Health Care Transformation
and Strategic Planning
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JOHNS HOPKINS
MEDICINE

Kevin McDonald
Chief, Certificate of Need
4160 Patterson Avenue
Baltimore, Maryland 21215

09/28/2018

RE: Johns Hopkins Bayview Medical Center New Inpatient Building – Matter # 18-24-2414

Dear Mr. McDonald:

Enclosed are responses to your request for completeness information, received Wednesday, August 22, 2018.

I certify that this document will be sent to the Baltimore City Health Department, which is the local planning agency.

Thank you for your consideration of this application. I look forward to working with you and your staff during its review. I am available if you have any questions or would like additional information.

Sincerely,

Spencer Wildonger
Director of Health Planning
swildon1@jhmi.edu
443-997-0742

cc: Leana S. Wen, M.D., Health Commissioner, Baltimore City

CONSISTENCY WITH GENERAL REVIEW CRITERIA (COMAR 10.24.01.08G(3))

THE STATE HEALTH PLAN

COMAR 10.24.10 - ACUTE HOSPITAL SERVICES standards

Adverse Impact

1. Following up on your response to question 17:
   a) Was your calculation of the average rate comparison weighted by the volumes of each of the hospitals? (Note: Bon Secours and Midtown, two of the smaller hospitals, have some of the highest rates in the State.)

   b) In Exhibits CQ 17.1, 17.2, and 17.3, there was no overhead rate listed for supplies at Union Memorial Hospital. How does excluding Union Memorial's overhead rate for supplies affect the rate comparisons in Exhibits CQ 17.1, 17.2, and 17.3?

   c) In the response to question 58 JHBMC stated that its rehab patients were comingled with chronic patients. In the rate comparisons shown as Exhibits CQ 17.1, 17.2, and 17.3 JHBMC did not have an approved HSCRC rate for rehab patients. How does the comingling of chronic and rehab patients under an HSCRC-approved chronic rate at JHBMC affect the rate comparisons to other hospitals?

Applicant Response:

a) A straight average of unit rates across the peer group was used for each rate center. These are the hospitals deemed by the HSCRC to have rate structures most comparable to JHBMC.

b) In Exhibits CQ 17.1, 17.2, and 17.3, if the hospital does not have a unit rate or if the unit rate was not included in the statewide unit rate files published by the HSCRC, the hospital was excluded from the peer group average rate calculation. As a result, excluding Union Memorial's overhead rate for supplies has no effect on the rate comparison in Exhibits CQ 17.1, 17.2, and 17.3.

c) As stated, historically both Rehab and Chronic patients were included under the Chronic rate designation and billed for services accordingly. This combined use of the rate should not materially affect the rate comparisons, as the underlying cost structures are believed to be not substantially different for Rehab and Chronic patient care.

2. Following up on your response to question 19:

a) The total Baltimore City population shown for 2017 in Exhibit CQ 19.1 is significantly more than the Maryland Department of Planning's projected 2020 population of 616,000. Where was the data shown in Exhibit CQ 19.1 and CQ 19.2 sourced?

b) How did the opening of JHBMC's new outpatient facilities three years ago impact emergency room volumes, ambulance arrivals, and trauma cases?

c) Exhibit CQ19.2 shows that emergency room admissions from the Baltimore North region for the six-month period ending 6/30/17 was 45% higher than it was in the six-month period ending 76/30/16. Bayview attributed the volume increase to patients coming from outside Bayview's normal service area that used to be seen at other hospitals. Please profile where these incremental patients are coming from, and what diagnoses are most prevalent.

Applicant Response:

a) Data was compiled from Claritas Pop-Facts Premier estimates for Calendar 2013 (version 2013.1) and Calendar 2017 (version 2017.1). Calendar 2017 Claritas core-based statistical area (CBSA) data is within 0.2% of Maryland Department of Planning data Statewide and within 0.6% for Baltimore City. However, in Table CQ 19.1, JHBMC makes two changes to the "Baltimore City" definition: 1) JHBMC defines "Baltimore City-East" as its J-CHiP service area, which includes two zip codes, 21219 (Sparrows Point) and 21222 (Dundalk) which are technically outside of the Baltimore City definition. Zip code 21219 is entirely outside of the Baltimore City line, while zip code 21222 is partially within Baltimore City limits. 2) JHBMC excludes zip code 21225 (Brooklyn) due to the city line crossing through the middle of the zip code. Zip code 21225 is classified as Baltimore County-Anne Arundel. The following table provides a reconciliation to Maryland Department of Planning estimates:

Table

Summary of Population Growth
2013 to 2017

	Claritas	MD Dept of Planning	Claritas Above / (Below) MD Dept Planning
Baltimore City	**615,281**	**611,648**	**0.6%**
Less: Zip Code 21225, Brooklyn	(34,012)		
	581,269		
Add: Zip Code 21219, Sparrows Point	9,730		
Add: Zip Code 21222, Dundalk	57,113		
Revised Baltimore City	648,112		
All Other Maryland	5,416,061	5,440,529	
Total State	**6,064,173**	**6,052,177**	**0.2%**

b) JHBMC opened its expanded Emergency Department in March CY2015. After an initial ramp up period in 2015, ED visits grew substantially in 2016 and 2017. 2018 volumes through June 2018 are holding steady at 2017 levels. Overall, ED visits have increased 6% since the expansion opened.

