Assessment of Service Changes at the University of Maryland Shore Medical Center at Chestertown

Report required under 2019 Laws of Maryland, Chapter 406 (Senate Bill 1010) and the Conference Report for Chapter 565 (House Bill 100)

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MARYLAND HEALTH CARE COMMISSION

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Executive Summary

In 2019, the Maryland General Assembly required that the Maryland Health Care Commission (MHCC), in collaboration with the Office of Health Care Quality (OHCQ) of the Maryland Department of Health (MDH), conduct an "assessment of the types, quality, and level of services provided at the University of Maryland Shore Medical Center in Chestertown (UMSMC at Chestertown).[1] This assessment was required to compare the services currently provided at the hospital with services provided in fiscal year 2015 and identify if any services were reduced or transferred to the University of Maryland Shore Medical Center at Easton after July 1, 2015. This report contains this assessment.

The UMSMC at Chestertown is a general hospital located in Chestertown in rural Kent County on Maryland's Eastern Shore. The hospital is located in "downtown" Chestertown and primarily serves residents of Kent and northern Queen Anne's Counties.

Prior to 2008, UMSMC at Chestertown operated as an independent community hospital, known in that year as Chester River Hospital. In 2008, Chester River Hospital joined the University of Maryland Medical System (UMMS). In 2013, the Chestertown hospital joined the University of Maryland Shore Health System (now Shore Regional Health), which also includes two other general hospitals (UMSMC at Easton and UMSMC at Dorchester), a freestanding medical facility in Queenstown, and a network of outpatient centers.[2] Based on regional strategic planning undertaken by Shore Regional Health in the current decade, residents of Chestertown have been concerned that UMSMC at Chestertown might eventually be closed or converted to a freestanding medical facility. A community group, *Save Our Hospital*, coalesced in opposition to this eventuality. During the 2016 legislative session, legislation passed which prevented this hospital from converting to a freestanding medical facility before July 1, 2020.[3] Subsequently, Shore Regional Health committed to keep UMSMC at Chestertown open through March 2022.

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[1] Senate Bill 1010, 2019

[2] A "freestanding medical facility" (FMF) is a licensed category of health care facility in Maryland that can only be operated by a general hospital. An FMF provides a high-level of emergency service capability similar to that found in a hospital emergency department but does not provide inpatient care. In April 2019, the Maryland Health Care Commission approved the conversion of UMSMC at Dorchester, located in Cambridge, to an FMF and the relocation of inpatient psychiatric hospital beds operated at the Cambridge hospital to UMSMC at Easton. http://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/2019_decisions/con_merger_shore_dorchester_decision_Revised_20190418.pdf

[3] See 2016 Md. Law, Ch. 420 (Senate Bill 707). This legislation also established a work group on rural health care delivery, tasked with studying issues related to rural health care access and delivery on the Eastern Shore. Pursuant to the 2016 legislation, the Maryland Health Care Commission convened a workgroup on rural health delivery in 2016 and 2017. In 2017, this work group submitted a report to the Maryland General Assembly which contained a number of recommendations, including the creation of a Mid-Shore Rural Health Collaborative focused on improving health care access on the mid-shore. See *Transforming Maryland's rural healthcare system: A regional approach to rural healthcare delivery*. http://mhcc.maryland.gov/mhcc/pages/home/workgroups/documents/rural_health/Rural%20Health%20Full%20report%20with%20Appendices_2017.pdf

Senate Bill 1056 in the 2018 legislative session established the recommended Rural Health Collaborative, which has begun work and will submit an initial report to the General Assembly in 2020. (See the Website of the Maryland Rural Health Collaborative, https://health.maryland.gov/mcrhc/Pages/home.aspx)

As of fiscal year 2020, UMSMC at Chestertown is licensed by the State of Maryland to operate 12 acute care hospital beds.[4] By this measure, this hospital is the third smallest hospital in the State.

The UMSMC at Chestertown Service Area, defined by patient origin, is concentrated in Kent County and parts of Queen Anne's County. Kent County's population is small (an estimated 19,383 in 2018) and is not growing. It is a relatively older population and has a relatively high rate of poverty. It has a higher proportion of residents who lack health insurance coverage than most areas of Maryland. These demographic factors suggest that Kent County's population may have a greater than average need for health care services and poorer access to services than most areas of the state. It is also a challenging environment for the generation of hospital income. Most areas of Queen Anne's County, which does not contain a general hospital, do not rely on UMSMC at Chestertown as an important access point for hospital services because travel time from many parts of this jurisdiction to the hospital in Annapolis or in Easton is better or comparable. Queen Anne's County has a larger population (an estimated 50,251 in 2018) and higher incomes than Kent County, and fewer households that lack health insurance coverage or public health benefits.

This assessment evaluated the types of service offered at UMSMC at Chestertown in two ways: types of licensed beds and All Patients Refined Diagnosis Related Groups (APR-DRG) service lines. No changes occurred in the broad licensure categories for beds operated by UMSMC at Chestertown between 2015 and 2018. The hospital only provided general acute medical/surgical/gynecological/addictions (MSGA) services in both 2015 and 2018 and did not provide the other three general hospital acute inpatient services that some hospitals provide; obstetric, pediatric, and acute psychiatric services. About 80% of patients admitted to general hospitals are MSGA patients. MHCC also considered All Patient-Refined Diagnosis Related Group (APR-DRG) service lines in assessing the types of services offered at the hospital. In 2015, services were provided to patients at UMSMC at Chestertown in seven inpatient service lines and one outpatient service line that were not seen in the patient population served in 2018. The service volume for each of these eight inpatient and outpatient service lines was five or fewer discharges in 2015, so the change in the patient population served was small. In addition, services in three inpatient surgery service lines were provided at UMSMC at Chestertown in 2018 that were not observed in 2015, resulting in a total net "loss" of only five service lines. UMSMC at Easton did not add service categories that were removed from UMSMC at Chestertown, although the volume of services provided at the Easton hospital did change. It is important to note that this assessment of service line change is based on the observed patients within a defined service line. A service may be potentially available at the hospital but have a volume of zero patients in a given year because no patient needing that service was treated in the hospital that year.

Between 2015 and 2018, the volume of inpatient service provided at UMSMC at Chestertown declined. The observed decline in inpatient service volume was larger than that observed at other Maryland hospitals. Some of these volume losses are likely due to changes in hospital utilization

[4] Maryland Health Care Commission, Licensed Acute Care Beds by Hospital and Service: Maryland, FY 2020 (effective July 1, 2019), accessed December 17, 2019

https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/documents/acute_care/chcf_Licensed_Acute_Care_Beds_by_Hospital_and_Service_%20Maryland_FY2020.pdf

that are occurring throughout the state and nation.[5] During the assessment period, UMSMC at Chestertown successfully reduced certain types of avoidable hospitalizations (see further discussion in the report section on Quality of Services), so that some of the decline in inpatient service volume is a result of patients receiving appropriate care in other settings and, thus, not needing to be hospitalized. Finally, UMSMC at Chestertown has lost market share to other hospitals, notably Anne Arundel Medical Center and UMSMC at Easton during the assessment period (2015-2018). The MHCC does not believe it is possible to determine, based on available data, that inpatient volume has been diverted from UMSMC at Chestertown to UMSMC at Easton for the express purpose of reducing use of the Chestertown hospital.

Some decline in outpatient service volume was also seen at UMSMC at Chestertown in the 2015-2018 time period, but this decline was small compared to the loss of inpatient cases. UMSMC at Chestertown lost less outpatient service volume, proportionally, than all hospitals in Maryland over the assessment time period, reflecting a potential area of strength for the hospital.

Based on quality measures mandated by CMS, overall quality of care, at UMSMC at Chestertown was stable in the 2015 to 2018 period. This hospital's quality of care can be characterized as relatively average among Maryland hospitals.

Some actions by UMSMC at Chestertown's parent, Shore Regional Health are undoubtedly related to the decline in use of this small hospital. The MHCC is not able to discern any formal plan being implemented by Shore Regional Health expressly designed to force a material market shift in hospitalization services from Chestertown to Easton. Only one service identified by *Save Our Hospital* as being transferred from UMSMC at Chestertown to the Easton hospital, sleep lab services, was confirmed by Shore Regional Health as a service it chose to terminate at UMSMC at Chestertown but the system claims that this action was taken on the basis of a recommendation by the now retired pulmonologist providing the service in Chestertown, because of the low volume of sleep studies being conducted there. Ultimately, sleep studies were not actually transferred from Chestertown to Easton. They are now conducted at patients' homes rather than the hospital.

[5] Healthcare Cost and Utilization Project, "HCUP Fast Stats- Trends in Inpatient Stays", Agency for Health Care Research and Quality, https://www.hcup-us.ahrq.gov/. See also Kaiser Family Foundation State Health Facts "Hospital admissions per 1,000 population by ownership type", https://www.kff.org/other/state-indicator/admissions-by-ownership/

See appendix A for detailed tables.

Introduction

This report is the result of a legislative mandate to conduct an assessment of the types, volumes, and quality of services at the University of Maryland Shore Medical Center at Chestertown (UMSMC at Chestertown). This section describes the legislative mandate, the organizations contributing to the report and related data analysis, the methodology and study approach, the history of the UMSMC at Chestertown, and the demographics of Kent and Queen Anne's Counties, which are served by this hospital.

Mandate for the Assessment and Community Concerns

The requirements for this report come from two legislative documents generated in the 2019 General Assembly session: Senate Bill 1010 and the Joint Chairman's Report on the Fiscal 2020 State Operating Budget (HB 100), and the State Capital Budget (HB 101) and Related Recommendations (page 95).

Senate Bill 1010 directs MHCC, in collaboration with the Office of Health Care Quality (OHCQ), a division of the Maryland Department of Health (MDH) that licenses health care facilities, to conduct an "assessment of the types, quality, and level of services provided at the UMSMC in Chestertown".[6] This assessment must compare current services with services provided in fiscal year 2015 and identify if any services were reduced or transferred to the UMSMC in Easton after July 1, 2015.

The Joint Chairmen's Report withholds $500,000 in appropriations for MDH pending MDH, in consultation with MHCC, conducting an assessment and submitting a report covering the same topics addressed in Senate Bill 1010.

Senate Bill 1010 and House Bill 100 both require the submission of the report to the legislature by January 1, 2020. MDH and MHCC submitted a letter requesting a 30 day extension to this deadline.

In September 2018, before the 2019 legislative session, the Maryland Secretary of Health sent a letter to the Chairs of MHCC and the Health Services Cost Review Commission (HSCRC) requesting that the Commissions collaborate to conduct an audit of services at UMSMC at Chestertown. This letter was prompted by a March 2018 request for "regular state-mandated hospital audits" from *Save Our Hospital*, the group representing community leaders and citizens concerned about apparent service reductions at UMSMC at Chestertown and the hospital's long-term viability.[7] The request from *Save Our Hospital* outlined detailed concerns about services, marketing, and facility maintenance at UMSMC at Chestertown.

