GALLAGHER
EVELIUS & JONES LLP
ATTORNEYS AT LAW

THOMAS C. DAME
tdame@gejlaw.com
direct dial: 410 347 1331
fax: 410 468 2786

August 25, 2015

VIA EMAIL & HAND DELIVERY

Ms. Ruby Potter
ruby.potter@maryland.gov
Health Facilities Coordination Officer
Maryland Health Care Commission
4160 Patterson Avenue
Baltimore, Maryland 21215

Re: Baltimore Washington Medical Center, Inc.
t/a University of Maryland Baltimore Washington Medical Center
Cardiac Surgery, Research, and Training Program
Docket No. 15-02-2361

Dear Ms. Potter:

On behalf of applicant Baltimore Washington Medical Center, Inc. *t/a* University of Maryland Baltimore Washington Medical Center, we are submitting six copies of its Response to Comments Submitted by Interested Parties in the above-referenced matter.

I hereby certify that a copy of this submission has been forwarded to the appropriate local health planning agencies as noted below. Thank you for your assistance.

Sincerely,

Thomas C. Dame

TCD:blr
Enclosures
cc: Kevin McDonald, Chief, Certificate of Need
Paul Parker, Director, Center for Health Care Facilities Planning & Development, MHCC
Suellen Wideman, Esq., Assistant Attorney General, MHCC
Jinlene Chan, M.D., Health Officer, Anne Arundel County (w/ enclosures)
Leana S. Wen, M.D., Health Commissioner, Baltimore City (w/ enclosures)
Leland D. Spencer, M.D, Health Officer, Caroline County (w/ enclosures)
Thomas J. McCarty, Acting Health Officer, Talbot County (w/ enclosures)
Maura J. Rossman, Health Officer, Howard County (w/ enclosures)
Joseph A. Ciotola, Jr., M.D., Health Officer, Queen Anne's County (w/ enclosures)

#536551
011598-0019

Robert A. Chrencik, President & CEO, UMMS
Hank J. Franey, Executive Vice President & CFO, UMMS
Megan J. Arthur, Esq., Senior Vice President & General Counsel, UMMS
Sandra H. Benzer, Esq., Associate Counsel, UMMS
Alison G. Brown, Senior Vice President & Chief Strategy Officer, UMMS
Dana Farrakhan, Senior Vice President, Strategy, Community and Business Development, UMMS
Scott Tinsley-Hall, Director of Strategy and Program Development, UMMS
Donald Steacy, Planning Project Manager, UMMS
Stephen T. Bartlett, M.D., Senior Vice President, System Program Integration and System Surgeon in Chief, UMMS
James S. Gammie, M.D., Chief, Division of Cardiac Surgery, University of Maryland School of Medicine
Janet Petit, Clinical Program Administrator, Division of Cardiac Surgery, UMMS
Keith D. Persinger, Executive Vice President & COO, UMMC
Karen Olscamp, President & CEO, UM BWMC
Kathy McCollum, Senior Vice President, Clinical Integration and COO, UM BWMC
Alfred Pietsch, Senior Vice President and CFO, UM BWMC
Becky Paesch, Senior Director, Strategic Planning and Physician Enterprise, UM BWMC
Daniel Donaldson, Director of Finance Decision Support, UM BWMC
Laurie Fetterman, Planning & Business Development Analyst, UMBWMC
Andrew L. Solberg, A.L.S. Healthcare Consultant Services
Jonathan Montgomery, Esq.
M. Natalie McSherry, Esq.
John T. Brennan, Jr., Esq.
Steve Schuh, County Executive, Anne Arundel County
Neil M. Meltzer, President & CEO, LifeBridge Health
Chet Burrell, President & CEO, CareFirst BlueCross BlueShield
Mike Pantelides, Mayor, City of Annapolis
Ella R. Aiken, Esq.

IN THE MATTER OF UNIVERSITY OF	*	
MARYLAND BALTIMORE WASHINGTON	*	BEFORE THE MARYLAND
MEDICAL CENTER	*	HEALTH CARE COMMISSION
Docket No. 15-02-2361	*	

* * * * * * * * * * * * *

UNIVERSITY OF MARYLAND
BALTIMORE WASHINGTON MEDICAL CENTER'S
RESPONSE TO COMMENTS SUBMITTED BY INTERESTED PARTIES

August 25, 2015

TABLE OF CONTENTS

University of Maryland Baltimore Washington Medical Center ("UM BWMC"), by its undersigned counsel and pursuant to COMAR § 10.24.01.08F, submits this response to the comments filed by interested parties addressing UM BWMC's Certificate of Need application.

ARGUMENT

I. UM BWMC SHOWS NEED FOR AN ADDITIONAL LOCATION OF AN EXISTING PROGRAM.

a. The proposed new cardiac surgery location at UM BWMC would largely serve existing demand within UMMS without significantly impacting other providers.

UM BWMC proposes to open another location of the UM Division of Cardiac Surgery, principally to shift appropriate patient volume within the UMMS system to UM BWMC for the convenience of patients and to reduce costs. UM BWMC's proposed program would have little impact on other existing cardiac surgery programs, and would respond to constituent desires for UMMS to open a cardiac surgery location in the southern Baltimore area.[1] UMMS already provides high-quality cardiac surgery services in the northern Baltimore area and in Baltimore City.[2] The proposed Glen Burnie surgery location is a logical complement to the existing UMMS network of cardiac surgery locations and outpatient surgery clinics for pre-and post-operative care. The proposed program is consistent with national and state health care goals to reduce the cost of care and enhance patient experience.

---

[1] Among many other letters of support, UM BWMC received numerous letters of support from existing cardiovascular patients who desire a more convenient location for services, but wish to experience the clinical excellence of the UM Division of Cardiac Surgery. *See* Exhibit 33.

[2] The UM Division of Cardiac Surgery also serves the Metropolitan Washington region in partnership with Dimensions Healthcare at Prince George's Hospital Center ("PGHC"). Without any factual support, Lifebridge Health, Inc. ("Lifebridge") questions the ability of the UM Division of Cardiac Surgery to support and develop programs at PGHC and UM BWMC simultaneously. (Lifebridge Comments at 3.) In fact, the UM Division of Cardiac Surgery is currently supporting three locations with strong quality measures. Moreover, the resurgence of the cardiac surgery program at PGHC is well underway and progressing positively. That program will be even more established by the time a new location may open at UM BWMC (if approved).

In FY 2018, UM BWMC projects a volume shift of 158 UMMS cases (151 cases from University of Maryland Medical Center ("UMMC") and seven cases from University of Maryland St. Joseph's Medical Center ("UM SJMC")), representing 69.3% of the total projected volume of 228 cases. Only 30.7% (70 cases) of the total volume would come from non-UMMS providers. (UM BWMC Appl., Exhibit 23.)

Comparatively, the program proposed by Anne Arundel Medical Center ("AAMC") relies entirely on shifting volume from existing unaffiliated hospitals with cardiac surgery programs. (AAMC Appl. at 92.) AAMC gives short shrift to the adverse impact its proposed program would cause. In particular, AAMC completely ignores the impact that its proposed program would have on PGHC. In FY 2018, AAMC projects a shift of 221 cases from the MedStar Washington Hospital Center cardiac surgery program, 65.5% of AAMC's total projected volume. AAMC projects shifting only 69 cases in FY 2018 from JHH, AAMC's supposed partner, or 31.2% of the projected 337 cases.

b. UM BWMC appropriately established need under the applicable Need Standard, COMAR § 10.24.17.05A(6).

Citing COMAR § 10.24.01.08G(3)(b), the generally applicable review criterion for need, MedStar Washington Hospital Center and MedStar Union Memorial Hospital (collectively, "MedStar") contend that UM BWMC and AAMC must demonstrate the unmet needs of the population to be served. (MedStar Comments at 5.) However, Criterion .08G(3)(b) expressly applies only where the State Health Plan does not specify a need analysis. Here, the applicable provisions of the State Health Plan specify exactly what an applicant must establish to show need for a new cardiac surgery program, and UM BWMC has met the standard.

COMAR § 10.24.17.05A(6) (the "Need Standard") does not require a showing of "unmet need," as MedStar asserts. Instead, it instructs applicants on how to address need.[3] That standard provides:

> **(6) Need**
>
> (a) An applicant shall demonstrate that a new or relocated program can generate at least 200 cardiac surgery cases per year based on projected demand for cardiac surgery by the population in its proposed service area and an analysis of the market share that the applicant expects to capture for each zip code area in the proposed service area. An applicant shall demonstrate the reasonableness of the assumptions relied upon in defining its proposed service area.
>
> (b) An applicant's need analysis for a new or relocated program shall account for the utilization trends in the most recent published utilization projections of cardiac surgery cases in Regulation .08 for:
>
> (i) The health planning region in which the applicant hospital is located; and
>
> (ii) Any other health planning regions from which it projects drawing, or from which available evidence indicates that it will draw, 20 percent of more of its patients.
>
> (c) An applicant's need analysis for a new program shall include current information about the number of patients referred for cardiac surgery following a diagnostic cardiac catheterization at the applicant hospital and address how this information supports the applicant's demonstration that the proposed new program can generate at least 200 cardiac surgery cases per year.
>
> (d) Closure of an existing program, in and of itself, is not sufficient to demonstrate the need to establish a new or replacement program.

COMAR § 10.24.17.05A(6).

Consistent with Section (a) of the Need Standard, UM BWMC demonstrated that it will generate at least 200 cases per year based on projected demand for cardiac surgery within the

---

[3] In the last CON review for a new cardiac surgery program – the 2005 review for the Metropolitan Washington region – the then existing State Health Plan chapter governing cardiac surgery programs did not include a section on need. The Commission applied the general review criterion for need (COMAR § 10.24.01.08(3)(b)), and determined that there existed need for a new program in the region despite that three of the six existing programs in the region did not meet the minimum volume standard of 200 cases per year. *In re Metropolitan Washington Open Heart Surgery Review,* at 83-84 (July 21, 2005).

population. UM BWMC then provided an analysis of the market share that it would achieve, by each zip code in the service area, explaining the bases of its assumptions.

Consistent with Section (b) of the Need Standard, UM BWMC accounted for the utilization trends in the Commission's most recently published utilization projections by reducing the projected use rates in accordance with the trends that Commission identified for the Baltimore / Upper Shore health planning region.

Consistent with Section (c) of the Need Standard, UM BWMC's analysis included current information about the number of patients referred for cardiac surgery following diagnostic catheterization and addressed how the information supported a conclusion that UM BWMC will reach 200 cases per year.

The Need Standard does not require applicants to address existing capacity.[4] Yet MedStar's arguments about need are premised upon its position that there exists sufficient capacity for cardiac surgery. MedStar simply subtracts the number of cases in one year from the number in another year and identifies that as "available capacity," an approach that has no regulatory basis and is not relevant to the Need Standard.

