UNIVERSITY OF MARYLAND UPPER CHESAPEAKE HEALTH

Consolidation of University of Maryland
Harford Memorial Hospital and University of Maryland Upper Chesapeake Medical Center
Matter No. 17-EX003

Responses to Additional Information Questions Dated March 22, 2019

The Charity Care Policy

1. **Based on the information submitted, it is not possible to determine whether your charity care policy is in compliance with the "Determination of Probable Eligibility" subpart of this standard (COMAR 10.24.19.04(C)(5)(a)(i)). Describe how this determination is made, and what information is required in order to convey probable eligibility (as contrasted with what is required to make final determination.[1]**

   If your review of your process and application forms do not comply with this standard, please revise it to do so.

   Applicants' Response

UM UCH's charity care policy complies with the requirements of COMAR 10.24.10.04A(2). *See* **Exhibit 4**, UM UCH's Financial Assistance Policy. In **Exhibit 4**, UM UCH included its Financial Assistance Policy in effect at the time the Exemption from CON Review was filed as well as a draft Financial Assistance Policy that was pending approval by the UM UCH Board of Directors. Subsequent to the filing of the Applicants' Request for Exemption from CON Review, the UM UCH Board formally approved of UM UCH's revised Financial Assistance Policy. A signed version of the revised financial assistance policy dated October 2018, is submitted herewith as **Exhibit 6**. Along with **Exhibit 6**, UM UCH is also enclosing its Financial Assistance Form, instructions to patients and financially responsible persons concerning completion of its Financial Assistance Application Form, a follow-up letter to patients regarding probable eligibility, and the current schedule of federal poverty levels used to make eligibility determinations.

Notices regarding UM UCH's financial assistance policy are currently posted in UM UCH's respective admissions offices, business offices, and emergency department areas. Additionally, UM UCH publishes notice annually in the Harford County Aegis in the form attached as **Exhibit 7**. Further, UM UCH's Financial Assistance Policy and related materials are available on UM UCH's website at the following URL:

https://www.umms.org/uch/patients-visitors/for-patients/financial-assistance

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[1] Note that the standard requires a two-day turnaround for a determination of probable eligibility, which allows a patient to know their likely eligibility for charity care without having to retrieve documentation that might not be readily available. As long as there is a simple procedure to assess probable eligibility, it is acceptable for the facility to require documentation prior to granting a final determination of eligibility.

As set forth in UM UCH's Financial Assistance Policy, patients will be deemed presumptively eligible for financial assistance if they qualify pursuant to one or more of fourteen (14) enumerated criteria, including:

I. Active Medical Assistance pharmacy coverage
II. Special Low Income Medicare Beneficiary (SLMB) coverage (covers Medicare Part B premiums)
III. Homelessness
IV. Medical Assistance and Medicaid Managed Care patients for services provided in the ED beyond coverage of these programs
V. Maryland Public Health System Emergency Petition (EP) patients (balance after insurance)
VI. Participation in Women, Infants and Children Program (WIC)
VII. Supplemental Nutritional Assistance Program (SNAP)
VIII. Eligibility for other state or local assistance programs
IX. Deceased with no known estate
X. Determined to meet eligibility criteria established under former State Only Medical Assistance Program
XI. Households with children in the free or reduced lunch program
XII. Low-income household Energy Assistance Program
XIII. Self-Administered Drugs (in the outpatient environment only)
XIV. Medical Assistance Spenddown amounts

Even if a patient does not qualify for presumptive eligibility, a probable eligibility determination may be made based on verbal or documented income levels and number of family members. Following a determination of probable eligibility, the follow-up letter enclosed with **Exhibit 6** is mailed to patients within two business days. UM UCH also reserves the right to make eligibility determinations without a formal application from its patients

2. You did not address the distribution of your charity care public notice (COMAR 10.24.19.04(C)(5)(a)(ii)). Please provide a copy of this public notice and describe how you will disseminate it to your service area population on an annual basis.

Applicants' Response

See Applicants' response to Question 1 above.

Bed Need

3. Looking at this exemption request along with the requested FMF exemption yields an increase of 39 observation beds (see table below).

	HMH today 2017	UCMC Today 2017	Total Today 2017	HMH future	UCMC future	Psych Hospital, Future	FMF future	System total in 2024	Change
MSGA beds	50	137	187	0	182	0	0	182	-5
Psych beds	26	0	26	0	0	40	0	40	+14
OBs beds	16	46	62	0	77	0	24	101	+39

In essence, the FMF replacing HMH increases observation beds by 50% over the facility it is replacing; meanwhile UCMC is proposing to increase observation beds by 67%. Between the two facilities, Upper Chesapeake is proposing a total increase of 63%. Staff has not been able to find a justification for this increase. Please explain.

Applicants' Response

At the outset, the Applicants note that the licensed bed numbers in the table associated with Question 3 are inaccurate based on fiscal year 2019 licensure. HMH is licensed for 54 MSGA beds and 28 psychiatric beds, while UCMC is licensed for 138 MSGA beds.

To the extent the number of observation beds identified on the Commission staff's table in question 3 is derived from annual observation average daily census reports to the Commission, such average daily census reports capture only billed observation hours and grossly undercount the actual observation bed need both at the existing facilities and following the conversion of HMH to UC FMF and merger and consolidation of HMH with UCMC.

The increase in number of observation beds presented in the Commission's question is a function of: (1) expected growth in the number of observation cases; and (2) an accurate calculation of the length of stay associated with those observation cases when projecting bed need for a dedicated observation unit. Billing requirements for patients that are eventually admitted as inpatients drastically limit the number of actual observation hours that are reported in the HSCRC Experience Report dataset. Using reported observation hours based on the HSCRC Experience report to project the need for observation beds in a dedicated observation unit would severely underestimate the number of observation beds required.

Summarized in Table 25 are bed need projections that included billed observation hours only, unbilled observation hours only, and billed and unbilled observation hours combined. At UCMC, unbilled hours observation account for a 48% addition to the billed hours, thereby resulting in need for 77 observation beds in fiscal year 2024. When the unbilled hours are included in the projection of bed need in historical years, there would be a need for 55 observation beds in fiscal year 2015 growing to 71 observation beds by fiscal year 2018. The growth from 71 observation beds in fiscal year 2018 to 77 beds in fiscal year 2024 is driven by

population and the transfer of observation patients from UC FMF, beginning in fiscal year 2022, that are expected to stay more than 48 hours.

Table 25
UCMC's Historical and Projected Observation Bed Need
FY2015 – FY2024

	Historical				Projection					
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
UCMC										
Observation Bed Need with Billed Observation Hours										
Observation Cases	10,963	11,410	12,127	13,930	13,985	14,043	14,106	14,523	14,618	14,717
ALOS - BIlled Hours	0.99	1.07	1.09	0.99	0.99	0.99	0.99	1.03	1.03	1.03
Occupancy	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Bed Need	38	42	46	48	48	48	48	51	52	52
Bed Need for Unbilled Observation Hours										
ALOS - BIlled Hours	0.47	0.58	0.62	0.48	0.48	0.48	0.48	0.49	0.49	0.49
Occupancy	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Bed Need	18	23	26	23	23	23	24	25	25	25
Total Observation Bed Need										
ALOS - Total Hours	1.46	1.64	1.71	1.47	1.47	1.47	1.47	1.52	1.52	1.52
Occupancy	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Bed Need	55	65	71	71	71	71	71	76	76	77

At UC FMF, the observation unit is sized for peak utilization due to the lack of any inpatient beds to be used for overflow of patients. The analysis of peak utilization was based on a patient level detailed data set of observation utilization, by day, during the twelve months ended August 31, 2018. At HMH, unbilled observation hours account for a 41% addition to billed observation hours. Applying the peak utilization adjustment experienced in 2018 to the combined projection of billed and unbilled hours results in a need for 32 observation beds in fiscal year 2024. When the unbilled hours are included in the projection of bed need in historical years, there would be a need for 36 observation beds in fiscal year 2015 growing to 38 observation beds by fiscal year 2018. The decline from 38 observation beds in fiscal year 2018 to 32 beds in fiscal year 2024 is driven by the transfer of observation patients from UC FMF to UCMC, beginning in fiscal year 2022, that are expected to stay more than 48 hours.

Table 26
HMH / UC FMF Historical and Projected Observation Bed Need
FY2015 – FY2024

	Historical				Projection					
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
HMH / UC FMF										
Observation Bed Need with Billed Observation Hours										
Observation Cases	3,761	3,896	4,019	4,443	4,458	4,474	4,491	4,516	4,543	4,571
ALOS - BIlled Hours	1.21	1.20	1.20	1.08	1.08	1.08	1.08	0.89	0.89	0.89
ADC - Billed Hours	12.4	12.8	13.2	13.1	13.2	13.2	13.2	11.0	11.0	11.1
Occupancy	80%	80%	80%	80%	80%	80%	80%	70%	70%	70%
Bed Need	16	16	16	16	16	16	16	16	16	16
Bed Need for Unbilled Observation Hours										
ALOS - UnbIlled Hours	0.49	0.49	0.49	0.44	0.44	0.44	0.44	0.36	0.36	0.36
ADC - Unbilled Hours	5.1	5.2	5.4	5.4	5.4	5.4	5.4	4.5	4.5	4.6
Occupancy	80%	80%	80%	80%	80%	80%	80%	70%	70%	70%
Bed Need	6	7	7	7	7	7	7	6	6	7
Total Observation Bed Need										
ALOS - Total Hours	1.70	1.69	1.69	1.52	1.52	1.52	1.52	1.25	1.25	1.25
ADC - Total Hours	17.5	18.0	18.6	18.5	18.6	18.6	18.7	15.5	15.6	15.7
Peak Utilization Adjustment	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Bed Need (1)	36	37	39	38	38	39	39	32	32	32

Note (1): UC FMF is sized for peak utilization with an adjustment to billed and unbilled hours based on actual experience for the 12 months ended August 2018

While the Applicants' observation bed need analysis projects a need for thirty-two (32) observation beds at UC FMF, the Applicants propose only twenty-four (24) observation beds. Based on 2018 experience, it is expected that observation utilization will meet or exceed UC FMF's observation capacity approximately 14% of the time. The design of the new facility, though, is expected to provide greater flexibility in managing the bed needs of observation patients. In addition, UC FMF can transfer patients to UCMC if observation beds are not available at UC FMF.

Presented below are the detailed assumptions that support Applicant's request for observation beds at UCMC and UC FMF.

UCMC Observation Bed Need

1. UCMC Observation Cases

In UM UCH's evaluation of the demand for observation beds, it found that the number of observation cases at UCMC increased 10.6% from fiscal year 2015 to 2017 and then another 14.9% in fiscal year 2018. This observation utilization is expected to grow conservatively with population in fiscal year 2019 through 2021 offset partially by an assumed 0.25% annual reduction for observation PAUs. In fiscal year 2022, with the shift of observation patients from HMH to AMC FMF, it is expected that, based on historical utilization, approximately 700 patients that stay greater than 48 hours will be transferred to UCMC. Approximately one-half of those transfers will become observation patients at UCMC. This addition results in a 3.0% increase in cases in fiscal year 2022 followed by population increases in fiscal years 2023 and 2024. Between fiscal year 2017 and 2024, the observation cases at UCMC are expected to increase 21.4% (Table 27.)

Table 27
UCMC's Historical and Projected Observation Cases
FY2015 – FY2024

	Historical				Projection						% Change
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY18-FY24
Observation Cases	**10,963**	**11,410**	**12,127**	**13,930**	**13,985**	**14,043**	**14,106**	**14,523**	**14,618**	**14,717**	
%Change		*4.1%*	*6.3%*	*14.9%*	*0.4%*	*0.4%*	*0.4%*	*3.0%*	*0.7%*	*0.7%*	*5.6%*

2. UCMC Observation Average Length of Stay

Determining the average length of stay to apply to the observation patients at UCMC before and after the construction projects requires an understanding of the observation hours that can be billed and those hours that are not billed. Per the HSCRC Experience Report dataset, UCMC reported 332,191 observation hours in fiscal year 2018. Included in these hours are 61,276 hours related to observation patients that were eventually admitted as an inpatient and 270,915 hours for patients that remained in outpatient status their entire stay. According to billing requirements for those patients that were eventually admitted, only those observation hours that occurred prior to 12:00 am of the day of admission can be billed.

During the 12 months ended August 2018, it was determined that UCMC billed 408,805 hours, a 23% increase over the hours billed during the twelve months ended June 2018 (fiscal year 2018). In addition, there were 82,808 hours that were not billed due to their occurrence on the day of admission. Rather than staying in a bed an average of 1.0 day as reported, observation patients are actually staying in beds an equivalent of 1.4 days (Table 28).

Table 28
UCMC's 2018 Observation ALOS

	2018		
	Inpatient	Outpatient	Total
FY2018 HSCRC Experience Report			
Cases	5,113	8,817	13,930
Hours	**61,276**	**270,915**	**332,191**
ALOS (Days)	0.5	1.3	1.0
UCHS Internal Report on Observiation Hours for 12 Months Ended August 2018			
Cases	5,408	8,768	14,176
Hours			
Billed	75,740	333,065	408,805
Unbilled	82,808	-	82,808
Total	**158,548**	**333,065**	**491,613**
Unbilled % of Total	*52.2%*	*0.0%*	*16.8%*
ALOS (Days)	1.2	1.6	1.4

Observation and medical patients will continue to overlap in the existing beds until distinct observation units are opened in fiscal year 2022. As such, it would be double counting to consider the full length of stay as an observation patient along with counting inpatient days when often times the patients stay in the same bed. When the dedicated observation units are opened, though in fiscal year 2022, the full length of stay needs to be considered when determining the required number of observation beds. Table 29 below reflects a continuation of the 1.0 day length of stay through fiscal year 2021, but then increases in fiscal year 2022 to 1.5 days which also takes into account the addition of observation cases with longer lengths of stay that will be transferred from the AMC FMF beginning in fiscal year 2022.

Table 29
UCMC's Historical and Projected Observation ALOS
FY2015 – FY2024

	Historical				Projection						% Change
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY18-FY24
ALOS - Observation	1.0	1.1	1.1	1.0	1.0	1.0	1.0	1.5	1.5	1.5	*52.7%*
%Change											

3. UCMC Observation Bed Need

The applicants used the State Health Plan occupancy rate of 80% to project the number of observation beds at UCMC. Based on the assumptions presented above, there is a projected need for 77 observation beds at UCMC in fiscal year 2024 to accommodate the full stay of observation patients in a dedicated unit (Table 30).

Table 30
UCMC's Historical and Projected Observation Bed Need
FY2015 – FY2024

	Historical				Projection						% Change
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY18-FY24
Observation Bed Need	38	42	46	48	48	48	48	76	76	77	*60.4%*
%Change		*10.5%*	*9.5%*	*4.3%*	*0.0%*	*0.0%*	*0.0%*	*58.3%*	*0.0%*	*1.3%*	

HMH / UC FMF Observation Bed Need

1. HMH / UC FMF Observation Cases

Between fiscal years 2015 and 2018, observation cases at HMH increased 18.1% (Table 31). In 2018, these patients stayed for an average of 25.9 hours or 1.1 days on average. Between fiscal years 2018 and 2021, observation cases are projected to increase at 0.5% per year associated with population growth. In this same time period, the applicants project a decrease in the number of observation cases at 0.25% annually associated with reductions in potentially avoidable utilization. With the transition of HMH's emergency and observation services to UC FMF in fiscal year 2022, observation patients with stays longer than 48 hours are projected to be transferred to UCMC. Overall, the applicant expects that there will be a 2.9% increase in observation cases at UC FMF in fiscal year 2024 when compared with observation cases at HMH in fiscal year 2018. (Table 31).

Table 31
HMH and UC FMF Historical and Projected Observation Cases
FY2015 – FY2024

	Historical				Projection						% Change
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY18-FY24
Observation Cases											
HMH	**3,761**	**3,896**	**4,019**	**4,443**	**4,458**	**4,474**	**4,491**	**-**	**-**	**-**	
%Change	*2.3%*	*3.6%*	*3.2%*	*10.5%*	*0.3%*	*0.4%*	*0.4%*	*-100.0%*	*0.0%*	*0.0%*	*-100.0%*
UC FMF								**4,516**	**4,543**	**4,571**	
%Change									*0.6%*	*0.6%*	
Total	**3,761**	**3,896**	**4,019**	**4,443**	**4,458**	**4,474**	**4,491**	**4,516**	**4,543**	**4,571**	
%Change		*3.6%*	*3.2%*	*10.5%*	*0.3%*	*0.4%*	*0.4%*	*0.6%*	*0.6%*	*0.6%*	*2.9%*

2. HMH / UC FMF Observation Average Length of Stay

Determining the average length of stay to apply to the observation patients at HMH through fiscal year 2021 and at the FMF beginning in fiscal year 2022 requires an understanding of the observation hours that can be billed and those hours that are not billed. Per the HSCRC Experience Report dataset, HMH reported 114,915 observation hours in fiscal year 2018 (Table 32). Included in these hours are 23,762 hours related to observation patients that were eventually admitted as an inpatient and 91,153 hours for patients that remained in outpatient status their entire stay. According to billing requirements for those patients that were eventually admitted, only those observation hours that occurred prior to 12:00 am of the day of admission can be billed.

During the 12 months ended August 2018, it was determined that HMH billed 135,672 hours, an 18% increase over the hours billed during the twelve months ended June 2018 (fiscal year 2018). In addition, there were 27,231 hours that were not billed due to their occurrence on the day of admission. Rather than staying in a bed an average of 1.1 days as reported in fiscal year 2018, observation patients actually stayed in beds for an equivalent of 1.5 days (Table 32).

Table 32
HMH's 2018 Observation ALOS

	2018		
	Inpatient	Outpatient	Total
FY2018 HSCRC Experience Report			
Cases	1,640	2,803	4,443
Hours	**23,762**	**91,153**	**114,915**
ALOS (Days)	0.6	1.4	1.1
HMH Internal Report on Observation Hours for 12 Months Ended August 2018			
Cases	1,624	2,843	4,467
Hours			
Billed	25,752	109,920	135,672
Unbilled	27,231	-	27,231
Total	**52,983**	**109,920**	**162,903**
Unbilled % of Total	*51.4%*	*0.0%*	*16.7%*
ALOS (Days)	1.4	1.6	1.5

Observation and medical patients will continue to overlap in the existing beds until a distinct observation unit is opened in the FMF in fiscal year 2022. As such, it would be double counting to consider the full length of stay for an observation patient while also counting their inpatient days when often times the patients stay in the same bed. When a dedicated observation unit is opened, though in fiscal year 2022, the full length of stay needs to be considered when determining the required number of observation beds. **Table 33** reflects a continuation of the 1.1 day length of stay through fiscal year 2021, but then increases it in fiscal year 2022 to reflect the unbilled hours. Partially offsetting the increase in length of stay for unbilled hours is a reduction in the length of stay at the FMF for those observation cases with stays that have historically been greater than 48 hours that will be transported to UCMC.