In response to this request, in late October 2018, the Commissions submitted a letter to the President and CEO of Shore Regional Health asking the health system to respond to the specific items addressed in the request from *Save Our Hospital*. In early November 2018, Shore Regional Health system submitted a response which responded to the specific items in *Save Our Hospital's* letter and reiterated the health system's commitment to maintaining UMSMC at Chestertown as a general hospital through March 2022.

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[6] Senate Bill 1010, 2019

[7] March 22, 2018 letter from Margie Elsberg on behalf of Save Our Hospital to Senator Hershey (see Appendix D).

Organizations Contributing to Report

Maryland Health Care Commission

MHCC is an independent regulatory agency of the State of Maryland whose mission is to plan for health system needs, promote informed decision-making, increase accountability, and improve access in a rapidly changing health care environment by providing timely and accurate information on accessibility, cost, and quality of services to policy makers, purchasers, providers and the public. The MHCC's vision for Maryland is to ensure that informed consumers hold the health care system accountable and have access to affordable and appropriate health care services through programs that serve as models for the nation. MHCC has 15 commissioners who are appointed by the Governor.

Office of Health Care Quality, Maryland Department of Health

OHCQ is the agency within MDH charged with monitoring the quality of care in Maryland's health care facilities and community-based programs. OHCQ is an agent of the Centers for Medicare and Medicaid Services (CMS) and is the designated State survey agency in Maryland. OHCQ issues State licenses and recommends certification to CMS. A license authorizes a facility or program to do business in Maryland. Certification authorizes a facility to participate in the Medicare and Medicaid programs. OHCQ surveys these facilities and programs to determine compliance with State and federal regulations, which set forth minimum standards for the delivery of care. It is through these activities that OHCQ fulfills its mission to protect the health and safety of Marylanders and to ensure there is public confidence in the health care delivery system.

Health Services Cost Review Commission

The Health Services Cost Review Commission (HSCRC) is an independent State agency with authority to establish hospital rates to promote cost containment, access to care, equity, financial stability and hospital accountability. The goals of the HSCRC are to constrain hospital cost growth, ensure that hospitals have the financial ability to provide efficient, high quality services to all Marylanders, and to increase the equity or fairness of hospital financing

The HSCRC's primary mandates are to review and approve reasonable hospital rates and publicly disclose information on the costs and financial performance of Maryland hospitals. The HSCRC establishes hospital-specific and service-specific rates for all inpatient, hospital-based outpatient and emergency services. In approving hospital rates, the HSCRC is required to assure that the total costs of all services offered by a hospital are reasonable, that aggregate revenues of a hospital are reasonably related to its aggregate costs, and that rates are set equitably among all purchasers of hospital services.

The HSCRC also plays a role in managing the State's responsibilities under the Total Cost of Care Model agreement with the Federal government. Under this agreement, Maryland is attempting to transform care delivery across the health care system with the objective of improving health and quality of care while also controlling cost.

LD Consulting

MHCC contracted with LD consulting[8], a small, Maryland-based, health financial and data analytics firm, to support the data analysis and writing for this report.

Methodology and Study Approach

Data Sources

To assess the types, quality, and level of services provided at UMSMC at Chestertown, the following data sources were used:

1. Publicly available data on the MHCC website[9].
2. Case mix data for inpatient and outpatient hospital visits from HSCRC.[10] HSCRC collects various data sets from all Maryland acute care hospitals and licensed specialty hospitals. Case mix data is self-reported by hospitals and inconsistencies can exist between hospitals for some information due to differences in internal hospital reporting. The outpatient data set includes hospital clinic, outpatient surgery, and emergency room data.
3. Hospital financial data collected by HSCRC including data on revenue, expenses, staff levels (full time equivalents) and volume inpatient admissions and outpatient services for Maryland hospitals.[11]
4. The CMS Virtual Research Data Center's (VRDC) Chronic Conditions Data Warehouse (CCW)[12] was used to compare the services provided at UMSMC at Chestertown to hospitals outside of Maryland. The CCW provides researchers with Medicare and Medicaid beneficiary, claims, and assessment data.[13] Maryland has access to 100% of hospital claims for Medicare fee-for-service claims for all U.S. residents.
5. Virginia rural hospital patient level data sets supplied by Virginia Health Information[14] were used to compare services at Chestertown to rural hospitals in Virginia, regardless of payer source, a useful compliment to the Medicare data provided through the CCW.

[8] https://ldchealth.com/

[9] https://mhcc.maryland.gov/

[10] Case mix data is collected pursuant to COMAR 10.37.04, 10.37.01.08 and 10.37.06, and includes financial and confidential patient-level administrative data. The inpatient and outpatient data sets are abstracted from the medical record of each of the state's approximately 700,000 inpatient discharges and 5.7 million outpatient visits annually. https://hscrc.maryland.gov/Pages/data.aspx

[11] https://hscrc.maryland.gov/Pages/data.aspx

[12] https://www.resdac.org/cms-virtual-research-data-center-vrdc

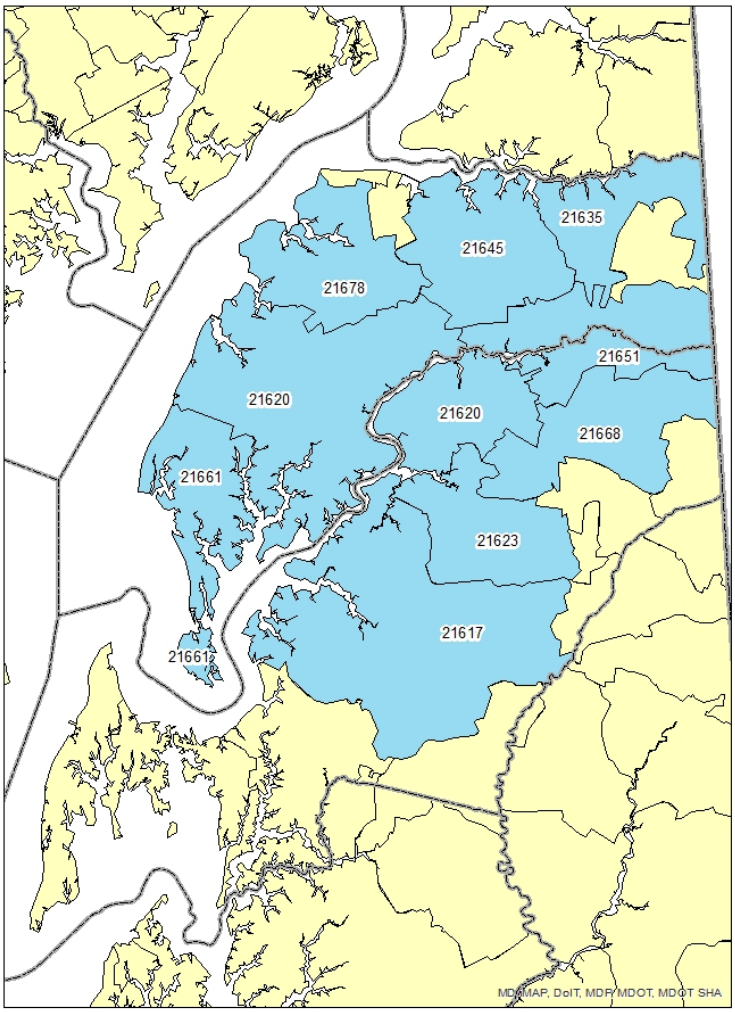
[13] https://www2.ccwdata.org/web/guest/home/

[14] http://www.vhi.org/

Chestertown Hospital Service Area

Some of the analysis included in this report is limited to individuals who reside in the defined service area of UMSMC at Chestertown. For purposes of this report, the service area is defined as the zip code areas that were home to 85 percent (85% relevance) of the hospital discharges from UMSMC at Chestertown in 2011, rank ordered on the basis of frequency of discharges. Use of an 85% relevance index allows for a service area definition that captures most of the zip code areas from which the hospital's patients consistently originate without producing the more diffuse and discontinuous service area that could occur by trying to include a higher cumulative percentage of the hospital's patient discharges. 2011 was selected as a base year for defining the service area because it is not too distant in the past to be relevant to the purposes of this assessment and is a year falling after the acquisition of Chester River Hospital by UMMS but before the incorporation of the hospital into Shore Regional Health.

Figure 1: Chestertown Hospital Service Area



In 2011, the 85% relevance service area for UMSMC at Chestertown included the following nine zip code areas: 21617, 21620, 21623, 21635, 21645, 21651, 21661, 21668, and 21678.[15] These zip code areas represent most of Kent

[15] Kent County contains or is included, in part, in the following zip code areas: 21610-Betterton (not in service area); 21620-Chestertown (in service area); 21635-Galena (in service area); 21645-Kennedyville (in service area); 21650-Massey (not in service area); 21651-Millington (in service area); 21661-Rock Hall (in service area); 21667-Still Pond (in service area); and 21678-Worton (in service area). Queen Anne's County contains or is include, in part, in the following zip code areas: 21607-Barclay (not in service area); 21617-Centerville (in service area); 21619-Chester (not in service area); 21620-Chestertown (in service area); 21623-Church Hill (in service area); 21638-Grasonville (not in service area); 21640-Henderson (not in service area); 21644-Ingleside (not in service area); 21649-Marydel (not in service area); 21651-Millington (in service area); 21657-Queen Anne (not in service area); 21658-Queenstown (not in service area); 21666-Stevensville (not in service area); 21668-Sudlersville (in service area); and 21679-Wye Milles (not in service area).

County (only the Betterton zip code area is not included) and about a third of the zip code areas in Queen Anne's county.

By 2018, only eight of these zip code areas would be included in an 85% relevance service area definition for UMSMC at Chestertown. (Fewer patients from 21645, Kennedyville, eliminated that zip code area from the 85% relevance service area for 2018.)

It is important to note that a service area definition based on patient origin is not equivalent to an area defined on the basis of market share. While 85 percent of patients at this hospital came from the zip code areas outlined above, the service area definition does not tell us about the strength of the commitment to the hospital by patients who reside in those zip code areas. Market share will be discussed later in the report.

Rural Hospitals

For some of the analysis in this assessment, UMSMC at Chestertown is compared to a select set of five other rural hospitals in Maryland with similar characteristics and levels of rurality in the surrounding community. These hospitals are Atlantic General (Worcester County), UMSMC at Dorchester, UMSMC at Easton, Garrett Regional (Garrett County), and Union Hospital (Cecil County).

Limitations

Use of hospitals in Delaware by residents of the defined service area cannot be identified and is not included in market share calculations. Similarly, while there is a District of Columbia hospital discharge data base, this data set was not available for the entire assessment period. Some residents of the UMSMC at Chestertown service area use hospitals in other states and, undoubtedly, Delaware and D.C. hospitals are the two groups of non-Maryland hospitals that account for most of this out-of-state migration. This means that the market shares achieved by Maryland hospitals are somewhat overstated in this report. However, the relative movement of market share among the Maryland hospitals that account for most of the service area population's hospital use is still revealed in a meaningful way.

