration, consolidation, or demographic shifts.

Additions / Challenges

- New for FY27: Primary Care Investment Questions
- New for FY27: FY26 staffed beds

- Data is self-reported and not audited
- Utilize regulatory opportunities to add temporary capacity - ECON and surge regulations
- Licensed Beds ≠ Staffed Beds
- MHCC does not collect actual usage / occupancy data for most services

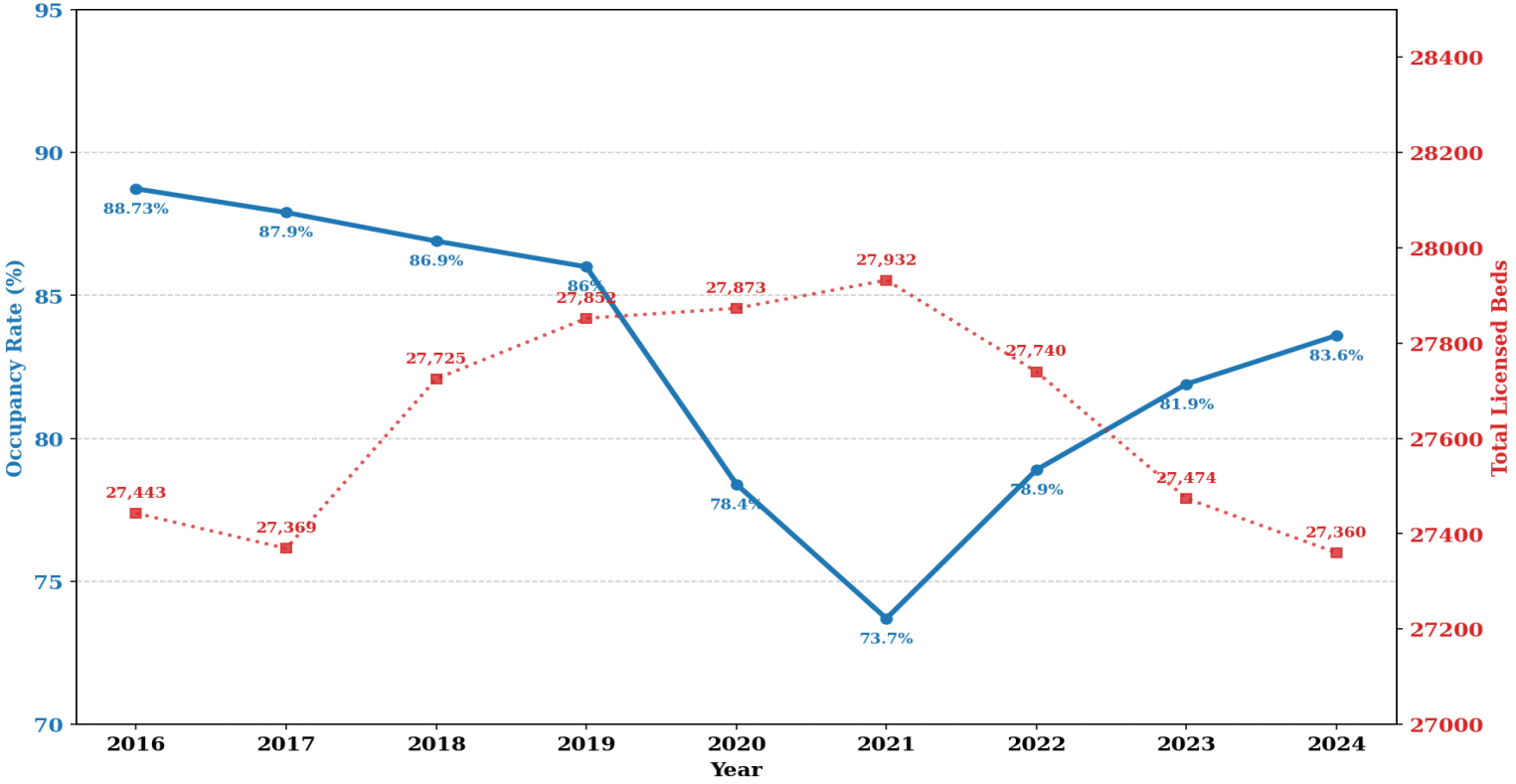
Post Acute:

Nursing Homes
Chronic Care
Hospice

Comprehensive Care Facility - Nursing Homes

- Nursing Home and Chronic Care Hospital data is collected annually in the MHCC's Long Term Care Survey
- In 2024, there were 221 nursing homes in the State of Maryland, with 27,360 beds
- The average occupancy rate was 83.6%
- Maryland has stayed in the 27,000-bed range for years

Maryland Nursing Home Capacity and Occupancy Rates (2016-2024)



Use of Chronic Care Hospital Beds
FY 2025

Jurisdiction/Facility	Licensed Beds	Patient Days	Discharges	Average Length of Stay (Days)	Average Annual Occupancy Rate
PRIVATE HOSPITALS					
Baltimore City					
Levindale Hebrew Geriatric Center and Hospital	100	26,908	586	46	**73.7%**
University of Maryland Medical Center Midtown Campus	22	2,985	74	40	**37.2%**
University of Maryland Rehabilitation & Orthopaedic Institute	56	7,850	277	28	**38.4%**
SUBTOTAL: Private Chronic Hospitals	178	37,743	937	114	**58.1%**
STATE-OPERATED HOSPITALS					
Washington County					
Western Maryland Hospital Center	60	1,690	8	211	**7.7%**
Wicomico County					
Deer's Head Hospital Center	66	1,415	29	49	**5.9%**
SUBTOTAL: State-Operated Chronic Hospitals	126	3,105	37	260	**6.8%**
MARYLAND TOTAL	304	40,848	974	374	**36.8%**

There are a total of 5 chronic care hospitals in Maryland.