II. UM BWMC MEETS THE MINIMUM VOLUME STANDARD (COMAR § 10.24.17.05A(1))

a. AAMC's analysis of proximity of residents in Northern Anne Arundel County is incorrect and irrelevant.

AAMC challenges the volume of cardiac surgery cases that likely will come to UM BWMC from zip codes 21225, 21090, 21226, 21227, and 21075 because AAMC claims

[4] COMAR § 10.24.17.05A(2) requires an applicant to demonstrate the impact of the proposed cardiac surgery program on existing providers. This is the only requirement to address existing capacity.

these zip codes are closer to UMMC than to UM BWMC. (AAMC Comments at 4.) However, the residents living in these zip codes are not materially closer to UMMC, as AAMC alleges.

Based on drive time information provided by Spatial Insights and presented in Table 33 below, AAMC's contention is incorrect for two of the five zip codes (21090, 21226), and the difference in time from the other three zip codes to the two hospitals is no more than three to five minutes.[5] As a physician and a patient determine the hospital location for the patient's cardiac surgery, a difference of only three to five minutes in travel time is immaterial and irrelevant to the decision.

Table 33
Drive Time (Minutes) Between Zip Codes and Hospitals

Zip Code	21075	21090	21225	21226	21227
UM BWMC (a)	17.1	10.75	10.77	11.47	12.53
UMMC (b)	14.13	10.9	7.23	12.5	7.63
Variance (c = a-b)	2.97	-0.15	3.54	-1.03	4.9

A more accurate indication of the hospital preferences for patients in these zip codes is presented in Table 34 below. In fiscal year 2014, more than 10% of the patients in these zip codes went to UM BWMC for all their inpatient services while only 7% went to UMMC. This is true for all inpatient services combined, as well when excluding the most severe cases (those with a severity of illness ("SOI") at level 4 (extreme). UM BWMC's market share of cardiology services, in total and excluding the most severe cases, is even greater. The allocation of cardiology market share between UM BWMC and UMMC is an appropriate example of how

[5] The City of Annapolis also makes an inaccurate assertion regarding distance between hospitals. It argues that UM BWMC is not as good of an option for its residents because, in part, it is only "6 miles to the south" of UMMC. June 27, 2015 Comments of the City of Annapolis, p. 2. UM BWMC, measuring in a straight line, is 10.3 miles south of UMMC, and is a minimum of 13.5 miles from UMMC by car. (Source: Google Maps.) Also, on a straight line, UM BWMC is only 11.5 miles from the Annapolis city limits.

patients in these five zip codes will choose UM BWMC over UMMC for cardiac surgery, especially when excluding the most severe cases.

Table 34
Summary of FY2014 Inpatient Discharges and Market Share
Zip Codes 21075, 21090, 21225, 21226, 21227

Hospital	All Hospital Discharges		Cardiology Discharges	
	Total	Excl. Level 4 SOI	Total	Excl. Level 4 SOI
BWMC	1,606	1,491	86	83
UMMC[(1)]	1,116	980	46	32
AAMC	341	338	4	4
PGHC	12	11	2	2
Other	12,286	11,444	648	612
Total[(2)]	15,361	14,217	786	733

Hospital	All Hospital Market Share		Cardiology Market Share	
	Total	Excl. Level 4 SOI	Total	Excl. Level 4 SOI
BWMC	10.50%	10.50%	10.90%	11.30%
UMMC [(1)]	7.30%	6.90%	5.90%	4.40%
AAMC	2.20%	2.40%	0.50%	0.50%
PGHC	0.10%	0.10%	0.30%	0.30%
Other	80.00%	80.50%	82.40%	83.50%
Total [(2)]	100.00%	100.30%	100.00%	100.00%

Note 1: Includes Greenebaum Cancer Center
Note 2: Excludes Shock Trauma Center

b. UM BWMC appropriately discounted documented expected cardiologist referrals, and AAMC did not.

AAMC's criticism of UM BWMC's cardiology referral volume relies on assumptions that, if valid, would apply as well to AAMC's cardiology referral volume and render AAMC's volume well below the 200 case minimum, while UM BWMC's referral volume would remain greater than 200 cases and comply with the standard. AAMC's criticism also misapplies assumptions that UM BWMC relies on in connection with other projections, such as projections of market share and volume shift in a manner that is not supported or supportable by UM BWMC's data or statements.

First, AAMC criticizes UM BWMC's assumption of a 10% increase in cardiology referrals at The Heart Center of Northern Anne Arundel (the "Heart Center") as "speculative," and argues that this "does not represent a tangible referral source and should not be counted." UM BWMC documented 81 referrals from the Heart Center, and projected an additional eight cases, based on the addition of a new cardiologist to the practice, and the representation that the new cardiologist would also refer patients from UM BWMC's service area to UM BWMC. (UM BWMC May 6, 2015 Completeness Responses, p. 2.) While UM BWMC stands behind this assumption, UM BWMC meets the minimum volume standard on the basis of its referral volume alone even without the inclusion of these additional eight cases.

Furthermore, AAMC's criticism of UM BWMC's failure to document these eight cases is inconsistent with AAMC's reliance on 422 cardiology referrals and documentation of only 260 of those referrals. UM BWMC agrees that the Commission should rely only on those referrals that the applicant has documented.[6] If, as the parties appear to agree, the Commission should rely only on documented and not "speculative" referrals, then AAMC's referral volume should be reduced to 260 cases, and UM BWMC's to 304. Table 35, following, shows the documented base referral volume for each applicant (before applying any reduction factors).[7]

---

[6] A more complete discussion of AAMC's failure to document its referral volume is presented on pages 6-10 of UM BWMC's Comments on AAMC's application, and is incorporated here by reference.

[7] The numbering of tables and exhibits in this submission follow sequentially from the CON application, completeness responses, and modification to CON application.

Table 35
Documented Referrals to UM BWMC and AAMC
Based on FY 2014 Volume

AAMC			UM BWMC		
Cardiology Referral Sources		**Documented Refs. (practice total)** [1]	**Cardiology Referral Sources**		**Documented Refs. (to UM BWMC)**
AAMC Cardiology Specialists	105	50	Arundel Heart Associates	71	71
Annapolis Card. Consultants	105	110	Heart Center of N. Anne Arundel Cty	89	81
Chesapeake Cardiac Care	27	32	Chesap. Cardiology at Shore Health	57	57
Bay Cardiology	10	10	UM SOM Div. of Cardiovascular Med.	54	54
Chestertown Cardiology	55	58	Maryland Heart Associates	41	41
Cardiology Associates	120	0			
Total, 6 practices	**422**	**260**	**Total, 5 practices**	**312**	**304**

Source: AAMC Appl., p. 79; AAMC March 30, 2015 Completeness Response, Exh. 17(a); UM BWMC Appl. at p. 45. and Exh. 24.

Note 1: AAMC documented the total number of referrals made by the practice in the prior year, rather than the number of cases the doctors anticipated referring to AAMC. AAMC then applied a reduction based on the language of the referral, i.e., whether the doctor indicated he or she would refer "all," "some" patients. This reduction has not been made to the referrals documented above, and will be addressed below.

AAMC and UM BWMC both agree that these referrals must be discounted by the projected net rate of decline in utilization. (UM BWMC May 6, 2015 Completeness Response, p. 2; AAMC July 27, 2015 Comments, p. 7.) However, AAMC applies the Commission's projected use rate decline to UM BWMC's referrals, rather than the smaller use rate decline AAMC itself projects for its service area.[8] For purposes of projecting minimum volume and need, UM BWMC does not contest the Commission's projected use rate decline or total percent discharge decline for the Baltimore / Upper Shore Region. However, it is inappropriate to compare the applications using different rates of decline. If the Commission's projections are determined to be correct, they will be correct for both applicants, and the projected decline will impact the proposed projects equally. Alternatively, if AAMC's projected decline is determined

[8] Although AAMC has asserted that it used the Commission's utilization projection methodology, its projected use rate decline is less than the Commission's projections for the Baltimore / Upper Shore Region and the Metropolitan Washington Region. Without more information, UM BWMC could not validate how AAMC projected its use rates.

to be correct, that decline would apply equally to the proposed projects. Thus, it is most appropriate to compare the referrals of each project applying the same net discharge decline rate.

Similarly, AAMC's criticism that UM BWMC must account for severity of illness in its referrals applies equally to AAMC, since AAMC also expects to treat patients of about the same severity/acuity. (AAMC Comments at 13.) Table 36 below shows the documented referral volume of each applicant, after reducing for declining utilization and screening out cases of extreme severity.

Table 36
Documented Referral Volume,
with Reduction for SOI
FY 2014 Actual, FY 2018 Projected

	AAMC			UM BWMC		
	FY 2014 Documented Referrals *to any Hospital*	**FY 2018 MHCC Discharge Decline Rate [1]** (FY 2014 - 10.08%)	**FY 2018 AAMC Discharge Decline Rate [2]** (FY 2014 -4.45%)	**FY 2014 Documented Referrals *to UM BWMC***	**FY 2018[3] MHCC Discharge Decline Rate [1]** (FY 2014 - 10.08%)	**FY 2018[3] AAMC Discharge Decline Rate [2]** (FY 2014 -4.45%)
Documented Referrals	260	234	248	304	273	290
Applying 17% SOI Reduction	216	194	206	252	227	241

Note 1: Net discharge decline, incorporating use rate decline and population growth, as projected by MHCC and published in the Maryland Register, Vol. 42, Issue 3 (Feb. 6, 2015).
Note 2: Net discharge decline, incorporating use rate decline and population growth, as projected by AAMC. AAMC March 30, 2015 Completeness Response, pp. 15-16. Although AAMC has asserted that it used the Commission's utilization projection methodology, its projected use rate decline is less than the Commission's projections.
Note 3: Although UM BWMC's projections indicate that the second full year of operation will be FY 2017, it is now apparent that this is not possible. AAMC should not object to UM BWMC's use of FY 2018 as a comparison point. Because both MHCC and AAMC project that net discharge rate will decline each year, the use of FY 2017 for UM BWMC would result in higher volume.

AAMC next criticized UM BWMC for not reducing its cardiology referrals for patient and physician preference. UM BWMC's referrals, however, necessarily account for physician preference, because physicians indicate that they expect to refer the cases in UM BWMC's service area, which are documented, to UM BWMC. (UM BWMC Appl., p. 45 & Exh. 24.)

AAMC correctly notes that UM BWMC's volume projections assume that 80% of non-severe cases that it currently transfers to UMMC will shift to UM BWMC. This assumption,

however, cannot be appropriately applied to cardiology referrals. UM BWMC's volume projections refer to all patients from the proposed service area who had cardiac surgery at UMMC in FY 2014 ("UMMC volume"). The UMMC volume includes patients referred to UMMC by cardiologists who have not offered letters of support to the proposed project, and patients who were transferred to or otherwise operated on at UMMC for any reason. UM BWMC's cardiologists' referrals are based on a different patient population – patients from the service area who were referred for cardiac surgery by the named cardiologists to any hospital ("referral volume").