Background on UMSMC at Chestertown

UMSMC at Chestertown is a general hospital that provides general medical and surgical inpatient and outpatient services located in Chestertown in rural Kent County on Maryland's Eastern Shore. The hospital primarily serves residents of Kent and Queen Anne's Counties. UMSMC at Chestertown is classified as a rural hospital according to the Federal Office of Rural Health Policy (FORHP) definition of rural hospital.[16]

[16] This definition of rural includes all non-metropolitan counties, as defined by the Office of Management and Budget as rural, and uses an additional method of determining rurality called the Rural-Urban Commuting Area (RUCA) codes. Similar to defining Metropolitan Statistical Areas, RUCA codes are based on Census data that is used to assign a code to each Census Tract. Tracts inside Metropolitan counties with the codes 4-10 are considered rural. FORHP has made some exceptions for areas with a RUCA code of 2 to 3 to be classified as rural.

Table 1: Key Acquisitions and Events on the Mid-Shore

2006	UMMS acquires Shore Health System composed of Easton Memorial and Dorchester General Hospitals.
2008	The General Assembly directs MHCC to study the use and performance of FMFs and authorizes establishment of the Queenstown FMF as a pilot project.
	UMMS acquires Chester River Hospital which is renamed the UMMS Medical Center at Chester River.
2010	Queenstown FMF opens.
2013	UMMS Medical Center at Chester River merges with Shore Health System (now Shore Regional Health).
2016	Senate Bill 707 prevents UMSMC at Chestertown from converting to an FMF before July 1, 2020.
2017	University of Maryland Shore Medical Center at Easton is authorized to offer percutaneous coronary intervention services.
2019	MHCC authorizes the conversion of UMSMC at Dorchester to an FMF (anticipated for completion in 2021) and the relocation of inpatient psychiatric services from UMSMC at Dorchester to UMSMC at Easton.
	Shore Regional Health submits a request to MHCC for an exemption from CON review to relocate psychiatric inpatient services to UMSMC at Chestertown (rather than UMSMC at Easton).

Prior to 2008, Chester River Hospital was an independent community hospital. In 2008, the hospital joined UMMS. In 2013, the hospital in Chestertown joined the University of Maryland Shore Health System (now Shore Regional Health), which also includes hospitals in Dorchester and Talbot Counties, an FMF in Queen Anne's County, and a network of outpatient centers.[17] Shore Regional Health serves five counties, the "Mid-Shore" region of the Eastern Shore, with an estimated 2018 population of approximately 172,000. By late 2015, some community members and physicians at UMSMC at Chestertown grew concerned that Shore Regional Health was considering a regional reconfiguration of its health care facility network that would involve converting UMSMC at Chestertown to an FMF or similar outpatient care campus.[18] During the 2016 legislative session, the law was amended to prohibit such a conversion before July 1, 2020.[19]

[17] In April 2019, the Maryland Health Care Commission approved the conversion of the Dorchester hospital located in Cambridge into a freestanding medical facility and the relocation of inpatient psychiatric hospital beds from the Dorchester facility to the University of Maryland Shore Medical Center at Easton.

http://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/2019_decisions/con_merger_shore_dorchester_decision_Revised_20190418.pdf

[18] "Freestanding medical facility" is a term in Maryland State law that describes a facility that has a 24/7 emergency service capability but does not provide inpatient hospitalization services

[19] See 2016 Md. Law, Ch. 420 (Senate Bill 707). This legislation also established a workgroup on rural health care delivery, tasked with studying issues related to the rural health care access and service delivery on the Eastern

Subsequently, Shore Regional Health has committed to keep UMSMC at Chestertown open as a general hospital through March 2022.

As of fiscal year 2020, UMSMC at Chestertown is licensed by the State of Maryland to operate 12 acute care hospital beds.[20] In Maryland, licensed bed capacity is annually adjusted as patient census rises or falls at a hospital. This hospital is the third smallest hospital in Maryland, in terms of licensed bed capacity and, thus, the size of its average daily census in the FYE March 31, 2019.

Demographics of Kent and Queen Anne's Counties

The UMSMC at Chestertown service area is concentrated in Kent County and parts of Queen Anne's County. Kent County's population is small (an estimated 19,383 in 2018) and is not growing. It is a relatively older population and has a relatively high rate of poverty. It has a higher proportion of residents who lack health insurance coverage than most areas of Maryland. These demographic factors suggest that Kent County's population may have a greater than average need for health care services and poorer access to services than most areas of the state. It is also a challenging environment for the generation of hospital income. Most areas of Queen Anne's County do not rely on UMSMC at Chestertown as an important access point for hospital services because travel time to the hospital in Annapolis or in Easton is better or comparable. Queen Anne's County has a larger (an estimated 50,251 in 2018) and wealthier population with better access to health insurance. Only a few Queen Anne's County zip code areas are in the UMSMC at Chestertown service area.

Kent County is estimated to have lost population over the past eight years. Queen Anne's County's population is estimated to have grown at a rate similar to Maryland overall between 2010 and 2018.[21]

Shore. Pursuant to the 2016 legislation, MHCC convened a workgroup on rural health delivery in 2016 and 2017. In 2017, this workgroup submitted a report to the Maryland General Assembly which contained a number of recommendations, including the creation of a Mid-Shore Rural Health Collaborative focused on improving health care access on the Mid-Shore. *Transforming Maryland's rural healthcare system: A regional approach to rural healthcare delivery*

http://mhcc.maryland.gov/mhcc/pages/home/workgroups/documents/rural_health/Rural%20Health%20Full%20report%20with%20Appendices_2017.pdf; Senate Bill 1056 in the 2018 legislative session established the recommended Rural Health Collaborative, which has begun work and will submit an initial report to the General Assembly in 2020. Website of the Maryland Rural Health Collaborative, https://health.maryland.gov/mcrhc/Pages/home.aspx

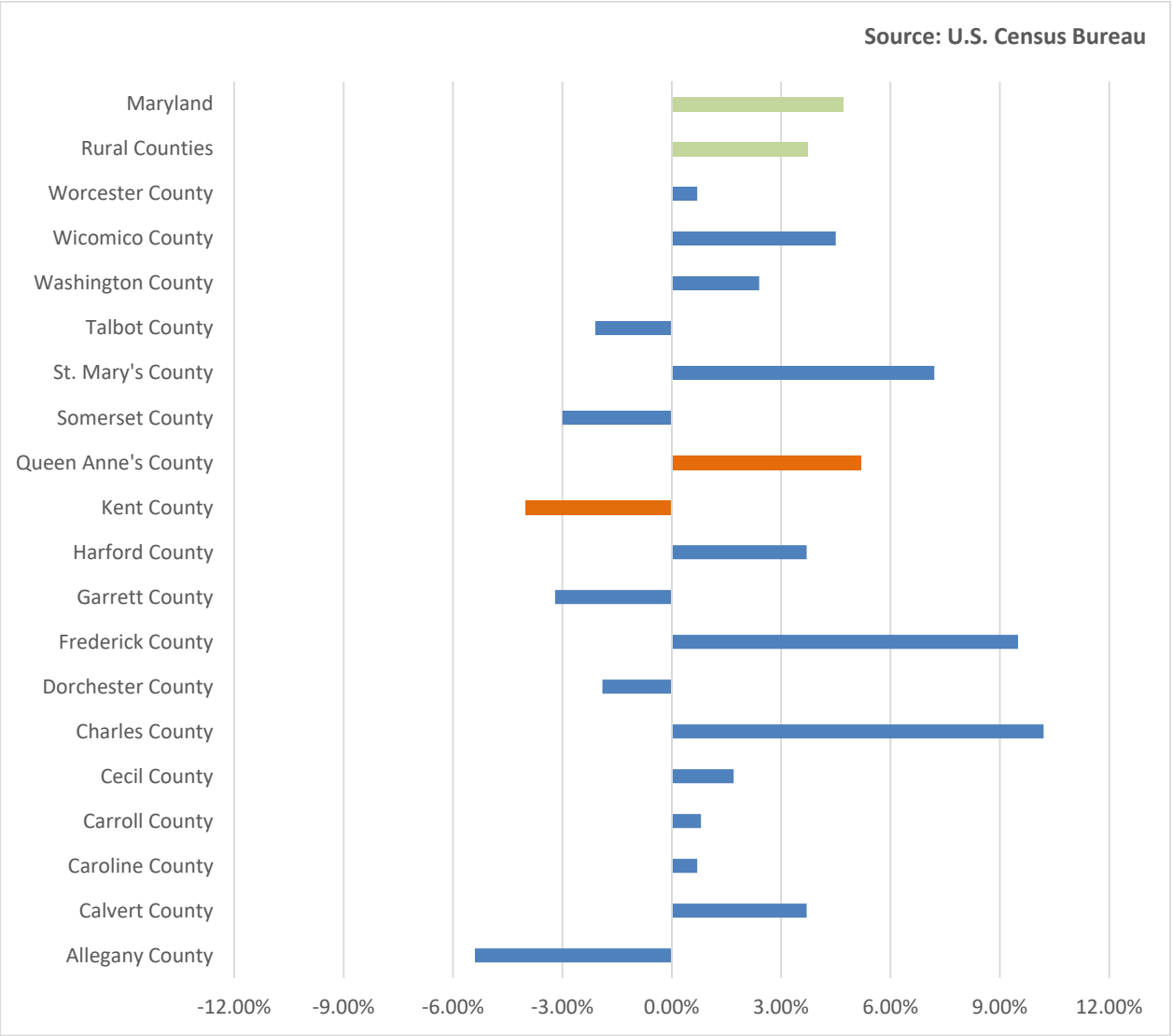
[20] Maryland Health Care Commission, Licensed Acute Care Beds by Hospital and Service: Maryland, FY 2020 (effective July 1, 2019), accessed December 17, 2019

https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/documents/acute_care/chcf_Licensed_Acute_Care_Beds_by_Hospital_and_Service_%20Maryland_FY2020.pdf

[21] According to U.S. Census bureau population estimates, Kent County lost four percent of its population between 2010 and 2018 (a loss of approximately 800 individuals) while Queen Anne's County's population grew by 5.2 percent (an approximate gain of 2,500 individuals). For comparison, the population of Maryland grew by 4.7% over that time period and the population in rural counties in Maryland grew by 3.7 percent. Six rural counties are estimated to have lost population over this time period and the only county estimated to have lost population at a faster rate than Kent County is Allegany County, in Western Maryland, which is estimated to have shrunk by 5.4 percent between 2010 and 2018. U.S. Census Bureau Quick Facts, accessed December 17, 2019