Three chronic care hospitals are private, and two are State operated.

In total Maryland has 304 chronic care beds, with an ALOS of 374 days and a 36.8% occupancy rate.

The number of chronic care hospitals with chronic care beds has been declining each year.

In the most recent 3 years, chronic care beds have closed at UM Capital Region Medical Center and Hopkins Bayview.

Hospice

Hospice data is collected annually in the MHCC survey

In the 2024 survey:

- 27 Hospices in Maryland, which includes 9 inpatient facilities with a total of 212 Beds
- Maryland hospice inpatient care is approximately 3%
- 2024 Average Annual Hospice Occupancy: 48.5% (Medicare)

Hospice Utilization 2016 - 2024

Year	Total MD Medicare Deaths (Source: CMS MBSF Summary file) - A	Total MD Hospice Deaths (Source: CMS Hospice Base Claims) - B	Total MD Medicare Hospice Deaths (Source: Merge MBSF and Base Claims data) - C	Hospice utilization D = C/A%
2016	37,592	17,136	16,863	44.86%
2017	38,475	17,976	17,956	46.67%
2018	39,374	18,747	18,742	47.60%
2019	39,512	19,083	19,082	48.29%
2020	46,466	20,928	20,660	44.46%
2021	44,394	19,947	19,697	44.37%
2022	44,061	20,350	20,110	45.64%
2023	41,567	20,065	19,847	47.75%
2024	42,539	20,879	20,652	48.55%

AHEAD Multi-Agency Work Plan
Post-Acute Care Priority

- Last September, Governor Moore issued a directive creating a working group of State regulatory agencies to develop a workplan identifying priority topics to be addressed that have implications for Maryland's performance under the AHEAD Model
- Post-Acute Care (PAC) Priority Topic:
  - PAC spending included in TCOC under AHEAD Model, plus PAC can affect hospital spending, e.g., bottlenecks in hospital discharges to clinically appropriate PAC settings can lead to patients remaining longer in the hospital which increases TCOC
  - MHCC tasked with developing a report with recommendations addressing PAC quality, access, and cost savings, including the impact of mergers and acquisitions
  - Hosting focus group meetings to discuss these and other related topics
  - Final report due in June

AHEAD Multi-Agency Work Plan
Post-Acute Care Priority

- Topics discussed during first two focus group meetings
  - Contributors to delayed discharges between hospitals and post-acute care
    - For example:
      - Availability of settings equipped to handle patients of varied complexity
      - Reimbursement and authorization challenges
      - Staffing shortages and training needs
  - Benefit design gaps and other payment-related challenges
  - Changes in market structure and facility operations due to mergers and acquisitions
- Third meeting will focus on value-based care

ED-Hospital Statistical Modeling Update

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The Challenge

- Hospitals are complex systems
  - Nonlinear dynamics, including threshold effects, feedback loops, bidirectional causation and interactions
  - These features violate key assumption of regression models. Despite that, most studies evaluating ED interventions rely on regression analysis.
  - This makes it difficult to assess the effect interventions will have in the real world
- Researchers often address this type of challenge using agent-based modeling
- We are using this approach, combined with real-world ED data, to identify interventions that may be particularly impactful for Maryland's hospitals