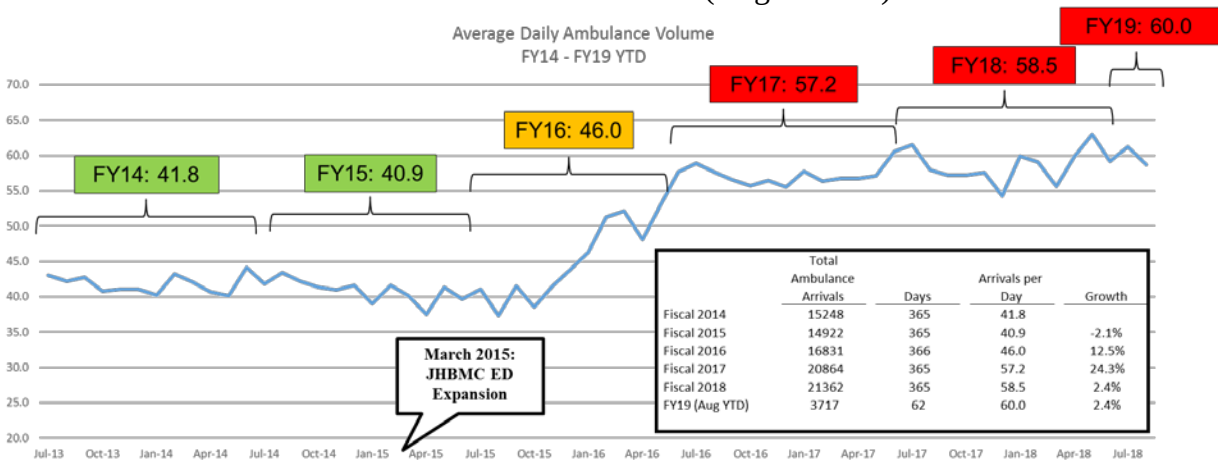
Table
Johns Hopkins Bayview Medical Center
Summary of ED Volume Growth
2014 to 2018 (June YTD Annualized)

	ED Admits		OP ED Visits		Total	
	Visits	Growth	Visits	Growth	Visits	Growth
2014	12,301		42,982		55,283	
2015	11,772	-4.3%	42,738	-0.6%	54,510	-1.4%
2016	12,042	2.3%	44,694	4.6%	56,736	4.1%
2017	12,875	6.9%	45,854	2.6%	58,729	3.5%
2018 (6 mos. Ann.)	12,794	-0.6%	45,904	0.1%	58,698	-0.1%
Cumulative Growth	**493**	**4.0%**	**2,922**	**6.8%**	**3,415**	**6.2%**

Source: CY2013 to CY2018 June YTD statewide experience data

JHBMC's ED expansion correlates with nearly 47% growth in daily ambulance arrivals from FY2015 to FY2019 August YTD. The opening of the ED corresponds with an initial ramp up period in ambulance arrivals, followed by substantial growth in FY2016 through FY2019.

Table
Johns Hopkins Bayview Medical Center
Trend of Ambulance Arrivals per Day
FY2014 to FY2019 (August YTD)



	Total Ambulance Arrivals	Days	Arrivals per Day	Growth
Fiscal 2014	15248	365	41.8	
Fiscal 2015	14922	365	40.9	-2.1%
Fiscal 2016	16831	366	46.0	12.5%
Fiscal 2017	20864	365	57.2	24.3%
Fiscal 2018	21362	365	58.5	2.4%
FY19 (Aug YTD)	3717	62	60.0	2.4%

Based on JHBMC's Trauma Registry Count, the number of Trauma activations over the last five years has increased nearly 67%, with Delta and Echo activations nearly doubling. From FY2015 to FY2016, the latest period data is available, Trauma volumes grew by 7.1%, with Echo activations growing by nearly 64%.

Table

Johns Hopkins Bayview Medical Center
Actual Trauma Registry Count by Level of Activation
FY2012 to FY2016

	FY2012	FY2013	FY2014	FY2015	FY2016	Cumulative Growth	Average Growth	Growth Since FY2015
Delta	757	524	726	974	904	19.4%	4.5%	-7.2%
Echo	420	576	436	813	1,332	217.1%	33.4%	63.8%
Total Activations	1,177	1,100	1,162	1,787	2,236	90.0%	17.4%	25.1%
Consult	79	137	80	2	-	-100.0%	-100.0%	-100.0%
ED Response	211	237	317	478	214	1.4%	0.4%	-55.2%
Not Valued	4	20	20	23	3	-25.0%	-6.9%	-87.0%
Total Registry Count	**1,471**	**1,494**	**1,579**	**2,290**	**2,453**	**66.8%**	**13.6%**	**7.1%**

c) Bayview's ED admissions growth in the Baltimore City-North region has been driven almost entirely by growth in zip code 21206. While only 5 miles from Bayview, patients residing in this zip code must drive more than 15 minutes to reach Bayview's ED. JHBMC's typical primary catchment area for emergency services is the zip codes within 15 minutes or less of its ED. All Baltimore City-North zip codes in which Bayview has experienced growth are well outside of this 15-minute drive time bubble. Growth at Bayview is primarily related to Psych/Substance Abuse, General Surgery, Trauma, Cardiac services, or Orthopedics (See Table for detail by DRG). Bayview's growth in ED admissions from Baltimore City-North is especially significant considering that overall, the ED visits for the region have declined by 332 cases. Bayview is the only hospital with significant growth in this region, while MedStar and LifeBridge hospitals have experienced significant decline.

Table

Johns Hopkins Bayview Medical Center
Baltimore City-North
ED Admissions Growth by Zip Code
January to June 2017

	ECMAD Growth				Case Growth			
ZIP	Jan-Jun 16	Jan-Jun 17	ECMAD Growth		Jan-Jun 16	Jan-Jun 17	Case Growth	
21206	347	478	132	38.0%	389	463	74	19.0%
21214	39	78	39	99.3%	43	83	40	93.0%
21239	25	46	21	84.7%	26	49	23	88.5%
21212	25	38	14	55.8%	26	41	15	57.7%
21211	8	15	7	81.7%	10	15	5	50.0%
21210	3	4	1	45.6%	2	5	3	150.0%
21251	-	-	-	0.0%	-	-	-	0.0%
21298	-	-	-	0.0%	-	-	-	0.0%
21209	7	4	(4)	-49.0%	9	6	(3)	-33.3%
Balt City-North	**454**	**663**	**209**	**46.2%**	**505**	**662**	**157**	**31.1%**

Table

Johns Hopkins Bayview Medical Center
Baltimore City-North
ED Admissions Growth by Product Line
January to June 2017