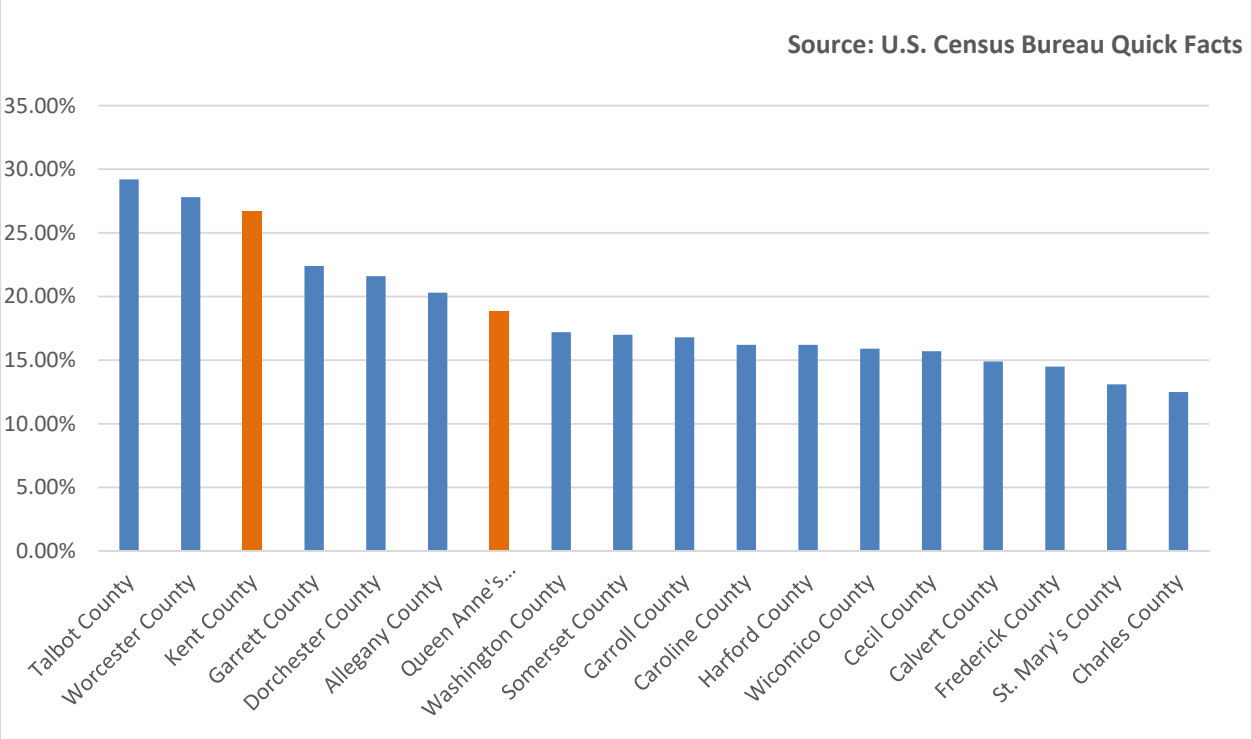
https://www.census.gov/quickfacts/fact/table/US/PST045218

Figure 2: Percent Change in Populations of Rural Counties in Maryland, April 1, 2010- July 1, 2019



Both Kent and Queen Anne's County have older populations than most Maryland jurisdictions. Twenty-seven (27) percent of Kent County's population is aged 65 or older. Of rural counties in the state, only Talbot and Worcester County have older populations. Almost 19 percent of Queen Anne's County's population is aged 65 or older.

Figure 3: Population Age 65 Years and Over as a Percent of Total Population, Rural Counties of Maryland, 2018



The populations of Kent and Queen Anne's Counties are predominantly White Non-Hispanic/Latino (78% in Kent County and 86% in Queen Anne's, compared to 51% for Maryland). The next largest racial/ethnic group is African American (15% in Kent County and six percent in Queen Anne's). About four percent of the population in both counties is Hispanic or Latino and about four percent of the population in both counties is foreign born. In Kent County, approximately six percent of the population speaks a language other than English at home; in Queen Anne's, approximately five percent. [22]

The proportion of individuals with a disability is slightly higher than the State average in these counties (Maryland, 7.4%; Queen Anne's County, 7.8%; Kent County 8.2%).[23] The proportion of veterans in these counties is similar to that seen in other Maryland rural counties.[24]

With the Medicaid expansion and availability of subsidized private market insurance beginning in 2014, the uninsured rate in Maryland has dropped in the past five years. In Maryland in 2018 the uninsured rate for non-elderly individuals was estimated at 6.9%. Queen Anne's County has a higher rate of health insurance coverage, with only 5.4% of the non-elderly population estimated

[22] U.S. Census Bureau Quick Facts, accessed December 17, 2019

https://www.census.gov/quickfacts/fact/table/US/PST045218

[23] Percent of population under age 65 with a disability 2013-2017, U.S. Census Bureau.

[24] MHCC analysis of U.S. Census Bureau data.

to lack health insurance. By comparison, Kent County, the primary source of patients for UMSMC at Chestertown, is estimated to have an uninsured rate of 8.4%.[25]

Poverty is a key social determinant of health status. The poverty rate in Kent County is approximately 13% (i.e. one in eight residents of the county live in poverty). This is a higher poverty rate than Maryland overall (9%). Queen Anne's County has a lower poverty rate (6.5%).[26]

Table 2: Income and Poverty for Kent County, Queen Anne's County, and Maryland[27]

	Median household income (in 2017 dollars), 2013-2017	Per capita income in past 12 months (in 2017 dollars), 2013-2017	Persons in poverty, percent (2018)
Kent County	$56,638	$32,217	12.9%
Queen Anne's County	$89,241	$40,553	6.5%
Maryland (All Counties)	$78,916	$39,070	9.0%

Home computer and internet access is relevant to health care for a number of reasons. It allows consumers access to information about their health, health care, and providers. It also allows for the implementation of home-based telehealth solutions that allow for in-home monitoring of patients. Among the 18 rural counties in Maryland, Kent County has fewer households with a computer (81.7% in 2013-2017) and fewer households with a broadband internet subscription (72.6% in 2013-2017).[28] Queen Anne's County has higher rates of computer ownership and broadband access, and is one of only four rural counties that exceed the state-wide rates on these measures.[29]

Table 3: Home Access to Computers and Broadband for Kent County, Queen Anne's County, and Maryland[30]

	Households with a computer, percent, 2013-2017	Households with a broadband Internet subscription, percent, 2013-2017
Kent County, MD	81.7%	72.6%
Queen Anne's County, MD	90.6%	84.6%
Maryland (All Counties)	90.2%	82.8%

Appendix A contains additional demographic data for reference.

[25] U.S. Census Bureau

[26] U.S. Census Bureau

[27] U.S. Census Bureau

[28] Allegany, Garrett, and Somerset County had lower rates of households without a computer. Five counties (Allegany, Garrett, Somerset, Dorchester, and Washington Counties) had lower rates of households with broadband subscriptions. Source: U.S. Census Bureau Quick Facts.

[29] Source: U.S. Census Bureau Quick Facts. The four rural counties with higher than average computer and internet access are Queen Anne's, Harford, Frederick, and Calvert.

[30] U.S. Census Bureau

Assessment of Changes in the Type (Category) of Services Provided at UMSMC at Chestertown, 2015-2018

Senate Bill 1010 (2019) directs MHCC to compare the "types" of services offered at UMSMC at Chestertown, providing a comparison between services provided in fiscal year 2015 and 2018, and services that were transferred to Easton.

This assessment evaluated the change in types of services in two ways. No change was found in the broad licensure categories for inpatient beds operated at UMSMC at Chestertown. The hospital provided general acute medical/surgical/gynecological/addiction (MSGA) services in both 2015 and 2018. In addition to bed licensure categories, the assessment considered APR-DRG service lines represented by patients. In 2015, services were provided to patients at UMSMC at Chestertown in seven inpatient service lines and one outpatient service line that were not seen in the patient population in 2018. The service volume for each of these service lines was five (5) or fewer patients in 2015, so the change was small. In addition, services in three inpatient surgery service lines were provided at UMSMC at Chestertown in 2018 that were not observed in 2015, resulting in a total net "loss" of only five service lines. The UMSMC at Easton did not add service categories that were removed from UMSMC at Chestertown, although the volume of services provided at Easton did change.

Licensed Bed Types

Maryland designates four types of acute care service at general hospitals and allows general hospitals to allocate licensed bed capacity among these categories of service so long as the hospital is authorized to provide the service. These categories are: 1) MSGA services; 2) obstetric services; 3) pediatric services; and 4) acute psychiatric services.

In 2015, UMSMC at Chestertown provided a single category of inpatient service, MSGA services, and it continued to provide that single inpatient service in 2018. UMSMC at Chestertown also allocated a single licensed bed to pediatric services during this period. However, the hospital had no reported patient days for patients aged 0-14 in 2018. Pediatric hospitalizations are relatively rare, and only a handful of Maryland hospitals with pediatric surgical capability handle the great bulk of demand for hospitalization of children. UMSMC at Chestertown did not provide obstetric or acute psychiatric services during this time period.[31]

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[31] The obstetrics unit at the hospital in Chestertown closed in 2012. As of 2011, the hospital had the lowest number of births of any hospital in Maryland (183), compared to 1,000 at Easton and 5,000 at Anne Arundel in the same time period. https://chestertownspy.org/2012/02/15/chester-river-hospital-to-close-obstetrics-april-1/. For residents of the UMSMC at Chestertown service area, obstetrics accounts for 16% of total inpatient discharges (or approximately 560). The majority of these visits occur at Anne Arundel Medical Center. Chestertown has two practicing obstetricians with an office location in Chestertown. These providers are not associated with Shore Regional Health and they deliver newborns at Anne Arundel Medical Center. https://www.myaamg.org/chester-river-ob-gyn The University of Maryland Shore Medical Group has two obstetrician/gynecologists and a nurse practitioner focused on women's health who hold office hours in Chestertown two days a month.https://www.umms.org/shore/locations/smg-womens-health-chestertown.

In 2018, only 135 births were generated by residents of Kent County at any location. The comparable number for residents of Queen Anne's County was 477. https://health.maryland.gov/vsa/Documents/Reports%20and%20Data/Jurisdictional/2018_Births/TableKent.pdf ; https://health.maryland.gov/vsa/Documents/Reports%20and%20Data/Jurisdictional/2018_Births/TableQueenAnnes.pdf. A national 2018 OB-GYN workforce study found a national average of 100 births per OB-GYN (with a range

In both 2015 and 2018, UMSMC at Easton provided both MSGA and obstetric services, as well as allocating licensed bed capacity to pediatric services (156 patients age 0-14 were served in Easton in 2018).

UMSMC at Easton is currently authorized to provide acute psychiatric services after UMSMC at Dorchester converts to a free-standing medical facility. However, Shore Regional Health has a request under review to replace this authorization with approval to introduce acute psychiatric services at UMSMC at Chestertown rather than Easton.[32]

APR-DRG Service Lines

UMSMC at Chestertown provided services in fewer service line categories in 2018 than in 2015. However, these were low volume services (less than 5 discharges in each service line) in 2015.