Table 33
HMH and UC FMF Historical and Projected ALOS
FY2015 – FY2024

	Historical				Projection						% Change
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY18-FY24
HMH	**1.21**	**1.20**	**1.20**	**1.08**	**1.08**	**1.08**	**1.08**				
%Change		*-0.7%*	*-0.1%*	*-10.0%*	*0.0%*	*0.0%*	*0.0%*				*-100.0%*
UC FMF								**1.25**	**1.25**	**1.25**	
%Change								*16.3%*	*0.0%*	*0.0%*	

3. <u>HMH / UC FMF Observation Bed Need</u>

The applicants used the State Health Plan occupancy rate of 80% to project the number of observation beds at HMH and UC FMF. Based on the assumptions presented above, there is a projected need in fiscal year 2024 of thirty-two (32) observation beds at UC FMF (**Table 34**) to accommodate peak utilization. Unfortunately, the building in which the FMF will reside has a capacity limit of 24 beds. Based on 2018 experience, it is expected that observation utilization

will exceed the building capacity approximately 14% of the days during the year. The design of the new facility, though, is expected to provide greater flexibility in managing the bed needs of observation patients. In addition, UC FMF can transfer patients to UCMC if beds are not available at UC FMF.

Table 34
HMH and UC FMF Historical and Projected Observation Bed Need
FY2015 – FY2024

	Historical				Projection					
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Bed Need										
HMH (1)	16	16	16	16	16	16	17			
UC FMF (2)								32	32	32
Total	16	16	16	16	16	16	17	32	32	32
Bed Recommendation (3)								24	24	24

Note (1): Reflects average daily census and 80% occupancy target
Note (2): Reflects peak utilization adjusted for patients staying greater than 48 hours
Note (3): Reflects building capacity

4. The FY2022 projected changes in discharges and patient days in Table F appear significant. Please explain the methodology and/or rationale that resulted in the following projections.

a) Pediatric discharges increase by 15.1% in (121 vs. 105).
b) Observation discharges increase by 8.2%, with a significant 54.2% increase in patient days from FY2021 (29,041 vs. 18,830).
c) Psychiatric discharges increase by 4% and patient days increase by 32.7%.
d) Total discharges increase by 4% and patient days increase by 17.5%, which is inconsistent with the historical data and trend line in the county.

Applicants' Response

Exhibit 5 includes an updated Table F that reflects the following changes to projected utilization:

1. A 1% reduction in pediatric discharges from 105 discharges in fiscal year 2021 to 104 discharges in fiscal year 2022. This change reflects an updated assumption that there will not be any pediatric discharges that are a part of the shift of medical surgical discharges from HMH to UCMC in fiscal year 2022. Instead, all of the medical surgical discharges that shift from HMH are allocated to age cohorts 15-64, 65-75 and 75+. The previous projection of medical surgical discharges that shift from HMH to UCMC reflected a historical allocation, by age cohort, of medical surgical discharges at UCMC

which includes pediatric discharges. This update reflects the historical trend in pediatric discharges.

2. A 2.4% increase in combined Observation discharges at UCMC and HMH / UC FMF from 18,596 in fiscal year 2021 to 19,040 in fiscal year 2022. This increase reflects (1) population related growth of 0.6% and (2) a 1.8% growth related to the shift of 330 observation cases from UM FMF that are expected to stay greater than 48 hours. These cases will initially be seen at UM FMF and then be transferred to UCMC when it is determined that they will stay more than 48 hours. They, therefore, count as cases at both UC FMF and UCMC. The previous projection of 5,606 observation cases at UC FMF in fiscal year 2022 has been corrected to reflect a 0.6% population growth.

3. A 47.0% increase in combined Observation patient days at UCMC and HMH / UC FMF from 18,830 in fiscal year 2021 to 27,685 in fiscal year 2022. This increase reflects (1) the 2.4% growth in observation cases as described above and (2) a 43.6% increase in the average length of stay for the inclusion of unbilled observation hours in the determination of average length of stay. Including the unbilled observation hours at UCMC increases the average length of stay by 50% from an average of 1.0 day as reported to the HSCRC to 1.5 days that reflects the total length of stay for observation patients. At HMH / UC FMF, the inclusion of unbilled hours increase the average length of stay by 16.3% from an average of 1.1 day at HMH to 1.25 days at UC FMF.

The increase in psychiatric discharges from 1,213 at HMH in fiscal year 2021 to 1,367 at UM FMF in fiscal year 2022 represents a 12.7% increase in psychiatric discharges. This increase reflects (1) population related growth and (2) the capture of additional market share in fiscal year 2022 with the opening of a dedicated gero-psychiatric unit. The 32.7% increase in patient days from 8,609 in fiscal year 2021 to 11,421 in fiscal year 2022 reflects (1) the 12.7% increase in psychiatric discharges and (2) a 17.8% increase in the average length of stay related to the introduction of gero-psychiatric services. Based on experience at Sheppard and Enoch Pratt Hospital in fiscal year 2016, patients treated in the geriatric program will require more services and have a longer average length of stay of 20.75 days beginning in fiscal year 2022. Separating the geriatric patients with longer lengths of stay, reduces the projected ALOS for patients treated in the non-geriatric program from 7.1 days in fiscal year 2021 to 6.2 days in fiscal year 2022. The combined average length of stay for gero and non-gero psychiatric patients is expected to equal 8.4 days beginning in fiscal year 2022.

With the changes identified above, the inpatient discharges and observation cases are projected to increase by 0.8% from 34,150 in fiscal year 2021 to 34,407 in fiscal year 2022. This growth is less than the 2.8% and 3.6% increases in inpatient discharges and observation cases in fiscal year 2017 and 2018, respectively. The updated projection of patient days shows that they are expected to increase 11.1% from 83,612 patient days in fiscal year 2021 to 92,927 in fiscal year 2022. This is driven by the increases in length of stay associated with (1) the introduction of a gero psychiatric program with a 20.75 day average length of stay and (2) the inclusion of unbilled observation hours that add 43.6% of actual incurred hours to the billed hours that are reported to the HSCRC.

5. The exemption request states (p. 41) that: “a … dedicated observation unit provides… for focused attention…from admission to the observation unit through

discharge, thereby minimizing unnecessary testing and ultimately reducing lengths of stay." We understand this point but have the following questions:

a) Is there any data or literature that you can cite to substantiate that statement?

b) The applicant's LOS projection does not reflect a belief in this statement (i.e., current LOS is 1.0 and projected LOS is 1.5). Why not? It seems that the assumed observation LOS should be reduced in a way that would reduce the projected need for observation beds. Please explain.

Applicants' Response

Dedicated observation units are effective in treating patients and in reducing length of stay for these patients. The first step for a successful observation unit is patient selection. A coordinated clinical discussion occurs between the emergency physician and the admitting provider. If the patient falls into one of the protocol driven clinical pathways or if the patient has a diagnosis and/or treatment that both clinicians feels could improve in less than 48 hours, then the observation unit is considered an appropriate location for the patient. The protocols are evidenced clinical pathways that include diagnostics and treatments. These are appropriately prioritized and there is 24/7 provider coverage as well as case management and a decreased nurse to patient ratio. Cohorting observation patients makes the nurses more effective and efficient since their documentation is different as well as their workflows when compared to an inpatient admission. Many clinical diagnoses like congestive heart failure (CHF) require treatments that simply need more time than provided in the emergency department to be effective. For a CHF patient, the diuretic can be highly effective and in 24 or 48 hours, if monitored closely, can improve sufficiently for discharge. There will still be approximately 20-30% of observation patients who will not improve and require inpatient hospitalization. This is a standard conversion rate and a natural progression for the patient who will require more days in the hospital.

Literature that supports observation units and efficiency gains include the following which are submitted with **Exhibit 8**:

1. A 14 bed observation unit was able to decrease the average length of a patient's stay by 32.5% (Plamann JM et al. Creation of an Adult Observation Unit: Improving Outcomes. J Nurs Care Qual. (2018)

2. A hospital at 95% capacity used an observation unit to improve efficiency and drive an improved in length of stay by 16% (Gabele D et al. Medical Observation Units and Emergency Department Collaboration: Improving Patient Throughput. J Nurs Adm. (2016)

3. Multiple studies with a 23-38% reduction in LOS for observation patients (Ross MA, et al. Protocol-driven emergency department observation units offer savings, shorter stays, and reduced admissions. Health Aff (Millwood). 2013 Dec;32(12):2149-56.

While literature identifies examples of other hospitals that have reduced lengths of stay with the utilization of observation units, UCMC has experienced a 27% growth in the number of observation cases from 10,963 cases in fiscal year 2015 to 13,930 in fiscal year 2018. This

growth has maximized the use of UCMC's physical medical surgical beds. Given this historical growth, Applicant is conservative in projecting future growth in cases with population only.

Applicant also considers it critical to account for the unbilled observation hours in sizing a dedicated observation unit as the lack of reporting these hours has resulted in conflicting reports on the utilization of UCMC's medical surgical beds. With the historical growth in observation utilization, it is critical to not underestimate the need for observation beds.

6. **Table 12 shows 12,694 total MSGA discharges in FY2022, but totaling the number from Table F equals 12,590. Which is correct? Please provide an updated Table F that reflects the correct total.**

Applicants' Response

The projection of 12,694 total MSGA discharges in fiscal year 2022 (Table 12 in the Modified CON application for the merger and consolidation of inpatient services at HMH and UCMC) includes 104 pediatric discharges. These pediatric discharges are presented in the updated Table F found at **Exhibit 5**.

7. **Please explain the 1.5 day increase in observation ALOS (Table 20, p. 26) assumed in your projection. In particular, if the FMF admits observation patients, any that are transferred to UCMC at 48 hours would be admitted as inpatients due to the Medicare two day rule, so that should not impact observation ALOS at UCMC.**

Assumedly, significant efficiencies should be gained as patients are transferred from a dedicated observation unit to an inpatient unit, freeing up observation beds, and turning them over for use by other observation patients.

While it is incorrect to "double count" an observation patient that stays in a bed as an inpatient, (p. 25), a dedicated observation unit does allow "double use" of the observation bed, where patients will need to be moved when transferred to inpatient status. This should eliminate the need to inflate ALOS in the observation unit. Please respond to the following:

a) **The projection model presented does not appear to account for this increase in efficiency in use of rooms from turnover. Won't this reduce the total need of observation beds, i.e. you get to "double count" some of the observation beds, because more than one patient can be in the bed per day due to turnover?**

b) **Conversely, if the projection model used is correct, then wouldn't it be in the public interest to only approve approximately 51 inpatient beds, (77 requested divided by 1.5), and take advantage of the fact that the same bed, when used for the observation and inpatient stays, is more efficient, since there won't be a need to impose an inflation factor for double counting hours, as described on page 25 in Table 19?**

c) **The request (p. 3) states, "…the net increase in observation capacity does not account for MSGA (beds) used presently at both UCMC and HMH for patients**

in observation status or for time patients spend in observation after 12:00a.m. on the day they are admitted as inpatients." By building the number of dedicated observation beds in the model, isn't it likely that UCMC will have too many MSGA beds since observation patients will no longer be occupying those beds as observation patients?

Applicants' Response

Determining the average length of stay to apply to the observation patients at UCMC requires an understanding of the observation hours that can be billed and those hours that are not billed. Per the HSCRC Experience Report dataset, UCMC reported 332,191 observation hours in fiscal year 2018. Included in these hours are 61,276 hours related to observation patients that were eventually admitted as an inpatient and 270,915 hours for patients that remained in outpatient status their entire stay. According to billing requirements for those patients that were eventually admitted, only those observation hours that occurred prior to 12:00 am of the day of admission can be billed. This billing requirement severely limits the number of incurred observation hours that are actually reported.

During the 12 months ended August 2018, it was determined that UCMC billed 408,805 hours, a 23% increase over the hours billed during the twelve months ended June 2018 (fiscal year 2018). In addition, there were 82,808 hours that were not billed due to their occurrence on the day of admission. Rather than staying in a bed an average of 1.0 day as reported, observation patients are actually staying in beds an equivalent of 1.4 days (Table 35).

Table 35
UCMC's 2018 Observation ALOS

	2018		
	Inpatient	Outpatient	Total
FY2018 HSCRC Experience Report			
Cases	5,113	8,817	13,930
Hours	**61,276**	**270,915**	**332,191**
ALOS (Days)	0.5	1.3	1.0
UCHS Internal Report on Observation Hours for 12 Months Ended August 2018			
Cases	5,408	8,768	14,176
Hours			
Billed	75,740	333,065	408,805
Unbilled	82,808	-	82,808
Total	**158,548**	**333,065**	**491,613**
Unbilled % of Total	*52.2%*	*0.0%*	*16.8%*
ALOS (Days)	1.2	1.6	1.4

When the dedicated observation units are opened in fiscal year 2022, the full length of stay needs to be considered when determining the required number of observation beds. Table 29 in the Modified CON application for the merge and consolidation of inpatient services at HMH and UCMC presents a continuation of the 1.0 day length of stay through fiscal year 2021, but then increases in fiscal year 2022 to 1.5 days which also takes into account the addition of 330 observation cases from UM FMF that are expected to stay in observation status greater than 48 hours, but are not expected to be admitted. These cases will initially be seen at UM FMF and then be transferred to UCMC when it is determined that they will stay more than 48 hours. They, therefore, count as observation cases at both UC FMF and UCMC.

The projection of observation bed need in a dedicated unit assumes that patients will remain in the observation unit until they are admitted or discharged as an outpatient. As experienced in the twelve months ended August 2018, patients are staying in observation status for 1.4 days. This length of stay limits the ability to care for more than one observation patient in an observation bed per day.

The construction of a dedicated observation unit is required to accommodate the shift of 2,595 medical surgical discharges from HMH in fiscal year 2022 (Table 9 in the Modified CON application for the merger and consolidation of inpatient services at HMH and UCMC). With an average length of stay of 4.04 days and an assumed occupancy of 80%, there will be a need for approximately 36 medical surgical beds to accommodate the patients coming from HMH. As presented in Table 29 in the Modified CON application for the merger and consolidation of inpatient services at HMH and UCMC, observation patients currently take up 48 beds.

Adverse Impact on Charges

8. Describe where UM UCH is in the process of negotiations with HSCRC regarding its GBR proposal.
Applicants' Response

Representatives from UM UCH recently had an initial meeting with the HSCRC on March 7, 2019. Another meeting will be scheduled in early April to review the financial projection detail supporting the GBR proposal with representatives of the HSCRC. A follow-up meeting with the HSCRC related to the GBR proposal is expected to be scheduled in late April, 2019, and it is currently expected that UM UCH would reach an agreement with the HSCRC by mid-May.

Cost Effectiveness

9. No cost estimates are provided for the five alternative approaches to expansion of UCMC (p. 28-32). But the applicant's "analysis" of the options refers to a "review of the cost and benefits of the available options."

Provide a more comprehensive discussion of the "costs and benefits" of the alternatives considered. Explicitly discuss the effectiveness of each alternative in terms of the project's key objective – providing the sufficient

space needed to provide the inpatient services that will no longer be available at HMH after its conversion to an FMF. The assessment should compare and contrast the particular effectiveness of providing more bed space, given that this is essentially the only need directly addressed by the chosen Option 1A, with respect to the conversion of HMH.

Applicants' Response

For each of the alternatives described on pages 28 to 31 of the Exemption Request, UCMC's architectural and construction consultants provided preliminary estimates solely of building construction costs. Based on these estimates, Options 1 and 1A were clearly determined to be the most cost-effective alternatives to provide the requisite space to house the number of beds projected to be needed upon the anticipated closure of HMH in fiscal year 2022. Ultimately, UCMC chose option 1A because it also provided shell space for potential expansion at UCMC's campus.

As set forth in the need analysis on pages 11 through 26 of the Exemption Request, UCMC projected a need for 202 MSGA beds and 34 observation beds in fiscal year 2022.

Option 1, considered a two story expansion above the Kaufman Cancer Center, with each floor being 26,000 building gross square feet ("BGSF") for a total of 52,000 BGSF. Option 1 did not include construction of a third floor of shell space as does Option 1A. Initial construction cost estimates for Option 1 were $25.8 million or approximately $430 per bed assuming construction of 60 private rooms. Ultimately, more detailed construction costs as set forth in the Exemption Application for Option 1 were determined to equal approximately $27 million.[2] While Option 1 would have provided adequate space to house the number of beds projected to be needed at UCMC in fiscal year 2022, it provided no opportunity for additional expansion on the UCMC campus.

Option 1A, the proposed project, includes Option 1 coupled with a single floor of shell space directly above the existing Kaufman Cancer Center that UCMC anticipates using for expansion of the Kaufman Cancer Center's diagnostic and treatment services and/or future inpatient needs. Initial cost estimates for construction of the shell space were estimated to be $4.2 million, however, as set forth in the Exemption Request these construction costs were ultimately determined to be approximately $3.17 million. As further described on pages 43 and 44 of the Exemption Request, construction of the shell space as part of the proposed project is cost effective, reasonable to include as part of the proposed project to limit disruption to the future operations of the Kaufman Cancer Center, and consistent with COMAR 10.24.10.04(B)(16).

Option 2 contemplated renovation of two levels of the Ambulatory Care Center ("ACC") on UCMC's campus. The floor plate of the ACC is 24,000 BGSF and, therefore, a two level renovation could have provided 48,000 BGSF of space for construction of between 54 and 60 private rooms. While Option 2 could have provided the necessary space to house the number

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[2] **The $27 million figure subtracts the estimated cost for construction of an additional level of shell space, $3,170,406, from the Project Budget, Table E, Line A.1.a.(1) of Exhibit 1, which reflects total new construction costs.**

of beds projected to be needed in fiscal year 2022, preliminary construction cost estimates for the renovation were $30.9 million or $542 per bed, assuming a total 57 beds. As a result, Option 2 was determined not to be as cost effective as Options 1 and 1A and was therefore rejected.

Option 3 examined a one story vertical expansion of each of UCMC's main hospital bed towers and the ED/bed tower. The combined vertical expansion would have created an additional 47,000 BGSF, sufficient to house 60 private patient rooms with each being 250 square feet. Estimated construction costs were $37.7 million or approximately $640 per bed (assuming 60 beds). This option was also rejected because it was not as cost effective as Options 1 and 1A.

Option 4 considered a one story vertical expansion of each of UCMC's main hospital bed towers but not the ED/bed tower. Combined, the vertical expansion would have created an additional 38,000 BGSF capable of housing 40 to 44 private rooms, each being 250 square feet. The estimated construction cost for Option 4 was $27.7 million or approximately $693 per bed assuming only 40 beds. Given the significant increase in cost per bed over Options 1 and 1A, Option 4 too was rejected as not cost-effective. Moreover, Option 4 failed to provide the requisite space for the number of beds projected to be needed by UCMC in fiscal year 2022.

Finally, Option 5 evaluated a one story vertical expansion above the main hospital diagnostic and treatment core, which would have created an additional 24,600 BGSF capable of housing up to 30 single patient rooms, with each room being approximately 300 square feet. Construction costs associated with Option 5 were estimated to be $21 million or $700 per bed. Option 5 was rejected because it failed to provide requisite space to house the number of beds projected to be needed by UCMC in fiscal year 2022 and also because the cost per bed significantly exceeded Options 1 and 1A which will yield significantly more space at a reduced cost per bed.

As described in the Exemption Request, Options 1 and 1A provide the most viable and cost-effective solution to providing the additional space needed to provide the inpatient services that will no longer be available at HMH after its conversion to an FMF. Option 1A also provides efficient and effective flexibility for future expansion of either inpatient needs or oncology diagnostic and treatment services.

Efficiency

10. Please list examples of the operational efficiencies that will be gained by consolidating the inpatient services of the two facilities in one location.

Applicants' Response

Operational efficiencies that can be achieved by consolidation of inpatient services of HMH and UCMC at a single location are numerous. Nursing leadership, including the Vice President and Assistant Vice President of Nursing, who currently serve in such roles at both hospitals, will be able to provide more timely direction and contact with all inpatients and patients in a single location. Consolidation of the two inpatient units, including the elimination of a small, six bed intensive care unit at HMH, will result in staffing efficiencies. Finally, with all

inpatients located at UCMC, supply chain, including surgical services and central sterile supply areas, will be consolidated, also generating efficiency.