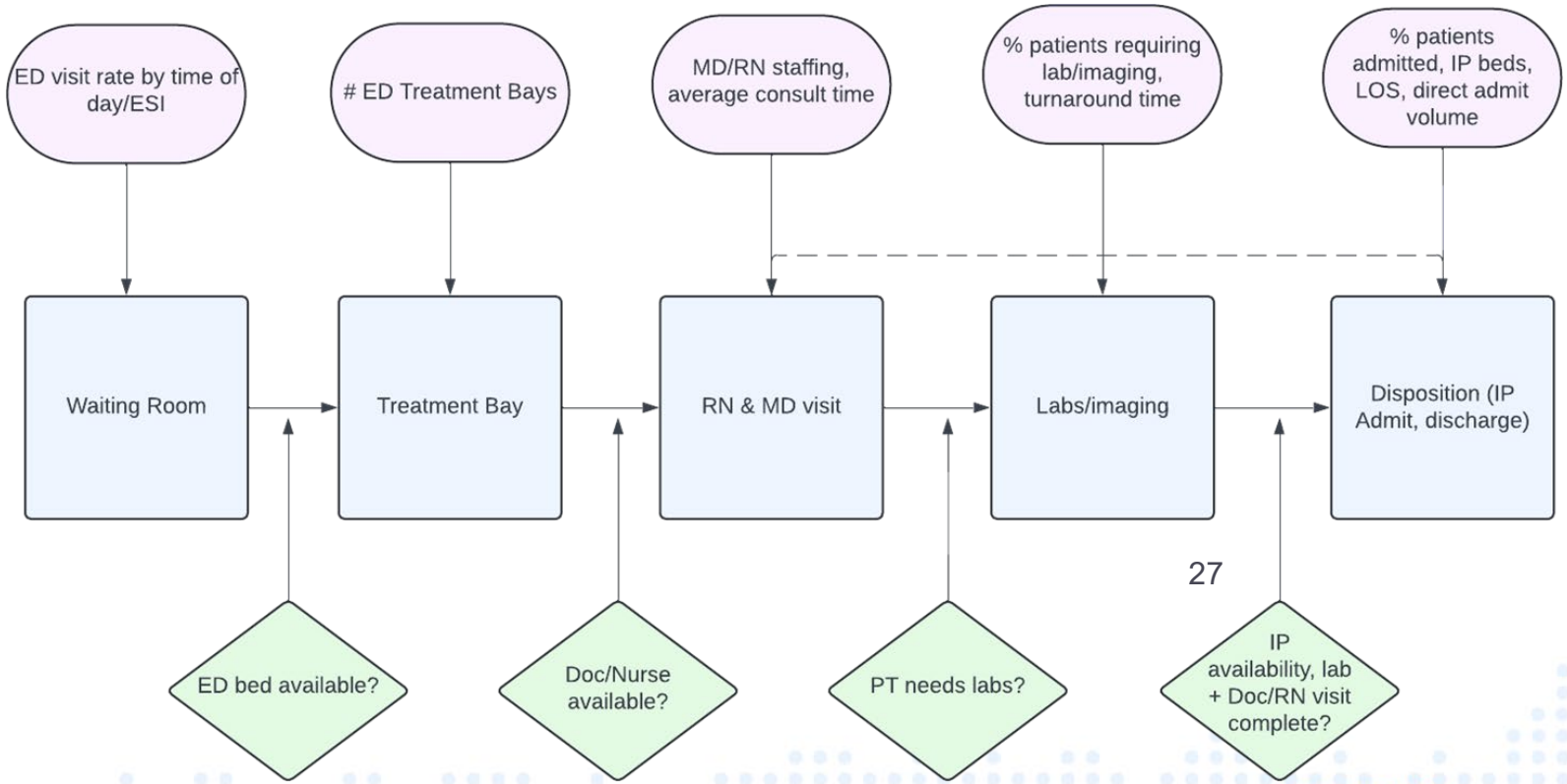
Agent-Based Model Basics

- The agent-based model creates a simulated universe of patients that interact with each other and the environment over time
- Must be validated to real-world conditions prior to exploring changes
- Accounts for emergent properties, bidirectional causality, and complex interactions that cannot be addressed with traditional statistical models
- Allows the investigator to specify different agent and/or environmental characteristics and evaluate their impact on model outcomes

Areas of Study

- The overarching goal is to provide the Commission with estimates of the relative potential impact on ED performance/patient experience of policies incentivizing changes in:
  - ED patient volume and acuity
  - IP length of stay, unit structure and bed count
  - MD/APP/RN staffing patterns
  - Admission rates for ED patients
  - Lab/Imaging utilization and turnaround time
  - Direct admit volume

Model Overview



How will we know if the model is valid?

- Does the model reproduce historical data on ED length of stay for discharged and admitted patients?
- Does the model reproduce observed data on other important ED dynamics?
- Is the model consistent with existing literature?
- Review by clinical and analytics experts at JHHS/UMMS

Model Outcomes

These are model outputs that reflect how interventions affect ED performance.

Measure	Definition	Data Source
ED 1 change (intervention vs. control)	Time from ED arrival to inpatient admission	Model estimate
OP 18 change (intervention vs. control)	Time from ED arrival to discharge	Model estimate

Core Validity Metrics

These are model outputs that reflect whether the model inputs and logic reproduce historically observed ED conditions.

Measure	Definition	Data Source
ED 1 (historical)	Time from ED arrival to inpatient admission	Casemix CY2024
OP 18 (historical)	Time from ED arrival to discharge	CMS, CY2024

Secondary Validity Metrics

These metrics assess whether the model is internally consistent. They indicate whether the model produces summary values that are in line with the model inputs. For example, if we model a hospital with mean inpatient LOS of 4 days, we would expect the model to produce a similar LOS value.

Measure	Definition	Data Source
IP LOS	Time from admission to discharge	HSCRC casemix
ED Volume	Number of patients arriving in ED during the model period	HSCRC casemix
Percent of ED patients admitted		HSCRC casemix
Percent of ED patients that leave against medical advice		HSCRC casemix

Secondary Validity Metrics 2

These metrics assess whether the model is internally consistent. They indicate whether the model produces summary values that are in line with the model inputs. For example, if we are modeling a hospital with mean inpatient LOS of 4 days, we would expect the model to produce a similar LOS value.

Measure	Definition	Data Source
Percent of ED patients that are transferred out prior to admission		HSCRC casemix
Number of IP direct admits for model period	Patients admitted to IP service without ED rate center charges	HSCRC casemix
Average number of RNs working		Staffing data provided by hospitals
Average number of physicians/APPs working		Staffing data provided by hospitals

Ancillary Metrics

These provide additional information on face validity. HSCRC lacks historical data for direct comparison, so they may be compared to peer-reviewed studies and other sources. All values are model estimates.