	ECMAD Growth				Case Growth			
APR DRG	January to June 2016	January to June 2017	ECMAD Growth		January to June 2016	January to June 2017	ECMAD Growth	
Psychiatry	8	28	20	237.4%	12	42	30	250.0%
General Surgery	34	87	52	153.3%	16	33	17	106.3%
Neurology	32	48	16	48.9%	40	56	16	40.0%
Substance Abuse	17	24	7	38.7%	43	59	16	37.2%
Trauma	8	30	22	287.5%	2	16	14	700.0%
Cardiology	48	66	18	36.9%	81	94	13	16.0%
Invasive Cardiology	7	30	23	345.5%	4	16	12	300.0%
Orthopedics	4	12	8	174.0%	6	17	11	183.3%
Otolaryngology	0	5	5	1375.0%	1	11	10	1000.0%
Orthopedic Surgery	17	36	18	105.3%	10	19	9	90.0%
Hematology	4	10	6	172.7%	6	12	6	100.0%
Oncology	8	13	5	69.5%	7	13	6	85.7%
Diabetes	7	12	5	75.2%	12	18	6	50.0%
Pulmonary	56	56	0	0.3%	60	65	5	8.3%
General Medicine	20	21	1	3.6%	25	28	3	12.0%
Vascular Surgery	7	10	3	39.6%	2	4	2	100.0%
Ventilator Support	-	12	12	0.0%	-	1	1	0.0%
All Other	176	163	(13)	-7.1%	178	158	(20)	-11.2%
Total Baltimore City-North	**454**	**663**	**209**	**46.2%**	**505**	**662**	**157**	**31.1%**

Baltimore City-North
ED Admissions Growth by Hospital
January to June 2017

		ECMAD Growth				Case Growth			
PROVNO	Hospital	January to June 2016	January to June 2017	ECMAD Growth		January to June 2016	January to June 2017	ECMAD Growth	
210029	Johns Hopkins Bayview Medical Center	454	663	209	46.2%	505	662	157	31.1%
210009	Johns Hopkins Hospital	1,023	1,041	19	1.8%	929	949	20	2.2%
210011	St. Agnes Hospital	86	88	2	2.2%	84	99	15	17.9%
210034	MedStar Harbor Hospital Center	23	37	14	59.9%	31	45	14	45.2%
210048	Howard County General Hospital	8	21	12	147.3%	13	17	4	30.8%
210002	University of Maryland Medical Center	262	301	39	14.7%	252	253	1	0.4%
210040	Northwest Hospital Center	84	74	(11)	-12.7%	104	93	(11)	-10.6%
210038	UMMC Midtown Campus	103	95	(8)	-7.7%	115	98	(17)	-14.8%
210015	MedStar Franklin Square Hospital Center	569	573	4	0.6%	650	630	(20)	-3.1%
210008	Mercy Medical Center	222	191	(30)	-13.7%	239	201	(38)	-15.9%
210044	Greater Baltimore Medical Center	628	529	(100)	-15.9%	712	637	(75)	-10.5%
210056	MedStar Good Samaritan Hospital	2,401	2,376	(25)	-1.1%	2,546	2,440	(106)	-4.2%
210012	Sinai Hospital	826	807	(19)	-2.3%	797	685	(112)	-14.1%
210024	MedStar Union Memorial Hospital	1,155	1,063	(92)	-8.0%	1,220	1,062	(158)	-13.0%
	All Other	753	754	1	0.1%	794	788	(6)	-0.8%
	Total Baltimore City-North	**8,598**	**8,612**	**14**	**0.2%**	**8,991**	**8,659**	**(332)**	**-3.7%**

Table

Johns Hopkins Bayview Medical Center
Baltimore City-North
ED Admissions Growth by DRG
January to June 2017