11. Please explain why creating dedicated observation units is a more efficient than expanding inpatient units that can be used flexibly as either observation beds or inpatient beds?

Applicants' Response

UM UCH anticipates that creation of a dedicated observation unit will support a more uniform documentation system for patient care as well as patient care pathways. Research has shown that dedicated observation units are effective in treating patients and in reducing lengths of stay for these patients. A first step towards a successful dedicated observation unit is patient selection. A coordinated clinical discussion occurs between the treating emergency physician and the admitting provider. If the patient falls into one of the protocol driven clinical pathways or if the patient has a diagnosis and/or treatment that both clinicians feels could improve in less than 48 hours, then observation unit is considered an appropriate location for the patient. The protocols are evidenced clinical pathways that include diagnostics and treatments. These treatments will be appropriately prioritized and there will be 24/7 provider coverage as well as case management and a decreased nurse:patient ratio. Cohorting observation patients makes nurses more effective and efficient since their documentation as well as their workflow will differ in comparison to an inpatient admission. Many clinical diagnoses like congestive heart failure require treatments that simply need more time than provided in the Emergency Department to be effective. For a congestive heart failure patient, the diuretic can be highly effective and in 24 or 48 hours, if monitored closely, can improve sufficiently for discharge. There will still be approximately 20-30% of observation patients who will not improve and require inpatient hospitalization. This is a standard conversion rate and a natural progression for the patient who will require more days in the hospital.

Patient Safety

12. The observation rooms proposed to be built at UCMC are designed as semiprivate, in contrast to those proposed at the FMF, which would all be private rooms. The rationale for private observation rooms at the FMF is that private rooms result in better infection control and lower infection rates, reduced recovery time for patients, greater privacy for patient-provider communications, and enhanced patient and family experience. In light of that and the fact that private rooms are becoming the industry standard, please explain the decision to make the observation beds at UCMC semi-private.

Applicants' Response

The observation rooms at the UCMC campus are proposed as vertical expansion above the existing Kaufman Cancer Center. The Kaufman Cancer Center was designed for vertical expansion of three floors (26,290 SF each) to accommodate either observation/inpatient beds or expanded Kaufman Cancer Center diagnostic and treatment services. With the development of

the greater need in observation, several test-fits were studied, including private rooms, traditional semi-private rooms, and open bays. Of the options analyzed, the proposed semi-private room layout provides the most efficient and effective proportion of patient space to support space, balanced with staff, patient, and family experience and infection prevention. A private room layout would provide 30 beds per floor maximum, and therefore, would not meet the bed count need for 77 observation beds across two floors. A traditional semi-private model would not meet UM UCH's privacy, experience, or infection prevention goals. An open bay model would allow for up to 62 bays per floor, but also would not satisfy UM UCH's patient care objectives.

The proposed semi-private observation room designs at UCMC is custom and atypical for semi-private accommodation, which specifically to addresses infection control, privacy, enhanced patient and family experience, and recovery time. Where traditional semi-private rooms provide two patient beds either side-by-side or facing one another with a curtain separation and a shared patient toilet/shower room, UM UCH's proposed custom design provides a private zone with a dedicated patient toilet/shower room for each of the two beds. The private zones are staggered separating the patient beds physically, with increased distance between beds compared to traditional models. The private zones are also separated visually, with both beds facing the same direction, but the headwalls are in separate planes, offset by ten feet and separated by private toilet/shower rooms. Each zone provides space for family and staff, and the staggered layout mitigates auditory transfer. This layout results in a larger overall semi-private patient room, but this is justified due to the improved patient safety and satisfaction.

Shell Space

13 The potential use of the proposed shell space is only vaguely described and not compellingly justified ("UCMC also proposes to construct one floor of shell space to accommodate future growth of the Kaufman Cancer Center's diagnostic and treatment services and/or additional future inpatient or observation needs").

a) Define the most likely use of the proposed shell space with more clarity, and specify the likely time frame in which that would occur.
b) Describe the current diagnostic and treatment services housed in the Kaufman Cancer Center.
c) Describe the proportion of capacity at which each of those services are operating.
d) Given the significant increase of observation beds being proposed in this exemption request, the fact that projected county demographics are stable, and declining inpatient use rates, how likely is the need for this space to materialize?

Applicants' Response

A minimum of half the 3rd floor space will be needed for the expansion of the Kaufman Cancer Center ("KCC"), which provides outpatient services only. The KCC is currently at full

capacity in several clinical areas, including: (1) hematology/oncology physician practice; (2) the multi-disciplinary clinic/services; and (3) supportive care services area.

Current diagnostic and treatment services in the KCC include the following: (1) comprehensive array of supportive care services (nurse navigation, social work, nutritional, spiritual care, integrative health services); (2) financial assistance support; (3) research team that engages with patient on participation in clinical trials; (3) multi-disciplinary clinic/services for a wide variety of cancer types and additional cancer programs (palliative care, cardio-oncology, Specialty specific surgical practices such as thoracic, gyn onc etc.); (4) radiation Oncology services; (5) comprehensive Breast Center – which includes full breast imaging testing, surgical breast practice and Breast navigation services; (6) Hematology/Oncology physician specialty practice; (7) infusion center.

Each service at the Kaufman Cancer Center is current at capacity except for Radiation Oncology services.

It is certain likely that UCMC will require at a minim one-half (1/2) of the 3rd floor for shell space to be built above the Kaufman Cancer Center, if not the full floor in the next three years.

Table of Exhibits

Table of Tables

Exhibit 5

TABLE F. STATISTICAL PROJECTIONS - ENTIRE FACILITY (UCMC + UC FMF + HMH + UC BEHAVIORAL HEALTH + OBSERVATION)

INSTRUCTION: Complete this table for the entire facility, including the proposed project. Indicate on the table if the reporting period is Calendar Year (CY) or Fiscal Year (FY). For sections 4 & 5, the number of beds and occupancy percentage should be reported on the basis of licensed beds. In an attachment to the application, provide an explanation or basis for the projections and specify all assumptions used. Applicants must explain why the assumptions are reasonable.

	Two Most Recent Years (Actual)		Current Year Projected	Projected Years (ending at least two years after project completion and full occupancy) Include additional years, if needed in order to be consistent with Tables G and H.					
Indicate CY or FY	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
1. DISCHARGES									
a1. General Medical/Surgical* UCMC	9,082	8,974	8,061	8,241	8,427	8,619	11,404	11,671	11,948
a2. General Medical/Surgical* HMH	2,931	3,034	3,021	3,087	3,155	3,226			
a3. Observation UCMC	11,410	12,127	13,930	13,985	14,043	14,106	14,523	14,618	14,717
a4. Observation UC FMF							4,516	4,543	4,571
a5. Observation HMH	3,896	4,019	4,443	4,458	4,474	4,491			
General MSGA & Observation	**27,319**	**28,154**	**29,455**	**29,770**	**30,099**	**30,442**	**30,443**	**30,832**	**31,235**
b1. ICU/CCU UCMC	814	860	842	860	879	899	1,186	1,214	1,242
b2. ICU/CCU HMH	203	179	175	179	183	187			
Total MSGA	**28,336**	**29,193**	**30,472**	**30,809**	**31,161**	**31,528**	**31,630**	**32,045**	**32,477**
c. Pediatric	94	123	108	107	106	105	104	103	102
d. Obstetric	1,381	1,366	1,296	1,299	1,301	1,304	1,307	1,310	1,312
e1. Acute Psychiatric HMH	1,236	1,233	1,195	1,201	1,207	1,213			
e2. Acute Psychiatric UC Behavioral Health							1,367	1,375	1,385
Total Acute	***31,047***	***31,915***	***33,071***	***33,416***	***33,776***	***34,150***	***34,407***	***34,834***	***35,277***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL DISCHARGES	***31,047***	***31,915***	***33,071***	***33,416***	***33,776***	***34,150***	***34,407***	***34,834***	***35,277***
2. PATIENT DAYS									
a1. General Medical/Surgical* UCMC	37,389	35,932	32,685	33,441	34,226	35,039	46,312	47,391	48,510
a2. General Medical/Surgical* HMH	13,472	13,246	12,318	12,601	12,896	13,201			
a3. Observation UCMC	12,169	13,243	13,841	13,890	13,941	13,996	22,033	22,177	22,327
a4. Observation UC FMF							5,652	5,685	5,720
a5. Observation HMH	4,670	4,813	4,788	4,802	4,818	4,834	-		
General MSGA & Observation	**67,700**	**67,234**	**63,631**	**64,734**	**65,881**	**67,070**	**73,997**	**75,253**	**76,557**
b1. ICU/CCU UCMC	3,600	3,415	3,342	3,419	3,500	3,583	4,727	4,836	4,950
b2. ICU/CCU HMH	1,515	1,496	1,465	1,499	1,534	1,571			
Total MSGA	**72,815**	**72,145**	**68,439**	**69,653**	**70,914**	**72,224**	**78,724**	**80,090**	**81,506**
c. Pediatric	232	335	234	232	245	251	249	246	244
d. Obstetric	2,806	2,776	2,512	2,517	2,522	2,528	2,533	2,538	2,544
e1. Acute Psychiatric HMH	7,502	7,486	7,737	8,138	8,542	8,609			
e2. Acute Psychiatric UC Behavioral Health							11,421	11,574	11,734
Total Acute	***83,355***	***82,741***	***78,922***	***80,541***	***82,224***	***83,612***	***92,927***	***94,449***	***96,028***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL PATIENT DAYS	***83,355***	***82,741***	***78,922***	***80,541***	***82,224***	***83,612***	***92,927***	***94,449***	***96,028***

TABLE F. STATISTICAL PROJECTIONS - ENTIRE FACILITY (UCMC + UC FMF + HMH + UC BEHAVIORAL HEALTH + OBSERVATION)

INSTRUCTION: Complete this table for the entire facility, including the proposed project. Indicate on the table if the reporting period is Calendar Year (CY) or Fiscal Year (FY). For sections 4 & 5, the number of beds and occupancy percentage should be reported on the basis of licensed beds. In an attachment to the application, provide an explanation or basis for the projections and specify all assumptions used. Applicants must explain why the assumptions are reasonable.

	Two Most Recent Years (Actual)		Current Year Projected	Projected Years (ending at least two years after project completion and full occupancy) Include additional years, if needed in order to be consistent with Tables G and H.					
Indicate CY or FY	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
3. AVERAGE LENGTH OF STAY (patient days divided by discharges)									
a1. General Medical/Surgical* UCMC	4.1	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1
a2. General Medical/Surgical* HMH	4.6	4.4	4.1	4.1	4.1	4.1			
a3. Observation UCMC	1.1	1.1	1.0	1.0	1.0	1.0	1.5	1.5	1.5
a4. Observation UC FMF							1.25	1.25	1.25
a5. Observation HMH	1.2	1.2	1.1	1.1	1.1	1.1			
General MSGA & Observation	2.5	2.4	2.2	2.2	2.2	2.2	2.4	2.4	2.5
b1. ICU/CCU UCMC	4.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
b2. ICU/CCU HMH	7.5	8.4	8.4	8.4	8.4	8.4			
Total MSGA	2.6	2.5	2.2	2.3	2.3	2.3	2.5	2.5	2.5
c. Pediatric	2.5	2.7	2.2	2.2	2.3	2.4	2.4	2.4	2.4
d. Obstetric	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9
e1. Acute Psychiatric HMH	6.1	6.1	6.5	6.8	7.1	7.1			
e2. Acute Psychiatric UC Behavioral Health							8.4	8.4	8.5
Total Acute	2.7	2.6	2.4	2.4	2.4	2.4	2.7	2.7	2.7
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL AVERAGE LENGTH OF STAY	2.7	2.6	2.4	2.4	2.4	2.4	2.7	2.7	2.7
4. NUMBER OF LICENSED BEDS									
a1. General Medical/Surgical* UCMC	128	123	112	114	117	120	159	162	165
a2. General Medical/Surgical* HMH	45	44	41	42	43	44			
a3. Observation UCMC	42	46	48	48	48	48	76	76	77
a4. Observation UC FMF							24	24	24
a5. Observation HMH	16	17	16	16	17	17			
General MSGA & Observation	**231**	**230**	**217**	**221**	**225**	**228**	**259**	**262**	**266**
b1. ICU/CCU UCMC	14	14	14	14	14	14	17	17	17
b2. ICU/CCU HMH	6	6	6	6	6	7			
Total MSGA	**251**	**250**	**237**	**241**	**245**	**249**	**276**	**279**	**283**
c. Pediatric	1	1	1	1	1	1	1	1	1
d. Obstetric	10	10	10	10	10	10	10	10	10
e1. Acute Psychiatric HMH	26	26	26	28	29	29			
e2. Acute Psychiatric UC Behavioral Health							40	40	40
Total Acute	***288***	***287***	***274***	***280***	***285***	***289***	***327***	***330***	***334***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL LICENSED BEDS	***288***	***287***	***274***	***280***	***285***	***289***	***327***	***330***	***334***

TABLE F. STATISTICAL PROJECTIONS - ENTIRE FACILITY (UCMC + UC FMF + HMH + UC BEHAVIORAL HEALTH + OBSERVATION)

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	Two Most Recent Years (Actual)		Current Year Projected	Projected Years (ending at least two years after project completion and full occupancy) Include additional years, if needed in order to be consistent with Tables G and H.					
Indicate CY or FY	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
5. OCCUPANCY PERCENTAGE *IMPORTANT NOTE: *Leap year formulas should be changed by applicant to reflect 366 days per year.*									
a1. General Medical/Surgical* UCMC	80.2%	79.8%	80.2%	80.2%	80.1%	80.1%	79.9%	80.0%	80.5%
a2. General Medical/Surgical* HMH	82.0%	82.5%	82.3%	82.2%	82.2%	82.2%			
a3. Observation UCMC	79.4%	78.9%	79.0%	79.3%	79.6%	79.9%	79.4%	79.9%	79.4%
a4. Observation UC FMF							64.5%	64.9%	65.3%
a5. Observation HMH	80.0%	79.9%	80.0%	80.2%	80.0%	79.8%			
General MSGA & Observation	80.4%	80.2%	80.3%	80.4%	80.4%	80.5%	78.3%	78.6%	78.8%
b1. ICU/CCU UCMC	70.5%	66.8%	65.4%	66.9%	68.5%	70.1%	76.2%	79.8%	80.2%
b2. ICU/CCU HMH	69.2%	68.3%	66.9%	68.5%	70.0%	61.5%			
Total MSGA	**79.6%**	**79.1%**	**79.1%**	**79.3%**	**79.5%**	**79.3%**	**78.2%**	**78.6%**	**78.9%**
c. Pediatric	63.6%	91.8%	64.1%	63.6%	67.1%	68.7%	68.1%	67.5%	66.9%
d. Obstetric	76.9%	76.0%	68.8%	69.0%	69.1%	69.3%	69.4%	69.5%	69.7%
e1. Acute Psychiatric HMH	79.1%	78.9%	81.5%	79.6%	80.7%	81.3%			
e2. Acute Psychiatric UC Behavioral Health							78.2%	79.3%	80.4%
Total Acute	**79.4%**	**79.0%**	**78.9%**	**78.9%**	**79.2%**	**79.2%**	**77.9%**	**78.4%**	**78.8%**
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL OCCUPANCY %	**79.4%**	**79.0%**	**78.9%**	**78.9%**	**79.2%**	**79.2%**	**77.9%**	**78.4%**	**78.8%**
6. OUTPATIENT VISITS									
a1. Emergency Department UCMC (Total)	65,251	64,502	61,445	61,812	62,181	62,553	63,041	63,418	63,797
a2. Emergency Department UC FMF (Total)							27,106	27,227	27,348
a3. Emergency Department HMH (Total)	29,520	28,356	26,743	26,862	26,981	27,101			
b1. Same-day Surgery Cases UCMC	5,890	5,678	5,621	5,652	5,685	5,719	5,753	5,791	5,830
b2. Same-day Surgery Cases HMH	1,169	1,210	1,234	1,240	1,246	1,252			
c1. Laboratory RVUs UCMC	11,182,649	12,048,570	11,494,331	10,945,039	11,228,867	11,453,817	14,782,750	15,082,236	15,392,589
c2. Laboratory RVUs HMH	2,803,257	2,695,784	2,487,416	2,554,276	2,599,157	2,645,591			
c3. Laboratory RVUs UC Behavioral Health							1,804,190	1,828,452	1,853,615
d1. Imaging RVUs UCMC	1,772,683	1,905,329	1,809,354	1,722,888	1,767,567	1,802,977	2,326,993	2,374,136	2,422,989
d2. Imaging RVUs HMH	590,035	615,566	582,398	598,053	608,561	619,433			
d3. Imaging RVUs UC Behavioral Health							495,722	502,356	509,234
e. Psych Emergency Department									
f1. Outpatient Psych Clinic HMH	5,052	5,646	5,759	5,874	5,992	6,111			
f2. Outpatient Psych Clinic UC Behavioral Health							6,234	6,358	6,485
g1. Intensive Outpatient Psych Program HMH	1,190	1,443	1,362	1,286	1,214	1,146			
g2. Intensive Outpatient Psych Program UC Behavioral Health							1,593	1,625	1,658
h1. Partial Hospitalization Program HMH				1,300	2,600	2,600			
h2. Partial Hospitalization Program UC Behavioral Health							3,900	5,200	5,200
TOTAL OUTPATIENT VISITS	***16,456,696***	***17,372,083***	***16,475,662***	***15,924,282***	***16,310,051***	***16,628,300***	***19,517,282***	***19,896,799***	***20,288,744***
7. OBSERVATIONS**									
a1. Number of Patients UCMC	11,410	12,127	13,930	13,985	14,043	14,106	14,523	14,618	14,717
a2. Number of Patients UC FMF							4,516	4,543	4,571
a3. Number of Patients HMH	3,896	4,019	4,443	4,458	4,474	4,491			
b1. Hours UCMC	292,060	317,843	332,191	333,349	334,589	335,915	528,801	532,243	535,846
b2. Hours UC FMF							135,645	136,443	137,280
b3. Hours HMH	112,075	115,522	114,915	115,254	115,620	116,014			

* Include beds dedicated to gynecology and addictions, if separate for acute psychiatric unit.

** Services included in the reporting of the "Observation Center", direct expenses incurred in providing bedside care to observation patients; furnished by the hospital on the hospital's premises, including use of a bed and periodic monitoring by the hospital's nursing or other staff, in order to determine the need for a possible admission to the hospitals as an inpatient. Such services must be ordered and documented in writing, given by a

TABLE I. STATISTICAL PROJECTIONS - UCMC + FMF

INSTRUCTION : Complete this table for the entire facility, including the proposed project. Indicate on the table if the reporting period is Calendar Year (CY) or Fiscal Year (FY). For sections 4 & 5, the number of beds and occupancy percentage should be reported on the basis of licensed beds. In an attachment to the application, provide an explanation or basis for the projections and specify all assumptions used. Applicants must explain why the assumptions are reasonable.