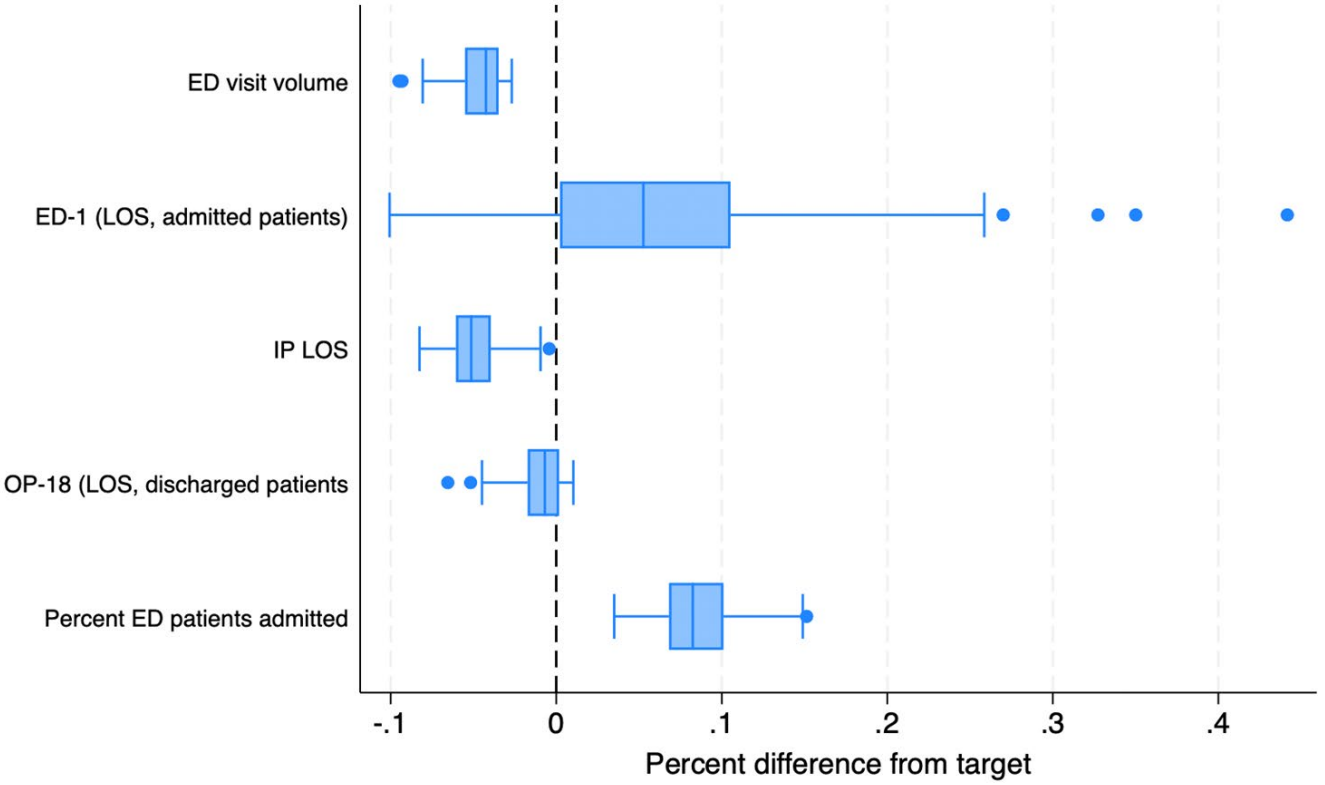
Measures	**Definition**
Average number of MD/APP available	Count of providers who are not with a patient at each model time interval
Average number of RNs available	Count of providers who are not with a patient at each model time interval
Average duration of MD/APP contact per ED patient	Total provider time with patients / # of ED visits
Average duration of RN contact per ED patient	Total RN time with patients / # of ED visits
Time to provider	Interval from patient arrival in ED to first MD/APP contact

Draft Validity Summary, HCMC

Validity metrics are assessed over 100 model runs. Key points:

- Median values for all metrics are within 10% of the target value.
- Most, including the core validity metrics (ED-1 and OP-18) are within 5%.
- There is no pattern to the results that would indicate a systemic issue (e.g.., the model is misestimating resource utilization, which would be indicated by lower ED volume, lower admit percentage, and lower LOS across ED and IP services)
- Overall this analysis supports validity of the HCMC model
- We will continue to explore methods to achieve results closer to target values