There is nothing inconsistent with UM BWMC's assumption that physicians who estimate they expect to refer a certain number of cases to UM BWMC will likely do so. These referrals will overlap to some extent with the 80% shifting volume from UMMC, but will not overlap completely. In addition, AAMC's criticism is not credible because its own application recognizes the difference between these data sets. For example, AAMC assumes that 50% of the patients in its service area who currently have surgery at Johns Hopkins Hospital ("JHH") will have their surgeries at AAMC. Yet, AAMC predicts that it will receive 50%, 75%, or 90% of the cardiology referrals made by the practices listed in its application based on the language in the various referral letters. To argue credibly that the 80% assumption that UM BWMC applies to UMMC's FY 2014 discharges of patients from UM BWMC's proposed service area should apply to UM BWMC's expected referrals based on letters of support from cardiology practices, AAMC would have to apply its own 50% assumption regarding JHH's FY 2014 discharges of patients from AAMC's proposed service area to its expected referrals based on letters of support

from cardiology practices. Of course, AAMC did not do this, because the assumption does not concern the same data set.[9]

UM BWMC concedes that, even after reducing for SOI, not every referral from a cardiologist will result in a surgery, and a patient might occasionally prefer to go to a hospital other than the one his or her cardiologist recommends. However, UM BWMC does not believe this number is significant. AAMC does not appear to have calculated this percentage for its own referrals. AAMC does project that referrals stating a cardiologist will refer "all" or "significantly all" of his or her volume to AAMC will result in a volume of 90% of the total referral volume for that practice. AAMC does not indicate whether this 10% reduction reflects SOI, patient preference, or no need for surgery. Although UM BWMC believes a 10% reduction would greatly overstate the volume reduction attributable to patient preference or no need for surgery, UM BWMC's documented cardiology referrals would result in sufficient volume to meet the minimum volume standard even if this reduction is applied.

In order to compare UM BWMC and AAMC on a level basis, one must first account for physician preference in AAMC's documented referrals. Unlike UM BWMC, which documented the number of referrals a physician expected to make to UM BWMC, AAMC documented the total number of referrals a physician made, and then applied a percentage to those referrals based on the qualifying language of the cardiologist. For the purposes of making an even comparison,

---

[9] For similar reasoning, AAMC's attempt to reduce UM BWMC's cardiology referrals by the 70% percent market share shift UM BWMC expects from UMMC in FY 2017, as projected in Exhibit 24, to UM BWMC's referral volume is not valid. AAMC is comparing two different discharge populations – UMMC total discharges, and the patients who the named cardiology practices refer to any hospital. There is no reason why UM BWMC's assumption regarding one patient population must be applied to the other, nor does AAMC offer any support. AAMC does not apply its own market shift assumptions to its cardiology referrals, except the tenuous and unsupported assumption that the percentage of referrals by the practice to AAMC will increase year to year, with the cardiologist's support language as the base of the initial percentage of total referrals that AAMC expects to receive.

UM BWMC first applied a 100% referral rate to cardiologists who indicated that they would refer all or significantly all of their patients to AAMC. For those cardiologists who qualified their referrals with language such as "most" or "a majority," UM BWMC applied the assumption AAMC used in its application. Table 37 below shows the referral volume for each applicant after applying a physician preference reduction.

Table 37
Documented Referral Volume, with Physician Preference Reduction
FY 2014 Actual

AAMC				UM BWMC			
Cardiology Referral Sources	**Documented Referrals[1]**	**% to be Referred**	**No. to be Referred**	**Cardiology Referral Sources**	**Documented Referrals[1]**	**% to be Referred**	**No. to be Referred**
AAMC Cardiology Specialists	50	100%	50	Arundel Heart Associates	71	100%	71
Annapolis Card. Consultants	110	100%	110	Heart Center of N. AA Cty.	81	100%	81
Chesapeake Cardiac Care	32	75%	24	Chesap. Card. at Shore Health	57	100%	57
Bay Cardiology	10	100%	10	UM SOM Div. of Card.-vasc. Med.	54	100%	54
Chestertown Cardiology	58	50%	29	Maryland Heart Associates	41	100%	41
Cardiology Associates	0	75%	0				
Total, 6 practices	**260**		**223**	**Total, 5 practices**	**304**		**304**

Note 1: See table X, supra

As shown in Table 38 below, even applying the reductions previously discussed, plus a reduction of 10% for patient preference and referrals that do not result in surgery (UM BWMC reiterates that this percentage is overstated), UM BWMC has sufficient volume from documented referrals alone to support its application, while AAMC does not.

Table 38
Documented Referral Volume,
with Reductions for Physician Preference, SOI, Patient Preference, and No Need for Surgery
FY 2014 Actual, FY 2018 Projected

	AAMC			UM BWMC		
	FY 2014 Documented Referrals	**FY 2018 MHCC Discharge Decline Rate** (FY 2014 - 10.08%)	**FY 2018 AAMC Discharge Decline Rate** (FY 2014 -4.45%)	**FY 2014 Documented Referrals**	**FY 2018 MHCC Discharge Decline Rate 1** (FY 2014 - 10.08%)	**FY 2018 AAMC Discharge Decline Rate** (FY 2014 -4.45%)
Documented Referrals	260	234	248	304	273	290
Physician Preference Reduction (see Table 37)	223	201	213	304	273	290
17% SOI Reduction	185	166	177	252	227	241
10% Patient Pref./No Surg.	167	150	159	227	204	217

c. UM BWMC can document minimum volume based on inpatient transfers from the hospital, and AAMC cannot.

AAMC argues that "the most fundamental difference between BWMC's projections and AAMC's projections for cardiac surgery is BWMC's reliance on projected demand vs. AAMC's reliance on existing in-house demand at AAMC." (AAMC July 27, 2015 Comments, p. 8.) Specifically, AAMC notes that UM BWMC identified 97 patients as having received a cardiac catheterization at UM BWMC who later required procedures that could have been performed at UM BWMC if it had a cardiac surgery program. AAMC misleadingly compares these 97 to its 234 "existing in-house demand."

UM BWMC's application identified 144 patients who had diagnostic catheterization procedures at UM BWMC and were subsequently referred for CABG.[10] (UM BWMC Appl., p. 60.) In response to the Commission's completeness questions, UM BWMC stated that 107 of these 144 patients were transferred/admitted to UMMC. (UM BWMC March 30, 2015 Completeness Response, p. 18.) Of the 107 patients transferred/admitted to UMMC, 89 had surgery, and 72 of those surgeries could have been performed at UM BWMC in the proposed program; the remaining 17 surgeries had an extreme SOI. *Id.* UM BWMC further stated that it does not have data regarding the 37 patients who were transferred/admitted to other hospitals, but it applied the same 67% rate as an assumption to determine that a total of 97 of the 144 patients could have had their surgeries performed at UM BWMC under the proposed program. *Id.* [11]

---

[10] UM BWMC's application incorrectly identified 145 patients. (UM BWMC Appl., p. 60). UM BWMC corrected this to 144 patients in its March 30, 2015 Completeness Response, p. 18.

[11] Since responding to completeness questions, UM BWMC thoroughly examined every relevant patient chart to determine the actual disposition for each patient. Thus, the information about inpatient and outpatient transfers provided in the rest of this response is based on actual data, not assumptions.

AAMC's "existing in-house demand" is not comparable to the 97 patients described above, as it is based on a larger population of patients than those who had diagnostic catheterization procedures at AAMC, and it includes patients transferred or referred for surgeries other than for coronary artery bypass graft ("CABG"). Furthermore, AAMC's existing in house demand is based on unsupported assumptions regarding the percentage of referred or transferred patients who actually had surgery, whereas UM BWMC's analysis is based on actual experience. An accurate comparison, discussed below, should compare similar patient populations. In addition, the comparison should not penalize an applicant for using actual experience rather than unsupported assumptions. Thus, the discussion below compares like categories of patients, and analyzes each hospital under both AAMC's unsupported surgery assumptions and UM BWMC's actual experience.

AAMC alleges 205 inpatient and 19 outpatient transfers for cardiac surgery, for a total of 224 transfers, a population that AAMC's comments refer to as its "existing in-house demand."[12] AAMC appears to have derived this number by calculating the number of inpatient and outpatient transfers to a cardiac surgery hospital with a product line code of cardiology or cardiac surgery, and validating the transfer and the reason for the transfer by reviewing individual patient records. UM BWMC replicated this analysis to identify an "existing in-house demand," as defined by AAMC, of 208 patients, as compared to AAMC's 224 patients, demonstrating similar

---

[12] AAMC, referring to its Chart 45, alleges that in FY 2014, 162 AAMC inpatients and 72 AAMC outpatients needed transfer to a hospital with cardiac surgery, for a total of 234 patients requiring transfer for cardiac surgery. (AAMC Interested Party Comments, p. 8; AAMC March 30, 2015 Completeness Response, Chart 45, p. 2.) Chart 45, identifies 205 inpatient transfers and 19 outpatient transfers, totaling 224. Although Chart 45 also identifies 234 patients as requiring surgery, after AAMC's unsupported surgery assumptions are applied, AAMC's comment refers to transferred patients, not surgical cases. Because AAMC's comments continue "stated simply, AAMC has documented a total of 234 patients who were served at AAMC and required *transfer* to a cardiac surgery performing hospital", UM BWMC assumes AAMC intends to compare the total number of cases transferred from AAMC – 224.

volume for the two hospitals. Table 39 below demonstrates the results of the comparative analysis, showing the number of surgical cases that would result from each program under AAMC's surgery assumptions.

Table 39
Surgery Cases Resulting from Transfers and Referrals Applying AAMC Surgery Assumptions
AMMC, UM BWMC FY 2014

	Transfers/Referrals			Resulting Surgeries[3]	
Recorded Reason for Inpatient Transfer	**AAMC[1]**	**UM BWMC[2]**	**AAMC Surg. Assumption[1]**	**AAMC**	**UM BWMC**
CABG	52	93	100%	52	93
Unspecified surgery	15		100%	15	0
Surgery (Valve)	9		100%	9	0
Evaluation for valve surgery	3	1	50%	1.5	0.5
Cardiac Cath for cardiac surgical eval.	95	62	50%	47.5	31
Evaluation for cardiac surg. based on dx	25	28[4]	50%	12.5	14
Eval. for cardiac cath/Valve	4		50%	2	0
Evaluation for cardiac cath/CABG	1		50%	0.5	0
N/A	1		0%	0	0
Total Inpatient Transfers	**205**	**184**		**140**	**138.5**
Outpatient Transfers	**19**	**24**	**100%**	**19**	**24**
Total Transfers ("Existing in-House Demand")	**224**	**208**		**159**	**162.5**
Outpatient Referrals for Surgery	**79**	**50**	**95%**	**75.1**	**47.5**
TOTAL, TRANSFERS AND REFERRALS[5]	**303**	**258**		**234**	**210**

Note 1: AAMC March 30, 2015 Completeness Responses, Chart 45, p. 2.
Note 2: Review of all inpatient transfers with a cardiology product line and all transfers from the cardiac catheterization lab after a patient received an outpatient catheterization, as well as patients who were sent home with a referral for cardiac surgery.
Note 3: Tenths of a percentage are shown for all numbers where the tenth decimal place number was other than 0. The final result (Total, Transfers and Referrals), was rounded to the nearest whole number.
Note 4: These 28 cases include some valve surgery transfers. Valve surgeries are not separately classified, but are included in the category description "other cardiac therapy without CABG or PCI."
Note 5: Although AAMC did not refer to its outpatient referrals in its discussion of current demand, UM BWMC identified its own outpatient referral volume in order to complete the comparison to AAMC's Chart 45.