	Two Most Recent Years (Actual)		Current Year Projected	Projected Years (ending at least two years after project completion and full occupancy) Include additional years, if needed in order to be consistent with Tables G and H.					
Indicate CY or FY	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
1. DISCHARGES									
a1. General Medical/Surgical*	9,082	8,974	8,061	8,241	8,427	8,619	11,404	11,671	11,948
a2. Observation UCMC	11,410	12,127	13,930	13,985	14,043	14,106	14,523	14,618	14,717
a3. Observation UC FMF	-	-	-	-	-	-	4,516	4,543	4,571
General MSGA & Observation	**20,492**	**21,101**	**21,991**	**22,225**	**22,470**	**22,725**	**30,443**	**30,832**	**31,235**
b. ICU/CCU	814	860	842	860	879	899	1,186	1,214	1,242
Total MSGA	**21,306**	**21,961**	**22,833**	**23,086**	**23,349**	**23,624**	**31,630**	**32,045**	**32,477**
c. Pediatric	94	123	108	107	106	105	104	103	102
d. Obstetric	1,381	1,366	1,296	1,299	1,301	1,304	1,307	1,310	1,312
e. Acute Psychiatric									
Total Acute	***22,781***	***23,450***	***24,237***	***24,492***	***24,757***	***25,034***	***33,041***	***33,458***	***33,892***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL DISCHARGES	***22,781***	***23,450***	***24,237***	***24,492***	***24,757***	***25,034***	***33,041***	***33,458***	***33,892***
2. PATIENT DAYS									
a1. General Medical/Surgical*	37,389	35,932	32,685	33,441	34,226	35,039	46,312	47,391	48,510
a2. Observation UCMC	12,169	13,243	13,841	13,890	13,941	13,996	22,033	22,177	22,327
a3. Observation UC FMF	-	-	-	-	-	-	5,652	5,685	5,720
General MSGA & Observation	**49,558**	**49,175**	**46,526**	**47,331**	**48,167**	**49,035**	**73,997**	**75,253**	**76,557**
b. ICU/CCU	3,600	3,415	3,342	3,419	3,500	3,583	4,727	4,836	4,950
Total MSGA	**53,158**	**52,590**	**49,868**	**50,751**	**51,666**	**52,618**	**78,724**	**80,090**	**81,506**
c. Pediatric	232	335	234	232	245	251	249	246	244
d. Obstetric	2,806	2,776	2,512	2,517	2,522	2,528	2,533	2,538	2,544
e. Acute Psychiatric									
Total Acute	***56,196***	***55,701***	***52,614***	***53,500***	***54,434***	***55,396***	***81,506***	***82,874***	***84,294***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL PATIENT DAYS	***56,196***	***55,701***	***52,614***	***53,500***	***54,434***	***55,396***	***81,506***	***82,874***	***84,294***
3. AVERAGE LENGTH OF STAY (patient days divided by discharges)									
a1. General Medical/Surgical*	4.1	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1
a2. Observation UCMC	1.1	1.1	1.0	1.0	1.0	1.0	1.5	1.5	1.5
a3. Observation UC FMF	-	-	-	-	-	-	1.25	1.25	1.25
General MSGA & Observation	2.4	2.3	2.1	2.1	2.1	2.2	2.4	2.4	2.5
b. ICU/CCU	4.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total MSGA	2.5	2.4	2.2	2.2	2.2	2.2	2.5	2.5	2.5
c. Pediatric	2.5	2.7	2.2	2.2	2.3	2.4	2.4	2.4	2.4
d. Obstetric	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9
e. Acute Psychiatric									
Total Acute	2.5	2.4	2.2	2.2	2.2	2.2	2.5	2.5	2.5
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL AVERAGE LENGTH OF STAY	2.5	2.4	2.2	2.2	2.2	2.2	2.5	2.5	2.5

TABLE I. STATISTICAL PROJECTIONS - UCMC + FMF

INSTRUCTION : Complete this table for the entire facility, including the proposed project. Indicate on the table if the reporting period is Calendar Year (CY) or Fiscal Year (FY). For sections 4 & 5, the number of beds and occupancy percentage should be reported on the basis of licensed beds. In an attachment to the application, provide an explanation or basis for the projections and specify all assumptions used. Applicants must explain why the assumptions are reasonable.

	Two Most Recent Years (Actual)		Current Year Projected	Projected Years (ending at least two years after project completion and full occupancy) Include additional years, if needed in order to be consistent with Tables G and H.					
Indicate CY or FY	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
4. NUMBER OF LICENSED BEDS									
a1. General Medical/Surgical*	128	123	112	114	117	120	159	162	165
a2. Observation UCMC	42	46	48	48	48	48	76	76	77
a3. Observation UC FMF	-	-	-	-	-	-	24	24	24
General MSGA & Observation	**170**	**169**	**160**	**162**	**165**	**168**	**259**	**262**	**266**
b. ICU/CCU	14	14	14	14	14	14	17	17	17
Total MSGA	**184**	**183**	**174**	**176**	**179**	**182**	**276**	**279**	**283**
c. Pediatric	1	1	1	1	1	1	1	1	1
d. Obstetric	10	10	10	10	10	10	10	10	10
e. Acute Psychiatric									
Total Acute	***195***	***194***	***185***	***187***	***190***	***193***	***287***	***290***	***294***
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL LICENSED BEDS	***195***	***194***	***185***	***187***	***190***	***193***	***287***	***290***	***294***
5. OCCUPANCY PERCENTAGE ****IMPORTANT NOTE:*** *Leap year formulas should be changed by applicant to reflect 366 days per year.*									
a1. General Medical/Surgical*	80.2%	79.8%	80.2%	80.2%	80.1%	80.1%	79.9%	80.0%	80.5%
a2. Observation UCMC	79.4%	78.9%	79.0%	79.3%	79.6%	79.9%	79.4%	79.9%	79.4%
a3. Observation UC FMF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	64.5%	64.9%	65.3%
General MSGA & Observation	80.0%	79.6%	79.9%	79.9%	80.0%	80.1%	78.3%	78.6%	78.8%
b. ICU/CCU	70.5%	66.8%	65.4%	66.9%	68.5%	70.1%	76.2%	79.8%	80.2%
Total MSGA	**79.3%**	**78.6%**	**78.7%**	**78.9%**	**79.1%**	**79.3%**	**78.2%**	**78.6%**	**78.9%**
c. Pediatric	63.6%	91.8%	64.1%	63.6%	67.1%	68.7%	68.1%	67.5%	66.9%
d. Obstetric	76.9%	76.0%	68.8%	69.0%	69.1%	69.3%	69.4%	69.5%	69.7%
e. Acute Psychiatric									
Total Acute	**79.1%**	**78.5%**	**78.1%**	**78.3%**	**78.5%**	**78.7%**	**77.9%**	**78.3%**	**78.6%**
f. Rehabilitation									
g. Comprehensive Care									
h. Other (Specify/add rows of needed)									
TOTAL OCCUPANCY %	**79.1%**	**78.5%**	**78.1%**	**78.3%**	**78.5%**	**78.7%**	**77.9%**	**78.3%**	**78.6%**
6. OUTPATIENT VISITS									
a1. Emergency Department UCMC (Total)	65,251	64,502	61,445	61,812	62,181	62,553	63,041	63,418	63,797
a2. Emergency Department UC FMF (Total)	-	-	-	-	-	-	27,106	27,227	27,348
b. Same-day Surgery Cases	5,890	5,678	5,621	5,652	5,685	5,719	5,753	5,791	5,830
c. Laboratory RVUs	11,182,649	12,048,570	11,494,331	10,945,039	11,228,867	11,453,817	14,782,750	15,082,236	15,392,589
d. Imaging RVUs	1,772,683	1,905,329	1,809,354	1,722,888	1,767,567	1,802,977	2,326,993	2,374,136	2,422,989
e. Other (Specify/add rows of needed)									
TOTAL OUTPATIENT VISITS	***13,026,473***	***14,024,078***	***13,370,751***	***12,735,391***	***13,064,300***	***13,325,066***	***17,205,644***	***17,552,808***	***17,912,552***
7. OBSERVATIONS**									
a1. Number of Patients UCMC	11,410	12,127	13,930	13,985	14,043	14,106	14,523	14,618	14,717
a2. Number of Patients UC FMF	-	-	-	-	-	-	4,516	4,543	4,571
b1. Hours UCMC	292,060	317,843	332,191	333,349	334,589	335,915	528,801	532,243	535,846
b2. Hours UC FMF	-	-	-	-	-	-	135,645	136,443	137,280

* Include beds dedicated to gynecology and addictions, if separate for acute psychiatric unit.

** Services included in the reporting of the "Observation Center", direct expenses incurred in providing bedside care to observation patients; furnished by the hospital on the hospital's premises, including use of a bed and periodic monitoring by the hospital's nursing or other staff, in order to determine the need for a possible admission to the hospitals as an inpatient. Such services must be ordered and documented in writing, given by a medical practitioner; may or may not be provided in a distinct area of the hospital.

Exhibit 6

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

Upper Chesapeake Health

Subject: Financial Assistance Policy

Effective Date: 10/2018

Approved by: _____

Steve Witman, Sr. VP CFO

_____

Board of Directors

To provide financial relief to patients unable to meet their financial obligation to University of Maryland Upper Chesapeake Health.

1. **Policy**
    a. This policy applies to the University of Maryland Upper Chesapeake Health (UM UCH) facilities to include:
        i. University of Maryland Upper Chesapeake Medical Center
        ii. University of Maryland Harford Memorial Hospital.

    UM UCH is committed to providing financial assistance to persons who have health care needs and are uninsured, underinsured, ineligible for a government program, or otherwise unable to pay, for all medically necessary care will be covered based on their individual financial situation.

    b. It is the policy of UM UCH to provide Financial Assistance (FA) based on indigence or high medical expenses (Medical Financial Hardship program) for patients who meet specified financial criteria and request such assistance. The purpose of the following policy statement is to describe how applications for FA should be made, the criteria for eligibility, and the steps for processing applications.

    c. UM UCH will post notices of availability at appropriate intake locations as well as the Patient Accounting Office. Notice of availability will also be sent to patients on patient bills. A Patient Billing and Financial Assistance Information Sheet will be provided before discharge and will be available to all patients upon request and without charge, both by mail and in the emergency room and admission areas. A written estimate of total charges, excluding the emergency department, will be available to all

patients upon request. This policy, the Patient Billing and Financial Information Sheet, and the Financial Assistance Application will also be conspicuously posted on the UM UCH website (https://www.umms.org/uch/patients-visitors/for-patients/financial-assistance).

d. FA may be extended when a review of a patient's individual financial circumstances has been conducted and documented. This may include a review of the patient's existing medical expenses and obligations, including any accounts having gone to bad debt.
e. Payments made for care received during the financial assistance eligibility window that exceed the patients determined responsibility will be refunded if that amount exceeds $5.00
    i. Collector notes, and any other relevant information, are deliberated as part of the final refund decision; in general refunds are issued based on when the patient was determined unable to pay compared to when the payments were made
    ii. Patients documented as uncooperative within 30 days after initiation of a financial assistance application are ineligible for a refund
f. UM UCH retains the right in its sole discretion to determine a patient's ability to pay. All patients presenting for emergency services or diagnosed-cancer care will be treated regardless of their ability to pay, except as noted under 2. d. iv. below.

2. Program Eligibility

a. Consistent with our mission to deliver compassionate and high quality healthcare services and to advocate for those who do not have the means to pay for medically necessary care, UM UCH strives to ensure that the financial capacity of people who need health care services does not prevent them from seeking or receiving care. To further the UM UCH commitment to our mission to provide healthcare to the surrounding community, UM UCH reserves the right to grant financial assistance without formal application being made by our patients.
b. Specific exclusions to coverage under the Financial Assistance Program:
    i. Physician charges are excluded from UM UCH's FA policy. Patients who wish to pursue FA for physician related bills must contact the physician directly. For a list of physicians providing emergency and other medically necessary care in the hospital facility, whose services are not covered under this policy, please contact our Financial Assistance Department at (443) 843-5092.

ii. Generally, the FA program is not available to cover services that are 100% denied by a patient's insurance company; however, exceptions may be made on a case by case basis considering medical and programmatic implications
iii. Cosmetic or other non-medically necessary services

c. Patients may become ineligible for FA for the following reasons:
   i. Have insurance coverage through an HMO, PPO, Workers Compensation, Medicaid, Motor Vehicle or other insurance programs that deny access to UM UCH due to insurance plan restrictions/limits
   ii. Refusal to be screened for other assistance programs prior to submitting an application to the FA program
d. Determination for Financial Assistance eligibility will be based on assets, income, and family size. Please note the following:
   i. Liquid assets greater than $15,000 for individuals, and $25,000 for families will disqualify the patient for 100% assistance.
   ii. Equity of $150,000 in a primary residence will be excluded from the calculation for determination of financial assistance; and
   iii. Retirement assets, regardless of balance, to which the IRS has granted preferential tax treatment as a retirement account, including but not limited to, deferred compensation plans qualified under the IRS code or nonqualified deferred compensation plans will not be used for determination of financial assistance.
   iv. Non-citizens/non-residents of the United States may only qualify for Financial Assistance under these circumstances: 1. an initial visit for emergency care or 2. if qualified for presumptive Medical Assistance upon inpatient admission or prior to outpatient treatments for cancer care, and only after a determination by the Financial Counselor/Director of Patient Accounting and/or V.P. of Finance. See the Upper Chesapeake Health Self Pay Billing policy for criteria for beginning outpatient cancer care for these patients.
e. Patients who indicate they are unemployed and have no insurance coverage shall be required to submit a FA application unless they meet Presumptive FA (see section 3 below) eligibility criteria. If a patient qualifies for COBRA coverage, the patient's financial ability to pay COBRA insurance premiums shall be reviewed by the Financial Counselor and recommendations shall be made to Senior Leadership. Individuals with the financial capacity to purchase health insurance shall be encouraged to do so, as a means of assuring access to health care services and for their overall personal health.

f. Free medically necessary care will be awarded to patients with family income at or below 200 percent of the Federal Poverty Level (FPL).
g. Reduced-cost, medically necessary care will be awarded to low-income patients with family income between 200 and 300 percent of the FPL
h. If a patient requests the application be reconsidered after a denial determination made by the Financial Counselor, the Director of Patient Accounting will review the application for final determination.
i. Payment plans can be offered for all self-pay balances by our Self Pay Vendor.

3. Presumptive Financial Assistance

a. Patients may also be considered for Presumptive Financial Assistance eligibility with proof of enrollment in one of the programs listed below. There are instances when a patient may appear eligible for FA, but there is no FA form on file. Often there is adequate information provided by the patient or through other sources, which could provide sufficient evidence to provide the patent with FA. In the event there is no evidence to support a patient's eligibility for FA, UM UCH reserves the right to use outside agencies or information in determining estimated income amounts for the basis of determining financial assistance eligibility and potential reduced care rates. Once determined, due to the inherent nature of presumptive circumstances, the only financial assistance that can be granted is a 100-percent write-off of the account balance. Presumptive FA eligibility shall only cover the patient's specific date of service. Presumptive eligibility may be determined on the basis of individual life circumstances that may include:
    i. Active Medical Assistance pharmacy coverage
    ii. Special Low Income Medicare Beneficiary (SLMB) coverage (covers Medicare Part B premiums)
    iii. Homelessness
    iv. Medical Assistance and Medicaid Managed Care patients for services provided in the ED beyond coverage of these programs
    v. Maryland Public Health System Emergency Petition (EP) patients (balance after insurance)
    vi. Participation in Women, Infants and Children Program (WIC)
    vii. Supplemental Nutritional Assistance Program (SNAP)
    viii. Eligibility for other state or local assistance programs
    ix. Deceased with no known estate
    x. Determined to meet eligibility criteria established under former State Only Medical Assistance Program

xi. Households with children in the free or reduced lunch program
xii. Low-income household Energy Assistance Program
xiii. Self-Administered Drugs (in the outpatient environment only)
xiv. Medical Assistance Spenddown amounts

b. Specific services or criteria that are ineligible for Presumptive FA include:
   i. Uninsured patients seen in the ED under EP will not be considered under the presumptive FA program until the Maryland Medicaid Psych program has been billed

4. Procedures

a. The Financial Counselor will complete an eligibility check with the Medicaid program to verify whether the patient has current coverage
b. The Financial Counselor will consult via phone or meet with patients who request FA to determine if they meet preliminary criteria for assistance.
   i. To facilitate this process each applicant must provide information about family size and income. To help applicants complete the process, we will provide an application that will let them know what paperwork is required for a final determination of eligibility
   ii. All applications will be tracked and after eligibility is determined, a letter of final determination will be submitted to the patient
   iii. Patients will have fifteen days to submit required documentation to be considered for eligibility. The patient may re-apply to the program and initiate a new case if the original timeline is not adhered to. For any episode of care, the financial assistance application process will be open up to at least 240 days after the first post-discharge patient bill for the care is sent.
c. There will be one application process for UM UCH. The patient is required to provide a completed FA application. In addition, the following may be required:
   i. A copy of their most recent Federal Income Tax Return (if married and filing separately, then also a copy of spouse's tax return)
   ii. Proof of disability income (if applicable)
   iii. A copy of their three most recent pay stubs (if employed) or other evidence of income of any other person whose income is considered part of the family income
   iv. A Medical Assistance Notice of Determination (if applicable)
   v. Proof of U.S. citizenship or lawful permanent residence status (green card)
   vi. Reasonable proof of other declared expenses may be taken in to consideration

vii. If unemployed, reasonable proof of unemployment such as statement from the Office of Unemployment Insurance, a statement from current source of financial support, etc.
viii. A Verification of No Income Letter (if there is no evidence of income)
ix. Three most recent bank statements

Written request for missing information will be sent to the patient. Where appropriate, oral submission of needed information will be accepted.

d. In addition to qualifying for Financial Assistance based on income, a patient can qualify for FA either through lack of sufficient income, insurance or catastrophic medical expenses based on the Financial Hardship criteria discussed below. Within two (2) business days following a patient's request for Financial Assistance, application for Medical Assistance, or both, the hospital will make a determination of probable eligibility. Completed applications will be forwarded to the Manager of Patient Accounting who will determine approval for adjustments up to $10,000. Adjustments of $10,000 or greater will be forwarded to the Director of Patient Financial Services and the V.P. of Finance for an additional approval.
e. Once a patient is approved for FA, FA coverage is effective for:
    i. All accounts in an AR (Accounts Receivable) status
    ii. All accounts in a BD (Bad Debt) status that were transferred within one year of the service date of the oldest AR account being adjusted using the current application
    iii. All future visits within 6 months of the application date
    iv. In addition, coverage will also extend to any account for which a written notice described in paragraph h (below) has not been sent or for which the deadline stated therein has not elapsed. However, UM UCH may decide to extend the FA eligibility period further into the past or the future.
f. Social Security beneficiaries with lifelong disabilities may become eligible for FA indefinitely and may not need to reapply
g. UM UCH does not report debts owed to credit reporting agencies.
h. In rare cases, accounts may warrant Extraordinary Collection Actions (ECAs). Once an account has met the following criteria, the account is closed by the collection agency as "uncollectible" and forwarded back to Patient Accounting for review to establish grounds for legal action. UM UCH reserves the right to place a lien on a patient's income, residence and/or automobile. This only occurs after all efforts to resolve the debt have been exhausted.

Criteria:

i. The debt is valid
ii. The account is equal to or greater than 120 days old
iii. Patient refuses to acknowledge the debt
iv. Upon review and investigation, we have determined liquid assets are available (checking, savings, stocks, bonds or money market accounts)
v. The VP of Finance must authorize legal action

Action will be preceded by notice 30 days prior to commencement. Availability of financial assistance will be communicated to the patient and a presumptive eligibility review will occur prior to any ECA action being taken. This written notice will indicate that Financial Assistance is available for eligible individuals, identify the ECAs that the hospital (or its collection agency, attorney or other authorized party) intends to initiate to obtain payment for the care, and state a deadline after which such ECAs may be initiated. It will also include a Patient Billing and Financial Assistance Information Sheet. In addition, the hospital will make reasonable efforts to orally communicate the availability of Financial Assistance to the patient and tell the patient how he or she may obtain assistance with the application process.