Table 4: APR-DRG Service Lines with Volume Greater Than Zero for UMSMC at Chestertown, UMSMC at Easton, and All Maryland Hospitals[33]

	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau
Inpatient Medical Services	Chestertown	26	21	-5
	Easton	32	31	-1
	All Maryland Hospitals	32	32	0
Inpatient Surgery[34]	Chestertown	8	9	1
	Easton	17	17	0
	All Maryland Hospitals	23	22	-1
Outpatient	Chestertown	20	19	-1
	Easton	22	22	0
	All Maryland Hospitals	22	22	0
All service lines (Inpatient & Outpatient, Medical and Surgery)	***Chestertown***	***54***	***49***	***-5***
	Easton	***71***	***70***	***-1***
	All Maryland Hospitals	***77***	***76***	***-1***

from 32-247 in the 50 largest metro areas).https://s3.amazonaws.com/s3.doximity.com/press/OB-GYN_Workload_and_Potential_Shortages_2018.pdf.

This means that Kent County's demand for OB-GYN services is likely being fully met by the existing providers. However, a 2018 MHCC workforce study suggests that the supply of OB-GYN physicians practicing in Kent and Queen Anne's County is likely to fall below the level of demand by 2030.

[32] https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/hcfs_con_merger_consolidation.aspx

[33] LC Consulting analysis of HSCRC Case-Mix data

[34] Because of a change in DRG classifications during the time period of the Assessment, the service related to injuries/complications of surgery was dropped in all hospitals during this time period.

To look at a more discrete level of changes in the types of services, MHCC looked at the All Patient Refined Diagnosis Related Group (APR-DRG) service line descriptions for inpatient services. APR-DRG codes are a set of standardized codes that categorize an inpatient stay based on a specific set of diagnoses and the medical or surgical services used to treat the patient. Sets of APR-DRG codes are categorized into service lines. For example, a knee replacement would have one APR-DRG code and a hip replacement would have another APR-DRG code but both codes will roll up to the Orthopedic Surgery APR-DRG service line. MHCC used the HSCRC patient-level administrative data (referred to as "case mix data") to determine the APR-DRG service line description. A hospital was determined to have a particular service category if the hospital had at least one reported APR-DRG code related to the service category reported in the service year reviewed. Outpatient service levels were identified using outpatient revenue codes.

UMSMC at Chestertown had a net decline of five service lines (compared to a net decline of one service line at UMSMC at Easton). Each of the services that was not provided to patients at UMSMC at Chestertown in 2018 had a very low volume of utilization in 2015 (less than five patients served in 2015).

Summary Perspective on Changes in the Type of Services Provided at UMSMC at Chestertown

During the study period, UMSMC at Easton did not add service line categories that were observed at UMSMC at Chestertown in 2015 but not reported in 2018, although the volume of services provided at Easton did change (and will be discussed in the next section). Additional tables on service types are contained in Appendix A.

Assessment of Changes in Volume of Services at UMSMC at Chestertown

Senate Bill 1010 (2019) directs MHCC to compare the "volume" of services offered at UMSMC at Chestertown in 2015 with 2018 volume and to identify any related "transfers" of services to UMSMC at Easton.

This assessment of changes in volume of service has been considered in terms of inpatient service and outpatient service. Inpatient services are broken down as medical or surgical in nature. A patient receiving inpatient services is admitted to the hospital for a stay of at least one night. Outpatient services are services that are provided at the hospital or on the campus of the hospital without any physician order for admission of the patient to the hospital. Outpatient services include emergency department services that do not result in a hospital admission, observation services, outpatient surgery, and an array of other diagnostic and treatment services, such as lab tests and diagnostic imaging procedures. A patient receiving outpatient services may stay overnight at the hospital as an "observation" patient.[35]

[35] "Observation services are hospital outpatient services given to help the doctor decide if" a patient needs "to be admitted as an inpatient or can be discharged. Observation services may be given in the emergency department or another area of the hospital". https://www.medicare.gov/Pubs/pdf/11435-Are-You-an-Inpatient-or-Outpatient.pdf. The distinction between inpatient and outpatient services is important from a regulatory perspective, and is also important for payers, patients, and other types of health facilities, as different payment rules apply. For example, Medicare Part A covers inpatient care, while Medicare Part B covers outpatient care, which in turn has different cost-sharing implications for patients. In addition, federal Medicare rules require a 3-day inpatient hospital admission before Medicare will cover payments to a nursing home. Time spent in outpatient observation care

Between 2015 and 2018, inpatient service volume at UMSMC at Chestertown declined, as it did at most Maryland hospitals. These reductions in admissions were relatively larger than those seen at other Maryland Hospitals. Some of these volume losses are likely due to changes in hospital utilization that follow national and statewide trends.[36] During the assessment period, UMSMC at Chestertown reduced certain types of avoidable hospitalizations (see further discussion in section on Quality of Services), so that some decrease in inpatient volumes is a result of patients receiving appropriate care in other settings and not needing to be hospitalized. UMSMC at Chestertown lost inpatient market share to other hospitals, including Anne Arundel Medical Center and UMSMC at Easton during the assessment period MHCC does not believe it is possible to determine, based on the data available, that inpatient service volume declines at UMSMC at Chestertown were the result of diversion of patients to UMSMC at Easton, on a planned basis.

A decline in outpatient service volume was also seen at UMSMC at Chestertown in the 2015-2018 time period, but these changes were small compared to the changes in inpatient service volume. On a relative basis, UMSMC at Chestertown lost less outpatient service volume than seen for all hospitals in Maryland over the assessment period.

Inpatient Services at UMSMC at Chestertown

This section provides data on the volume of inpatient service provided at UMSMC at Chestertown for the assessment period. Data is presented both for all patients that used UMSCMC at Chestertown (and comparable hospitals), as well as data on the inpatient service use of residents of the hospital's service area.

Hospital Inpatient Service Volume

Data from UMSMC at Chestertown shows a decline in inpatient service volume, both for medical services and for surgical services. Hospital utilization has been broadly declining in Maryland and throughout the United States in recent years. Some of the reductions in volume at UMSMC at Chestertown are consistent with this trend.[37] During the assessment period, UMSMC at Chestertown has successfully reduced certain types of avoidable hospitalizations (see further discussion in section on Quality of Services), further reducing inpatient service utilization at UMSMC at Chestertown during the assessment period (i.e. some of the decrease in inpatient volume is a result of patients receiving appropriate care in other settings and not needing to be hospitalized). Finally, UMSMC at Chestertown lost market share to other hospitals, including Anne Arundel Medical Center and UMSMC at Easton during the assessment period. Inpatient surgery cases declined by 25 percent at UMSMC at Chestertown, compared to a two percent decline at UMSMC at Easton. During this time period, some surgeries that previously require

doesn't count towards the three-day admission. https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/SNF3DayRule-MLN9730256.pdf

[36] Healthcare Cost and Utilization Project, "HCUP Fast Stats- Trends in Inpatient Stays", Agency for Health Care Research and Quality, https://www.hcup-us.ahrq.gov/. See also Kaiser Family Foundation State Health Facts "Hospital admissions per 1,000 population by ownership type", https://www.kff.org/other/state-indicator/admissions-by-ownership/.

[37] Healthcare Cost and Utilization Project, "HCUP Fast Stats- Trends in Inpatient Stays", Agency for Health Care Research and Quality, https://www.hcup-us.ahrq.gov/. See also Kaiser Family Foundation State Health Facts "Hospital admissions per 1,000 population by ownership type", https://www.kff.org/other/state-indicator/admissions-by-ownership/. See appendix A for detailed tables.

hospitalization were increasingly done on an outpatient basis (either at a hospital or at an ambulatory surgical center). This is reflected in a nine percent decline in inpatient surgery services at all Maryland Hospitals between 2015 and 2018. UMSMC at Easton's decline in inpatient surgery volume is likely lower than all Maryland Hospitals because UMSMC added percutaneous coronary intervention (PCI) services in 2017 (PCI is a form of invasive cardiology procedure that tends to be "coded" as a surgical service even though it does not take place in an operating room). The hospital in Easton reported 126 PCI cases in 2018. This service category had not previously been provided at UMSMC at Easton[38] and its introduction at Easton did not pull any case volume away from Chestertown, which has never provided PCI services.

Table 5: Volume of Inpatient Medical Discharges at UMSMC at Chestertown, UMSMC at Easton, and All Maryland Hospitals, 2015 & 2018[39]

	2015	2018	Nominal Change	Percentage Change
UMSMC at Chestertown	1,545	1,029	(516)	-33%
UMSMC at Easton	7,084	6,491	(593)	-8%
All Maryland Hospitals	473,458	454,805	(18,653)	-4%

Table 6: Volume of Inpatient Surgical Discharges at UMSMC at Chestertown, UMSMC at Easton, and All Maryland Hospitals, 2015 & 2018[40]

	2015	2018	Nominal Change	Percentage Change
UMSMC at Chestertown	236	176	(60)	-25%
UMSMC at Easton	1,604	1,569	(35)	-2%
All Maryland Hospitals	150,036	135,998	(14,038)	-9%

The data examined in this assessment contains some evidence that individuals who can choose to use another hospital for a scheduled inpatient medical or surgical service are doing so, although the reasons for those choices cannot be definitively determined. Eighty-nine percent (89%) of inpatient discharges (both medical and surgical) at UMSMC at Chestertown were delivered to individuals admitted through the emergency department (as opposed to scheduled direct admissions), compared to less than 60 percent of admissions at other Maryland hospitals. More than 90 percent of inpatient medical admissions at UMSMC at Chestertown resulted as a consequence of a patient presenting at the hospital's ED, compared to around 65% of admissions for other Maryland hospitals. At UMSMC at Chestertown, more than 55 percent of surgical patient admissions came from patients initially assessed in the emergency department, compared to

[38] PCI was not provided at UMSMC at Chestertown at any time in the study period.

[39] LD Consulting analysis of HSCRC Case Mix Data

[40] LD Consulting analysis of HSCRC Case Mix Data

approximately 30 percent for all Maryland hospitals. UMSMC at Easton's data on ED to admitted patient conversion closely resembles that data of all other Maryland hospitals.

TABLE 7: PERCENT OF INPATIENT ADMISSION ORIGINATING IN THE EMERGENCY DEPARTMENT AT UMSMC AT CHESTERTOWN, UMSMC AT EASTON, AND ALL MARYLAND HOSPITALS, 2015 & 2018

	UMSMC at Chestertown		UMSMC at Easton		All Maryland Hospitals	
Service Category	2015	2015	2015	2015	2015	2015
Inpatient Medical	92%	95%	66%	61%	65%	64%
Inpatient Surgery	56%	57%	27%	32%	31%	30%
Total Inpatient	**87%**	**89%**	**59%**	**55%**	**57%**	**56%**

Other rural hospitals in Maryland have an ED to inpatient conversion rate that is between the rate for all Maryland hospitals and the rate for UMSMC at Chestertown. About 75% of inpatient medical admissions at these hospitals originated in the ED and about 38% of inpatient surgical admission originated in the ED.