APR DRG	APR DRG CODE DESCRIPTION	ECMAD Growth January to June 2016	ECMAD Growth January to June 2017	ECMAD Growth		Case Growth January to June 2016	Case Growth January to June 2017	Case Growth	
				ECMAD Growth				ECMAD Growth	
194	HEART FAILURE	17	30	13	77.2%	20	35	15	75.0%
775	ALCOHOL ABUSE & DEPENDENCE	9	14	5	52.4%	19	31	12	63.2%
45	CVA & PRECEREBRAL OCCLUSION W INFARCT	10	23	13	124.8%	11	22	11	100.0%
710	INFECTIOUS & PARASITIC DISEASES INCLUDING HIV W O.R. PROC	5	37	31	575.1%	2	11	9	450.0%
174	PERCUTANEOUS CORONARY INTERVENTION W AMI	3	16	13	400.8%	2	9	7	350.0%
750	SCHIZOPHRENIA	3	8	5	207.8%	3	10	7	233.3%
751	MAJOR DEPRESSIVE DISORDERS & OTHER/UNSPECIFIED PSYCHOSES	2	6	4	268.2%	2	9	7	350.0%
342	FRACTURES & DISLOCATIONS EXCEPT FEMUR, PELVIS & BACK	1	6	4	299.7%	2	9	7	350.0%
201	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS	6	13	7	113.9%	11	17	6	54.5%
812	POISONING OF MEDICINAL AGENTS	2	8	6	386.6%	2	8	6	300.0%
420	DIABETES	7	12	5	75.2%	12	18	6	50.0%
135	MAJOR CHEST & RESPIRATORY TRAUMA	-	5	5	0.0%	-	6	6	0.0%
754	DEPRESSION EXCEPT MAJOR DEPRESSIVE DISORDER	1	4	3	315.1%	2	8	6	300.0%
134	PULMONARY EMBOLISM	2	7	6	280.3%	3	8	5	166.7%
58	OTHER DISORDERS OF NERVOUS SYSTEM	4	7	4	99.9%	5	10	5	100.0%
207	OTHER CIRCULATORY SYSTEM DIAGNOSES	1	4	3	573.2%	1	6	5	500.0%
753	BIPOLAR DISORDERS	1	4	3	514.7%	1	6	5	500.0%
861	SIGNS, SYMPTOMS & OTHER FACTORS INFLUENCING HEALTH STATUS	2	5	3	123.8%	4	9	5	125.0%
204	SYNCOPE & COLLAPSE	5	8	2	45.1%	10	15	5	50.0%
951	MODERATELY EXTENSIVE PROCEDURE UNRELATED TO PRINCIPAL DIA	-	14	14	0.0%	-	4	4	0.0%
711	POST-OP, POST-TRAUMA, OTHER DEVICE INFECTIONS W O.R. PROC	1	9	7	596.0%	1	5	4	400.0%
133	RESPIRATORY FAILURE	9	15	5	57.3%	7	11	4	57.1%
930	MULTIPLE SIGNIFICANT TRAUMA W/O O.R. PROCEDURE	-	5	5	0.0%	-	4	4	0.0%
663	OTHER ANEMIA & DISORDERS OF BLOOD & BLOOD-FORMING ORGANS	2	5	3	115.9%	4	8	4	100.0%
347	OTHER BACK & NECK DISORDERS, FRACTURES & INJURIES	1	4	3	191.3%	2	6	4	200.0%
115	OTHER EAR, NOSE, MOUTH,THROAT & CRANIAL/FACIAL DIAGNOSES	-	2	2	0.0%	-	4	4	0.0%
249	OTHER GASTROENTERITIS, NAUSEA & VOMITING	3	4	2	68.4%	4	8	4	100.0%
181	LOWER EXTREMITY ARTERIAL PROCEDURES	-	7	7	0.0%	-	3	3	0.0%
305	AMPUTATION OF LOWER LIMB EXCEPT TOES	-	7	7	0.0%	-	3	3	0.0%
308	HIP & FEMUR FRACTURE REPAIR	5	10	5	87.0%	3	6	3	100.0%
424	OTHER ENDOCRINE DISORDERS	1	5	4	389.6%	1	4	3	300.0%
660	MAJOR HEMATOLOGIC/IMMUNOLOGIC DIAG EXC SICKLE CELL CRISIS	-	4	4	0.0%	-	3	3	0.0%
757	ORGANIC MENTAL HEALTH DISTURBANCES	1	4	3	205.2%	2	5	3	150.0%
42	DEGENERATIVE NERVOUS SYSTEM DISORDERS EXC MULT SCLEROSIS	-	2	2	0.0%	-	3	3	0.0%
383	CELLULITIS & OTHER SKIN INFECTIONS	3	5	2	75.9%	5	8	3	60.0%
248	MAJOR GASTROINTESTINAL & PERITONEAL INFECTIONS	-	2	2	0.0%	-	3	3	0.0%
253	OTHER & UNSPECIFIED GASTROINTESTINAL HEMORRHAGE	-	2	2	0.0%	-	3	3	0.0%
111	VERTIGO & OTHER LABYRINTH DISORDERS	-	1	1	0.0%	-	3	3	0.0%
113	INFECTIONS OF UPPER RESPIRATORY TRACT	0	2	1	345.1%	1	4	3	300.0%
950	EXTENSIVE PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS	-	7	7	0.0%	-	2	2	0.0%
911	EXTENSIVE ABDOMINAL/THORACIC PROCEDURES FOR MULT SIGNIFIC	-	6	6	0.0%	-	2	2	0.0%
912	MUSCULOSKELETAL & OTHER PROCEDURES FOR MULTIPLE SIGNIFICA	8	13	5	70.3%	2	4	2	100.0%
192	CARDIAC CATHETERIZATION FOR OTHER NON-CORONARY CONDITIONS	1	5	4	295.2%	1	3	2	200.0%
315	SHOULDER, UPPER ARM & FOREARM PROCEDURES EXCEPT JOINT REP	-	4	4	0.0%	-	2	2	0.0%
952	NONEXTENSIVE PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS	-	3	3	0.0%	-	2	2	0.0%
314	FOOT & TOE PROCEDURES	1	4	3	257.1%	1	3	2	200.0%
48	PERIPHERAL, CRANIAL & AUTONOMIC NERVE DISORDERS	2	5	2	103.1%	4	6	2	50.0%
343	MUSCULOSKELETAL MALIGNANCY & PATHOL FRACTURE D/T MUSCSKEL	-	2	2	0.0%	-	2	2	0.0%
136	RESPIRATORY MALIGNANCY	2	4	2	118.4%	2	4	2	100.0%
191	CARDIAC CATHETERIZATION FOR CORONARY ARTERY DISEASE	-	2	2	0.0%	-	2	2	0.0%
144	RESPIRATORY SIGNS, SYMPTOMS & MINOR DIAGNOSES	1	3	2	124.4%	3	5	2	66.7%
281	MALIGNANCY OF HEPATOBILIARY SYSTEM & PANCREAS	-	2	2	0.0%	-	2	2	0.0%
137	MAJOR RESPIRATORY INFECTIONS & INFLAMMATIONS	7	8	1	21.0%	5	7	2	40.0%
244	DIVERTICULITIS & DIVERTICULOSIS	-	1	1	0.0%	-	2	2	0.0%
199	HYPERTENSION	1	2	1	236.1%	1	3	2	200.0%
774	COCAINE ABUSE & DEPENDENCE	-	1	1	0.0%	-	2	2	0.0%
47	TRANSIENT ISCHEMIA	-	1	1	0.0%	-	2	2	0.0%
380	SKIN ULCERS	1	2	1	101.5%	1	3	2	200.0%
755	ADJUSTMENT DISORDERS & NEUROSES EXCEPT DEPRESSIVE DIAGNOS	-	1	1	0.0%	-	2	2	0.0%
139	OTHER PNEUMONIA	4	5	1	19.3%	6	8	2	33.3%
770	DRUG & ALCOHOL ABUSE OR DEPENDENCE, LEFT AGAINST MEDICAL	2	2	(0)	-8.1%	7	9	2	28.6%
4	TRACHEOSTOMY W MV 96+ HOURS W EXTENSIVE PROCEDURE OR ECMO	-	12	12	0.0%	-	1	1	0.0%
175	PERCUTANEOUS CORONARY INTERVENTION W/O AMI	2	7	5	211.0%	1	2	1	100.0%
320	OTHER MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE PROCEDUR	2	7	4	184.7%	2	3	1	50.0%
23	SPINAL PROCEDURES	-	3	3	0.0%	-	1	1	0.0%
20	CRANIOTOMY FOR TRAUMA	-	3	3	0.0%	-	1	1	0.0%
466	MALFUNCTION, REACTION, COMPLIC OF GENITOURINARY DEVICE OR	1	3	3	270.9%	1	2	1	100.0%
247	INTESTINAL OBSTRUCTION	0	3	2	531.7%	1	2	1	100.0%
262	CHOLECYSTECTOMY EXCEPT LAPAROSCOPIC	-	2	2	0.0%	-	1	1	0.0%
223	OTHER SMALL & LARGE BOWEL PROCEDURES	-	2	2	0.0%	-	1	1	0.0%
724	OTHER INFECTIOUS & PARASITIC DISEASES	-	2	2	0.0%	-	1	1	0.0%
301	HIP JOINT REPLACEMENT	-	2	2	0.0%	-	1	1	0.0%
50	NON-BACTERIAL INFECTIONS OF NERVOUS SYSTEM EXC VIRAL MENI	-	2	2	0.0%	-	1	1	0.0%
	All Other DRGs	308	205	(103)	-33.5%	325	223	(102)	-31.4%
	Total Baltimore City-North	**454**	**663**	**209**	**46.2%**	**505**	**662**	**157**	**31.1%**