5. Financial Hardship

a. The following guidelines are outlined as a separate, supplemental determination of Financial Assistance, known as Financial Hardship. Financial Hardship will be offered to all patients who apply for FA and are determined to be eligible. Medical Financial Hardship is available for patients who otherwise do not qualify for Financial Assistance under the primary guidelines of this policy.
b. Financial Hardship Assistance is defined as facility charges incurred at UM UCH owned hospitals or physician practices for medically necessary treatment by a family household that exceeds 25% of the family's annual income. The Financial Assistance reduction will be the balance that exceeds the 25% of the family's annual income. Family annual income must be less than 500% of the Federal Poverty Limit
c. Once a patient is approved for Financial Hardship Assistance, coverage may be effective starting with the first qualifying date of service and the following twelve (12) months
d. Financial Hardship Assistance may cover the patient and the immediate family members living in the same household. Each family member may

be approved for the reduced cost and eligibility period for medically necessary treatment.

e. Coverage will not apply to elective or cosmetic procedures.
f. In order to continue in the program after the expiration of an eligibility period, each patient (family member) must reapply to be considered.
g. Patients who have been approved for the program should inform UM UCH of any changes in income, assets, expenses or family (household) status within 30 days of such changes. Patients determined to be eligible for Financial Hardship Assistance and granted an eligibility period extending into the future will be notified about how to apply for more generous assistance during such eligibility period.
h. All other eligibility, ineligibility and procedures for the primary Financial Assistance program criteria apply for the Financial Hardship Assistance, unless otherwise stated
i. See Attachment A for the sliding scale reduced cost of care.

6. Amounts Generally Billed

a. An individual who is eligible for assistance under this policy for emergency or other medically necessary care will never be charged more than the amounts generally billed (AGB) to an individual who is not eligible for assistance. The charges to which a discount will apply are set by the State of Maryland's rate regulation agency (HSCRC) and are the same for all payers (i.e. commercial insurers, Medicare, Medicaid or self-pay).

Reviewed / Revised: 10/2018

ORIGIN DATE: 10/2010

NEXT REVIEW DATE: 10/2019

2/1/2019

% discount	MAX/MIN	Family 1	Family 2	Family 3	Family 4	Family 5	Family 6	Family 7	Family 8
Fed Pov Guideline		$12,490.00	$16,910.00	$21,330.00	$25,750.00	$30,170.00	$34,590.00	$39,010.00	$43,430.00
MHA Guidelines now at 200% of FPL									
100%	up to	$ 24,980.00	$ 33,820.00	$ 42,660.00	$ 51,500.00	$ 60,340.00	$ 69,180.00	$ 78,020.00	$ 86,860.00
90%	Min	$ 24,981.00	$ 33,821.00	$ 42,661.00	$ 51,501.00	$ 60,341.00	$ 69,181.00	$ 78,021.00	$ 86,861.00
	Max	$ 27,478.00	$ 37,202.00	$ 46,926.00	$ 56,650.00	$ 66,374.00	$ 76,098.00	$ 85,822.00	$ 95,546.00
80%	Min	$ 27,479.00	$ 37,203.00	$ 46,927.00	$ 56,651.00	$ 66,375.00	$ 76,099.00	$ 85,823.00	$ 95,547.00
	Max	$ 28,727.00	$ 38,893.00	$ 49,059.00	$ 59,225.00	$ 69,391.00	$ 79,557.00	$ 89,723.00	$ 99,889.00
70%	Min	$ 28,728.00	$ 38,894.00	$ 49,060.00	$ 59,226.00	$ 69,392.00	$ 79,558.00	$ 89,724.00	$ 99,890.00
	Max	$ 29,976.00	$ 40,584.00	$ 51,192.00	$ 61,800.00	$ 72,408.00	$ 83,016.00	$ 93,624.00	$ 104,232.00
60%	Min	$ 29,977.00	$ 40,585.00	$ 51,193.00	$ 61,801.00	$ 72,409.00	$ 83,017.00	$ 93,625.00	$ 104,233.00
	Max	$ 31,225.00	$ 42,275.00	$ 53,325.00	$ 64,375.00	$ 75,425.00	$ 86,475.00	$ 97,525.00	$ 108,575.00
50%	Min	$ 31,226.00	$ 42,276.00	$ 53,326.00	$ 64,376.00	$ 75,426.00	$ 86,476.00	$ 97,526.00	$ 108,576.00
	Max	$ 32,474.00	$ 43,966.00	$ 55,458.00	$ 66,950.00	$ 78,442.00	$ 89,934.00	$ 101,426.00	$ 112,918.00
40%	Min	$ 32,475.00	$ 43,967.00	$ 55,459.00	$ 66,951.00	$ 78,443.00	$ 89,935.00	$ 101,427.00	$ 112,919.00
	Max	$ 33,723.00	$ 45,657.00	$ 57,591.00	$ 69,525.00	$ 81,459.00	$ 93,393.00	$ 105,327.00	$ 117,261.00
30%	Min	$ 33,724.00	$ 45,658.00	$ 57,592.00	$ 69,526.00	$ 81,460.00	$ 93,394.00	$ 105,328.00	$ 117,262.00
	Max	$ 34,972.00	$ 47,348.00	$ 59,724.00	$ 72,100.00	$ 84,476.00	$ 96,852.00	$ 109,228.00	$ 121,604.00
20%	Min	$ 34,973.00	$ 47,349.00	$ 59,725.00	$ 72,101.00	$ 84,477.00	$ 96,853.00	$ 109,229.00	$ 121,605.00
	Max	$ 36,221.00	$ 49,039.00	$ 61,857.00	$ 74,675.00	$ 87,493.00	$ 100,311.00	$ 113,129.00	$ 125,947.00
10%	Min	$ 36,222.00	$ 49,040.00	$ 61,858.00	$ 74,676.00	$ 87,494.00	$ 100,312.00	$ 113,130.00	$ 125,948.00
	Max	$ 37,470.00	$ 50,730.00	$ 63,990.00	$ 77,250.00	$ 90,510.00	$ 103,770.00	$ 117,030.00	$ 130,290.00

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

UM Upper Chesapeake Health has a Financial Assistance Program based on financial need.

Please complete and return the attached form and required documents within 15 days.

This information will be held in the strictest confidence and is necessary to determine eligibility.

Within two (2) business days of receipt of the Financial Assistance Request, the hospital will make a determination of probable eligibility.

Thank you for choosing **UM Upper Chesapeake Health**

We would like to assist you with the **Financial Assistance** process. Please complete the attached form and return it to us **within 15 days** with the requested information from the list below. This information will be held in the strictest confidence and is necessary to determine eligibility. Within two (2) business days of receipt of the Financial Assistance Request, the hospital will make a determination of probable eligibility. If you are unable to provide this information within that time frame, please contact:

Financial Counselor
(443) 843-5092

In order for you to qualify for **Financial Assistance**, we are required to obtain the completed and signed application along with the following:

- **Copies of all pages of your last three (3) bank statements**
  - Must be copies of original bank statements showing bank's name and all account holders' names
  - Need copies for applicant and spouse
  - If there are deposits other than payroll, please provide an explanation
- **Copies of your last three (3) pay stubs**
  - Need copies for applicant and spouse
- **Copies of all pages of your current income tax return and W-2's**
- **Copies of any benefits you are receiving**
  - Social Security benefit letter
  - Unemployment notifications
  - Disability benefit letters
  - Proof of any public assistance
    - Food Stamps
    - WIC program
    - Primary Adult Care Program
    - Energy Assistance
    - Free or reduced lunch plans
- **If there is no income**, you will need to call me to obtain a copy of our Verification of No Income form

Please be assured that this information is necessary to determine your eligibility.

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

Maryland State Uniform Financial Assistance Application

Information About You

Name: _____ (First) (Middle Initial) (Last)

Social Security Number ☐☐☐ - ☐☐ - ☐☐☐☐ Marital Status: ☐ Single ☐ Married ☐ Separated

US Citizen: ☐ Yes ☐ No Permanent Resident: ☐ Yes ☐ No

Home Address: _____ (Street Address)
_____ (City) (State) (Zip code) (Country)

Home Phone: (☐☐☐) ☐☐☐ - ☐☐☐☐ (Area Code) ### - ####

Employer Name & Address: _____ (Employer Name)
_____ (Street Address)
_____ (City) (State) (Zip code)

Work Phone: (☐☐☐) ☐☐☐ - ☐☐☐☐ (Area Code) ### - ####

Household Members:

Name	Age	Relationship

Have you applied for Medical Assistance ☐ Yes ☐ No

If yes, what was the date you applied? ☐☐/☐☐/☐☐☐☐ *(MM/DD/YYYY)*

If yes, what was the determination?

Do you receive any type of state or county assistance? ☐ Yes ☐ No

If Yes, please attach a copy of your benefit letter as proof of this assistance.

Please return application to:
UM Upper Chesapeake Health
Patient Accounting Department
2027 Pulaski Highway, Suite 215
Havre de Grace, MD 21078

I. Family Income

List the amount of your monthly income from all sources. You may be required to supply proof of income, assets, and expenses. If you have no income, please provide a letter of support from the person providing your housing and meals. Within two (2) business days following a patient's request for Financial Assistance the hospital will make a determination of probable eligibility.

	Monthly Amount
Employment	
Retirement/pension benefits	
Social security benefits	
Public assistance benefits	
Disability benefits	
Unemployment benefits	
Veterans benefits	
Alimony	
Rental property income	
Strike benefits	
Military allotment	
Farm or self employment	
Other income source:	
Total	

II. Liquid Assets

	Current Balance
Checking account	
Savings account	
Stocks, bonds, CD, or money market	
Other accounts	
Total	

III. Other Assets

If you own any of the following items, please list the type and approximate value.

Home :	Loan Balance:			Approximate value:	
Automobile:	Make:		Year:	Approximate value:	
Additional vehicle:	Make :		Year:	Approximate value:	
Additional vehicle:	Make:		Year:	Approximate value:	
Other property:				Approximate value:	
				Total	

IV. Monthly Expenses

	Amount
Rent or Mortgage	
Utilities	
Car payment(s)	
Credit card(s)	
Car insurance	
Health insurance	
Other medical expenses	
Other expenses	
Total	

Do you have any other unpaid medical bills? ☐ Yes ☐ No

For what service? _____

If you have arranged a payment plan, what is the monthly payment? _____

If you request that the hospital extend additional financial assistance, the hospital may request additional information in order to make a supplemental determination. By signing this form, you certify that the information provided is true and agree to notify the hospital of any changes to the information provided within ten days of the change.

_____

Applicant signature *Date* *Relationship to Patient*

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

UM Harford Memorial Hospital
443-843-5000
UM Upper Chesapeake Medical Center
443-643-1000

Help for Patients to Pay Hospital Care Costs

If you cannot pay for all or part of your care from our hospital, you may be able to get **free** or **lower cost** services.

PLEASE NOTE:

1. We treat all patients needing emergency care, no matter what they are able to pay.
2. There may be services provided by physicians or other providers that are not covered by the **hospital's** Financial Assistance Policy. For a **list of physicians** providing emergency and other medically necessary care in the hospital facility, whose services are not covered under this policy, please visit our website or contact our Financial Assistance Department at (443) 843-5092.
3. You will never be charged for emergency and other medically necessary care more than **amounts generally billed** to patients who are not eligible for financial assistance under the financial assistance policy. Rates are set by the State of Maryland.

HOW THE PROCESS WORKS:

When you become a patient, we ask if you have any health insurance. We will not charge you more for hospital services than we charge people with health insurance. The hospital will:

1. Give you information about our financial assistance policy or
2. Offer you help with a counselor who will help you with the application.

HOW WE REVIEW YOUR APPLICATION:

The hospital will look at your ability to pay for care. We look at your income and family size. You may receive free or lower costs of care if:

1. Your income or your family's total income is at 300% or less of the federal poverty level.
2. Your income or your family's income is at 500% or less of the federal poverty level **and** your medical debt incurred at an UMMS hospital facility exceeds 25% of your family's annual household income.

PLEASE NOTE: If you are able to get financial help, we will tell you how much you can get. If you are not able to get financial help, we will tell you why not.

HOW TO APPLY FOR FINANCIAL HELP:

1. Fill out a **Financial Assistance Application Form**. (see below for website address of application form)
2. Give us all of your information to help us understand your financial situation.
3. Turn the Application Form into us.

PLEASE NOTE: The hospital must screen patients for Medicaid before giving financial help. Cosmetic and other non-medically necessary services may not be covered.

OTHER HELPFUL INFORMATION:

1. You can get a **free copy** of our Financial Assistance Policy and Application Form:
- *Online* at www.umuch.org/patients/financial-assistance
- *In person* at UM Upper Chesapeake Health, 2027 Pulaski Highway Ste 215, Havre De Grace MD 21078
- *By mail* by calling (443) 843-5092 to request a copy.

2. You can call the Financial Assistance Department at (443) 843-5092 if you have questions or need help applying.
3. The FAP, FAP application or Plain Language Summary are also available in Spanish. If you need information translated in another language, please call (443) 843-5092.

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

UM Harford Memorial Hospital
443-843-5000
UM Upper Chesapeake Medical Center
443-643-1000

[f_Mis Current Date]

[f_Reg Guar Name Full]
[f_Reg Guarantor Address1]
[f_Reg Guarantor City], [f_Reg Guarantor State] [f_Reg Guarantor Zip]

Dear [f_Reg Guar Name Full]:

Thank you for returning your Financial Assistance application.

At this time, we have completed a preliminary review of your application and have determined that you did not return sufficient information with your application to allow us to complete the assessment of your eligibility. However, based on information we have received your eligibility for Financial Assistance is probable.

Therefore, if you would like for us to reconsider your application at this time, please return the requested information to us within **5 business days** to **University of Maryland Upper Chesapeake Health, Patient Accounting Department, 2027 Pulaski Highway, Suite 215, Havre de Grace, MD 21078.**

Missing or incomplete information: Account #: [f_Reg Account Number]

___ Three (3) most recent pay stubs
___ Three (3) most current bank statements (must be copies of original statements)
___ Explanation for deposits on bank statements
(explanations must be submitted in writing)
___ Proof of Retirement/Pension benefits
___ Proof of Social Security Income
___ Proof of Public Assistance benefits (WIC, PAC, Food Stamps, Energy Assistance)
___ Proof of Disability benefits
___ Proof of Unemployment benefits
___ Proof of Veteran's benefits
___ Proof of Alimony/Child Support
___ Most current Tax Return including W-2's
___ Verification of No Income form
___ Applicant's signature on form
___ Proof of insurance (copy of insurance card)
___ Other _____

Please feel free to contact me directly Monday through Friday at (443) 843-5092 with any questions.

If the requested information is not available, please contact our **Billing Office at 855-748-0680 within 5 business days** on Monday through Thursday from 8am to 8pm or Friday from 8am to 4:30pm to set up an acceptable payment plan. We would like to continue to work with you to clear this account as soon as possible.

Thank you for your continued cooperation.

Sincerely,

Financial Counselor

Exhibit 7

NOTICE

University of Maryland Upper Chesapeake Health maintains accessibility to all emergency and other medically-necessary services regardless of an individual's ability to pay. The hospital's financial assistance policy will consider free or discounted care for those patients who cannot pay the total cost of hospitalization due to lack of insurance coverage and/or inability to pay. For more information on our financial assistance policy for patients who qualify for help with their hospital bills, or if you require translation services to understand this policy, please call 443-843-5092 or visit us at umuch.org.

AGF 3-2600 March 1 6163214

Exhibit 8

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Creation of an Adult Observation Unit

Improving Outcomes

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Laura Fennimore, DNP, RN, NEA-BC

A growing segment of patients in hospitals are considered outpatients, classified as observation. These patients neither have the severity of illness nor the intensity of service to qualify as inpatients, yet are not well enough to be discharged. Hospitals have created observation units to address the clinical needs of this growing patient type to provide care in the right setting by managing emergency department throughput and utilizing the most efficient staffing resources. This article describes the change processes and improvements in quality, length of stay, and patient satisfaction, which occurred following the implementation of an adult observation unit.
Key words: *emergency department, length of stay, observation patient, observation status, observation unit*

THE economics of health care today demand the wise use of health care dollars. The delivery of efficient care can be achieved if patients receive the right care, with the right skill mix, in the right location. In the quest to improve quality, reduce costs, and prevent overcrowding and lengthy wait times in the emergency department (ED), many hospitals have found an effective way to manage a growing segment of patients by assigning them to observation status. Observation patients are not ready clinically to be discharged from the ED and require more care and treatment time than can be provided in a traditional ED setting. Treating this type of patient in the ED until an inpatient bed is available has negative consequences for patient satisfaction (eg, comfort, hygiene, and rest) and wastes valuable staff resources. Yet, observation patients usually have less physical care needs than typical inpatients and require a shorter duration of care. Therefore, these patients are often "caught" between inpatient status and the outpatient world. Observation patients placed on an inpatient unit generally receive the same level of care as inpatients, despite their needs being dramatically different. A significant shift in how nurses and other health care professionals care for these patients can be achieved with the designation of a distinct observation unit. This article describes the processes implemented to create an adult observation unit and improve the quality of care for observation patients at a 489-bed regional referral center in central Minnesota.

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The authors declare no conflict of interest.

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PROBLEM DESCRIPTION

The impact of the aging population is visible in many sectors of our society, including the number of people 65 years and older who

require hospitalization for acute and chronic conditions. In addition to this, patient acuity is higher, creating an increase in the length of stay (LOS) for inpatients at most organizations. Often, the entry point to a hospital is through its ED.[1] Admissions through the ED are cited as high as 50%, and the timeliness of patient flow (throughput) through the ED and hospital are becoming areas of concern as patient acuity increases.

Adding to the throughput concerns is the increased time required to work up patients, contributing to a longer ED LOS.[2] These concerns can be mitigated by the creation of a unit specifically designed to accommodate patients who are determined to be on observation status. Nearly 50% of all ED visits result in a hospital admission, and from there, approximately 15% of these patients are considered observation.[3] A specific unit creates an opportunity for a quicker transfer from the ED to the observation unit, thus creating a shortened stay in the ED. This allows the evaluation and treatment initiated in the ED to continue for a longer duration until the patient is ready clinically for discharge.

AVAILABLE KNOWLEDGE

A literature review was conducted using CINAHL, PubMed, and Clinical Key. Search terms included observation, unit, department, short-stay, clinical decision making, hospital, observation care, and observation outcomes. Articles were restricted to the most recent 10 years; 46 articles were reviewed. Key themes emerged including the shortened LOS that can be achieved with an observation unit, as well as increases in patient satisfaction. It was evident that the specialized needs of observation patients could best be facilitated in a dedicated observation unit, where staff and providers treat patients according to the Centers for Medicare & Medicaid Services (CMS) rules and regulations. Another key theme emerged in the literature, that no 2 observation units were alike. Some hospitals found it beneficial to create diagnosis-specific observation units, such as a unit for chest pain or heart failure, and others preferred a mixed-diagnosis unit.