In addition, as UM BWMC explained in its comments on AAMC's application, AAMC's assumptions of percentages for surgeries appear arbitrary and unsupported. (UM BWMC Interested Party Comments, pp. 11-12.) UM BWMC completed a detailed review of patient records to identify the actual treatment each patient received instead of assuming whether a patient had surgery. Of the 208 transferred patients, UM BWMC identified 103 confirmed

surgeries; of the 50 outpatient referrals, UM BWMC confirmed 43 actual surgeries, totaling 146 actual confirmed cases. UM BWMC was not able to confirm the result of 7 out of its 258 cases, or 2.7%. The results of UM BWMC's review are detailed in Exhibit 51. Table 40, below, applies the resulting percentages to the total transfers and referrals, except where noted.

Table 40
Surgery Cases Resulting from Transfers and Referrals Applying UM BWMC Actual Experience
AMMC, UM BWMC FY 2014

	Transfers/Referrals		Resulting Surgeries[1]		
Recorded Reason for Inpatient Transfer	**AAMC**	**UM BWMC**	**UM BWMC**	**UM BWMC Surg. Rate[2]**	**AAMC**
CABG	52	93	74	79.57%	41.4
Unspecified surgery	15			0%[3]	0
Surgery (Valve)	9			100%[4]	9
Evaluation for valve surgery	3	1	1	100%	3
Cardiac Cath for cardiac surgical eval.	95	62	3	4.84%[5]	4.6
Evaluation for cardiac surg. based on dx	25	28	5	17.86%	4.5
Eval. for cardiac cath/Valve	4			50%[4]	2
Evaluation for cardiac cath/CABG	1			50%[4]	0.5
N/A	1			50%[4]	0.5
Total Inpatient Transfers	**205**	**184**	**83**		**65.4**
Outpatient Transfers	**19**	24	20	83.33%	**15.8**
Total Transfers ("Existing in-House Demand")	**224**	208	103		**81.3**
Outpatient Referrals for Surgery	**79**	50	43	86%	**67.9**
TOTAL, TRANSFERS AND REFERRALS	**303**	**258**	**146**		**149**

Source: Review of all inpatient transfers with a cardiology product line and all transfers from the cardiac catheterization lab after a patient received an outpatient catheterization, as well as patients who were sent home with a referral for cardiac surgery. Each patient record was reviewed in UM BWMC's electronic medical record (Epic).

Note 1: Tenths of a percentage are shown for all numbers where the tenth decimal place number was other than 0. The final result (Total, Transfers and Referrals), was rounded to the nearest whole number. Because UM BWMC's results are based on confirmed surgery cases, all UM BWMC results are whole numbers.

Note 2: Unless otherwise noted, this percentage is based on UM BWMC's confirmed actual experience. A hospital by hospital breakdown of these cases is attached as Exhibit 51. UM BWMC was not able to determine the outcome of 7 of 258 of its transfers and referrals (2.7%), and assumed no surgery for these cases.

Note 3: For the "unspecified surgery" category UM BWMC rejected AAMC's 100% assumption of surgery and gave that category no weight. In UM BWMC's review of transfers, which had a cardiology or cardiac surgery product line code with a reason of transfer for surgery, UM BWMC identified some transfers that were actually vascular surgery. UM BWMC did not include these transfers in its existing volume count. AAMC should be required to explain what its "unspecified surgery" category means, whether it includes patients transferred for vascular surgery, and whether it could possibly include a cardiac surgery result.

Note 4: UM BWMC did not have transfers that fit into some the "reason categories" that AAMC defined, therefore in, all but one of those categories UM BWMC applied AAMC's original assumptions. *See* AAMC March 30, 2015 Completeness Responses, Chart 45, p. 2.

Note 5: Within the category "cardiac cath for cardiac surgical evaluation," it is likely that many catheterization patients were transferred during the time UM BWMC and AAMC provided elective PCI services under a waiver granted by the Commission because of the clinical restrictions of the waiver. To assume 50% of these patients had cardiac surgery, absent supporting details or confirmation, is unreasonable. Based on a review of actual data, UM BWMC determined that only 5% of its patients who fell into this category actually had cardiac surgery.

d. UM BWMC's market share assumptions are reasonable.

AAMC questions whether UM BWMC will achieve sufficient market share to shift the projected cardiac surgery cases from non-UMMS hospitals to UM BWMC. (AAMC Comments at 9-10.) As explained in response to completeness questions, UM BWMC reasonably expects to achieve a market share in the cardiac surgery service area that is approximately equivalent to UM BWMC's current market share of 50% for cardiology in its HSCRC service area. In addition, the market share of UMMS-affiliated hospitals in the proposed cardiac surgery service area demonstrates that a new location of the UM Division of Cardiac Surgery at UM BWMC can reasonably, if not conservatively, expect to achieve a 50% market share for cardiac surgery.

As shown in Exhibit 52, UMMS has a 51% market share for cardiology (which UMMS describes internally as "cardiovascular medicine") throughout the proposed UM BWMC cardiac surgery service area, including a 47.8% market share in Anne Arundel County and a 77.5% market share in the Mid Shore counties, an area that AAMC claims is too distant for UM BWMC to expect any significant volume. By contrast, AAMC's cardiology market share in the UM BWMC cardiac surgery area is only 22.9%.

UM BWMC's market share projections are reasonable based on the strength of its membership in UMMS, which will provide numerous strengths and advantages, including a powerful referral network throughout the proposed cardiac surgery service area.

e. UM BWMC appropriately discounted for severity of illness.

AAMC's suggestion that UM BWMC's projections should account for an increased percentage of Extreme SOI cases, which UM BWMC's proposed program will not accept, is

without merit. AAMC attaches two articles that compile data from 1991-2008 and 1990-1999 and find an increase in the prevalence of risk factors for mortality over the periods studied. UM BWMC, however, calculated the SOI level of FY 2014 cases in the proposed service area. The articles, compiling data from at least six years prior to the data reviewed by UM BMWC, cannot support a finding that there is a current increasing trend of Extreme SOI cases.

Furthermore, while the articles may suggest an overall increase in the prevalence of risk factors, AAMC did not convincingly demonstrate that the increases noted in the studies demonstrated an increase in percentage of overall cardiac cases defined as "Extreme." The risk factors could have resulted, for example, in an increase of "Major" severity cases from "Moderate," or could not have affected the breakdown of SOI at all. In addition, just as AAMC speculates that the expected rise in the prevalence of mortality risk factors for cardiac surgery might increase extreme SOI cases, one could also posit that the "new technology and less invasive procedures" that AAMC touts in its application will drive down extreme SOI cases. (AAMC Appl. at p. 137.) The health care system's increased emphasis on prevention and chronic disease management can also lead to reductions in extreme SOI. Without significant data, there is no basis to accept AAMC's mere speculation over UM BWMC's assumption based on actual experience.

Even if AAMC could demonstrate that there will be some increase in the percentage of cases with an Extreme SOI, UM BWMC's application of a 17% SOI reduction was conservative – only 15.5% of the cases UM BWMC referred to UMMC in in FY 2014 were extreme SOI cases. (UM BWMC Responses to April 22, 2015 Completeness Questions at 2-3.)

Lastly, AAMC's criticism employs calculations inconsistent with AAMC's own application. For example, AAMC assumes a lower net discharge decline rate, yet accepts

UM BWMC's use of the Commission's projection (which would result in fewer cases) to UM BWMC's projected FY 2017 discharges. Also, like UM BWMC, AAMC will not accept Extreme SOI level cases, yet AAMC does not make any reduction for SOI in its application. (AAMC Comments at 13.)

III. UM BWMC MEETS THE COST EFFECTIVENESS STANDARD (COMAR § 10.24.17.05A(4))

UM BWMC modified its CON application on August 10, 2015 to reflect that UM BWMC and UMMC commit to accept 50% revenue variability for cardiac surgery cases shifted from UMMC to UM BWMC, despite that the agreement between UMMS and the Health Services Cost Review Commission regarding Global Budget Revenue ("GBR") permits revenue to be redistributed among UMMS affiliated hospitals without applying a revenue variability factor (the "Modification"). The Modification will improve the cost effectiveness of the proposed addition of a new location of the UM Division of Cardiac Surgery at UM BWMC. UM BWMC's explanation of the cost effectiveness of its proposal appears in replacement text included in the Modification.[13]

[13] As explained in the Modification, and contrary to AAMC's contention, UM BWMC would not charge materially more than AAMC for each cardiac surgery case. (UM BWMC Modification, Replacement Text for Cost Effectiveness Standard.) AAMC used the traditional "charge per case" approach for estimating its charges, and UM BWMC used the "rate center" approach. When the same approach is used for each applicant, the charges are similar. Using the rate center approach, which is based on unit rates approved by the HSCRC, the applicants' charges are projected to be within 2.5% ($50,749 for AAMC and $51,952 for UM BWMC). (Compare Exhibit 49 and 50.) Apparently, CareFirst BlueCross BlueShield and the City of Annapolis relied upon AAMC's inaccurate comparison of cost effectiveness when identifying AAMC as a more cost effective provider.

IV. UM BWMC'S PROPOSAL IS FINANCIALLY FEASIBLE (COMAR § 10.24.17.05A(7)).

a. Using AAMC's flawed revenue assumptions, the addition of UM BWMC as a new location of the UM Division of Cardiac Surgery would be financially feasible standing alone.

AAMC incorrectly assumes the HSCRC will permit a cardiac surgery program in Anne Arundel County to increase revenue at a level equivalent to 85% of charges rather than the new 50% variable cost factor for market share adjustments. (AAMC Comments at 15, footnote 42.) UM BWMC did not incorporate an 85% revenue variability assumption into its financial projections, but rather assumes the HSCRC's stated use of a 50% variable costs factor when determining the GBR market shift adjustments for rate year 2016 in its memorandum dated July 17, 2015 will apply for any new cardiac surgery program in Anne Arundel County. (*See* Exhibit 5 to UM BWMC's Comments on the AAMC application)

However, if UM BWMC were to receive an increase in its expected cardiac surgery related revenue at a level equivalent to 85% of charges, it would realize an increase in its projected net operating revenue of approximately $3 million, which would result in a positive operating income in each year of the new location as a stand-alone program, as presented in Table 41 below. To be clear, UM BWMC does not agree with AAMC's assumption of 85% revenue variability. Rather, for illustration purposes only, Table 41 shows the financial feasibility of UM BWMC as a stand-alone location using AAMC's revenue assumption.