Draft Validity Plots, HCMC

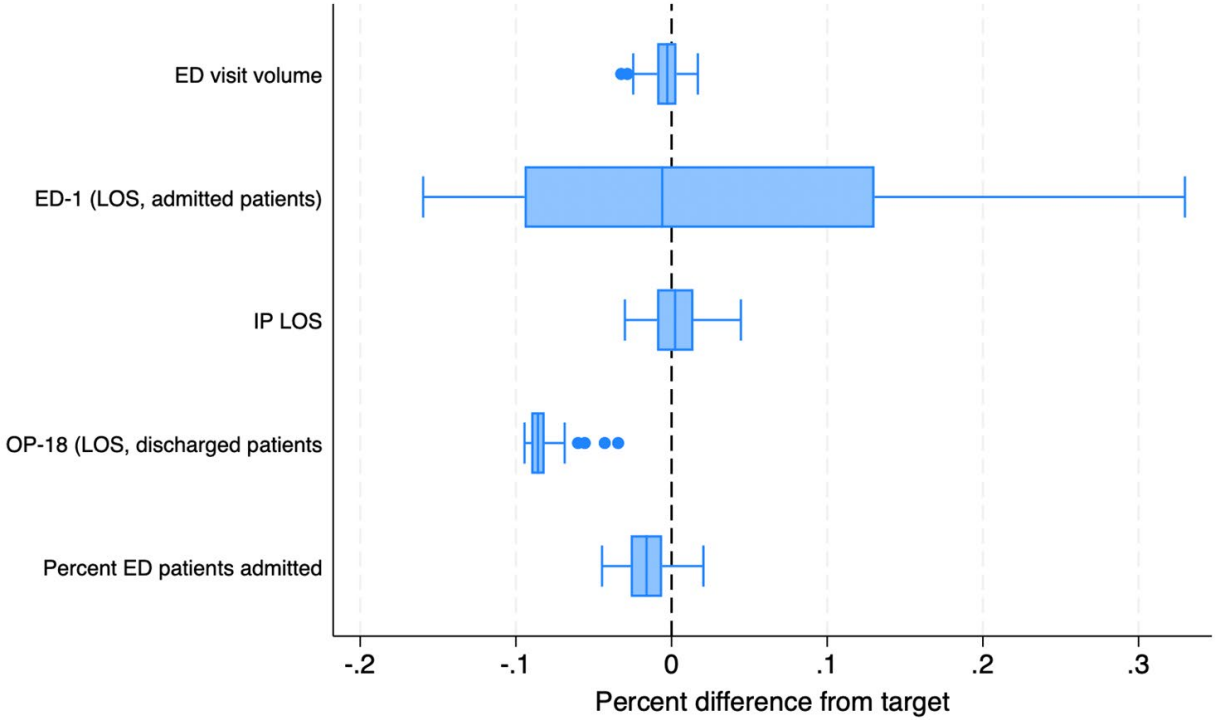


Draft Validity Summary, Meritus

Validity metrics are assessed over 100 model runs. Key points:

- Mean values for ED1 and OP18 across the runs are quite close to historically observed values
- The same finding holds true for ED volume and inpatient LOS
- Overall this analysis supports validity of the Meritus model
- We are working to understand variation in ED1 results
    - Likely not the result of maldistributed ED1

Draft Validity Plots, Meritus



Draft Intervention Results

Intervention: Interdisciplinary Discharge Planning Team

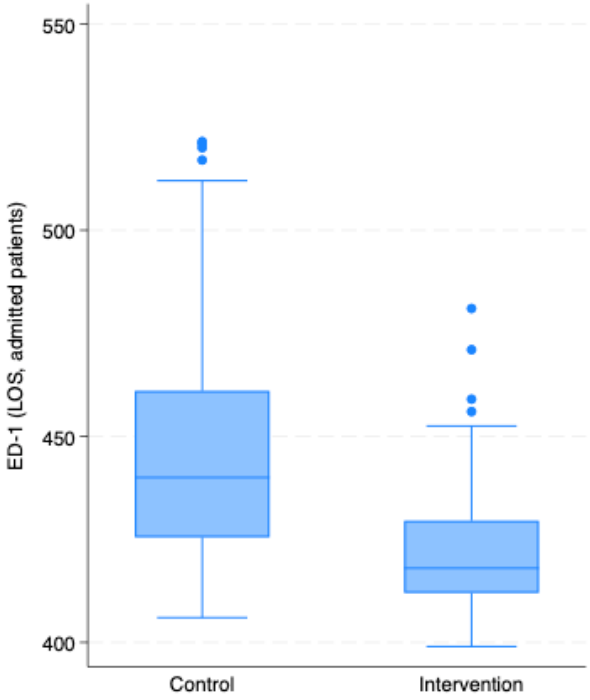
- Discharge planning is associated with a 5% decrease in IP LOS*
- To trial this intervention, we observed change in ED LOS after reducing IP LOS by 5% from base value at HCMC and Meritus

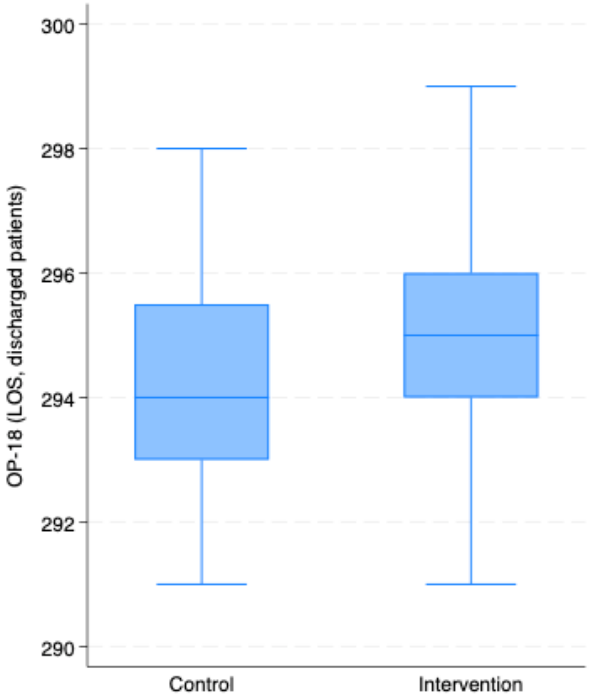
Result

- 5% decline in ED-1, from 445 minutes to 422 minutes at HCMC
- 19% decline in ED-1, from 400 minutes to 323 minutes at Meritus
- No meaningful change in OP-18 was noted at either facility