3. Following up on your response to question 23: Please provide an estimate of the impact on emergency room rates at JHBMC if volumes were to decrease by three percent annually due to population declines and improvements in managing patient care such as directing patients to lower cost alternatives as recommended by the HSCRC to reduce the total cost of care.

Applicant Response:

Table CQ 17.1 shows JHBMC's capital adjusted EMG rate of $60.6074 as 5% efficient compared to the stated peer group. As discussed in our response to question 23, due to the fixed revenue of nature of GBR, changes in volumes produce changes to unit rates as revenue remains constant. A three percent annual decrease in JHBMC ED volumes, assuming revenue remains constant, would produce a 3% annual increase to unit rates (assuming no adjustments for volume change). The impact of this change on JHBMC's efficiency to the peer group is dependent upon the utilization trends for that peer group. For example, it is reasonable to assume that the peer group hospitals will also experience declines related to lower cost alternatives and care management. If the peer group experiences utilization trends that are similar to JHBMC's experience, JHBMC will remain efficient to the peer group. However, if JHBMC and the peer group experience differential utilization trends, rate efficiency would change accordingly (again, assuming retention of volume and no adjustments). As shown in the following table, if JHBMC reduces utilization at a rate one percent faster than the peer group annually, JHBMC would reach the peer group average unit rate in five years. Similarly, JHBMC utilization reduction at a rate 2% faster than the peer group would produce a unit rate similar to the peer group in three years and 3% faster would produce rates equivalent to the peer group in two years

Table

Johns Hopkins Bayview Medical Center
Comparison of JHBMC's Efficiency to Peer Group
EMG Rate Center

FY2017 Roll Forward

	JHBMC						Peer Group Average [2]											
	A	B	C	D	E	F (D/B)	G	H	I [(F-H)*B]	J	K	L [(F-K)*B]	M	N	O [(F-N)*B]	P	Q	R [(F-Q)*B]
	Volume		Revenue		Capital Adjusted Rate		3% Annual Volume Reduction (No Differential Rate of Decline)			2% Annual Volume Reduction (1% Differential Rate of Decline)			1% Annual Volume Reduction (2% Differential Rate of Decline)			0% Annual Volume Reduction (3% Differential Rate of Decline)		
	Annual Growth Rate	Volume	Annual Growth Rate	Revenue	Annual Growth Rate	Capital Adjusted Rate	Annual Growth Rate	Rate	JHBMC (Favorable)/ Unfavorable to Avg Rate	Annual Growth Rate	Rate	JHBMC (Favorable)/ Unfavorable to Avg Rate	Annual Growth Rate	Rate	JHBMC (Favorable)/ Unfavorable to Avg Rate	Annual Growth Rate	Rate	JHBMC (Favorable)/ Unfavorable to Avg Rate
FY2017 EMG[1]		669,647		$40,585,564		60.6		63.8	($2,151,308)		63.8	($2,151,308)		63.8	($2,151,308)		63.8	($2,151,308)
Year 1	-3%	649,558	0%	40,585,564	3%	62.5	3%	65.8	(2,151,308)	2%	65.1	(1,698,297)	1%	64.5	(1,283,749)	0%	63.8	(869,202)
Year 2	-3%	630,071	0%	40,585,564	3%	64.4	3%	67.8	(2,151,308)	2%	66.4	(1,250,088)	1%	65.1	(433,802)	0%	63.8	374,441
Year 3	-3%	611,169	0%	40,585,564	3%	66.4	3%	69.9	(2,151,308)	2%	67.7	(806,630)	1%	65.8	398,891	0%	63.8	1,580,775
Year 4	-3%	592,834	0%	40,585,564	3%	68.5	3%	72.1	(2,151,308)	2%	69.1	(367,873)	1%	66.4	1,214,680	0%	63.8	2,750,918
Year 5	-3%	575,049	0%	40,585,564	3%	70.6	3%	74.3	(2,151,308)	2%	70.5	66,233	1%	67.1	2,013,909	0%	63.8	3,885,958
Year 6	-3%	557,797	0%	40,585,564	3%	72.8	3%	76.6	(2,151,308)	2%	71.9	495,738	1%	67.7	2,796,914	0%	63.8	4,986,946

Notes:
[1] Per Johns Hopkins Bayview CON Completeness Information (7/3/2018), Exhibit CQ 17.1
[2] Peer group defined as Sinai Hospital, Prince George's Hospital Center, Harbor Hospital Center, Bon Secours Hospital, Union Memorial Hospital, Union Memorial Hospital, Mercy Medical Center, JHBMC, UMMC

Construction Cost of Hospital and Non-Hospital Space

4. The response to question 26 indicates that the two transport elevators and the two material handling elevators will serve all floors from basement to penthouse, but the calculations that followed used eight floors for the freight elevators and seven floors for the material handling elevators. Please explain or correct this apparent discrepancy.