Hospital Service Area Inpatient Service Volume

Another perspective on this data involves a look at the residents of the UMSMC-Chestertown service area (i.e. the nine zip code areas defined as the hospital's 85% relevance service area, described earlier in this report). For the most part, the residents of this service area obtain inpatient hospital services at five hospitals: UMSMC at Chestertown; Anne Arundel Medical Center; UMSMC at Easton; University of Maryland Medical Center; and The Johns Hopkins Hospital.[41]

Total inpatient hospital discharges for residents of this service area declined by 445 discharges between 2015 and 2018, an 11 percent drop. Discharges from UMSMC at Chestertown declined by 521 (32%) between 2015 and 2018, while discharges of service area residents increased by 168 (32%) at UMSMC at Easton and by 23 (3%) at Anne Arundel Medical Center. Other hospitals in Maryland (including the University of Maryland Medical Center and The Johns Hopkins Hospital, both in Baltimore City, saw declines in inpatient hospitalizations from residents of the service area.

[41] Inpatient visits from these five hospitals make up 89% of all inpatient visits for Chestertown hospital service area residents.

Table 8: Number of Inpatient Hospital Discharges for Top Five Hospitals by Hospital Discharge Volume for Residents of Chestertown Hospital Service Area, 2015 & 2018

Hospital Name	2015	2018	Nominal Change	Percentage Change
UMSMC at Chestertown	1,609	1,088	-521	-32%
Anne Arundel Medical Center	897	920	23	3%
UMSMC at Easton	529	697	168	32%
University of Maryland Medical Center	309	280	-29	-9%
Johns Hopkins Hospital	130	129	-1	-1%
Other Maryland Hospitals	465	380	-85	-18%
Total Inpatient Discharges	**3,939**	**3,494**	**-445**	**-11%**
Proportion of discharges at top five hospitals	**88%**	**89%**		

Table 9: 2015 and 2018 Inpatient Services Market Share for Top Five Hospitals used by Residents of Chestertown Hospital Service Area

Hospital Name	2015 IP Market Share	2018 IP Market Share
UMSMC at Chestertown	41%	31%
Anne Arundel Medical Center	23%	26%
UMSMC at Easton	13%	20%
University of Maryland Medical Center & Shock Trauma	8%	8%
Johns Hopkins Hospital	3%	4%
Other Maryland Hospital	12%	11%

During the assessment period, UMSMC at Chestertown lost service area market share to other hospitals. In 2015, 41% of the inpatient hospitalizations for residents of the UMSMC at Chestertown service area occurred at UMSMC at Chestertown. AAMC had a market share in the service area of 23% and UMSMC at Easton achieved a 13% market share. By 2018, only 31% of the total Maryland hospital discharges from the service area were from UMSMC at Chestertown. In that same year, Anne Arundel Medical Center accounted for 26% of the discharges from the service area and UMSMC at Easton accounted for 20%.

There are a number of factors that influence which hospital a patient chooses. Such factors include services offered at the hospital facility (for example, UMSMC at Chestertown does not have obstetric services, certain cardiac services, or a trauma center), patient choice, and specialty or primary care physician recommendations and referrals.

Transfers to other Hospitals

One concern that has been raised by some community members is that patients are being transferred from UMSMC at Chestertown to other hospitals. In 2018, 28% of inpatient admissions

(medical and surgical) at UMSMC at Easton of service area residents were the result of transfers from another hospital. In 2015, only 9 percent of admissions at UMSMC at Easton were the result of transfers from another hospital. It is not possible to identify the source hospital in the data (i.e. MHCC cannot determine how many of these transfers are from UMSMC at Chestertown in the administrative data set).

Emergency medicine services (EMS) personnel routinely transport a patient to the nearest hospital equipped to treat that patient's condition. An emergency medical services (EMS) diversion allows hospitals in the State to inform EMS of capacity issues within the hospital or the ED that could have an impact on the timeliness of patient care. For example, a "red alert" communicates that a hospital has no ECG monitored beds available for critical care or telemetry. A "yellow alert" is a request from an emergency department to EMS to bypass the hospital with all patients in need of urgent medical care. Patients that bypass the hospital because of a red or yellow alert would not be captured in the transfer data discussed above, because EMS transports the patients directly from the site of the EMS call to another hospital.

Yellow alerts, the most relevant diversion for this assessment were not major contributors to EMS bypasses that may have occurred at UMSMC in Chestertown in either 2015 or 2018. In 2015, UMSMC at Chestertown was on yellow alert 24 hours (less than 1% of total ED hours) over that year and in 2018, the hospital was on yellow alert a mere eight hours.[42] UMSMC at Easton had more hours on yellow alert but it experienced a decline in yellow alert hours from 312 (about 4% of total ED hours) in 2015 to 140 in 2018.

Average Daily Census, Length of Stay, and Licensed Beds

UMSMC at Chestertown saw a decrease in the average daily census (ADC) for inpatient services in each year over the study period. The ADC for UMSMC at Chestertown, a function of both discharges and average length of stay, declined 36% from 2015 to 2018 and the ADC for UMSMC at Easton increased 15% over the same time period (however, the ADC for UMSMC at Easton has declined since 2018). The overall average daily census for all Maryland hospitals decreased 2.6% from 2015 to 2018. The overall average daily census for all Maryland rural hospitals decreased 11% from 2015 to 2018 (a decrease of nine percent if UMSMC at Chestertown is excluded).

Licensed bed capacity at UMSMC at Chestertown fell from 31 beds in FY 2015 to 26 beds in FY 2018 (16 percent). Licensed bed capacity has fallen to 12 beds as of FY 2020 (a decrease of 61 percent compared to 2015). Licensed bed capacity for acute care hospitals in the State of Maryland is dynamic, calculated annually based on average daily acute care inpatient census. The average daily census (ADC) of acute care patients for each hospital for the 12-month period ending with the first quarter of each year is calculated and total licensed acute care bed capacity is established for the next fiscal year at 140% of the hospital's average daily census during that period. This licensure approach reflects an assumption that an average annual occupancy rate of approximately 71% for acute care hospital beds is an appropriate benchmark for determining the maximum

[42] MHCC analysis of the CHATS Region I, II, IV - County/Hospital Alert Tracking System at https://www.miemssalert.com/chats/Default.aspx?hdRegion=124&hdReportRegion=IV&hdReport=Hospital%20Summary%20Report accessed on January 10, 2020

number of beds an acute care hospital needs to operate without an excessive number of days occurring in which all bed capacity is full.[43]

Table 10: Licensed Bed Capacity, FY 2015-FY 2020

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Percent Change, 2015-2020
UMSMC at Chestertown	31	30	26	26	21	12	-61%
UMSMC at Easton	112	112	112	120	104	97	-13%
All Maryland Hospitals	**9,804**	**9,800**	**9,555**	**9,611**	**9,355**	**9,401**	**-4%**

Outpatient Service Volume Changes at UMSMC at Chestertown

Use of outpatient services for all patients at the Chestertown hospital declined during the 2015-2018 assessment period, but at a much lower rate than the rate of decline experienced in inpatient service. UMSMC at Chestertown saw a five percent decline in outpatient service volume between 2015 and 2018. Hospitals in Maryland, on average, saw a six percent volume reduction during this time period, so the Chestertown hospital is retaining more of its historic volume of outpatient services than many other Maryland hospitals. Easton saw two percent growth in outpatient service volume over this time period.

Table 11: Visit Volume - Outpatient Care, 2015 & 2018

	2015	2018	Net Change, 2015 -2018	Percent change, 2015-2018
UMSMC at Chestertown	77,833	74,240	-3593	-5%
UMSMC at Easton	141,209	143,695	2,486	2%
All Maryland Hospitals	13,568,384	12,709,474	(858,910)	-6%

Outpatient Service Volume for Residents of the UMSMC at Chestertown Service Area

Focusing on the geographic service area, residents of this area frequently choose UMSMC at Chestertown for outpatient services. Of the outpatient service visits provided to residents of this service area, 66 percent were provided at UMSMC at Chestertown, a percentage that has changed very little during the assessment period.

The total number of outpatient service visits at any hospital provided to residents of the UMSMC at Chestertown service area increased about one percent over the assessment period. This is the same increase in outpatient service visits seen at UMSMC at Chestertown during the assessment period. The volume of outpatient service visits delivered to service area residents also increased at UMSMC at Easton, Johns Hopkins Hospital, and the University of Maryland Medical Center. Outpatient services delivered at the FMF in Queen Anne's County declined during this period.

43 https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/documents/acute_care/chcf_Annual_Rpt_Hosp_Services_FY2018.pdf

Table 12: Outpatient Service Visit Market Share for UMSMC at Chestertown Service Area Residents: Top Five Hospitals by Visit Volume		
	2015 Market Share	2018 Market Share
UMSMC at Chestertown	67%	66%
Anne Arundel Medical Center	9%	8%
UMSMC at Easton	6%	7%
University of Maryland Medical Center	6%	7%
Johns Hopkins Hospital	3%	4%
Other Maryland Hospitals	9%	8%

Table 13: Outpatient Service Visits Provided to UMSMC at Chestertown Service Area Residents				
	2015	2018	Net Change, 2018 -2015	Percent change, 2018-2015
UMSMC at Chestertown	31,051	31,301	250	1%
Queen Anne's Freestanding Medical Facility	3,968	3,595	-373	-9%
Anne Arundel Medical Center	3,022	3,244	222	7%
UMSMC at Easton	2,976	3,237	261	9%
Johns Hopkins Hospital	1,560	2,023	463	30%
Other Maryland Hospitals	4,077	3,793	-284	-7%
Total OP Visits	**46,654**	**47,193**	**539**	1%

Observation Stays

Table 14: Average Daily Census of Observation Patients				
	FY 2015	FY 2016	FY 2017	FY 2018
UMSMC at Chestertown	2.5	2.0	1.3	1.8
UMSMC at Easton	3.0	3.0	2.0	2.0

Observation services are those services furnished by the hospital on the hospital's premises, including use of a bed and periodic monitoring by the hospital's nursing or other staff, which are reasonable and necessary to determine the need for a possible inpatient admission.[44] Observations services are outpatient services. However, these services may be

[44] https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/documents/acute_care/chcf_Annual_Rpt_Selected_Hospital_Services_FY2017.pdf

provided in a hospital room and bed, and so the patient may not be aware of the status of the services. The status of the services makes a difference to patient's cost-sharing responsibility both for the time in the hospital and for subsequent stays in a long-term care facility, depending on the patient's source of insurance. It appears that use of this outpatient service declined at both UMSMC at Chestertown and UMSMC at Easton over the assessment period.