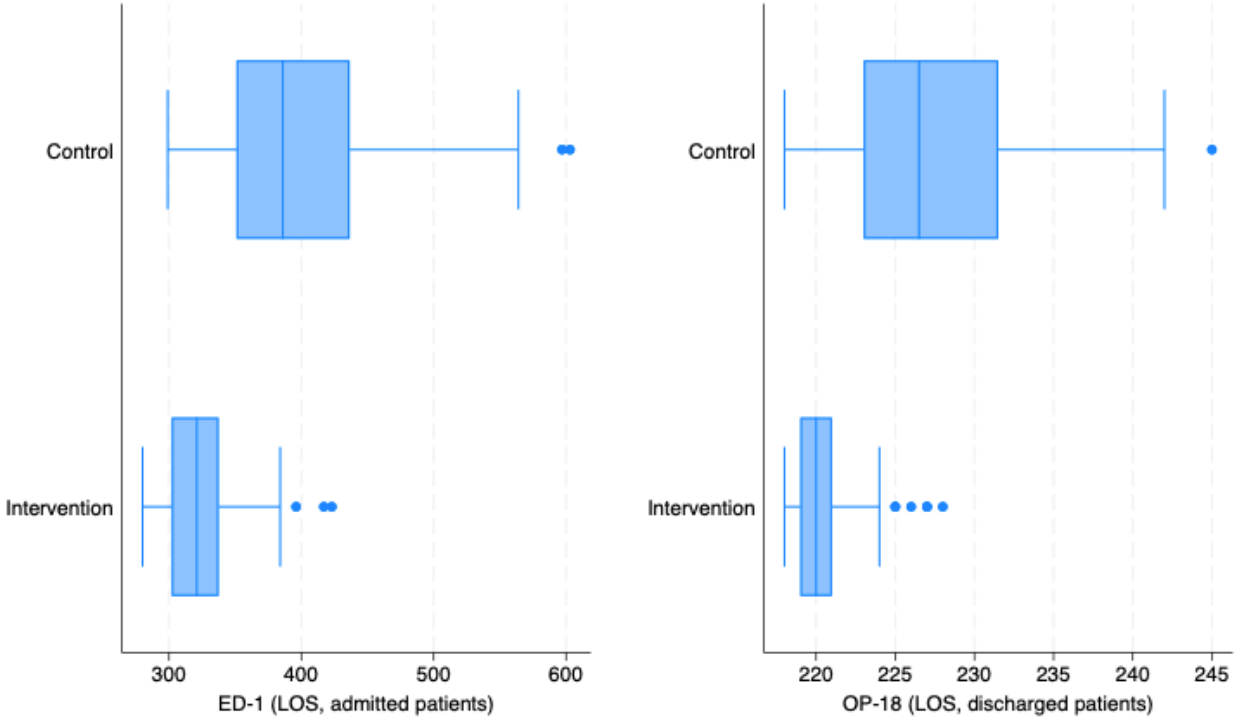
* Artenstein, A., Rathlev, N., Neal, D., Townsend, V., Vemula, M., Goldlust, S., Schmidt, J., Visintainer, P., Albert, M., Alli, G., Anderson, J., Bertolasio, P., Bourgeault, R., Bryson, C., Calcasola, S., Delozier, G., Edwards, S., Elia, T., Garreffi, L., … Tuomi, M. (2017). Decreasing Emergency Department Walkout Rate and Boarding Hours by Improving Inpatient Length of Stay. *Western Journal of Emergency Medicine*, *18*(6), 982–992.