Applicant Response:

Both the freight/transport and freight/material handling elevators serve all floors from the basement to the penthouse. This constitutes seven stops. The transport elevators also serve the helipad which adds one additional stop. The number of stops and calculations as presented in the MVS calculations supplied with the first set of completeness questions are consistent with this.

5. The response to question 29 detailing the calculation of the demolition costs associated with both the site work and the connection of the new building to the existing structure includes a line item for permits, contingency, etc. Referencing that:

    a) How much of the adjustment for site demolition and how much of the adjustment for demolition of adjacent structure is for "etc."? What is included in the "etc." component of this line item and why is it part of the adjustment for each category of demolition?

    b) How much of the adjustment for site demolition and how much of the adjustment for demolition of adjacent structure is for estimated contingency? Explain the inclusion of an estimated contingency in each calculation given that the project contingency budget line item is not included in the MVS comparison.

Applicant Response:

The costs included in the line item titled "Permit, Estimating Contingency, Etc." are related to permit fees and a design development / estimating contingency. There is no assigned cost or scope or work for etc. The design development/estimating contingency is added to the estimated construction costs given the early stage of design. This is typically related to small scope changes that may occur over the remaining portion of design. The design development/estimating contingency is also used to address potential estimating changes that occur over the remaining design. The amount related to permit fees is calculated consistently with all permit fees for the project as explained in prior completeness question responses. The estimating / design development contingency is approximately 1.5% of the estimated construction costs for the extraordinary cost item.

6. Regarding the response to question 31 and the issue of whether it is appropriate to make adjustments for extraordinary basement cost, explain why the Commission should accept such a fundamental change in the calculation of comparison of project costs to an MVS benchmark. In responding to this question, please address the following:

   a) What differentiates this project from other hospital projects acted on by the Commission that included basement construction, and in which there were no similar adjustments for extraordinary costs in the MVS comparison?

   b) What specific cost items or categories will be incurred in constructing the basement that are not included in the MVS benchmark as adjusted for the departmental differential cost factor that was calculated by JHBMC?

   c) Cite any past Commission decision that included acceptance of such an adjustment.

Applicant Response:

We have not completed an extensive study of recent construction projects acted on by the Commission. In a similar manner, we have not studied all recent Commission decisions to understand who has requested extraordinary cost relief for the basement or the resulting Commission decision. As a result, we are unable to respond to parts a) and c) of this question.

As we studied the total cost of our project and compared it to the MVS allowable amount for the project, the basement was a clear outlier. While we understand that the department cost adjustment factor attempts to adjust for program variation between a typical hospital basement and the program included in our basement, the fact is that the adjustment falls woefully short. In our previous completeness question answers, we provided the calculations that support both the allowable department cost adjustment factor as well as the variation between the allowable amount and our estimated cost of the basement. The numbers clearly show that allowable MVS cost for the basement and the estimated project cost as prepared by out estimator are materially different. We believe that this is a reasonable and justifiable request and that it stands on its own based on the data provided.

7. The response to question 32 stated that the urban construction premium was calculated at 3% of the estimated new building construction cost plus $191,353 for permits, contingency, etc. Please respond to the following:

   a) What is the basis of the 3% figure used to calculate the urban construction premium and how was it calculated?

   b) How much of the $191,353 is for the "etc." component? What is included in this component and why is it part of the restricted site/urban premium adjustment?

   c) How much of the $191,353 is for estimated contingency? Explain the inclusion of an estimated contingency in this calculation given that the project contingency budget line item is not included in the MVS comparison.

Applicant Response:

Please see the discussion above in question 5 as it answers subparts b) and c) of this question.

The urban construction premium is related to restricted site conditions and the lack of adequate site space on this project. Section 99 page 1 of the MVS publication provides that complex/congested sites can be adversely impacted in the range of two to five percent of the construction cost. We believe that this project fits this criteria. The 3% is consistent with the MVS guidelines as well as prior CON submissions that cited extraordinary costs for Restricted Site Conditions.

8. Regarding the responses to question 35, please respond to the following:

a) Given that the multistory multiplier only applies at the rate of 0.5% for each floor over three above the ground, explain why a multistory multiplier of 1.015 was applied in calculating the MVS benchmark for the renovation of the upper floors when Table C indicates that renovations will only be performed on the first and third floor. Correct any error in this calculation.

b) The supporting calculation of the departmental differential cost factors used in calculating the MVS benchmarks for the renovation of the basement and the upper hospital floors shows a total of 27,791 SF for the basement and 21,563 SF for the two main hospital floors to be renovated. These totals are not consistent with the totals reported on the revised Table C, 34,739 SF for the basement and a total of 26,954 SF for the renovation of the two hospital floors. Please explain or correct this apparent discrepancy.

Applicant Response:

a) A revised MVS analysis is attached (Exhibit 1). It adjusts the multi-story multiplier from 1.015 to 1.01. The change results in a reduction of the blended renovation MVS allowable amount from $324.10 to $323.50.

b) A revised departmental gross square footage chart has been provided (see Exhibit 2) and the updated MVS for the renovations is based on the revised Departmental adjustment factors.

VIABILITY OF THE PROPOSAL

9. Following up on your response to question 41: Does JHBMC anticipate needing any additional HSCRC approved revenue increases within the next five years other than normal inflation and other adjustments in the annual update factor in order to fund additional staffing increases?

Applicant Response:

Bayview reserves the right to submit a full rate application to the HSCRC to fund any needed rate relief in the next five years for any circumstance.