Table 41
Impact of 85% Revenue Variability
On UMBWMC Financial Performance

Financial Performance	FY2017	FY2018	FY2019
UMBWMC Net Operating Revenue			
Net Operating Revenue @ 50% Revenue Variability (CON)	$ 3,853,826	$ 4,304,654	$ 4,695,754
Net Operating Revenue @ 85% Revenue Variability	$ 6,551,504	$ 7,317,912	$ 7,982,782
Increase in Net Operating Revenue	$ 2,697,678	$ 3,013,258	$3,287,028
UMBWMC Operating Income			
Operating Income @ 50% Revenue Variability (CON)	$ (1,875,522)	$ (2,108,705)	$ (2,378,919)
Increase in Net Operating Revenue	$2,697,678	$3,013,258	$ 3,287,028
Operating Income @ 85% Revenue Variability	$ 822,156	$904,553	$ 908,109

b. With the addition of UM BWMC, the UM Division of Cardiac Surgery, as a program, will remain financially feasible.

As noted above, UM BWMC modified its CON application. The Modification includes replacement text in response to the Financial Feasibility Standard (.05A(7)), which explains that the combination of UM BWMC and UMMC will remain financially feasible (i.e., excess revenues will exceed expenses) with the addition of UM BWMC as a new location for the program. Also, using AAMC's incorrect assumption of 85% revenue variability would improve the financial performance of the program.

c. UM BWMC accurately projected its staffing expense.

Both AAMC and MedStar raise questions about UM BWMC's staffing projections. UM BWMC's staffing model was developed carefully with the guidance and consultation of the UM Division of Cardiac Surgery clinical leadership, including Dr. James Gammie, Chief of the UM Division of Cardiac Surgery, Tina Cafeo, DNP, RN, Director of Nursing and Patient Care Services for UMMC, and Mary Evans, MS, RN, Nurse Manager for the Cardiac Surgery Intensive Care Unit and Stepdown Units at UMMC. Each of these clinical leaders has extensive experience in the proper staffing of cardiac surgery programs. Their collective expertise ensured that UM BWMC identified all clinical and administrative areas needed to support a

cardiac surgery program location for 270 cases per year (as projected through FY2021). The affidavits of Dr. Gammie, Ms. Cafeo, and Ms. Evans are attached collectively as Exhibit 53.

AAMC asserts that UM BWMC may overestimate the extent to which staff can be shared with UMMC, noting that UM BWMC intends to use certain existing UMMC staff on a part-time basis, including a part-time director of perfusionist services, shared perfusionists, support and training services from UMMC cardiac team nurses, and contracting for cardiac surgery coverage with UMMS surgeons. (AAMC Comments at 16.) This sharing of resources is one of the major benefits of UM BWMC being a fully integrated member hospital in UMMS. UM BWMC has the ability to shift costs and share resources instead of adding incremental positions and expenses as would be required in a stand-alone hospital or in a less integrated "partnership" like the one AAMC proposes with JHM.

MedStar's identification of alleged gaps in UM BWMC's staffing model (MedStar Comments at 19) reflects MedStar's misunderstanding of the Manpower Information Table (Table L). *See* Exhibit 33. Specifically, MedStar apparently overlooked the staffing expense items disclosed in Table L as "Direct Care Staff" under the heading "Contractual Employees." In this category, UM BWMC included perfusionist staffing ($166,000), anesthesia contract services ($141,650), and CT assistants ($250,000). The projected staffing for a .25 FTE perfusionist and a .2 FTE physician – which MedStar claims is grossly insufficient – represents only oversight services, not clinical services. Thus, the oversight service expenses were included under the heading "Administration," not "Direct Care."

MedStar also states that "both parties should be required to document the full staffing plans and related costs of their proposed cardiac surgery programs including the contract provisions for specialized staff." (MedStar Comments at 20.) Again, MedStar misread

UM BWMC's Manpower Information Table and disregarded the staffing information set forth in UM BWMC's application. UM BWMC details, at pages 14 through 28 of its application, the existing cardiovascular facilities and services at UM BWMC, as well as the new facilities and services needed to support the proposed addition of cardiac surgery services.

To address MedStar's assertions, Exhibit 54 summarizes UM BWMC's staffing projections. It corrects the information contained in MedStar's Table 3 (page 18) with an added column to explain the staffing categories MedStar questions. The positions included in Exhibit 54 are the incremental positions required for the addition of UM BWMC as a proposed new location of the UM Division of Cardiac Surgery (i.e., those positions needed in addition to existing staffing).[14]

Regarding physician services, as discussed in UM BWMC's CON application, at p. 20, physician services will be contracted through the University of Maryland School of Medicine ("UM SOM") for surgery and anesthesia services. The UM Division of Cardiac Surgery currently is staffed with 12 surgeons. Two are assigned to the UM SJMC on a full time basis, and two other surgeons operate one to two days each week. One surgeon is assigned to PGHC on a full time basis, and two other surgeons are privileged at PGHC for part time coverage. Nine surgeons operate at UMMC and assist with coverage at UM SJMC and PGHC.

Individual surgeon volumes vary from a current 125 to 400 per physician. Physicians at UM SJMC carry a case load of approximately 200 cases per physician, per year. Accounting for the 150 cases projected to shift from UMMC to the new UM BWMC location in FY 2021, and

---

[14] After examination and consultation, UM BWMC determined that incremental staffing was not required in the following departments: Cardiac Rehab, Respiratory Therapy, Radiology, Hospitalists, Intensivists, Nutritional Services, Transport Services, Business Office, HIM and the Maryland Vascular Center (outpatient clinic location).

the availability of current staff to increase their current volumes, the projected UM BWMC volumes can be covered with current staffing.

The outpatient practice also will include a fulltime nurse practitioner employed through the University of Maryland Community Medical Group. The expenses (and associated revenue) for clinical services provided to patients by surgeons, anesthesiologists, and practice based nurse practitioner are not incurred by UM BWMC. Thus, the revenue and expenses for these services are not included in the projections for the proposed project.

Finally, MedStar points to the Joint Commission's Proposed Requirements for Comprehensive Cardiac Center Certification Program ("CCCM") and asserts that both applicants fail to include key personnel and other expenses in their staffing plans. (MedStar Comments at 20.) This assertion is false as to UM BWMC. The CCCM is a proposed certification program – it has not been adopted. Also, the Joint Commission describes the proposal as "requirements for an optional advanced certification program for Comprehensive Cardiac Centers in accredited hospitals." *See* http://www.cardiovascularbusiness.com/topics/practice-management/joint-commission-outlines-rules-comprehensive-cardiac-centers (last accessed August 13, 2015). Notwithstanding the proposed and optional character of the CCCM, UM BWMC's staffing plan complies with the recommendations, as detailed in the attached Exhibit 55.

d. The cost of UM BWMC's proposed project is not underestimated by the amount of an earlier unrelated operating room project.

AAMC suggests that UM BWMC's Project Budget (Table E) for the proposed project should include the capital costs associated with the addition of three larger replacement operating rooms (approved by the Commission on January 14, 2015) (the "OR Project"). However, as explained in UM BWMC's responses to completeness questions, the OR Project was unrelated to

the present project and was not necessary to create capacity for a cardiac surgery service. (UM BWMC Responses to March 10, 2015 Completeness Questions at 1-2.)

Indeed, the OR Project did not create any additional surgical capacity. The proposed cardiac surgery service will use two large operating rooms that were constructed pursuant to a CON granted almost six years ago and have been in service for several years. Table 18, reproduced below, shows that the addition of cardiac surgery will not require additional surgical capacity. Specifically, Table 18 shows negative demand for surgical capacity after UM BWMC dedicates 1.5 operating rooms for cardiac surgery.

Table 18
Analysis of UM BWMC Operating Room Capacity
After Addition of Cardiac Surgery Services

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Total OR Cases	11,356	11,438	11,499	10,723	10,852	10,982	11,114	11,247	11,382
Annual % Change	-2.9%	0.7%	0.5%	-6.7%	1.2%	1.2%	1.2%	1.2%	1.2%
Minutes/Case	102.4	106.8	110.0	108.4	108.4	108.4	108.4	108.4	108.4
Minutes	1,162,526	1,221,703	1,264,755	1,162,710	1,176,662	1,190,782	1,205,071	1,219,532	1,234,166
TAT Min/Case	25	25	25	25	25	25	25	25	25
TAT Minutes	283,900	285,950	287,475	268,080	271,297	274,552	277,847	281,181	284,555
Total Minutes	1,446,426	1,507,653	1,552,230	1,430,789	1,447,959	1,465,334	1,482,918	1,500,713	1,518,721
Current Optimal Capacity	1,653,000	1,653,000	1,653,000	1,653,000	1,653,000	1,653,000	1,653,000	1,653,000	1,653,000
Difference	(206,574)	(145,347)	(100,770)	(222,211)	(205,041)	(187,666)	(170,082)	(152,287)	(134,279)
Optimal Capacity/OR	114,000	114,000	114,000	114,000	114,000	114,000	114,000	114,000	114,000
Needed ORs	(1.81)	(1.27)	(0.88)	(1.95)	(1.80)	(1.65)	(1.49)	(1.34)	(1.18)

Reproduced from Response to Completeness Question 1(c).
Note: To analyze the impact on the other ORs, UM BWMC removed: (a) the projected cardiac surgery cases from the "Total OR Cases" line; and (b) the minutes for 1.5 existing ORs from the "Current Optimal Capacity" line.

Noting that Table 18 shows that UM BWMC's minutes per case have been increasing, AAMC disputes UM BWMC's forecast that OR minutes per case would decrease in FY 2015. In fact, contrary to AAMC's contention, OR minutes per case dropped in FY 2015, to 108.7/case, within .3 minutes of UM BWMC's projection.

However, the more relevant statistics are total OR case volume and OR minutes. As shown in Table 42 below, total OR minutes at UM BWMC has dropped as a result of many

inpatient cases transitioning to ambulatory cases, and many ambulatory cases moving out of the hospital ORs to outpatient surgery centers.