Reducing IP LOS Decreases ED-1 Time: HCMC





Reducing IP LOS Decreases ED-1 Time: Meritus



Intervention: Increase ED RN Staffing at HCMC

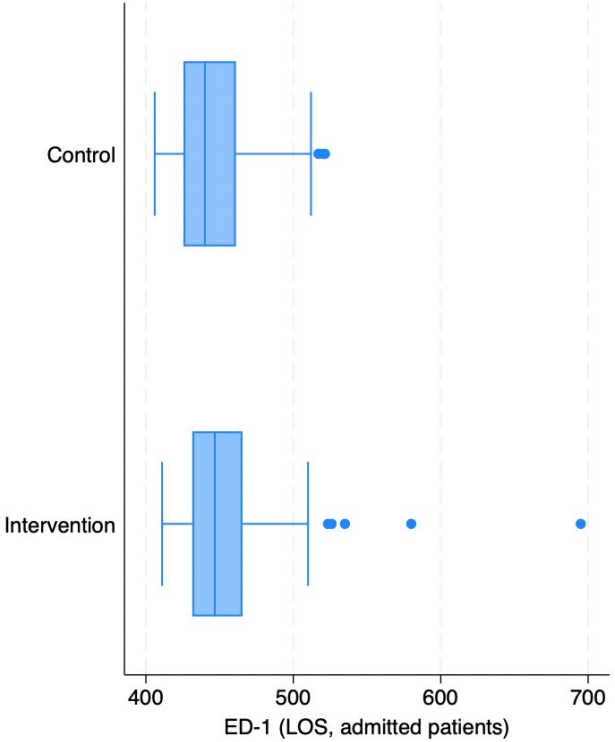
Intervention

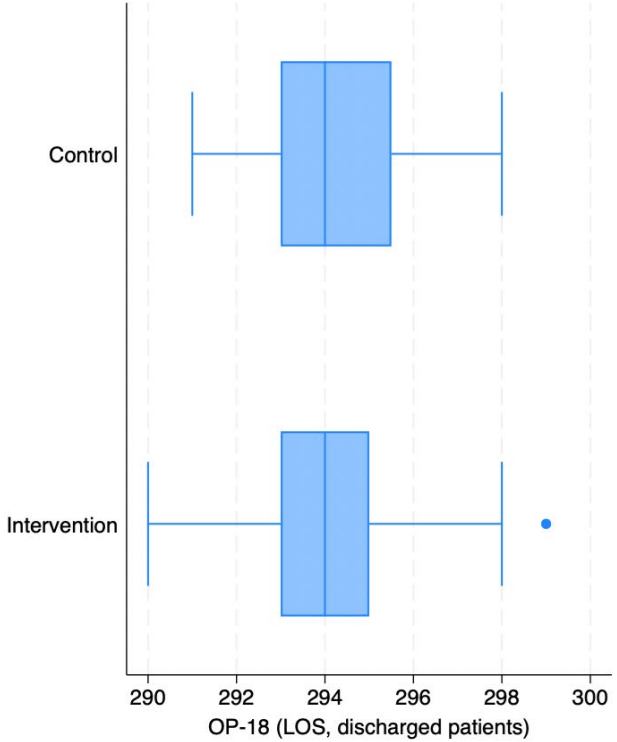
- Observe change in hospital operations after increasing RN staffing by 5% from base value across all shifts

Result

- 2% increase in ED-1, from 445 minutes to 454 minutes
- Minimal change in OP-18
- In the near term we will test an intervention that adds a specific number of nurse FTEs rather than % increase

Increasing ED RN Staffing Does Not Impact ED LOS





Intervention: Limit Direct Admit Volume at HCMC

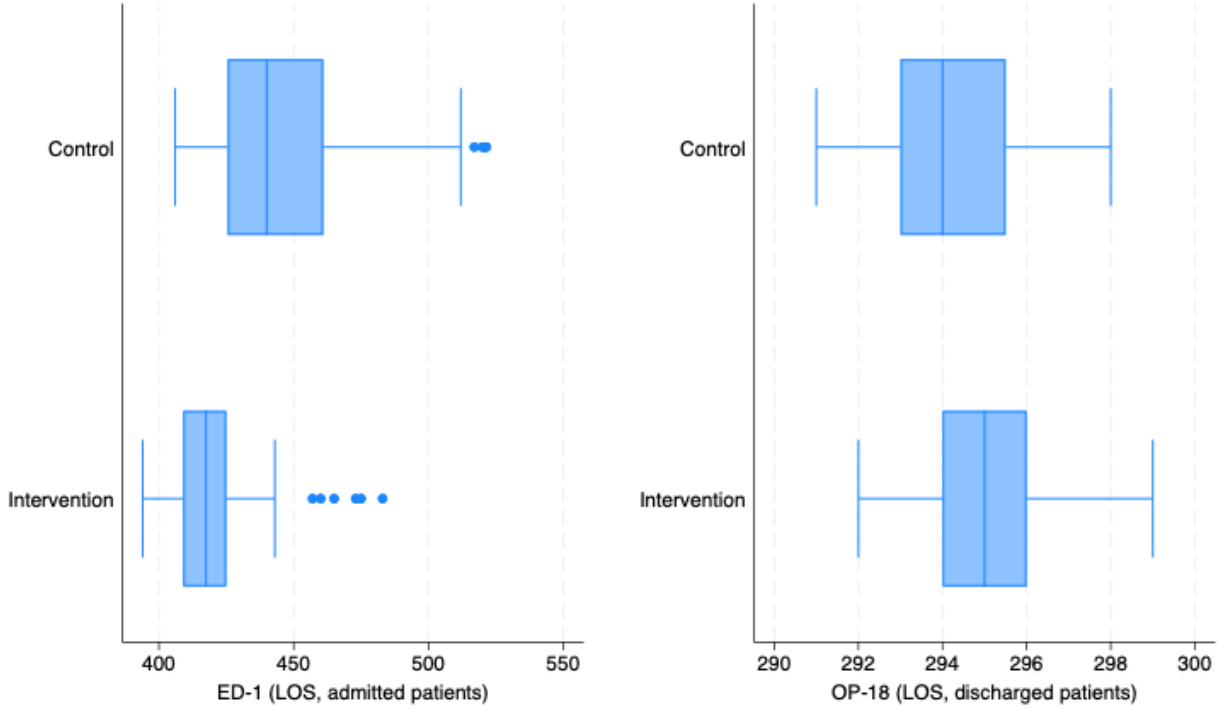
Intervention

- Allow direct/elective admits only when med/surg unit is at <= 80% capacity
- Simplified version of schedule management program discussed in Helm et al (2011), which reduced ED admission blockages by 21%