10. Following up on your response to question 41: Please define in more detail the expense reductions or revenue enhancements (including additional rate increases, if any) that exceed the assumed capital rate increase that comprises the $36,075,000 in performance improvements.

Applicant Response:

JHBMC history has shown that in addition to the annual PI plans, other opportunities to improve operational outcomes emerge each year. These opportunities have manifested in many different forms such as; conversion of premium labor to payroll, elimination of external contracts, reduction in utilization patterns, and the lower average cost of workforce (i.e., replacement of retirees). As many of these items are the children of many team discussions and strategies, the details would not be well understood until a decision has been made to proceed as an operational initiative in each operating cycle.

11. Following up on your response to question 51: Please confirm that JHBMC is offering no assurance that the assumed capital rate increase will be the only revenue increase needed within the next five years other than normal inflation and other adjustments in the annual update factor?

Applicant Response:

Correct, Bayview is offering no assurance that the assumed capital rate increase will be the only revenue increase needed in the next five years other than inflation and other annual update factor adjustments.

12. Following up on your response to question 53: Will additional HSCRC approved revenue increases be required to fund the "Service Line Incremental Investment Expenses"?

Applicant Response:

As stated previously, with the exception of FY 2023 when the New Inpatient Building opens, these are investments that are available while still maintaining strong financial performance. Since these Service Line Incremental Investment Expenses are incorporated into the feasibility of the financial plan, JHBMC does not plan to request HSCRC funding for these items.

13. Following up on your response to question 54: Please provide a further explanation of how investments on pension assets will improve from a loss of $12.6 million in 2019 to a profit of $9.8 million in 2025? Will additional contributions to the pension fund be required to cause the increase in profitability?

Applicant Response:

The non-operating gain (loss) associated with JHBMC's pension is comprised of several components. Presented below is a schedule of these components with descriptions of the change in the components.

Pension Component	FY 2019 Budget	FY 2025 Projection	Difference
Interest costs	$ (18,269,000)	$ (25,511,000)	$ (7,242,000)
Expected return on assets	18,246,000	37,332,000	19,086,000
Amortization of net losses	(12,557,000)	(2,067,000)	10,490,000
Total gain (loss)	$ (12,580,000)	$ 9,754,000	$ 22,334,000

The interest costs increase with each year of completed service by employees. The expected return on the pension plan's assets reflects the expected long-term rate of return on the balance of investments in the plan. The amortization of net losses relate to changes in the projected benefit obligation due to changes in the discount rate and differences between the expected rate of return on assets and the actual rate of return that is earned. By fiscal year 2025, the amortization of actuarial losses will be nearly complete. In addition, the return on assets is expected to grow as the value of the plan assets grow.

The increase in return on assets and reduction in the amortization of net losses are the drivers of the change in the pension gain (loss).

14. Regarding question 56: Our completeness question on funding the pension liability amounts erred, citing the FY 2016 and FY 2017 audited financial statements when it should have referred to the FY 2015 and FY 2016 audited financial statements. We will rephrase the question: Between FY 2015 and FY 2017 JHBMC's pension liability increased by $32 million or an average of $16 million per year. Will JHBMC need additional approved rate increases from HSCRC in the future to fund additional pension liabilities due to the fact that the Hospital still has a defined benefit pension plan?

Applicant Response:

JHBMC is responsible to fund its own pension. As such, expenses related to the funding are included in JHMBC's financial projection. In that the funding of future pension liabilities is already fully funded in the financial projection, JHBMC does not plan to need to ask for any future GBR increases to fund future pension costs.

Exhibit 1

Johns Hopkins Bayview Medical Center - Central Utility Plant - Renovation

	I. The Marshall and Swift Guideline			**M&S Page #**
a	Type			
b	Construction Quality/Class		All	
c	Stories		2	for use in Perimtr Adj.
d	Perimeter		541	
e	Average Floor to Floor Height		33.63	
f	Square Feet		24,530	for use in Perimtr Adj.
	Average floor Area		12,265	
	A. Base Costs			Section 15-19
g	Basic Structure	$	374.00	Section 15-31
h	Elimination of HVAC cost for adjustment		0	Section 15-25
I	HVAC Add-on for Mild Climate		0	Section 15-25
j	HVAC Add-on for Extreme Climate		0	Section 15-25
k	**Total Base** Cost		$374.00	
	Adjustment for Departmental Differential Cost Factors		0.70	
	Adjusted Total Base Cost		$261.80	
	B. Additions			Section 15-36
l	Elevator (If not in base)		$0.00	Section 15-25
m	Other		$0.00	
n	**Subtotal**		$0.00	
o	**Total**		$261.80	
	C. Multipliers			15-37
p	Perimeter Multiplier		0.959303375	
q	Product	$	251.15	
				15-37
r	Height Multiplier		1.478425	
s	Product		$371.30	
				15-25
t	Multi-story Multiplier		1.000	
u	Product		$371.30	
	D. Sprinklers			15-36
v	Sprinkler Amount		$4.09	
w	**Subtotal**		$375.39	
	E. Update/Location Multipliers			99-3
x	Update Multiplier		1.03	
y	Product		$386.65	
				99-5

z	Location Multipier		1.01
aa		Product	$390.52
bb	**Calculated Square Foot Cost Standard**		**$390.52**