The CMS defines observation care as a set of specific, clinically appropriate services to include the ongoing short-term treatment, assessment, and reassessment of patients, necessary before a decision can be made whether a patient will require further treatment as an inpatient or may be safely discharged.[4] Observation services and patients are considered outpatients, and services are covered under Medicare Part B, which may mean patients will pay more out of pocket for observation expenses than if they were considered an inpatient.[3]

When hospitals do not have a dedicated observation unit, observation patients are placed on a general inpatient unit and receive treatment similar to an inpatient, creating inefficiencies, longer lengths of stay, and increased costs.[3] More than 36% of hospitals in the United States have a designated observation unit, with strict criteria for patient entry and discharge. Many more organizations are contemplating adding this level of service to their patient care platform.[5]

Benefits of observation units defined in the literature include decreased length of stay, decreased costs, increased patient satisfaction, and decreased risk of noncompliance with CMS policies.[3,5-8] The CMS has been enforcing the concepts of observation status, and hospitals have been asked increasingly by Medicare to return payments when admitted patients have been deemed to not need inpatient level of medical services.[5] The CMS also may reject payment for 1-day inpatient stays, thereby increasing the benefits of an alternate care delivery option, such as a dedicated unit, for observation patients.[5] Patients also benefit from being in a distinct observation unit. A more appropriate LOS reduces the risk of hospital-associated infections and unplanned events and decreases out-of-pocket expenses. Patients also feel well cared for, as they are rounded on often by both the nursing staff and other providers.[9]

RATIONALE AND AIMS

Patient demographics from a large teaching hospital in Minnesota demonstrated a shift in volume away from patients being admitted as inpatients to being on observation status. Hospital observation patient volume grew from fiscal year (FY) 2014 to FY 2015 by 18% (905 patients) and from FY 2015 to FY 2016 by an additional 9.2% (545 patients). It was anticipated that volume would continue to grow 9% from FY 2016 to FY 2017 and then taper off to an increase of 3% to 4% in subsequent years as predicted by market and population data for the area.[3] Without a dedicated observation unit, observation patients would need to remain on the inpatient units. This practice would consume inpatient beds for an already full hospital. When a separate unit is created for observation patients, the beds do not count in the total licensed number of beds the hospital has, thus creating even greater capacity.

Of the total encounters for the hospital, observation patients made up 19% in FY 2014, then 17.6% in FY 2015, and 18.6% in FY 2016. Both inpatients and observation patients were growing in volume. The hospital also had an opportunity to reduce LOS for patients on observation status. The average LOS for patients on observation status was approximately 40 hours, compared with national benchmarks for observation stays between 24 and 30 hours.[8]

The development of a designated observation unit was warranted with this compelling data and was incorporated into the hospital strategic plan. Nurses, physicians, and other health care providers who typically provide inpatient care would need to develop a new mindset to care for this unique patient population through frequent assessment, intervention, evaluation, and reassessment until patients were ready for discharge. Anticipated outcomes of this care delivery model change for observation patients included a decreased LOS, decreased direct costs, and improved patient satisfaction.

The hospital created its strategic plan on the basis of the Institute for Healthcare Improvement's model of the Triple Aim (better patient experience, lower cost, and an emphasis on population health).[10] Using this framework, the hospital had an opportunity to improve the value of care to observation patients by increasing standardization, eliminating unnecessary procedures and tests, and decreasing the LOS. There also was a need to improve the experience of patients and their families with the discharge process. Patients frequently described having to wait hours for a physician to write the discharge orders long after they were ready to leave. The aims of this project and care delivery model change were to (1) create and operationalize an adult observation unit and (2) evaluate the impact of this change on the hospital and observation patients served.

INTERVENTION

Process and team

The project was approved by the hospital and health system board of directors as a new service for patients requiring upfront construction costs. According to hospital guidelines at the time, the project did not need to be formally reviewed by the institutional review board. Once these approvals were secured, planning for the unit began using the Iowa evidence-based practice model. This model includes the following steps: identify a practice question, determine support for the project, form a team, review the evidence to determine whether a pilot project is warranted, implement, and finally, evaluate whether the pilot was successful and, if so, spread it other areas of the health system.[6]

The concept of improving care through a care delivery model change and implementation of an observation unit was identified as an organizational priority in the strategic plan. The next step in the planning process was to assemble an interdisciplinary team. It was determined that both nurses and physicians

would lead the project. Various stakeholders and ad hoc team members would be included as necessary. Four hospitalist physicians and an ED physician demonstrated an interest and agreed to dedicate time and energy to the project. Nursing was represented by the service line administrator and a hospitalist advanced practice registered nurse (APRN). A nurse coordinator was hired to lead the unit.

This group was identified as the observation unit steering committee and ensured all necessary components were achieved in a timely manner. In addition to the steering committee, a large interdisciplinary team consisting of a representative from all supportive departments such as imaging, laboratory, admissions, physical therapy, social work, pharmacy, and spiritual care took part in the planning process. Each of these partners brought their expertise to operationalize the unit. This allowed the unit to open ahead of schedule with minimal issues for patients, their families, or staff.

A literature review was conducted to determine best practices in the development and operationalization of the unit. In addition to this, team members attended a national conference on observation units, which provided critical knowledge of design and implementation of the unit and its infrastructure. The team met at least bimonthly during the planning phases. The collaboration and teamwork were important; where 1 member had expertise, another may not, allowing team members to capitalize on their strengths, and teach others along the way.

Unit design

A 14-bed unit was proposed to the hospital finance committee and board of directors, which encompassed 1 hallway of shelled space available within the hospital, not adjacent to the ED. In the literature, some observation units are described as being located within or adjacent to the ED and are typically managed by the ED providers and staff. Other observation models describe units located away from the ED and are managed by hospitalist providers and a separate nursing staff. There does not appear to be preference of 1 unit type versus another.

An architect was secured, and design plans were initiated to construct the unit taking into account patient safety and workflow efficiencies. Two styles of patient rooms were built in the observation unit: (1) single rooms for patients who require isolation precautions including a bathroom within the room, and (2) smaller, single patient rooms with a shared hallway bathroom and shower. Supportive spaces included decentralized nursing stations to allow for the frequent observation of patients, a family lounge, clean and soiled utility rooms, and a patient/family welcome desk.

Electronic medical record

The design of the electronic medical record for the observation unit required several components. Because observation patients are considered outpatients, focused assessments including the body system(s) affected by the patient's presenting illness are required versus a full head-to-toe nursing assessment. An inpatient documentation template was selected to begin the build, versus an outpatient template. The inpatient template had all the required documentation elements and would facilitate patient movement throughout the hospital. Approximately 20% of patients are likely to transfer to inpatient status at some point in their hospital stay.[7] Therefore, using an inpatient template would allow for ease of transfer. Documentation flow sheets for nurses and templated notes for providers were developed next. In addition to this, evidence-based order sets, coding, and charge capture for the providers also had to be developed. The initial functional health assessment conducted by nurses focused on what was necessary to ensure a safe discharge plan for the patient versus a comprehensive assessment as required for inpatients.

Patient care and standards

The implementation team used several guidelines to create inclusion and exclusion

criteria to determine which patients could be admitted to the observation unit versus a general unit. The inclusion/exclusion criteria stated in general terms which patients would be most appropriate to have in the observation unit and which patients were likely to be too sick and would warrant inpatient admission. An example of this would be for heart failure. Patients considered for inclusion in the observation unit would be those with (1) no unstable angina, (2) negative initial cardiac enzymes, and (3) no new electrocardiogram changes. Patients with heart failure who would be excluded from the observation unit might have advanced heart failure, newly diagnosed heart failure, or acute kidney injury in addition to heart failure. The ED physician and hospitalist collaborate to determine what level of care is necessary for the patient, and despite the criteria, the hospitalist has the final decision in determining patient placement.

Standards of care for nursing were created to define the assessments and level of monitoring patients could expect to receive in the unit. These standards are consistent with Medicare expectations that patients who are on observation status are receiving multiple assessments, frequent reassessments, and interventions throughout their stay until they are discharged.[3] This may include assessments every 4 hours based on the patient's condition, which is more often than on a typical inpatient unit.

Staffing

Staffing was the next objective that needed to be determined. Sg2, an analytics-based health care consulting company, recommends a staffing ratio of 1 registered nurse (RN) to 4 patients because of the high turnover of observation patients.[7] When the 14-bed unit is full, 3 RNs are present and have 4 patients each, and 1 charge RN has 2 patients and serves as a problem solver/resource for the unit. With staff input, the schedule was built around both 8- and 12-hour shifts. This was determined to be the most desirable staffing pattern because of daily turnover of patients expected and the likelihood there would be a different number of patients on a routine basis at the defined shift change times of 7:00 AM, 3:00 PM, 7:00 PM, and 11:00 PM. A total of 16.97 full-time equivalents (FTEs) of RNs and 10.18 FTEs of patient care assistants were hired for the unit. The new positions were filled by current staff from units across the hospital and from outside the hospital including experienced nurses as well as new graduate nurses. This created a blended team, some with several years of experience to the novice nurse/patient care assistant. A common ground was found in that none of the staff had ever worked in an observation unit before and needed to understand how observation patient care was different from inpatient care.

These new positions were above the current number of FTEs across the hospital. The rationale for the new positions was because the hospital was seeing more patients and was near capacity at times, resulting in patients having to be diverted to other hospitals. With the addition of observation beds and the fact that these do not count in the total licensed bed count, the hospital anticipated keeping the same inpatient census, but now would have the capacity for other admissions such as the patients who were being diverted to other hospitals.

The unit is currently staffed with a hospitalist physician located in the observation unit from 8:00 am until 5:30 PM. After 5:30 PM, patients are cared for by the hospitalist program, and the observation unit will be staffed with a hospitalist APRN. There is also an RN coordinator responsible for leading the unit. This individual has a half-time clinical RN position, and the other half of the position is spent as the operational manager of the unit whose duties include problem-solving key areas, hiring staff, conducting performance appraisals, and monitoring outcomes. In June 2016, the observation unit opened with the goal of providing care consistent with observation-level care, which is focused on the principles of frequent assessments, interventions, evaluations, and then repeating the cycle until the adult patient is ready for discharge, typically within 24 to 30 hours.

MEASURES

A collaborative effort to define outcome measures for the unit was established between the service line director, accounting, performance improvement, and information systems. A distinct universe within the organization's enterprise data warehouse was established for this purpose. Outcome measures monitored on a monthly basis include volume monitoring, such as average daily census, LOS measured in hours, direct and total cost, hospital case mix index, number of patients diverted because of lack of bed availability, and return visits within 72 hours to the ED or inpatient setting. Quality and safety outcomes are also measured and include patient falls, number of patients who experience cardiac arrest, and patient satisfaction data via the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. These outcome measures are consistent with those recommended in the literature.[3,9,11] Measures obtained are compared with pre- and postobservation unit implementation.

RESULTS

To date, the observation unit has been exceeding the anticipated outcomes in most areas. The 1-year goal was to reduce overall LOS from 40 hours to 26 hours. In the initial 4 months, the unit was able to achieve a reduction in LOS by 32.5%, down to an average LOS of 26.8 hours (Figure). As a result of this decrease in LOS and other factors, the direct cost for patients in the observation unit, compared with similar patients not in the unit, has also been reduced by 10.4% for a direct cost reduction of $379.20 per patient.

Patients have been highly satisfied with the observation unit. Using top-box methodology measuring preobservation unit scores compared with postunit opening, HCAHPS scores have increased in most categories. Communication with physicians increased from 68.8% to 100%, overall rating increased from 74% to 100%, and willingness to recommend increased from 70.4% to 100%. Surprisingly, the communication with nurses' score declined from 82.3% to 73.3% postimplementation. This change has been shared with the nurses and is being investigated for a direct cause, but at this point seems to be due to random variation.

Patients going to the observation unit are leaving the ED 10 minutes faster than observation patients who are going to an inpatient unit, increasing throughput in the ED. The hospital is also seeing fewer patients diverted than prior to the observation unit opening.

DISCUSSION

The creation of an observation unit has been an example of how nurses demonstrate leadership and collaboration by establishing an interdisciplinary team to create an

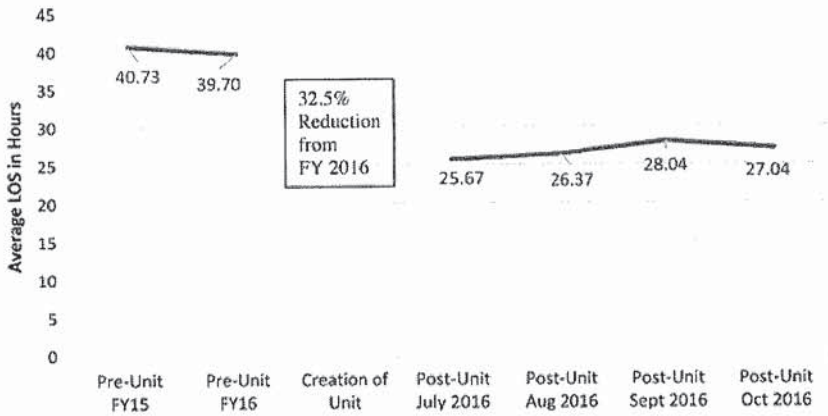

Figure. Observation LOS, change in hours. LOS indicates length of stay.

exceptional product for patients in today's ever-changing health care arena. There has been a strong commitment by nurses and physicians to prioritize care to this patient population, as everyone knows the care is measured in hours and not days, like a typical inpatient. Nurses are committed to rounding on patients frequently, making focused assessments, intervening, evaluating, and contacting the hospitalist promptly to progress with the patient's care needs. Physicians have been available and collaborative in working with the nurses to ensure the best care for the patients and families served. This commitment is evidenced in the outcomes achieved to date: reduction in LOS and direct costs as well as improvements in patient satisfaction scores.

Limitations

A significant limitation in creating this observation unit was getting buy-in from the ED physicians. The hospital underwent a significant turnover of the ED physician group 9 days after the observation unit opened. Initial volumes of the unit were low, and this risk has been mitigated by revisiting physician groups who are the referring providers and advertising the exceptional outcomes that have been achieved since the unit opened.

CONCLUSION

The establishment of an adult observation unit improved care for observation patients and their families. This project clearly demonstrates using an evidence-based approach and process with interdisciplinary collaboration and teamwork can be effective to improve outcomes and create innovations in care for the patients served.

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Protocol-Driven Emergency Department Observation Units Offer Savings, Shorter Stays, And Reduced Admissions

ABSTRACT **Many patients who seek emergency department (ED) treatment are not well enough for immediate discharge but are not clearly sick enough to warrant full inpatient admission. These patients are increasingly treated as outpatients using observation services. Hospitals employ four basic approaches to observation services, which can be categorized by the presence or absence of a dedicated observation unit and of defined protocols. To understand which approach might have the greatest impact, we compared 2010 data from three sources: a case study of observation units in Atlanta, Georgia; statewide discharge data for Georgia; and national survey and discharge data. Compared to patients receiving observation services elsewhere in the hospital, patients cared for in "type 1" observation units—dedicated units with defined protocols—have a 23–38 percent shorter length-of-stay, a 17–44 percent lower probability of subsequent inpatient admission, and $950 million in potential national cost savings each year. Furthermore, we estimate that 11.7 percent of short-stay inpatients nationwide could be treated in a type 1 unit, with possible savings of $5.5–$8.5 billion annually. Policy makers should have hospitals report the setting in which observation services are provided and consider payment incentives for care in a type 1 unit.**

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Between 1997 and 2007 the number of emergency department (ED) visits in the United States rose at twice the rate of population growth.[1] Simultaneously, there was a decline in the number of EDs, an increase in the number of patients who spent extended periods in ED beds (referred to as "ED boarding"), and an increase in the number of tests and treatments that ED patients received.[2]

The Centers for Medicare and Medicaid Services (CMS) recently initiated efforts such as the Recovery Audit Contractor program to reduce avoidable costs across the entire Medicare program.[3] This program targets a variety of health care claims patterns to identify overpayments made by Medicare. Inpatient admissions with short lengths-of-stay that were deemed to be unnecessary were responsible for half of the overpayments that CMS recovered in the first year of the recovery audits.[4]

Payment for an entire inpatient admission is based on a single averaged diagnosis-related group (DRG) payment that is much higher than the payment for a shorter outpatient observation visit. Such observation visits are more cost based—that is, major individual components of the visit are paid for separately instead of being combined into an averaged payment, which would be much higher than the separate payments collectively.[5] Medicare's recoveries are based on the premise that it inappropriately

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made a higher DRG payment for short inpatient admissions that should have been billed as outpatient observation visits.

The convergence of trends in ED use has created a critical situation for which solutions are needed. One solution might be better use of observation visits, although this depends on the delivery model used.

Current Models Of Observation Services

A clinical context in which to consider both emergency and observation care is "time." The treatment of acute or "time-sensitive" conditions is a central feature of emergency medicine. Some ED patients need more time than a busy ED is designed to provide (about six hours maximum) but less than twenty-four hours of inpatient care if their condition is managed actively. The care needed by these "6-to-24-hour" patients does not fall neatly into either the category of an ED visit or that of a full inpatient admission. They are not well enough for immediate discharge, but it is not clear that they are sick enough to warrant full inpatient admission. These patients are increasingly treated as outpatients using observation services, as defined by CMS observation policy documents.[6]

CMS defines *observation services* as outpatient care ordered by a physician and provided in a hospital bed (to either an inpatient or an outpatient) to determine the need for inpatient admission.[6] This care is expected to be completed within twenty-four hours, with exceptional cases requiring more than forty-eight hours. Across the United States, observation services are provided in one of four distinct settings, which are defined by the presence or absence of two features: dedicated units and protocols (Exhibit 1).

EXHIBIT 1

Hospital Settings In Which Observation Services Are Provided

Setting	Description	Characteristics
Type 1	Protocol driven, observation unit	Highest level of evidence for favorable outcomes Care typically directed by ED
Type 2	Discretionary care, observation unit	Care directed by a variety of specialists Unit typically based in ED
Type 3	Protocol driven, bed in any location	Often called a "virtual observation unit"
Type 4	Discretionary care, bed in any location	Most common practice Unstructured care Poor alignment of resources with patients' needs

SOURCE Authors' analysis. **NOTE** ED is emergency department.

Two-thirds of US hospitals deliver observation services without using an observation unit. In most of these hospitals, care is provided in a type 4 setting: a bed anywhere in the hospital (usually an inpatient bed), with unstructured care provided at the discretion of the treating physician.[7,8] Some of these hospitals also treat observation patients in a type 3 setting: a bed in any unit using structured, condition-specific protocols. The remaining one-third of hospitals have a designated observation unit, which is typically adjacent to the ED but is sometimes located on an inpatient floor. Half of these hospitals use condition-specific protocols to treat patients (type 1 setting); the other half do not (type 2 setting).[7,8]

The key elements required to manage type 1 settings, or units, have been described elsewhere[8] (for more details on the seven key components of a type 1 ED observation unit, see Appendix Exhibit 1).[9] They include a dedicated unit, operational guidelines, condition-specific protocols, appropriate staffing and administrative oversight, ancillary services support, and close attention to metrics of use and quality. Guidelines specify how patients are selected for the unit, how their conditions are managed, and the criteria for their discharge home. These guidelines are used to create "order sets," or "protocols," to ensure consistency in how patients are managed. Ancillary services and staff are aligned to ensure that protocols are followed.

Of the four settings, type 1—dedicated units with condition-specific protocols—have been the most studied and are associated with the best outcomes. These include lower costs, shorter lengths-of-stay, lower rates of inpatient admissions, less diagnostic uncertainty, greater patient satisfaction, better clinical outcomes, and improvements in the use of hospital resources.[8] Just as critical care units are designed to provide optimal care for critically ill patients, type 1 units are designed to provide the best outcomes for observation patients.