Table 42
UM BWMC Operating Room Capacity
FY 2012 – FY 2015 (Actual)

	Patient Class	FY12	FY13	FY14	FY15
Total Cases	Inpatient	4,515	4,675	4,903	4,486
	Outpatient	6,841	6,763	6,596	6,282
	Grand Total	**11,356**	**11,438**	**11,499**	**10,768**
	Patient Class	**FY12**	**FY13**	**FY14**	**FY15**
Total Minutes	Inpatient	629,667	662,122	709,202	644,284
	Outpatient	532,859	559,581	555,553	526,200
	Grand Total	**1,162,526**	**1,221,703**	**1,264,755**	**1,170,484**
	Patient Class	**FY12**	**FY13**	**FY14**	**FY15**
Minutes/Case	Inpatient	139.46	141.63	144.65	143.62
	Outpatient	77.89	82.74	84.23	83.76
	Grand Total	**102.37**	**106.81**	**109.99**	**108.7**

Source: UM BWMC internal data

As a result of the reduction in hospital OR utilization, which UM BWMC fully expected, UM BWMC requires no additional OR capacity to accommodate the proposed cardiac surgery program, and the recent OR project was not necessary to support a new cardiac surgery service at UM BWMC.

e. The reduction of the need for charity care due to the implementation of the Affordable Care Act will not materially reduce revenue.

AAMC argues that the global budget revenue methodology of payment mandates a reduction in revenue for a hospital when its charity care declines. AAMC provides no support for this assertion, and there is none. There is no provision in the UMMS GBR Agreement with the HSCRC (which includes UM BWMC as part of the integrated system) that would require a reduction in revenue on account of reduced charity care.

Like all hospitals, UM BWMC is experiencing a decline in charity care due to the expansion of Medicaid coverage under the Affordable Care Act. However, the charity care reduction has produced increases in insurance payments as more Marylanders are insured. In FY

2015 UM BWMC experienced a decrease in charity care with no material adverse effect on revenue.

V. THE ACCESS STANDARD IS NOT APPLICABLE, BUT THE PROPOSED UM BWMC LOCATION FOR THE UM DIVISION OF CARDIAC SURGERY PROVIDES BETTER GEOGRAPHIC ACCESS THAN A STAND ALONE CARDIAC SURGERY PROGRAM AT AAMC.

AAMC states that UM BWMC and AAMC agree that Anne Arundel County needs a cardiac surgery program. (AAMC Comments at 18.) UM BWMC's position is that the UM Division of Cardiac Surgery needs another location at UM BWMC to more conveniently and cost effectively serve the many cardiovascular patients who already seek care from UMMS-affiliated hospitals throughout the UM BWMC proposed cardiac surgery service area.

The geographic proximity of a cardiac surgery hospital is not a critical factor for patients electing a cardiac surgery provider.[15] This is because patients generally choose health care providers based upon established relationships, convenient access to the full continuum of care, and the recommendations of family and friends who have used similar services. As discussed in Section II.d., UMMS has a dominant market share for providing cardiology services in the UM BWMC proposed cardiac surgery service area. The patients who rely upon UMMS facilities and clinicians today for their cardiovascular care will not likely switch to AAMC for cardiac surgery merely because it may be a closer facility.

Recent cardiac surgery case volumes originating from the Mid Shore counties (Kent, Caroline, Talbot, and Queen Anne's Counties) show an overwhelming preference for UMMS-affiliated cardiac surgical programs despite comparable drive times and geographic proximity to other cardiac surgery hospitals. UMMS has a combined 59.5% market share in the mid-shore

---

[15] The Commission recognizes that "[g]eographic access to cardiac surgery services . . . is not a problem in Maryland, with respect to patient travel time or survival." COMAR 10.24.17.03 at p. 11.

counties. (UM BWMC Comments on AAMC Application at 17, Table 3). UMMS-owned and UMMS-affiliated cardiology practices are located in Easton, Cambridge, and Queenstown on the Eastern Shore. Comparatively, AAMC only offers one affiliated cardiology practice on the Eastern Shore to direct referrals to its program.

Of greater importance than the customary one-time location of the cardiac surgery procedure itself, is the convenience of pre-and post-operative care and the extent to which it is part of a familiar and clinically integrated system to maximize continuity of care. The UM Division of Cardiac Surgery, which would include UM BWMC, currently offers outpatient clinics in Queenstown, Baltimore, Towson, and Bel Air with additional central Maryland locations planned. This will allow Eastern Shore patients, and others, the flexibility to choose an outpatient location that is convenient to their homes or work places, while being able to have surgery at UM BWMC. In addition, cardiopulmonary rehabilitation programs accredited by the American Association of Cardiovascular and Pulmonary Rehabilitation are available at a number of UMMS locations, including UM BMWC, UM Shore Regional Health Centers at Chestertown, Dorchester, and Easton, and UM Shore Medical Pavilion at Queenstown. This extensive network of clinically integrated care allows for streamlined care delivery and a shared medical record, prevents duplication of effort, increases collaboration and communication between providers, and ultimately promotes improved quality of care, patient safety, patient satisfaction and better health outcomes.

VI. UM BWMC OFFERS SUPERIOR CHARITY CARE.

AAMC states that the charity care budgets between AAMC and UM BWMC should not be a significant factor, but the historical data show that UM BWMC has provided substantially more charity care than AAMC. (UM BWMC Appl. at 40-41.) UM BWMC agrees that the implementation of the Affordable Care Act has expanded the number of Medicaid beneficiaries

and reduced the number of uninsured Marylanders. However, even after accounting for the effect of the ACA, the historical data and financial projections of the applicants demonstrate that UM BWMC has provided – and will provide – much more charity care than AAMC. Table 43 below shows the relative actual and projected charity care contributions of the two applicants, based on Tables G and J submitted by the applicants.

Table 43
Actual and Projected Charity Care for UM BWMC and UMMC
FY 2013 – FY 2019

	2013		2014		2015		2016		2017		2018		2019	
	Amount	% of Operating Expense	Amount	% of Operating Expense	Amount	% of Operating Expense	Amount	% of Operating Expense	Amount	% of Operating Expense	Amount	% of Operating Expense	Amount	% of Operating Expense
AAMC Charity Care – Entire Facility	$8,912,500	1.87%	$5,721,800	1.21%	$2,774,084	0.58%	NA	NA	$2,812,570	0.60%	$2,827,796	0.60%	$2,835,548	0.61%
UM BWMC Charity Care – Entire Facility	$25,709,000	7.80%	$13,307,000	4.12%	$8,068,000	2.37%	$8,120,142	2.33%	$8,179,722	2.30%	$8,246,006	2.30%	$8,312,458	2.30%

VII. UM BWMC AND AAMC OFFER COMPARABLE OUTREACH PROGRAMS.

AAMC states that "other comparative review factors - such as quality and cardiac education and outreach - weigh in favor of AAMC rather than BWMC." (AAMC Comments at 2.) This contention is not accurate, and AAMC did not provide evidence to substantiate it. In fact, UM BWMC and AAMC demonstrated comparably strong outreach programs.

AAMC and UM BWMC currently collaborate on several population health initiatives with outreach components, including serving as co-chairs of the Healthy Anne Arundel Coalition and as successful co-applicants in the Bay Area Transformation Partnership grant.
UM BWMC's outreach efforts will continue to expand, in part due to these activities, and it is likely AAMC's outreach also will continue to expand to meet the needs of local communities. UM BWMC looks forward to how it can continue to partner with AAMC in joint outreach activities to best meet Maryland's goals for population health and health system transformation.

UM BWMC's proposed cardiac surgery program includes a budgeted cardiac community outreach coordinator position (Table L, Manpower Information Table). UM BWMC's community outreach programs are developed in response to identified community needs and the capacities of UM BWMC staff and clinical programs. With the addition of a cardiac surgery program, and the associated staff, UM BWMC will have additional resources to commit to expanded cardiovascular outreach, particularly among minority and disadvantaged populations. Furthermore, as UM BWMC becomes established as a comprehensive cardiovascular care program, the hospital expects to see increasing demand for cardiovascular-related community outreach services by local senior centers, community organizations, faith-based organizations, schools, and the general public.

Although AAMC denies the applicability of UM BWMC's perinatal outreach and education programs to this CON review, these programs further illustrate UM BWMC's proven ability to effectively reach minority and disadvantaged populations and engage them in outreach initiatives with demonstrated health improvement outcomes.

Also, AAMC questions the relevance of UM BWMC physicians appearing in local news articles. However, AAMC's own application included examples of news articles that only mention AAMC, some tangentially or without a specific relationship to cardiovascular disease. (AAMC Appl., Exhibit 5a, p.676-714) In fact, presence in the media is another aspect of a diversified cardiovascular health education program aimed at high risk populations.

UM BWMC's programs are in a region of the County with more high risk populations than the county as a whole, as demonstrated at pages 94-99 of the UM BWMC CON application. UM BWMC uses a variety of approaches to reach these people. As demonstrated in UM BWMC's comments on the AAMC application, UM BWMC had more programs and more

encounters than AAMC in FY 2014. AAMC commented on UM BWMC's outreach programs without supporting its criticisms or its conclusion that a comparison weighs in favor of AAMC.

VIII. UM BWMC AS A LOCATION WITHIN THE UM DIVISION OF CARDIAC SURGERY OFFERS STRONG QUALITY ASSURANCE.

AAMC claims that the quality assurance and performance improvement process for the proposed cardiac surgery program at UM BWMC "suffers from being overly entwined with UMMC's existing quality processes."[16] (AAMC Comments at 23.) On the contrary, UM BWMC's full integration with UMMS is a source of strength. UM BWMC is an integrated part of a system with an existing world-renowned cardiac surgery program and a robust quality program. In UMMS' experience, the system approach to quality improvement drives a culture of continuous improvement through collaborative sharing of successful processes and outcomes.

In 2013, UMMS identified key strategic planning priorities to drive the "Triple Aim": better care, improved health, and lower cost. High level engagement of clinical providers is an essential component for success and is the driving force behind the physician-led Clinical Performance Council (the "Council"). The goal of the Council is to institute system-wide standards and processes, objectively establishing UMMS as a high value provider of key clinical services. Currently, there are twelve physician-led clinical process improvement workgroups.

The UMMS corporate structure supports the Clinical Performance Improvement Council and workgroups. Each workgroup is supported by an UMMS project manager and a data analyst team partnering with physicians to achieve target objectives. These teams also collaborate with

---

[16] AAMC's criticism is ironic given that AAMC touts the benefits of its own combined quality initiatives with the quality committees at JHH, including a "single individual responsible for the collection and submission of data hired by AAMC and JHU with protocols already in place at JHU." (AAMC Appl. at 100.) Also, AAMC's program would use JHM surgical staff. In AAMC's words, this could "muddle the lines of authority and accountability."

hospital-specific service line staff and leadership. Teams of physicians, UMMS staff, and facility-specific staff meet regularly to apply benchmarks, implement best practices, and monitor and measure results to continuously drive improvements in quality, safety, and patient experience for each of the system hospitals. A key to the success of this initiative is the engagement of clinical physicians, both faculty and local community physicians, who lead system-wide clinical performance improvement. Each physician team lead reports regularly on progress to the Council. The overall quality of clinical services, process, and outcomes are the responsibility of a team and not one quality coordinator.