Johns Hopkins Bayview Medical Center - Basement- Renovation

I. The Marshall and Swift Guideline

				M&S Page #
a	Type		Hospital	Gen. Hospital or Conval. Hosp.
b	Construction Quality/Class		Good/A	
c	Stories		1	
d	Perimeter		-	for use in Perimtr Adj.
e	Average Floor to Floor Height		13.8	
f	Square Feet		34,739	
	f.1	Average floor Area	34,739	for use in Perimtr Adj.
	A. Base Costs			
g		Basic Structure	$162.00	Section 15-24 - 26
h		Elimination of HVAC cost for adjustment	0	Section 15-25
I		HVAC Add-on for Mild Climate	0	Section 15-25
j		HVAC Add-on for Extreme Climate	0	Section 15-25
k	**Total Base Cost**		$162.00	Section 15-25
	Adjustment for Departmental Differential Cost Factors		1.37	
	Adjusted Total Base Cost		$221.93	
	B. Additions			
l		Elevator (If not in base)	$0.00	Section 15-36
m		Other	$0.00	Section 15-25
n	**Subtotal**		$0.00	
o	**Total**		$221.93	
	C. Multipliers			
p	Perimeter Multiplier		0.92521225	15-37
q		Product	$205.34	
r	Height Multiplier		1.04	15-37
s		Product	$213.60	
t	Multi-story Multiplier		1.000	15-25
u		Product	$213.60	
	D. Sprinklers			
v		Sprinkler Amount	$0.00	15-36
w	**Subtotal**		$213.60	
	E. Update/Location Multipliers			
x	Update Multiplier		1.02	99-3
y		Product	$217.87	
z	Location Multipier		1.02	99-5
aa		Product	$222.23	
bb	**Calculated Square Foot Cost Standard**		**$222.23**	

Johns Hopkins Bayview Medical Center - Upper Floors - Renovation

I. The Marshall and Swift Guideline

				M&S Page #
a	Type		Hospital	Gen. Hospital or Conval. Hosp.
b	Construction Quality/Class		Good/A	
c	Stories		2	
d	Perimeter		582	for use in Perimtr Adj.
e	Average Floor to Floor Height		14.7	
f	Square Feet		26,954	
	f.1	Average floor Area	13,477	for use in Perimtr Adj.
	A. Base Costs			
g		Basic Structure	$374.00	Section 15-24 - 26
h		Elimination of HVAC cost for adjustment	0	Section 15-25
I		HVAC Add-on for Mild Climate	0	Section 15-25
j		HVAC Add-on for Extreme Climate	0	Section 15-25
k	**Total Base Cost**		$374.00	Section 15-25
	Adjustment for Departmental Differential Cost Factors		0.97	
	Adjusted Total Base Cost		$364.33	
	B. Additions			
l		Elevator (If not in base)	$0.00	Section 15-36
m		Other	$0.00	Section 15-25
n	**Subtotal**		$0.00	
o	**Total**		$364.33	
	C. Multipliers			
p	Perimeter Multiplier		0.95749315	15-37
q		Product	$348.84	
r	Height Multiplier		1.06	15-37
s		Product	$370.33	
t	Multi-story Multiplier		1.010	15-25
u		Product	$374.03	
	D. Sprinklers			
v		Sprinkler Amount	$3.77	15-36
w	**Subtotal**		$377.80	
	E. Update/Location Multipliers			
x	Update Multiplier		1.03	99-3
y		Product	$389.13	
z	Location Multipier		1.01	99-5
aa		Product	$393.03	
bb	**Calculated Square Foot Cost Standard**		**$393.03**	

The JOHNS HOPKINS BAYVIEW MEDICAL CENTER

RENOVATIONS

		MVS Benchmark	Sq. Ft.		Total Cost Based on MVS
Standard					
"Tower" Component		$393.03	26,954	$	10,593,624
Utility Building		$390.52	24,530	$	9,579,376
Basement		$222.23	34,739	$	7,720,073
Consolidated	**$**	**323.50**	86,223	$	27,893,072

Renovation - All Components

II. The Project

A. Base Calculations	**Actual**
Building	$27,885,000
Fixed Equipment	$0
Site Preparation	$0
Architectual Fees	$2,155,000
Permits	$303,000
Capitalized Construction Interest	Calculated Below
Subtotal	$30,343,000

B. Extraordinary Cost Adjustments

	Project Costs
Demolition & Abatement	$2,261,475
Remodel Premium	$4,968,863
Selective Demolition at the Loading Dock	$50,586
Extraordinary Basement program cost	$1,652,236
Restricted Site	$607,243
LEED Silver Green Building Premium	$733,784
MBE Participation Cost Premium	$733,784
Total Cost Adjustments	$11,007,970

C. Adjusted Project Cost	**Adjusted Project**
Building	$16,877,030
Fixed Equipment	$0
Site Preparation	$0
Architectual Fees	$1,304,285
Permits	$303,000
Subtotal	$18,484,315
Capitalized Construction Interest	$1,341,575
Total	$19,825,890

Per Sq. Foot
$323.41
$0.00
$0.00
$24.99
$3.51
Calculated Below
$351.91

Building
Building
Building
Building
Building
Building
Building

Per Square Foot

$195.74
$0.00
$0.00
$15.13
$3.51
$214.38
$15.56
$229.94

Exhibit 2

Department/Function	BGSF	MVS Department Name	MVS Differential Cost Factor	Cost Factor X SF
ACUTE PATIENT CARE				
Level 1				
Imaging	4,853	Radiology	1.22	5,921
Circulation	2,399	Internal Circulation, Corridors	0.6	1,439
	-			
Level 3	-			
Surgical Intensive Care	14,594	Inpatient Unit	1.06	15,470
Clean Core Connection	504	Central Sterile Supply	1.54	776
TBD	1,113	Unassigned Areas	0.5	557
Circulation	3,491	Internal Circulation, Corridors	0.6	2,095
Total	26,954		0.97	26,257

Basement

Department/Function	BGSF	MVS Department Name	MVS Differential Cost Factor	Cost Factor X SF
Level 01				
EVS	1,285	Housekeeping	1.31	1,683
Catering and Kitchen Storage	2,030	Dietary	1.52	3,086
Linen	2,946	Laundry	1.68	4,949
Tray Prep	2,673	Dietary	1.52	4,063
Food Service - Dry and Cold Storage	5,393	Storage and Refrigeration	1.6	8,629
Receiving	5,334	Storage and Refrigeration	1.6	8,534
MM Storage	6,634	Storage and Refrigeration	1.6	10,614
Office/Admin	1,634	Offices	0.96	1,569
Staff Amenities	1,889	Employee Facilities	0.8	1,511
Circulation	4,921	Internal Circulation, Corridors	0.6	2,953
	34,739		1.37	47,591