Summary Perspective on Changes in Service Volume at UMSMC at Chestertown

UMSMC at Chestertown experienced a larger decline in admissions during the assessment period and a larger decline in admissions after 2018 than would be expected, in light of the broad decline in hospitalization seen across the state in recent years. The basis for this decline is two-fold. UMSMC at Chestertown was and still is experiencing a higher level of admission of patients discharged from a hospital within the 30 days preceding admission, referenced as "readmissions," than most hospitals. It was and still is experiencing a higher level of Prevention Quality Indicators (PQI) admissions (a measure of potentially avoidable hospitalizations for ambulatory care sensitive conditions) than most hospitals. It has made progress in reducing the number of such potentially preventable admissions but this has exacerbated the overall decline in use of its inpatient facilities. Secondly, the hospital has lost significant inpatient market share in its shrinking service area to the two other hospitals that draw the most patients from this service area. The patient choices underlying this trend and physician influence on those choices cannot be definitively characterized by MHCC in a manner that allows for any meaningful finding on why inpatient care is migrating away from UMSMC at Chestertown. It seems likely that some actions of Shore Regional Health, taken in response to the declining use of the hospital in Chestertown and the reductions in demand for service at this hospital have exacerbated the declines. However, MHCC is not able to discern any formal plan being implemented by Shore Regional Health expressly designed to force a market shift in hospitalization services from Chestertown to Easton.

Assessment of Changes in the Quality of Care Provided by UM Shore Medical Center at Chestertown, 2015 – 2018

Three types of data are examined to assess the quality of services provided at SMC-Chestertown and how quality and performance measures for this hospital have changed in recent years.

The first set of measures are those related to broad categories of hospital use and measures of timely and effective hospital care. Characteristically, they have been used, e.g., in the case of readmissions and PQI admissions, in Maryland's regulatory model to track and reward reductions in hospital use that can be prevented through improvements in care delivery and coordination. The measures include: the ratio of "readmissions" to total admissions; the ratio of "Prevention Quality Indicator" (PQI) admissions to total admissions; and the time inpatients originating from the hospital emergency department (ED) wait in the ED prior to admission.

Hospital Use

Readmissions" are admissions of patients that occur within 30 days of the same patient being discharged from a hospital stay. (Transfers of patients from one hospital to another for longer-term care are not readmissions.) Readmissions were reduced at SMC-Chestertown in the years shown in the table, declining at a faster rate (38%) between 2015 to 2018 than total admissions (31%). The observed rate in 2018 was comparable to the average seen for Maryland's rural hospitals (12%). The overall readmission rate for all Maryland hospitals in 2018 was 8.9%.

Table 15: Readmissions and Total Admissions, UMSMC at Chestertown						
	2015	2016	2017	2018	Nominal Change 2015-18	Average Annual Change 2015-2018
Readmissions	245	247	249	152	-38.0%	-11.3%
Total Admissions	1,829	1,581	1,712	1,262	-31.0%	-8.9%
Readmissions/Total Admissions	13.4%	15.6%	14.5%	12.0%		

The Prevention Quality Indicators (PQIs) are a set of measures that can be used with hospital inpatient discharge data to identify quality of care for "ambulatory care sensitive conditions." These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease. The PQIs are population based and adjusted for covariates. (AHRQ). In 2018, 10.2% of SMC-Chestertown admissions included PQI, a significant improvement when compared with 2015's PQI rate of 22.7%. The 2018 PQI rate for SMC-Chestertown is slightly higher than the average rate for Maryland rural hospitals (9.5%). The gap between the SMC-Chestertown rate and the state average (7.3%) is higher.

Table 16: PQI Admissions and Total Admissions, UMSMC at Chestertown						
	2015	2016	2017	2018	Nominal Change 2015-18	Average Annual Change 2015-2018
PQI Admissions	415	331	279	129	-68.9%	-25.3%
Total Admissions	1,829	1,581	1,712	1,262	-31.0%	-8.9%
PQI Admissions/Total Admissions	22.7%	20.9%	16.3%	10.2%		

From 2015 to 2018, SMC-Chestertown reduced the median time patients spent in the hospital's ED prior to admission by over 1.5 hours, an impressive achievement when compared with statewide experience, where this measure (in terms of a simple average time) actually worsened slightly in those same years. Despite the improvement, the median time spent by patients at SMC-Chestertown in 2018 was longer than that observed for the two nearest Eastern Shore general hospitals and Anne Arundel Medical Center, by approximately an hour to 1.5 hours and was substantially longer compared to the border state rural hospital average and almost 20 minutes longer than the overall statewide average

Table 17: Median Time (Minutes) in ED Prior to Admission, UMSMC at Chestertown and Selected Other Hospitals						
Hospital	2015	2016	2017	2018	Nominal Change 2015-18	Average Annual Change 2015-2018
UMSMC at Chestertown	512	493	407	418	-18.4%	-4.9%

UMSMC at Easton	306	325	335	350	14.4%	3.4%
Union Hospital of Cecil County	352	369	339	330	-6.3%	-1.6%
Anne Arundel Medical Center	372	352	333	330	-11.3%	-2.9%
University of Maryland Medical Center	635	-	662	688	8.3%	2.0%
Rural Hospitals in Border States (Simple Average)	227	232	232	233	2.5%	0.7%
All Maryland Hospitals (Simple Average)	391	383	391	399	2.1%	0.5%

Hospital Performance Evalation Guide

A second set of measures are those that MHCC has used in its Maryland Hospital Performance Evaluation Guide (MHPEG), which can be accessed on the MHCC web site at: https://www.marylandqmdc.org/Article/View/d1c578b9-afab-45c2-b88a-df65e1c46fc2

A number of measures in the MHPEG are not reported for UMSMC at Chestertown because utilization is too low to yield meaningful performance results. A review of the measures is summarized below.

Timely and Effective Care

The following table provides 2018 values for CMS Hospital Compare timely and effective care measures as available SMC-Chestertown, the two other Shore Regional Health hospitals (combined) and Anne Arundel Medical Center. The measures of timely and effective care, also known as process measures, show how often or how quickly hospitals provide care that research shows gets the best results for patients with certain conditions.

The substantive "findings" from this set of measures are:

- The reported median time from ED arrival to ED departure for discharged ED patients increased from 178 minutes in 2017 to 406 minutes in 2018. This is only based on two available data points.
- Colonoscopy care appears to be improving. Both measures for this procedure showed significant improvement between 2016 and 2018. .Both were new measures in 2015.

Complications, Deaths, and Imaging Measures

With respect to this set of complication and death measures, no changes in complications or mortality measures occurred. All measures with enough data are found to be "No different than the national rate"

No clear change trends in imaging measures are apparent.

Table 18: Selected Measures of Timely and Effective Care, UM Shore Medical Center at Chestertown and Selected Other Hospitals in 2018					
Service Type/ Condition	Measure	Measure Value	SMC-Chestertown	SMC-Easton & SMC-Dorchester	Anne Arundel Medical Center
Emergency Department	Median time from arrival in ED to departure for admitted ED patients	Minutes	330	330	418
	Median time in ED after decision to admit	Minutes	102	111	207
	Median time in ED – all outpatients (not admitted)	Minutes	128	153	189
	Median time from arrival in ED to ED departure – all patients	Minutes	406	285	430
	Left without being seen	Percentage of total ED patients	1%	3%	1%
Heart Attack or Chest Pain	Median time to ECG	Minutes	7	7	4
Colonoscopy Care	Appropriate follow-up interval for normal colonoscopy in average risk patient	Compliance Percentage	40%	78%	94%
	Colonoscopy interval for patients with a history of adenomatous polyps-avoidance of inappropriate use	Compliance Percentage	89%	82%	100%
Sepsis Care	Appropriate care for severe sepsis and septic shock	Compliance Percentage	34%	38%	69%
Immunization for Influenza	Immunization for influenza following patient assessment	Compliance Percentage	97%	99%	99%
Health Care Worker Influenza Vaccination	Health care workers immunized for influenza	Compliance Percentage	99%	99%	95%

Infections

UMSMC at Chestertown does not have results for all but one of the hospital-acquired infection types tracked by the Centers for Disease Control, because of insufficient data or, in the case of cardiac surgery, because it does not provide the service. Small amounts of data are not compatible with precision issues in the National Healthcare Safety Network calculations of comparative performance. Clostridium difficile is the only infection type that is consistently scored for UMSMC at this hospital. The standardized infection ratio (SIR) is consistently above 1 (below 1 is better), but the SIR is considered no different than the national benchmark and there have been no changes in this finding since 2015.

Patient Experience

Finally, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS®) data set was reviewed. CAHPS surveys are funded and overseen by the Agency for Healthcare Research and Quality (AHRQ). The surveys ask patients to report on their health care experiences and are available to the public. They focus on health care quality aspects that patients find important and are capable of assessing. The surveys measure patient experience with various measures that 'should' happen with each medical encounter, such as understandable communication with doctors, nurses and pain management during a patient's hospital or clinic visit or end of life care. More information of CAPHS survey information can be accessed at: (https://www.ahrq.gov/cahps/news-and-events/podcasts/measure-patient-experience-podcast.html)

The following table provides a composite star rating based on HCAPHS patient surveys for five years for five hospitals, for border state rural hospitals and for all hospitals in Maryland. The five-star rating system combines data gathered from questions on ten topics: nurse communication; doctor communication; responsiveness of hospital staff; communication about medicines; discharge information; care transition; cleanliness of hospital environment; quietness of hospital environment; hospital rating; and willingness to recommend hospital. As can be seen, over the five years shown, SMC-Chestertown's average composite score was 2.6, the lowest star rating among the two nearest alternative general hospitals on the Eastern Shore (SMC-Easton and Union), and also lower than the average maintained by Anne Arundel Medical Center and University of Maryland Medical Center. Over the years shown, SMC-Chestertown composite star rating was similar to the average for all Maryland hospitals.

Table 19: CMS 5-Star Composite Hospital Ratings 2014-2018

Hospital	2014	2015	2016	2017	2018
UMSMC at Chestertown	3	2	2	3	3
UMSMC at Easton	3	3	3	3	3
Union Hospital at Cecil County	3	3	3	3	2
Anne Arundel Medical Center	3	3	4	3	4
University of Maryland Center	3	3	3	3	3
Rural Hospitals in Border States (Simple Average)	**3.2**	**3.2**	**3.4**	**3.2**	**3.3**
All Maryland Hospitals (Simple Average)	**2.6**	**2.6**	**2.6**	**2.7**	**2.8**

Summary Perspective on Changes in Quality at UMSMC at Chestertown

Substantive changes in the overall quality of care at SMC-Chestertown are not evident in the 2015 to 2018 period based on the quality of care and performance measures considered. This hospital certainly does not stand out has a top performer among Maryland hospitals nor does the profile indicate that the hospital is notable for producing very bad outcomes or significantly unhappy patients.

As previously noted, SMC-Chestertown has reduced readmissions or potentially preventable or avoidable admissions at a faster pace than the state's hospitals as a whole but started the period with a high proportion of such admissions and its levels are still relatively high despite its success. This "success" is a substantive factor in the inpatient volume slide that has occurred at SMC-Chestertown, as previously discussed in this report.

Assessment of the Causes for the Observed Changes at UMSMC at Chestertown, 2015 to 2018

A key basis for this report was the distribution in 2018 of a list of grievances by the *Save Our Hospital* organization that has established itself in Chestertown. Those complaints were directed at Shore Regional Health and primarily addressed changes in personnel and services at UMSMC at Chestertown that, in the view of the Chestertown group, constituted neglect, inaction, or purposeful actions by Shore Regional Health that degraded the availability of services in Chestertown, the quality of managerial oversight applied in Chestertown, or, in the case of psychiatric services, a poor level of policy consideration and decision-making related to the conversion of the Cambridge hospital to an FMF and the alternatives for relocation of this service.