Another example of the benefit of these system-wide clinical performance improvement teams is the collaboration across service lines to improve patient care. Recently, the Emergency Medicine and Interventional Cardiology work groups collaborated on the communication and criteria guidelines expediting PCI for STEMI and management of post-arrest patients.

Dr. James Gammie, Chief of the UM Division of Cardiac Surgery (and the proposed Clinical Director of UM BWMC's cardiac surgery program), is the physician champion for the cardiac surgery workgroup. Dr. Gammie brings together cardiac surgeons within UMMS for the purpose of enhancing cardiac surgery quality of care system-wide. Convening an ongoing clinical improvement team of surgeons from across the hospitals performing these procedures has demonstrated the power to standardize care, limit variability, increase predictability, and improve patient outcomes. Current cardiac surgery data collection efforts of this work group focus on CABG, mitral valve replacement ("MVR"), and aortic valve replacement ("AVR") + CABG with the metrics of reducing blood utilization and mortality being closely evaluated. Across cardiac surgery services, improvement efforts have resulted in a 21% decrease in blood utilization per encounter and a 33% decrease in mortality. Also, costs to the health care system

have been reduced by lowering supply costs and utilization. Between FY 2014 to FY 2015, UMMC experienced a 29% decrease in direct variable expenses per encounter and a 27% decrease in variable blood expense have been demonstrated while patient encounters have realized a slight increase of 3%.

UM BWMC's cardiac surgery program will receive the same corporate support that is currently in place for the physician-led quality workgroup. Furthermore, as part of the overall UM Division of Cardiac Surgery structure, UM BWMC will develop a "local" Operating Council consistent with what UMMC, UM SJMC, and PGHC currently use as part of their programs. Among other responsibilities, the Councils ensure the local implementation and performance of best practices identified through the UMMS Cardiac Surgery Network Clinical Performance Improvement Council.

The UMMS cardiac surgery clinical process improvement team activities are in addition to other quality improvement initiatives identified in the UM BWMC application, including but not limited to, benchmarking by the Society for Thoracic Surgeons' National Database™, participation in Maryland Cardiac Surgery QI Collaborative, monthly quality meetings focused on programmatic outcome goals, morbidity and mortality review, as well as educational focused events such as grand rounds, case review, and journal review.

As an alleged example of UM BWMC's excessive entanglement with UMMC, AAMC asserts that UM BWMC's Quality Assurance and Performance Improvement Plan ("QAPI") would be managed by one nurse at both UMMC and UM BWMC. (AAMC Comments at 23.) This is not correct. When UM BWMC stated that it would participate in the same quality assurance performance improvements programs as UMMC, it meant that UM BWMC would replicate UMMC initiatives at UM BWMC, while also participating in larger system initiatives

and location-specific initiatives. UM BWMC's QAPI will be led by its cardiac surgeon team with support from the cardiac surgery service line director and quality manager, both of these positions are identified in the staffing plan and program budget. These people will work collaboratively with cardiac quality improvement staff at other cardiac surgery locations.

Despite AAMC's claims to the contrary, the UM Division of Cardiac Surgery bimonthly quality forum will be able to adequately review UM BWMC's "quality of care ... protocols and guidelines ... outcomes data, and .... clinical and process improvement projects." Much of the proposed volume at UM BWMC will be shifting from within UMMS, and capacity exists at this forum to address the additional volume. Also, the bimonthly quality forum is only one of the many quality improvement processes identified in UM BWMC's application.

AAMC's concerns about the UM BWMC's quality program are baseless. UM BWMC offers a superior quality and performance improvement program.

CONCLUSION

For the reasons set forth above, UM BWMC respectfully asks that the Commission approve UM BWMC's CON application and deny AAMC's application.

Respectfully submitted,

Thomas C. Dame
Ella R. Aiken
Gallagher Evelius & Jones LLP
218 North Charles Street, Suite 400
Baltimore MD 21201
(410) 727-7702

Attorneys for University of Maryland Baltimore Washington Medical Center

August 25, 2015

Table of Exhibits

Table of Tables

CERTIFICATE OF SERVICE

I hereby certify that on the 25th day of August 2015, a copy of University of Maryland Baltimore Washington Medical Center's Response to Comments Submitted by Interested Parties was sent via email and first-class mail to:

Suellen Wideman, Esq.
Assistant Attorney General
Maryland Health Care Commission
4160 Patterson Avenue
Baltimore MD 21215-2299
suellen.wideman@maryland.gov

Jinlene Chan, M.D.
Health Officer
Anne Arundel County Health Dept.
Health Services Building
3 Harry S. Truman Parkway
Annapolis MD 21401
hdchan22@aacounty.org

Leana S. Wen, MD
Health Commissioner
Baltimore City
1001 E. Fayette Street
Baltimore, MD 21202
health.commissioner@baltimorecity.gov

Leland Spencer, M.D.
Health Officer
Caroline & Kent Counties Health Dept.
403 S. 7th Street
P.O. Box 10
Denton, MD 21629
leland.spencer@maryland.gov

Thom McCarty
Acting Health Officer
Talbot County Health Department
100 S. Hanson Street
Easton MD 21601
thom.mccarty@maryland.gov

Dr. Maura J. Rossman
Health Officer
Howard County Health Department
8930 Stanford Boulevard
Columbia MD 21045
mrossman@howardcountymd.gov

Joseph Ciotola, M.D
Health Officer
Queen Anne's County
206 N. Commerce Street
Centreville, MD 21617-1118
joseph.ciotolamd@maryland.gov

Jonathan E. Montgomery, Esq.
Gordon Feinblatt LLC
233 East Redwood Streeet
Baltimore MD 21202
jmontgomery@gfrlaw.com

M. Natalie McSherry, Esq.
Christopher C. Jeffries, Esq.
Louis P. Malick, Esq.
Kramon & Graham, P.A.
One South Street, Suite 2600
Baltimore, MD 21202
nmcsherry@kg-law.com

John T. Brennan, Jr., Esq.
Crowell & Moring LLP
1001 Pennsylvania Avenue, NW
Washington, DC 20004
jbrennan@crowell.com

Hon. Steve Schuh
County Executive
Anne Arundel County
PO Box 2700
Annapolis MD 21404
countyexecutive@aacounty.org

Neil M. Meltzer
President & Chief Executive Officer
LifeBridge Health
2401 West Belvedere Ave.
Baltimore MD 21215-5216

Hon. Mike Pantelides
Mayor
City of Annapolis
160 Duke of Gloucester Street
Annapolis MD 21401-2517

Chet Burrell
President & CEO
CareFirst BlueCross BlueShield
1501 S. Clinton St. 17th Floor
Baltimore MD 21224-5744

Thomas C. Dame

I hereby declare and affirm under the penalties of perjury that the facts stated in BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Kathy McCollum
Senior Vice President, Clinical
Integration and COO
UM BWMC

#520223
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Rebecca Paesch
Vice President, Strategy and Business Development
UM BWMC

#520224
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Laurie Fetterman
Strategic Planning Project Manager
UM BWMC

#520225
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Alfred Pietsch
Senior Vice President and CFO
UM BWMC

#520226
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Daniel Donaldson
Director of Finance Decision Support
UM BWMC

#520227
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Barbara Hamilton
Cardiac Catheterization Laboratory
Manager
UM BWMC

#520228
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Scott Tinsley-Hall
Director of Strategy and Program Development
UMMS

#520232
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Donald Steacy
Planning Project Manager
UMMS

#520233
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Janet Petit
Clinical Program Administrator,
Division of Cardiac Surgery
UMMS

#520229
011598-0019

I hereby declare and affirm under the penalties of perjury that the facts stated in UM BWMC's Response to Comments Submitted by Interested Parties and its attachments are true and correct to the best of my knowledge, information, and belief.

August 17, 2015
Date

Andrew L. Solberg
A.L.S. Healthcare Consultant Services

#520234
011598-0019

EXHIBIT 51

University of Maryland Baltimore Washington Medical Center
Surgery Case Review
Transfers by Hospital (FY 2014)

Hospital	Total Transfers from BWMC to Cardiac Surgery Hospitals	Confirmed Surgeries	Cannot confirm actual treatment
Inpatient			
UMMC	141	68	
UM St. Joseph's Medical Center	5	5	
Johns Hopkins Hospital	14	3	3
Union Memorial Hospital	20	6	
Washington Hospital Center	4	1	
Total Inpatient Transfers	**184**	**83**	
Outpatient			
UMMC	22	19	
UM St. Joseph's Medical Center	1	1	
Union Memorial Hospital	1		1
Total Outpatient Transfers	**24**	**20**	
TOTAL TRANSFERS	**208**	**103**	**4**[1]

University of Maryland Baltimore Washington Medical Center
Surgery Case Review
Outpatient Referrals for Surgery, by Hospital (FY 2014)

	Cases Referred for Surgery
Referrals Resulting in Surgery, by Hospital	
UMMC	34
UM St. Joseph's Medical Center	6
Union Memorial Hospital	1
Walter Reed National Military Medical Center	1
Unknown	1
Total Referrals Resulting in Surgery	**43**
Cannot Confirm Actual Treatment	**3**[1]
Referrals Confirmed Not Resulting in Surgery	**4**
TOTAL REFERRALS	**50**

Source (both Tables): Review of all inpatient transfers with a cardiology product line and all transfers from the cardiac catheterization lab after a patient received an outpatient catheterization, as well as patients who were sent home with a referral for cardiac surgery. Each patient record was reviewed in UM BWMC's electronic medical record (Epic).

Note 1: UM BWMC was not able to determine the outcome of 7 of its 258 transfers and referrals (2.7%).