Result

- 6% reduction in ED-1, from 445 minutes to 420 minutes
- Minimal change in OP-18

Managing Direct Admit Volume Reduces ED LOS at HCMC



Next Steps

- Expand validity to work to additional hospitals that have submitted data (JHH, Bayview, Suburban)
- Provide additional analytics around initial interventions
  - Does reducing IP LOS for patients discharged to SNF have similar results?
  - Does addressing long LOS patients improve ED dynamics?
  - How do interventions impact other hospital parameters (% admitted, ED volume, etc)
- Test additional interventions
  - Reduction in ED volume from enhanced primary care
  - Reducing ED admission variability

Applicability to Subgroup

- Input needed on interventions to model that impact bed capacity
  - Are there interventions supported by the literature that would be feasible for MD hospitals?
  - What is the impact of the change on IP bed availability?
  - Are there other details/data we need to incorporate the intervention into the model?
- Modeling results may help prioritize ways to address bed capacity concerns and high ED LOS

Other HSCRC Related Work

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HSCRC Quality Policies Specific to ED and Hospital Throughput

Quality Based Reimbursement:

- Assesses annual improvement in ED LOS for admitted patients
- Goal is 5-10 percent improvement to receive full reward (CY 2025 preliminary results located in appendix)
- Holds 0.20 percent of inpatient revenue at-risk (approximately +/- $25 M statewide)

Best Practice Policy:

- Pay for reporting policy that assesses hospital implementation of 2 out of 6 best practices identified to improve patient care and flow

Other Updates

- Surge Policy reinstituted in RY2025 to fund volume surges in respiratory conditions on a retrospective basis and moving forward.
- HSCRC staff developing IP LOS policy for Commissioner consideration.
  - 3/31
- ED LOS Tableau Dashboard (V1) will be released on CRISP Reporting Services Portal in April
  - Goal is to provide summary of ED LOS for admitted (ED1) and discharged (OP18) patients for State and hospital monitoring.
  - Allows analysis of ED LOS over time and the ability to stratify by patient and hospital characteristics.

Meeting Follow Up

- Next ED Wait Time Reduction Commission Access and Capacity Subgroup Meeting:
  - May 28, 2026, 0900-1030
- ED WTR Commission Access and Capacity Subgroup Agendas
  - Work related to identified 2025/2026 priorities will be a standing item on meeting agendas
  - If any subgroup member has a suggested agenda item, please reach out to tina.simmons@maryland.gov
- Please visit the ED Wait Time Reduction Commission Webpage for all materials.
  - 2026 Calendar

Appendix

Preliminary data through December 2025 indicates that **23 of 41 Maryland hospitals (56%)** have had some **improvements** compared to CY 2024.

		2024	2025	% Change
HOSPID	Hospital Name	Median	Median	
210016	Adventist- White Oak	889	632	-28.91%
210011	St. Agnes	553	440	-20.43%
210057	Adventist- Shady Grove	454	370	-18.50%
210012	Lifebridge- Sinai	941	801	-14.88%
210035	UMMS- Charles	562	486	-13.52%
210060	Adventist-Ft. Washington	519.5	463.5	-10.78%
210044	GBMC	467	417	-10.71%
210008	Mercy	492	445	-9.55%
210062	MedStar- Southern MD	657	597	-9.13%
210023	Luminis- Anne Arundel	509	471	-7.47%
210009	JHH- Johns Hopkins	1032	968	-6.20%
210032	ChristianaCare, Union	306	288	-5.88%
210002	UMMS- UMMC	1474	1387.5	-5.87%
210022	JHH- Suburban	484	458	-5.37%
210017	Garrett	244	231	-5.33%
210029	JHH- Bayview	1281	1224	-4.45%
210018	MedStar- Montgomery	470	450	-4.26%
210056	MedStar- Good Sam	565	544	-3.72%
210040	Lifebridge- Northwest	598	576	-3.68%
210034	MedStar- Harbor	427	420	-1.64%
210019	Tidal- Peninsula	485	478	-1.44%
210027	Western Maryland	539	532	-1.30%
210039	Calvert	380	379	-0.26%
210038	UMMS- Midtown	594	594.5	0.08%
210024	MedStar- Union Mem	462	465	0.65%
210061	Atlantic General	201	204	1.49%
210065	Trinity - Holy Cross Germantown	466	476	2.15%
210049	UMMS-Upper Chesapeake	728	749	2.88%
210043	UMMS- BWMC	799	827	3.50%
210051	Luminis- Doctors	481	501.5	4.26%
210005	Frederick	421	453	7.60%
210030	UMMS- Chestertown	437	471	7.78%
210063	UMMS- St. Joe	635	689	8.50%
210004	Trinity - Holy Cross	505	550	8.91%
210003	UMMS- Capital Region	1156	1267	9.60%
210015	MedStar- Franklin Square	632	698	10.44%
210033	Lifebridge- Carroll	592	659	11.32%
210001	Meritus	365	418	14.52%
210028	MedStar- St. Mary's	389	447	14.91%
210037	UMMS- Easton	1091.5	1266	15.99%
210048	JHH- Howard County	958	1134	18.37%
Statewide		562		