These units offer two distinct benefits to the US health system. First, they provide observation services in a setting that might result in shorter lengths-of-stay and lower costs for observation patients, compared to other settings. The savings might benefit not only hospitals but also patients, whose out-of-pocket costs could be lower. Second, the units provide a lower-cost alternative to inpatient admission for selected inpatients. The scope of these two benefits can be understood through the use of two different analyses.

In this article we examine the impact of type 1 units on the length-of-stay and cost of existing observation patients. We compared the per-

Two-thirds of US hospitals do not have an observation unit, and most observation patients in these hospitals receive care in a type 4 setting.

formance of three prototype type 1 units in Atlanta, Georgia (at hospitals described below), with the performance of a representative sample of US hospitals and with that of all hospitals in Georgia. Both of the larger groups included types 1–4 settings. We then determined the regional and national impact of type 1 units on the cost of care for a selected subgroup of inpatients, if care in a type 1 setting were used as an alternative to an inpatient admission.

Impact On Observation Visits' Length And Cost

As noted above, two-thirds of US hospitals do not have an observation unit, and most observation patients in these hospitals receive care in a type 4 setting.[7,10] Studies of care in a type 4 setting report mean lengths-of-stay of forty-one hours for adult medical patients. As a result of these long stays, hospital costs exceed payments by an average of $331.[11]

Medicare claims data for 2012 show that 11 percent of observation stays were for at least three nights.[5] Prolonged observation stays lead to poor use of costly inpatient beds; higher out-of-pocket expenses; and increased risks of hospital-acquired infections.[5,12] Additionally, Medicare requires a patient to have been a inpatient for at least three days to receive coverage for rehabilitation in a skilled nursing facility after hospital discharge—a requirement known as the "three-night rule." For patients admitted following observation, prolonged observation stays increase the risk of not meeting this inpatient requirement because observation is an outpatient service.

The impact of care in a type 1 setting on observation patients' lengths-of-stay and costs has not been determined.

STUDY DATA AND METHODS To examine the impact of an observation unit on visit lengths and costs, we performed a retrospective observational cohort study of observation services using data from three distinct sources. The first was a case study of three Atlanta hospitals' type 1 observation units using 2010 clinical data. The second source was data for types 1–4 settings in Georgia from 2010 discharge data from the Healthcare Cost and Utilization Project (HCUP).[13] The third source was data for all four settings for 2009–10 from the National Hospital Ambulatory Medical Care Survey (NHAMCS).[14]

Because there is no standardized way to identify type 1 units using national data, we used a case-study approach. Specifically, we compared the performance of three hospitals in Atlanta that we knew had type 1 units to the performance of all hospitals in Georgia and to the performance of a representative sample of hospitals across the United States. The regional and national comparison groups included observation patients managed in all four types of settings, although only a small number of patients were seen in type 1 units.

The Atlanta hospitals were the following: Emory University Hospital, a 587-bed tertiary care hospital (in addition to an 8-bed ED observation unit), which had 35,427 ED visits in 2010; Emory University Hospital Midtown, a 511-bed urban teaching hospital (in addition to an 8-bed ED observation unit), which had 57,236 ED visits in 2010; and Grady Memorial Hospital, a 953-bed urban public hospital (in addition to a 7-bed ED observation unit), which had 93,238 ED visits in 2010.

These hospitals' ED observation units had the key components of type 1 units described above. At each institution, patients were admitted to the observation unit after initial management of their condition in the ED had failed, using one of thirty-three condition-specific protocols for conditions such as chest pain, asthma, syncope (fainting), heart failure, and transient ischemic attack. These protocols had been developed through a process of literature review followed by interdepartmental consensus, pilot testing, and then implementation. The protocols contained clear guidelines for determining a patient's eligibility to receive observation services and how the care should proceed (for a link to the protocols, see Appendix Exhibit 2).[9]

Statewide observation services data for Georgia came from the following three HCUP databases: the Georgia State Inpatient Database, Georgia State Emergency Database, and the Georgia State Ambulatory Surgery Database (for information about these databases and how observation visits were identified see Appendix Exhibit 3).[9] Observation stays in these

data sets were identified by the presence of an observation stay revenue code, a positive observation stay charge, or an observation stay *Current Procedural Terminology* (CPT) procedure code in the record. We selected observation service encounters including an indication that the patient had been seen in the ED. The length of an observation stay is captured in a field in HCUP records.

NHAMCS is a nationally representative sample of about 35,000 visits to 350 EDs annually.[14] Observation services are delivered only to a portion of the sample because the data collection is targeted toward all ED visits, not just those involving an observation stay. Therefore, we combined data from 2009 and 2010 to improve the precision of the sample.

STUDY RESULTS During the study period there were 1.4 million annualized observation visits in the United States and 101,593 observation visits in Georgia, excluding cases of labor and delivery diagnoses from both groups. The most common conditions are listed in Exhibit 2.[14] The three Atlanta hospitals with type 1 units had 7,199 observation visits, or 7.1 percent of the cases in Georgia.

The case-mix of conditions managed with observation services was similar across the three study groups (Exhibit 2). Patients' ages were comparable across the groups, but there were more socioeconomically disadvantaged patients in the three Atlanta hospitals, as measured by the percentages of patients in the Medicaid and self-pay categories.

The three groups also differed in terms of length-of-stay (Exhibits 2 and 3), with patients in the Emory/Grady type 1 units having the shortest stays as well as a 17–44 percent lower relative probability of subsequent admission to

EXHIBIT 2

Observation Services, Patients, And Top Twelve Conditions Across Three Study Groups

	Emory/Grady,[a] 2010	Georgia,[b] 2010	US,[c] 2009–10
ED visits	185,901	4,194,602	133,957,000
OBSERVATION VISITS			
Number	7,199	101,593	1,392,000
Length-of-stay			
Average (hours)[d]	17.2	27.6	22.3
Visits >24 hours	10.4%	44.4%	29.0%
Visits >36 hours	0.1	24.7	14.9
Visits >48 hours	0.1	7.2	6.9
Visits >72 hours	0.0	1.6	0.9
Rate of inpatient admission	13.1%	15.8%	23.2%
PATIENT CHARACTERISTICS			
Average age (years)	52.8	51.6	47.9
Percent male	42.9%	44.2%	44.2%
Payer (%)			
Medicare	26.5	37.9	29.8
Medicaid	11.4	15.1	26.1
Self-pay or uninsured	27.7	15.3	8.0
PROTOCOL OR CLINICAL CLASSIFICATION SOFTWARE CATEGORY[e]			
1st most common condition	Chest pain	Chest pain	Abdominal pain
2nd	Syncope	Syncope	Chest pain
3rd	Dehydration	Fluid and electrolyte disorders	Fluid and electrolyte disorders
4th	Transient ischemic attack	Appendicitis	Cardiac dysrhythmias
5th	Asthma	Cardiac dysrhythmias	Other lower respiratory disease
6th	Cellulitis	Abdominal pain	Syncope
7th	Abdominal pain	Asthma	Conditions associated with dizziness
8th	Congestive heart failure	Chronic obstructive pulmonary disease	Asthma
9th	Hyperglycemia	Urinary tract infections	Headache, including migraine
10th	Pyelonephritis	Pneumonia	Skin and subcutaneous tissue infections
11th	Pneumonia	Congestive heart failure	Other nervous system disorders
12th	Electrolyte abnormality	Biliary tract disease	Epilepsy and convulsions

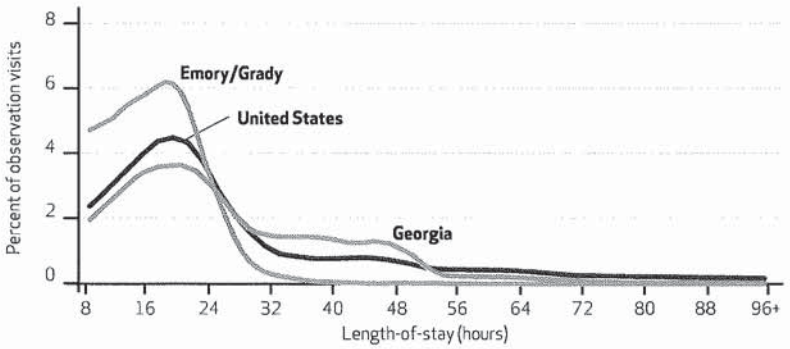
SOURCE Authors' analysis. [a]Emory/Grady data are for emergency department (ED) visits and type 1 ED observation visits at the three Atlanta hospitals described in the text. [b]Georgia data, from the Healthcare Cost and Utilization Project, are for both ED and observation visits. [c]National data, from the National Hospital Ambulatory Medical Care Survey, are annualized for both ED and observation visits. [d]Number of hours beyond the eight-hour minimum length-of-stay allowed for Medicare payment for observation. The interquartile ranges are 13–21 for Emory/Grady, 23–36 for Georgia, and 11–27 for the United States. [e]Emory/Grady type 1 ED units use condition-specific protocols. For Georgia and US hospitals, Clinical Classification Software (see Note 23 in text) was used to group *International Classification of Diseases*, 9th Revision, Clinical Modification (ICD-9-CM), diagnosis codes into a smaller number of clinically meaningful categories.

the hospital as an inpatient. The most notable difference was in the percentage of patients with a prolonged observation visit. Fewer than 0.1 percent of type 1 unit patients had stays longer than forty-eight hours, compared to 7.2 percent of patients in Georgia and 6.9 percent of patients nationwide. The performance of the three Atlanta hospitals' observation units was consistent with the performance of type 1 units reported in previous studies and national surveys.[7,15–19]

Applying the length-of-stay achieved by the Emory/Grady type 1 units to statewide data would lead to a 38 percent reduction in the length of observation visits in Georgia. Applying the type 1 unit length-of-stay to national data would lead to an estimated 23 percent reduction. Annually, this would save about 296,000 bed days nationally and $950 million, based on costs from HCUP data.

EXHIBIT 3

Observation Visit Lengths-Of-Stay Across Three Study Groups



SOURCE Authors' analysis. **NOTES** Observation visits shorter than the eight-hour minimum length-of-stay allowed for Medicare payment were excluded here. Emory/Grady data are for emergency department (ED) visits and type 1 ED observation visits, at the three Atlanta hospitals described in the text. Georgia data, from the Healthcare Cost and Utilization Project, are for both ED and observation visits. National data, from the National Hospital Ambulatory Care Survey, are annualized for both ED and observation visits from 2009–10. Other data are from 2010.

Impact On Avoidable Inpatient Admissions

If observation services can be provided efficiently and cost-effectively in type 1 units, then those units may offer an alternative to short-stay inpatient admissions. Prior studies have estimated the reductions associated with the use of dedicated observation units in national inpatient admissions (2.4 million annually) and costs ($3.1 billion) using Monte Carlo simulations based on NHAMCS data and inputs drawn from other studies.[20] HCUP captured more than 96 percent of inpatient encounters nationwide in 2010. Therefore, it serves as an intriguing data source for more precise estimates of cost savings at the national and state levels that could result from using type 1 units as a substitute for short inpatient stays.

STUDY DATA AND METHODS To examine the impact of observation units on avoidable inpatient admissions, we used the HCUP Nationwide Inpatient Sample, the largest publicly available all-payer inpatient care database in the United States. The 2010 sample contains all discharge data from 1,051 hospitals located in forty-five states, which represents approximately a 20 percent stratified sample of community hospitals. The sample includes data on total charges for each hospitalization. HCUP Cost-to-Charge Ratio Files enable the conversion between charges and estimated costs.

To estimate how many admissions might be eligible for an observation unit, we identified admissions that began in the ED and resulted in inpatient stays lasting no more than two nights.[7] This approach is supported by data from randomized trials of observation-eligible conditions showing that the length-of-stay in type 1 units is half that of inpatient settings, where median lengths-of-stay ranged from twenty-three to sixty-one hours in three different studies.[21–23]

Using a time-based criterion alone might overestimate hospital admissions eligible for an observation unit. Therefore, we chose a subgroup of short-stay inpatient admissions with diagnoses that are commonly managed in an observation unit.[7,8,10,17] This was done by screening the list of Clinical Classification Software diagnosis groups for appropriate conditions.[24] Eligibility for this more selective list was based on conditions reported in prior studies of observation unit conditions, conditions managed at the Atlanta hospitals we studied, published estimates of avoidable ED admissions, and our own experience.[20,25,26]

STUDY RESULTS According to estimates based on the Nationwide Inpatient Sample data, there were more than thirty-nine million inpatient encounters in 2010. Half of those admissions began in the ED (Exhibit 4). When we used only the more selective list of eligible conditions, we found that 11.7 percent of all admissions, with a collective cost of $20.2 billion, would be eligible for an observation unit. In Georgia, 10.0 percent of admissions, costing $459 million, were eligible for an observation unit.

Substantial savings could be achieved through alternative management of these cases. Cost savings of care in type 1 units relative to traditional inpatient care have been reported to be in the range of 27–42 percent.[8] Applying these percentages to the national data suggests that the use of

EXHIBIT 4

Costs Of Selected Types Of Inpatient Admissions In Georgia And The United States, 2010

	Georgia			US		
Type of admission	**Number**	**Percent**	**Cost ($ millions)**	**Number**	**Percent**	**Cost ($ millions)**
All	1,057,099	100.0	9,787	39,008,298	100.0	392,677
Beginning in ED	488,036	46.2	4,833	19,733,528	50.6	202,203
Beginning in ED and lasting no more than 2 nights	167,602	15.9	765	7,340,408	18.8	34,346
Beginning in ED, lasting no more than 2 nights, only observation-eligible conditions	106,077	10.0	459	4,544,836	11.7	20,229

SOURCE Authors' analysis. **NOTES** Georgia and national data are from the Healthcare Cost and Utilization Project. ED is emergency department.

type 1 units to replace short inpatient admissions could save $5.5–$8.5 billion per year.

Health Policy Issues And Implications

Widespread adoption of type 1 observation units has tremendous potential to provide cost savings to patients, hospitals, and payers. The units give ED physicians the opportunity to provide the right level of treatment to the right patient in the right setting, thereby reducing the proportion of inpatient admissions. Just as the ED has been the safety net of the health system, type 1 units are the safety net of the ED.

For many patients, type 1 units are a more cost-effective and efficient use of hospital-based health care resources than inpatient admissions. What would it take to have these units widely adopted?

First, some level of organizational redesign would be needed in the two-thirds of US hospitals that do not have the units. To incentivize such a redesign, payers would need to pay a higher rate for care provided in type 1 observation units than for care provided in any inpatient bed.

A model to consider is how ED visits are paid for. EDs are classified by Medicare as either "type A" EDs (open 24/7) or "type B" EDs (open for shorter periods of time)—designations that have been adopted nationally—and Medicare adjusts its payments to account for the round-the-clock services of "type A" EDs.[27]

Medicare broadly classifies both observation and emergency care as outpatient "visits," with different payment rates for each. Recognizing that the "setting" influences the level of service provided for outpatient visits, as with ED visits, payers could also require hospitals to report the setting in which observation visits occurred. For example, payers could ask hospitals to report on claim forms whether or not observation services had been provided in an observation unit and any other part of the hospital, perhaps using the classification scheme in Exhibit 1. Payers could then incentivize the use of type 1 units by paying a higher rate for care in that setting than for care delivered elsewhere.

Second, these changes would likely increase the use of observation services, with financial consequences for Medicare patients. This is because for each outpatient service delivered, Medicare beneficiaries have a 20 percent copayment, up to the inpatient deductible amount ($1,184 for the first sixty days of an inpatient episode in 2013), and self-administered medications are not covered. As mentioned above, prolonged observation time might jeopardize a Medicare patient's eligibility for rehabilitation in a nursing home following inpatient admission, because observation time does not help meet the inpatient "three-night rule." These concerns have drawn attention to observation services.

For patients who cannot be released from the hospital after observation but must be admitted as inpatients and who then require rehabilitation in a skilled nursing facility, a type 1 unit is a preferable setting for care because the observation visit length-of-stay is shorter there than elsewhere. For these patients, being admitted as an inpatient sooner is better because they then spend more of their hospital time as an inpatient—thus improving their chance of meeting the "three-night rule."

Concerns that Medicare patients have higher copayments for observation visits than for inpatient admissions have been recently been addressed.[5,12] In 2012 Medicare observation copayments were, on average, $324 lower than inpatient copayments, with 94 percent of observation visits having copayments that were lower than those for inpatient care. Observation remained less expensive than inpatient care when the additional cost of self-administered medications was added to inpatient costs. Furthermore, many Medicare enrollees also have supplemen-

27–42%

Cost savings

Cost saving of care in type 1 observation units relative to traditional inpatient care have been reported in the range of 27–42 percent.

Just as the ED has been the safety net of the health system, type 1 units are the safety net of the ED.

tal insurance or alternative plans that further decrease their out-of-pocket expenses. For example, Medicare Advantage plans and Medigap insurance help cover the additional Part B copayment, and many enrollees also have Part D coverage that covers the additional drug expenses.

However, there are meaningful numbers of enrollees who do not have these plans and of patients who go to a skilled nursing facility without ever qualifying for inpatient admission. For these patients, as for all observation patients, shorter stays in type 1 units are likely to have lower costs and thus lower copayments than prolonged observation stays in other settings.

Conclusion

Discussions of EDs in reference to national health care costs often focus on the high cost of avoidable ED visits, but this focus misses a much greater opportunity. Peter Smulowitz and colleagues estimated that greater savings could be achieved through avoided inpatient admissions than through avoided ED visits (1.0–2.5 percent versus 0.24–0.8 percent reductions in US health expenditures).[26] In a separate analysis of our data, we estimated that the cost savings from avoided inpatient admissions using type 1 units would be two to four times more than the savings from avoided ED visits (for details of this analysis, see Appendix Exhibit 4).[9]

Type 1 observation units also have benefits under current alternative payment schemes. Under bundled payment systems and in accountable care organizations, ED physicians could play a crucial role in deciding the right level of care needed to achieve high-quality outcomes while conserving resources. Type 1 units give ED physicians an appropriate option to care for the increasingly large portion of patients who are too sick to be sent home, but not sick enough to warrant inpatient care. ■

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Medical Observation Units and Emergency Department Collaboration

Improving Patient Throughput

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OBJECTIVE: The aim of this study was to identify whether observation status patients placed in a dedicated unit would decompress the emergency department (ED) more than observation patients who were admitted to other available beds.
BACKGROUND: An urban quaternary hospital has a high volume of patients with average daily census of 95% capacity. A medical observation unit (MOU) was created to improve patient throughput.
METHODS: In phase 1, the MOU charge nurse reviewed the ED patients to be admitted and selected appropriate patients based on unit inclusion criteria. In phase 2, the MOU charge nurse did rounds with the ED charge nurse once per shift.
RESULTS: MOU observation patients demonstrated a 53-minute (16%) reduction in average overall ED length of stay compared with observation patients admitted to other units.
CONCLUSION: Inclusion criteria, a rounding checklist, and engagement of MOU and ED nurses helped the MOU and ED with patient throughput.