EXHIBIT 52

Relative Market Share for Cardiology in UM BWMC's Proposed Cardiac Surgery Service Area

Cardiology Medicine Market Share – UM BWMC Cardiac Surgery Service Area FY 2014 – FY 2015

UM BWMC Cardiac Surgery Service Area					
Top 10 Hospitals	FY2014		FY2015		FY14-15
	Discharges	Market Share	Discharges	Market Share	% Δ Discharges
BWMC Cardiac Surgery Service Area	**7,727**		**7,766**		**0.5%**
UM BWMC	**2,092**	**27.1%**	**2,276**	**29.3%**	**8.8%**
ANNE ARUNDEL	1,811	23.4%	1,782	22.9%	-1.6%
UM SMC at EASTON	**868**	**11.2%**	**875**	**11.3%**	**0.8%**
UMMC	**496**	**6.4%**	**463**	**6.0%**	**-6.7%**
HARBOR HOSPITAL	471	6.1%	463	6.0%	-1.7%
ST. AGNES	474	6.1%	411	5.3%	-13.3%
JOHNS HOPKINS	311	4.0%	304	3.9%	-2.3%
HOWARD CTY. GENERAL	254	3.3%	298	3.8%	17.3%
UM SMC at CHESTERTOWN	**263**	**3.4%**	**259**	**3.3%**	**-1.5%**
UNION MEMORIAL	129	1.7%	122	1.6%	-5.4%
OTHER NON UMMS HOSPITALS	*464*	*6.0%*	*423*	*5.4%*	*-8.8%*
OTHER UMMS HOSPITALS	***94***	***1.2%***	***90***	***1.2%***	***-4.3%***
UMMS TOTAL	**3,813**	**49.3%**	**3,963**	**51.0%**	**3.9%**

Source: HSCRC Non-Confidential State Database
Inpatient Data Only
Excludes Ages 0-14
Cardiology Medicine defined by the following APR-DRG Codes: 161, 170, 171, 174, 175, 176, 177, 190, 191, 193, 194, 196, 197, 198, 199, 200, 201, 203, 204, 205, 206, 207

Cardiology Medicine Market Share – Anne Arundel County FY 2014 – FY 2015

Anne Arundel County					
Top 10 Hospitals	FY2014		FY2015		FY14-15
	Discharges	Market Share	Discharges	Market Share	% Δ Discharges
Anne Arundel County	**5,041**		**5,167**		**2.5%**
UM BWMC	**1,990**	**39.5%**	**2,174**	**42.1%**	**9.2%**
ANNE ARUNDEL	1,539	30.5%	1,526	29.5%	-0.8%
HARBOR HOSPITAL	391	7.8%	398	7.7%	1.8%
UMMC	**287**	**5.7%**	**262**	**5.1%**	**-8.7%**
JOHNS HOPKINS	204	4.0%	209	4.0%	2.5%
ST. AGNES	157	3.1%	148	2.9%	-5.7%
UNION MEMORIAL	103	2.0%	102	2.0%	-1.0%
HOWARD CTY. GENERAL	60	1.2%	78	1.5%	30.0%
LAUREL REGIONAL	36	0.7%	38	0.7%	5.6%
HOPKINS BAYVIEW	34	0.7%	28	0.5%	-17.6%
OTHER NON UMMS HOSPITALS	*195*	*3.9%*	*168*	*3.3%*	*-13.8%*
OTHER UMMS HOSPITALS	***45***	***0.9%***	***36***	***0.7%***	***-20.0%***
UMMS TOTAL	**2,322**	**46.1%**	**2,472**	**47.8%**	**6.5%**

Source: HSCRC Non-Confidential State Database
Inpatient Data Only
Excludes Ages 0-14

Cardiology Medicine defined by APR-DRG Codes: 161, 170, 171, 174, 175, 176, 177, 190, 191, 193, 194, 196, 197, 198, 199, 200, 201, 203, 204, 205, 206, 207

Cardiology Medicine Market Share – Mid Shore Counties
FY 2014 – FY 2015

Cardiovascular Medicine - Mid Shore Counties (Kent, Caroline, Talbot, and Queen Anne's)					
Top 10 Hospitals	FY2014		FY2015		FY14-15
	Discharges	Market Share	Discharges	Market Share	% Δ Discharges
Mid Shore Region	**1,704**		**1,709**		**0.3%**
UM SMC at EASTON	**867**	**50.9%**	**874**	**51.1%**	**0.8%**
UM SMC at CHESTERTOWN	**263**	**15.4%**	**258**	**15.1%**	**-1.9%**
ANNE ARUNDEL	267	15.7%	252	14.7%	-5.6%
UMMC	**151**	**8.9%**	**143**	**8.4%**	**-5.3%**
PENINSULA REGIONAL	50	2.9%	72	4.2%	44.0%
JOHNS HOPKINS	31	1.8%	35	2.0%	12.9%
UM SMC at DORCHESTER	**27**	**1.6%**	**29**	**1.7%**	**7.4%**
UM BWMC	**11**	**0.6%**	**15**	**0.9%**	**36.4%**
UNION OF CECIL	3	0.2%	7	0.4%	133.3%
UM SJMC	**4**	**0.2%**	**5**	**0.3%**	**25.0%**
OTHER NON UMMS HOSPITALS	*25*	*1.5%*	*18*	*1.1%*	*-28.0%*
OTHER UMMS HOSPITALS	***5***	***0.3%***	***1***	***0.1%***	***-80.0%***
UMMS TOTAL	**1,328**	**77.9%**	**1,325**	**77.5%**	**-0.2%**

Source: HSCRC Non-Confidential State Database
Inpatient Data Only
Excludes Ages 0-14
Cardiology Medicine defined by APR-DRG Codes: 161, 170, 171, 174, 175, 176, 177, 190, 191, 193, 194, 196, 197, 198, 199, 200, 201, 203, 204, 205, 206, 207
Mid Shore Region: Kent County, Caroline County, Talbot County, and Queen Anne's County

EXHIBIT 53

Affidavit of James Gammie, M.D.

I, James Gammie, declare as follows:

1. I am more than 21 years of age and competent to give this Affidavit.

2. I am a physician who specializes in cardiac surgery. I serve as a professor in the Department of Surgery, University of Maryland School of Medicine. I also serve as the Chief of the University of Maryland Division of Cardiac Surgery.

3. I participated in the planning process to establish staffing projections for a new location of the University of Maryland Division of Cardiac Surgery at the University of Maryland Baltimore Washington Medical Center ("UM BWMC"). I reviewed and approved the final staffing projections as set forth in the UM BWMC Certificate of Need application, including the Manpower Information Table (Table L), which specifies new positions and contract services needed (in addition to existing staffing) for the proposed cardiac surgery location at UM BWMC.

I hereby declare and affirm under the penalties of perjury that the foregoing facts are true and correct to the best of my knowledge, information, and belief.

August 14, 2015
Date

James Gammie, M.D.
Professor, Department of Surgery
Chief, Division of Cardiac Surgery
University of Maryland School of Medicine

#535592
011598-0019

Affidavit of Mary Evans, MS, RN

I, Mary Evans, declare as follows:

1. I am more than 21 years of age and competent to give this Affidavit.

2. I am the Nurse Manager for the Cardiac Surgery Intensive Care Unit and Stepdown Units at the University of Maryland Medical Center ("UMMC") and I am a member of the UMMC cardiac care team.

3. I participated in the planning process to establish staffing projections for a new location of the University of Maryland Division of Cardiac Surgery at the University of Maryland Baltimore Washington Medical Center, including sharing staffing models for the proposed new cardiac surgery location.

I hereby declare and affirm under the penalties of perjury that the foregoing facts are true and correct to the best of my knowledge, information, and belief.

August 19, 2015
Date

MS, RN
Mary Evans, MS, RN
Nurse Manager
Cardiac Surgery ICU and Stepdown Units, UMMC

Affidavit of Tina Cafeo, DNP, RN

I, Tina Cafeo, declare as follows:

1. I am more than 21 years of age and competent to give this Affidavit.

2. I am the Director of Nursing and Patient Care Services for the University of Maryland Medical Center ("UMMC") and I am a member of the UMMC cardiac care team.

3. I participated in the planning process to establish staffing projections for a new location of the University of Maryland Division of Cardiac Surgery at the University of Maryland Baltimore Washington Medical Center, including sharing staffing models for the proposed new cardiac surgery location.

I hereby declare and affirm under the penalties of perjury that the foregoing facts are true and correct to the best of my knowledge, information, and belief.

8-19-2015
Date

Tina Cafeo, DNP, ~~RN~~
Director of Nursing and Patient Care
UMMC

#535589
011598-0019

EXHIBIT 54
UM BWMC Staffing Projections

Job Category	FTE	Cost	Comments
Contract - Admin			
Physician	0.2	$200,000	Clinical oversight
Perfusion	0.25	$49,500	Clinical oversight
Anesthesiology		$50,000	Clinical oversight
Resident		$75,000	
Contract - Direct Care			
Physician			
Perfusion		$166,000	Incremental expense of 1.0 FTE added to UMMC team
Anesthesia		$166,155	Call coverage agreement
CT Assist		$293,250	3rd party company - 24/7 cardiac coverage for the OR (scheduled and emergency cases)
Employee - Admin			
Supervisor/Management	0.5	$67,000	Research Coordinator
Employee - Direct Care			
Cardiac nursing	9.8	$1,089,799	2.35 OR RN (includes service line coordinator), 1.77 Critical Care RN, 5.63 Step Down unit RN's
Lab Personnel	0.5	$31,000	
Patient Care Techs	3.6	$136,842	
Periop Techs	1.2	$77,418	
Pharmacy Personnel	0.8	$95,250	
Rehab Services	1.2	$68,034	Physical Therapy
Physician Assistant			
Hospitalist			
Nurse Practitioner			
Employee - Support Staff			
Quality/Data Manager	1	$170,220	Case Manager and Quality Analyst
Other Support Staff	1	$75,000	Cardiac Outreach Coordinator
Support Staff - Technical			
Support Staff - Professional			

EXHIBIT 55

UM BWMC Staffing Plan's Compliance with the Joint Commission's Proposed Requirements for a Comprehensive Cardiac Center Certification Program

EP 5 – The following practitioners and staff members are available as follows:	
	Status
Physicians – available 24/7	
Cardiac interventionalist and staff	Currently available
Cardiologist with cardiac imaging experience	Currently available
Board certified electrophysiologist	Currently available
Diagnostic radiologist	Currently available
Physicians with critical care and cardiovascular experience staff the Cardiovascular Critical Care Unit	All Intensivists are certified in critical care and have cardiovascular experience
One or more cardiologist are to be available by phone within 20 minutes and available in house within 45 minutes	Currently available
Cardiothoracic surgeon available within 30 minutes	Included in proposed program
Cardiac anesthesiologist available within 30 minutes	Included in proposed program
Surgeons with expertise in vascular surgery	Currently available
Advanced Practice Nurses (APNs) and Physician Assistants (PAs):	
Participate in all aspects of program	Included in proposed program
Imaging Staff – 24/7	
Qualified radiology technologists (to include assisting with cardiac procedures)	Currently available
Qualified CT and MRI technologists	Currently available
Cardiac Rehabilitation	
Services directed by a clinician with expertise and experience in cardiac rehabilitation	Currently available
Physical Therapists, nutritionists, and cardiac rehabilitation to perform patient assessments during the inpatient acute cardiac phase	Currently available

EP 6 – The following individuals and support services are available to the center's interdisciplinary team:	
Licensed Social Workers or Case Managers	Proposed one additional case manager for the program
Infection control personnel	Currently available
Genetic diagnostic and counseling services or written consultation and referral agreements for services	UM BWMC has service currently available on campus as well as the ability to refer to UMMC
Behavioral or mental health services	Currently available
Nurse(s) or licensed independent practioner(s) with appropriate training or experience in cardiovascular care to conduct staff education and development	Included in proposed program – detailed on page 20 and Exhibit 7 of the application
Personnel for assisting surgical procedures, such as surgical assistants	Included in proposed program
At least one staff member with expertise in grief and bereavement counseling and palliative care	Currently available