Emergency department (ED) crowding is a pressing healthcare issue, particularly as overcrowded EDs result in longer wait times, dissatisfied patients, and more patients leaving without being seen by a physician.[1] The Affordable Care Act,[2] originally targeted to address excess ED usage, has been widely recognized for increased usage of EDs for low-acuity issues. In addition, hospitals must report ED diversions to the Centers for Medicare & Medicaid Services (CMS).[3] A high volume of ED patients challenges resources and highlights the need to maximize throughput with the goals of decompressing the ED, while ideally and simultaneously improving the patient experience. This article describes the process of opening and optimizing a dedicated medical observation unit (MOU) to help the ED and hospital meet these goals.

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Background: Building the Case for MOU

A dedicated MOU outside the ED is a strategy to improve throughput by monitoring patients for an average of 8 to 24 hours when immediate discharge from the ED is not indicated. The functional purpose of observation units is to determine whether an inpatient admission is warranted.[4] Observation units are used to cohort patient populations in a geographical area. Streamlining observation patient care can result in an average of 25% decreased length of stay (LOS). Delivering care in an MOU costs 25% to 50% less than the care of an inpatient with the same diagnosis. Placing observation patients in a dedicated space is a best practice for achieving lower LOS for the observation period as well.[4]

Reportedly 80% of academic medical centers, and one-third of all hospitals have observation units.[5] In October 2013, CMS restructured the guidelines about observation status. The status was redefined to apply to patients hospitalized for care up to the second midnight of hospital-based care.[6] This regulatory

change highlighted the need for physicians to work more efficiently to treat observation patients in a shorter length of time to meet this parameter. The placement of a patient on an MOU can support the physician efficiently through the use of multidisciplinary protocols and a focus on the consistent roles of each provider.[4]

MOU Benefits

Dedicated MOUs demonstrate cost savings, greater revenues, and decreased LOS. Insurance companies treat MOU stays as outpatient visits, which generate larger revenues for the hospital than standard inpatient charges based on diagnosis-related group (DRG) and lower cost of care.[7] MOUs report discharging patients in less time, while exposing them to fewer risks incurred in the hospital, such as falls, infections, and medication errors.[7] Increased patient satisfaction and safety result from the decreased LOS in an MOU because patients are more satisfied when they are able to go home faster.[1] Observation unit patients are seen sooner by physicians, and observation patients also have a lower rate of misdiagnosis.[4]

MOUs also decrease ED overcrowding by pulling appropriate patients out of ED faster. The ED benefits from decreased numbers of patients leaving without being seen by a physician, as well as fewer ambulance diversions. Appropriate usage of an MOU is one of the most effective strategies to improve hospital throughput.[7] With the literature supporting the utilization of MOUs and the ability to improve patient outcomes and financial stewardship, our hospital proceeded with opening its MOU in March 2014.

Opening an MOU

Our hospital is an 886-bed quaternary medical center with a high-volume ED. One-third of the admissions come from the ED. On average, 250 patients are evaluated in the ED daily, and 80 to 90 are admitted. The 23-bed MOU housed on the 3rd floor of the medical center is similar in setup to areas of the ED. The observation space is separated into 8 closed-door rooms with toilets and 15 curtained-off areas with shared restrooms.

Executive nursing and ED leadership opened the MOU in March 2014 as a restricted, hospitalist-run unit. In the initial phase of the MOU, only the largest of our facility's 3 hospitalist teams used the MOU. The restricted unit model asserts that only a set group of hospital-employed physicians can utilize a unit. Observation units for hospitalist patients only, or run exclusively by the ED, function on protocol and demonstrate greater efficiencies.[4] In the initial restricted unit phase, our MOU initially managed patients with the following conditions: chest pain, asthma or chronic obstructive pulmonary disease (COPD) exacerbation, gastroenteritis, community-acquired pneumonia, and syncope. The initial low census and limited physician access provided a controlled environment for standardization. Even at this early stage, MOU showed decreased LOS for the 5 initial diagnoses with an average LOS of 19 hours. Observation patients with same diagnoses housed in other inpatient units had an average LOS of 28 hours.

To facilitate decision making regarding which patients belong in MOU, a multidisciplinary collaborative team from the ED and MOU created unit inclusion criteria, exclusion criteria, and monitoring capabilities (Table 1). The primary goals of the MOU were to decompress the ED and provide focused and efficient care. These goals were measured through ED throughput time, MOU patient volume, and LOS. As a comparison, observation patients in the MOU were compared with observation patients admitted to an inpatient unit.

Optimizing Use of the MOU

Three months after opening in March 2014, MOU census remained low, which is reflected in the June units of service (UOSs) (Figure 1). Prior to June 2014, the MOU team was working with the finance department at our institution to determine what volume measurement would be most appropriate. In the time between March and June, 2014, average daily census (ADC) data were used. MOU ADC was 2 patients from March through May, 2014. UOS (or volume) is defined by using patient-days equivalent, which includes observation patient hours. It is based on the number of charges accrued for the unit and reflects the unit's ability to generate revenue. UOS was selected as the metric because it does not require manual calculation and reflects all patients who were admitted to the MOU. Hospital census data are collected at midnight and cannot be used to measure volume of observation patients because the MOU has many patients admitted after midnight, but discharged before the following midnight. These patients would be lost in census calculations.

The low volume initially in the MOU is a result of the unit being limited to 1 hospitalist team's patients, who had to be admitted with 1 of the 5 identified admission diagnoses. Because this model already had a positive impact on LOS, the MOU and ED leadership teams met to discuss better utilization options for the MOU after this initial phase. The outcome of this meeting was to change the unit from a restricted unit to a unit for any patients meeting the defined inclusion criteria and any admitting physicians starting on July 1, 2014. In this nonrestricted unit model, any

Table 1. Inclusion and Exclusion Criteria in the MOU

MOU Capabilities	Inclusion Diagnoses	Exclusion Criteria
Vitals signs up to every 3 h	Dehydration/electrolyte disturbance	Continuous IV drip (all but Heparin, IV insulin and IV narcotics)
Anticipated discharge in ≤24 h	Syncope	Obstetrics (past 10 wk pregnant and if admission related to pregnancy) and pediatric patients aged <18 y
Continuous cardiac monitoring	Chest pain	Psychiatric medical/surgical, 5150 patients
Strict intake and output monitoring	Community-acquired pneumonia	Mechanically ventilated patients
	Asthma exacerbation	Need for immediate hemodialysis during nights/weekends (must go to hemodialysis unit)
	Any additional diagnosis with expected discharge before 2nd midnight in hospital	Peritoneal dialysis
		Hemodynamic instability
		ETOH intoxication and withdrawal, active drug use, and drug seeking
		Airborne requiring negative pressure, to rule out flu or patients requiring droplet precautions, diarrhea with concern for norovirus, bone marrow transplant patient needing positive pressure

practicing physician with privileges at our facility could admit patients to the MOU. Figure 1 summarizes the results of our UOS over time, reflecting a large increase in volume after the unit restrictions were lifted. The bar graph (Figure 1) represents a trend for higher volume in the MOU over time.

Optimizing ED Throughput

With the large increase in volume, the MOU nursing team recognized the need to streamline efficiency once the unit opened to all patients and providers. From August 2014 to December 2014, the MOU nursing staff staged 2 distinct phases of interventions to actively "pull" patients from the ED to the MOU. In our facility, bed placement is typically determined by the patient placement department. In the MOU model we created, the MOU charge nurse would review MOU-appropriate patients and direct patient placement to admit them to MOU, rather than the reverse process. Our goal with this active "pull" of patients was to decrease the length of time the patient would have spent in the ED waiting for patient placement to assign a bed. As a performance improvement project, all nurse-led interventions were approved by the institutional review board.

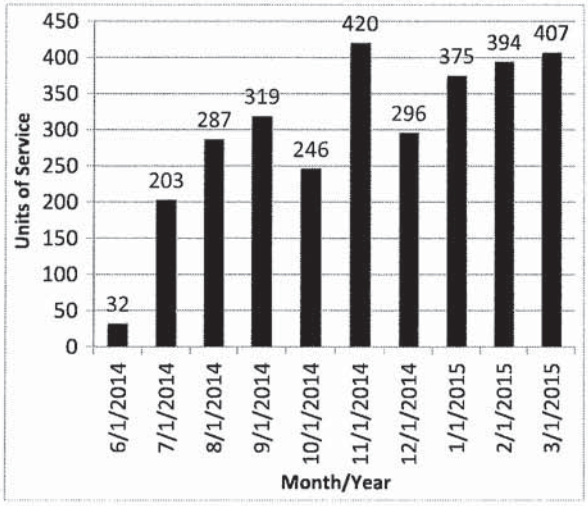

Figure 1. UOS trend in the MOU. The MOU opened in March 2014. Regular fluctuations in units of service were consistent with the hospital's census patterns. The large spike in November 2014 is the result of UOS over 3 pay periods rather than 2. Volume prior to June 2014 was calculated by ADC, which is not reflected here.

Phase 1 launched in August 2014. In phase 1, the MOU charge nurse reviewed the ED patients to be admitted and selected those appropriate for MOU based on electronic chart review and inclusion criteria (Table 1). The nurse manager of the MOU provided education to the MOU and ED staff through staff meetings and huddles to share the inclusion and exclusion criteria, as well as to provide case studies of appropriate observation patients to aid in identifying which ED patients may go to the MOU.

To enhance this process, phase 2 launched in December 2014. In phase 2, the MOU charge nurse began rounding with the ED charge nurse once per shift at 4 PM and 9 PM, using the inclusion criteria and a new rounding checklist (Figure 2) as a guide. The checklist guided charge nurse decision making by applying some objective criteria to evaluate patient appropriateness for the MOU. The MOU manager again held in-services and additional staff meetings with the charge nurses in the MOU to review and explain the rounding checklist. The checklist was also shared with the ED nursing leadership to educate their charge nurses to identify good candidates for MOU prior to the scheduled charge nurse rounding times.

Generic exclusion criteria	
PCU status	☐
OB or pediatrics	☐
Psychiatric/5150	☐
Mechanically ventilated	☐
Immediate dialysis	☐
Alcohol withdrawal	☐
Droplet/airborne	☐
Frequent readmission	☐
Social admission	☐
Hemodynamic instability	☐

Chronic pain	
Trauma to other sites	☐
Worsening neuro	☐

Gastroenteritis	
Creatinine >2 times baseline	☐
Bloody emesis	☐
Na <125 or >155 mmol/liter	☐
Acute renal failure	☐
Impending shock	☐
Severe dehydration	☐

Abdominal pain	
Chronic pain	☐
Acute peritonitis	☐
Hypotension (SBP <90 mm Hg)	☐
Acute renal failure	☐
Impending shock	☐
Severe dehydration	☐

Allergic reaction	
Stridor	☐
Airway compromise	☐
Saturation <80%	☐
Hypotension (SBP <90 mm Hg)	☐

TIA (later 2015)	
Suspected acute cerebrovascular accident	☐
Hypertensive crisis	☐
Worsening neuro	☐

Cellulitis	
Gangrene/necrotizing fasciitis	☐
Hypotension (SBP <90 mm Hg)	☐
Diabetic infections	☐
Tissue necrosis	☐
Pain requiring multiple IV medications	☐
High fevers	☐
White blood cells > 16000	☐

Chest pain	
Ischemic electrocardiogram (ECG) changes	☐
Troponin newly positive	☐
Hypotension (systolic blood pressure [SBP] <90 mm Hg)	☐
New abnormal ECG	☐
Troponin >0.78	☐
Troponin 0.05-0.78	*Call MD*

Gastrointestinal bleeding	
Hemodynamic instability	☐
Varices	☐
Advanced liver disease	☐
Advanced malignancy	☐
Gastropathy	☐

Syncope	
Confusion/new deficit	☐
Abnormal vital signs	☐
History of ventricular arrhythmia	☐
Has cardiac assist device	☐
Afibrillation/flutter with uncontrolled HR	☐
Moderate/severe CHF	☐
Prior episodes without evaluation	☐
Prior workup with no findings	☐
Confusion	☐

Pneumonia	
Airway compromise	☐
Saturation <90%	☐
Hypotension (SBP <90 mm Hg)	☐

Asthma/COPD exacerbation	
Active congestive heart failure (CHF)	☐
Active pneumonia	☐
Brain-type natriuretic peptide >100 pg/ml	☐
Saturation <90%	☐
Cyanosis	☐
Bradycardia (heart rate [HR] <50 beats/min)	☐
Arrhythmias	☐
Hypotension (SBP <90 mm Hg)	☐
Confusion	☐

Risk factors for slow response to treatment: location: periorbital, scrotum, neck, over joints; failure of recent orally administered antibiotics; large area of erythema; chronic lymphedema/venous stasis; and immunosuppression.

IMPORTANT NOTES:

Figure 2. MOU/ED Rounding Template (MOU Exclusion by Diagnosis).

These tools represented a new type of patient selection process for our facility, which historically has relied on our patient placement department to assign beds to patients in the ED based on bed availability and acuity, rather than on specialty-specific care.

Results

Patient throughput at our facility is measured by ED LOS, which is from the time of admission in the ED to the patient's arrival to an assigned bed in the receiving unit. Baseline throughput data were collected prior to opening the MOU. Throughput data were collected after both phases. Observation patient throughput time was compared between patients placed in the MOU versus patients placed in any other unit in the organization.

Figure 3 illustrates the difference in ED LOS between observation patients admitted to MOU and observation patients admitted to other inpatient units. Since opening the MOU, patients had a shorter LOS in the ED, reflecting improved throughput (bar graph: ED throughput during study period).

The MOU was also able to demonstrate a shorter ED LOS through both interventional phases, despite

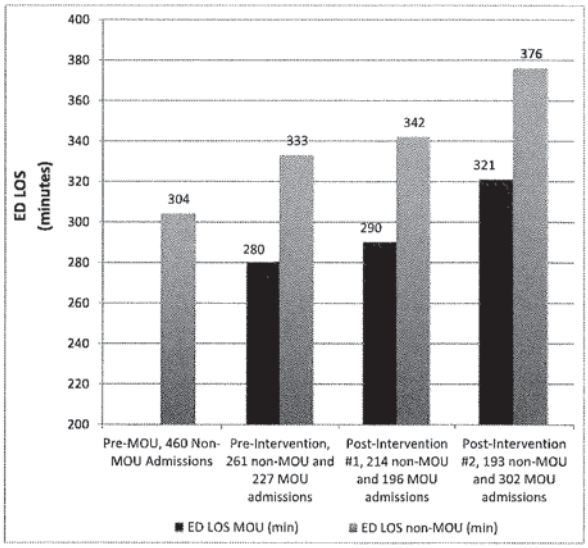

Figure 3. ED throughput during interventional phases. After phase 1 implementation, the MOU received observation status admissions from the ED with a 53-minute reduction (16%) in average overall ED LOS compared with observation patients admitted to other inpatient units. These ED LOS gains were sustained after each of the nurse-led interventions.

a rising volume of patients and ED LOS of observation patients placed outside the MOU. The MOU charge nurse patient selection process ensured that patients were identified in a timely fashion and booked to the MOU without the involvement of patient placement in decision making, eliminating time delays. Ambulance diversions and patients left without being seen were not significantly altered by the presence of MOU.

Discussion

Switching to an open MOU is attributable to the increase in census; however, ED and MOU charge nurse collaboration with patient selection also aided in increasing unit census with appropriate observation patients. Total volume of observation admissions fluctuated from 1 month to the next; however, a steady increase in the proportion of observation patients admitted to the MOU was seen from 46% in August 2014, to 52% in December 2014, to 61% in March 2015. The remaining observation patients were admitted to other units when MOU was full or when they had specific exclusion criteria.

The implementation of 2 separate nurse-initiated interventions resulted in a higher proportion of observation patients being admitted to the MOU. We were unable to demonstrate 1 initiative to be superior to the other and implemented both in our standard operating procedures. MOU has set a standard in the facility for streamlined, efficient movement of patients from the ED, which ideally will translate to similar findings for other units in the organization who adopt similar practices. For other facilities interested in improving flow through the ED to the floors, the MOU experience suggests that opening a dedicated observation space that actively "pulls" patients from the ED is a key practice for success.

The inability to affect ambulance diversions and patients left without being seen could be attributed to 2 factors. In 2015, our hospital experienced a volume surge of admitted patients creating a high daily census, a decreased bed capacity due to a unit renovation impacting 54 beds, and a higher percentage of patients evaluated in the ED requiring admission or observation. As the MOU continues to fill to capacity and renovated units reopened, ambulance diversions and the number of patients left without being seen by a physician decreased.

Patients treated in MOU benefited from the expedited testing and earlier discharge from the hospital. Since its inception, the MOU maintains significantly shorter LOS than observation patients housed in other units, particularly for chest pain and transient ischemic attack (TIA) diagnoses. MOU patients with chest pain have LOS 6 hours shorter than do chest pain patients elsewhere. After opening of MOU, TIA patients experienced decline in LOS from 48 hours to less than 24 hours. Our results correlate with previous literature that shows support for use of observation units in management of chest pain.[7] The use of observation units in managing TIA patients is also supported in the literature,[8] and our LOS for these patients is comparable with results for other observation TIA patients.[9] Opening a dedicated MOU also increases awareness of observation patients and the importance of grouping them together to achieve shorter LOS.

The MOU cohort of patients spends less time in the ED, decreasing overcrowding. In the current healthcare environment focused so heavily on cost containment, moving patients out of the ED, where care is more expensive,[6] benefits the institution financially. Once in the MOU, the hospital generates more revenue, since observation stays are billed at outpatient hourly rates, instead of DRG-related capitation payments. Compared with other hospitals of similar size and makeup, the cost of care in MOU at this institution ranks in the 43rd percentile, versus the 60th percentile for ED cost of care. In conjunction with successful throughput improvements, MOUs demonstrate sizable financial and efficiency gains and should be considered as a critical strategy to decrease the overcrowding of the ED while generating revenue.

Financial analysis of fiscal year 2015 revealed the top 5 diagnoses admitted to the MOU were unspecified chest pain, syncope and collapse, other chest pain, shortness of breath, and unspecified abdominal pain. These diagnoses were compared with the same top 5 diagnostic codes for all patients not seen in the MOU. This comparison allowed our facility to review outcomes from patients admitted through the ED/MOU to those who are directly admitted from the ED or bypassing the MOU. There was a 63% lower total cost variance between the patients being admitted through the MOU and those who were admitted to regular inpatient units. We also had a 1.82 average LOS reduction or 60% variance in patient days per case. The cost savings and days saved are significant for this population of patients who were placed in the MOU. During the period July 2014 to September 2014, the average direct cost savings per observation patient in the MOU was about $200 less than for observation patients in other areas. In addition, MOU observation patients had a 1.9% decrease in readmissions compared with observation patients in other areas. This decrease in readmissions translates to a cost savings of $200 per patient as well.

Limitations

Our study is not without limitations. First, our findings are based on 1 hospital observation unit, so it may not be fully representative of all observation units.

Second, our unit is less standardized than many closed observation units and may have more variation in the way care is prescribed. Third, our MOU has 23 beds, so any observation patients in excess of that did not benefit from the faster throughput through the ED because they were admitted to other units.

Conclusion

Our institutional experience with an MOU illustrates how grouping observation patients in a dedicated space is more efficient in decompressing the ED. Our MOU was able to demonstrate direct cost savings as well. In addition to the cost savings and improved throughput, the MOU's engagement of nurses in the additional nursing interventions allowed for a collaborative relationship between MOU and ED. This partnership achieves the goals of decompressing the ED quickly and getting patients to the MOU sooner, where they will benefit from the decreased LOS. While the MOU was very successful with throughput, further study is required to demonstrate whether patient satisfaction improved as a result of less time in ED and shorter LOS overall. Future studies for the MOU will gather patient engagement data to validate whether gains were also made there.

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