Appendix D includes correspondence itemizing the specific grievances identified by *Save Our Hospital* and the response of Shore Regional Health.

As outlined in the body of this report, UMSMC at Chestertown is a small rural hospital providing general medical/surgical inpatient services that has not seen any changes in recent years in its fundamental service mix or quality of care but has experienced a precipitate decline in demand for hospitalization. As noted in the report, one basis for the decline in inpatient service volume is UMSMC at Chestertown's history of hospitalizing patients of questionable appropriateness. As would be expected under Maryland's new payment model, these high levels of readmissions and PQI admissions are falling. This is a positive development that has placed a difficult strain on this small hospital. Secondly, as overall use of hospitals declines, as a result of reductions in inappropriate hospitalization but also as a result of changes in clinical practice, UMSMC at Chestertown is also seeing its market position erode. It is reasonable to expect that Shore Regional Health will try to deploy staff and clinical resources where they can be used most frequently and most efficiently. As activity levels at the hospital in Chestertown shrink, perceptions of the hospital as a reliable and proficient provider of services by physicians and patients may lead to more migration to other hospitals or health care facilities for service. It is difficult to know with certainty, but it is possible that a "downward spiral" of decline may be at play.

To reiterate the report's summary perspective on the volume decline, the choices underlying this trend cannot be definitively characterized by MHCC in a manner that allows for any meaningful finding on why inpatient care is migrating away from UMSMC at Chestertown. Some actions by Shore Regional Health which, at least in part, are a response to the declining demand for service in Chestertown, have exacerbated the decline. However, MHCC is not able to discern any formal

plan being implemented by Shore Regional Health expressly designed to force a market shift in hospitalization services from Chestertown to Easton.

Some actions by UMSMC at Chestertown's parent, Shore Regional Health are undoubtedly related to the decline in use of this small hospital. MHCC did not identify any formal plan being implemented by Shore Regional Health expressly designed to force a material market shift in hospitalization services from Chestertown to Easton. Only one service identified by "*Save Our Hospital*" as being transferred from UMSMC at Chestertown to the Easton hospital, sleep lab services, was confirmed by Shore Regional Health to have made this transfer by choice of SRH but the system claims that this action was taken on the basis of a recommendation by the now retired pulmonologist providing the service in Chestertown, because of the low volume of sleep studies being conducted.

Financial Performance of UM Shore Medical Center at Chestertown

While not requested as a specific element of this report, context for the information about changes at UMSMC at Chestertown provided in the report, revenues and expenses from Maryland hospitals' annual Statement of Revenue and Expenses (schedule RE) were reviewed to summarize the change in revenue and expenses from fiscal year 2015 to 2018 at the UMSMC at Chestertown.[45] The schedule RE summary includes data from regulated revenue, unregulated revenue[46] and the combined total revenue.

In total (combining both regulated and unregulated revenue), UMSMC at Chestertown generated positive margins from fiscal year 2015 through 2018. In 2015 the hospital's "profit" (excess revenues over expenses) margin was $1.2 million (2% of net revenue) and steadily increased to $8.1 million in 2018 (15% of net revenue). It is worth noting that the hospital accrued a significant $6.8 million deduction to patient revenue in 2015 that impacted financial performance. This accrual was related to a payback to CMS that spanned multiple years but was realized in 2015. Had this $6.8 million deduction not been realized in 2015 the profit margin in 2015 would have been more consistent with that seen in 2018, approximately $8 million. The positive margin is attributable to inpatient and outpatient services. The hospital did not generate a positive margin from unregulated revenue generated from 2015 through 2018. Like UMSMC at Chestertown, the total gross profit margin for all Maryland Hospitals was positive in both 2015 (3.9% of net revenue) and 2018 (5.7% of net revenue). However, the profits experienced at the Chestertown hospital as a percentage of net revenue exceeded the rate of profit for all Maryland hospitals and also exceeded profit as a percentage of net revenue for Maryland rural hospitals (4.8% of net revenue).

In the regulated inpatient and outpatient services, gross patient revenue at UMSMC at Chestertown declined from $64.5 million in 2015 to $59.4 million in 2018. The reduction is seen primarily in the gross revenues from daily hospital services and inpatient ancillary services. There was an increase in revenue from ambulatory services while outpatient ancillary service revenue remained

[45] Maryland hospital audited financial statements are available on the HSCRC website. https://hscrc.maryland.gov/pages/hsp-afs.aspx. Schedule RE is used by Maryland Hospitals to provide an annual statement of revenue and expenses to the HSCRC. The schedule RE summary includes data from regulated revenue, unregulated revenue, and the combined total revenue.

[46] Unregulated revenue includes physician services and other Medicare Part B services that hospitals provide but are not subject to HSCRC rate setting.

relatively flat from 2015 to 2018. The $5 million drop in patient revenue from 2015 to 2018 was offset by reductions in expenses (primarily wage and benefit expenses) which was reported as $18.6 million in 2015 and only $12.1 million in 2018. However, there was a $3.2 million increase from 2015 to 2018 reported under "other expenses." Shore Regional Health stated that the increase in other expenses is related to an increase in recruitment and additional practice support. In the above-mentioned letter to Senator Hershey from *Save Our Hospital*, concerns were addressed regarding service and staff reductions and the transition of the Chestertown hospital into a de facto FMF. The decline in daily hospital and inpatient ancillary services and the increase in ambulatory and outpatient ancillary service revenue suggests that there is a transition during this period away from inpatient care to ambulatory care. To further review the reduction of salary and wage expenses and how that might relate to the alleged reduction in staffing, the UMSMC at Chestertown Schedule C was reviewed.[47] Schedule C includes the hospital's reported wages and benefits by general service center as well as the hospital's reported full time-equivalent staffing by general service area.

As reported on Schedule C, UMSMC at Chestertown reported a total of $8.2 million in wage and benefit expenses in 2015. The wage and benefits reported in 2018 declined by 56% to $3.6 million. Expense reductions were reported across all service areas but were most notable in hospital administration which was reported at $1.8 million in 2015 and dropped to $72,000 in 2018. There were eight hospital administration FTEs reported in 2015 and six in 2018. The patient accounts service area contributed significantly to the overall wage decline. This service area previously had $990,000 allocated in wages in 2015 and dropped to $0 allocated in wages in 2018. Shore Regional Health stated that the decline in hospital administration and patient accounts expenses was a result of regionalizing positions at Chestertown. *Save Our Hospital* expressed concerns over administration and a lack of on-site leadership at the hospital in Chestertown.

Nursing administration saw a significant decline (57%) in wages and FTEs from 2015 to 2018. In 2015, $1.4 million (12 FTEs) were allocated in wages for nursing administration versus $596,000 (six FTEs) in 2018. *Save Our Hospital* expressed concerns over nursing shortages as well as an understaffed transitional nurse navigator program and a lack of nurses with specialized care such ostomy and wound care nursing. *Save Our Hospital* alleges that such nursing shortages resulted in the transfer of patients to Easton. In the above-mentioned Shore Regional Health response letter to *Save Our Hospital* allegations (see Appendix D), administration and nursing shortages were addressed. The letter confirms that positions such as the medical records supervisor and the joint commission director are regional positions and states that such positions do not require full time, on-site staffing at the Chestertown hospital. The letter also addresses the concerns over alleged nursing shortages stating that nurse staffing at UMSMC at Chestertown is managed within an appropriate range for the patient demand experienced and standardized nurse to patient ratio targets. Additionally, the use of telemedicine to consult ostomy and wound nursing was referenced in Shore Regional Health's response. The reduction in expenses, wages, and FTEs associated with hospital and nursing administration found in the financial reports (schedule RE and schedule C), as well as the feedback provided by Shore Regional Health, confirms the impact on staffing levels

[47] Schedule C "General Service Center" is used by hospitals to report fiscal year overhead expenses (Wage, Salary, Fringe Benefit and Other Expenses), and FTEs for the general service centers. Detailed instruction of the report and description of the general service centers included in this schedule can be found on HSCRC web site at https://hscrc.maryland.gov/Documents/Hospitals/Compliance/AccountingBudgetManual/2018/SECTION-500-FINAL-03-01-18.pdf

and expenses related to "regionalization." The extent to which that reduction in staff resulted in consequential shortages in Chestertown and/or transfers to Easton cannot be determined in the schedule RE and Schedule C financial reports. The reduction in gross patient revenues is indicative of declining service volume. However, to further review and confirm any reduction in services, the UMSMC at Chestertown Schedule V5 was reviewed.[48] The Schedule V5 includes the hospital's reported inpatient and outpatient volume of visits and the number of days that a patient was hospitalized. The information found in schedule V5 comprises information found in Schedules V1, V2, and V3 and is available by service center.[49]

As reported on Schedule V5, UMSMC at Chestertown reported a total of 7,770 inpatient days in 2015. Patient days reported in 2018 represented a decline of 38% (4,853 days). The overall volume of inpatient admissions also declined 33% from 2015 (a reported 1,859 admissions) to 2018 (a reported 1,254 admissions). Additionally, outpatient visits reported on Schedule V5 declined by 4% over the same time frame. Hospital discharges and patient days for the hospital in Chestertown declined but this decline was outstripped by the 50% rate of reduced nursing staff. However, it would not be clinically accurate to assume that the nurse to patient ratio is directly related to the rate of inpatient/outpatient visits. The lower rate of visits could however correlate to fewer patients and thus fewer nurses needed to maintain the standard nurse to patient ratio. Additionally, we can see in Schedule V5 that the average length of stay related to the Intensive Care Unit (service center "MIS") dropped from 6.4 days in 2015 to 1.3 days in 2018. The lower length of stay required by patients may be an indication of a lower acuity of patients or, potentially, the lower length of stay is a result of a nurse vacancy in the ICU unit in 2018 – as referenced in the Shore Regional Health response letter to *Save Our Hospital*'s allegations. In the Shore Regional Health response letter to *Save Our Hospital*'s allegations it was noted that the vacancy (and active recruitment to fill that vacancy) may result in possible ICU patient transfers. Patient transfers from UMSMC are addressed in the section of this report on the "Assessment of Changes in Volume of Services at UMSMC at Chestertown". As noted in that section of the report, in 2015, 9% of admissions at UMSMC at Easton were the result of transfers from another hospital, while in 2018, 28% of admissions at UMSMC at Easton were the result of transfer from another hospital. The source hospital for these transfers could not be identified.

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[48] Schedule V5 "Equivalent Inpatient Days and Admissions" is used by hospitals to express outpatient visits and inpatient days as equivalent inpatient days (EIPD) and outpatient visits and inpatient admissions as equivalent inpatient admissions (EIPA). Detailed instruction of the report can be found on HSCRC web site HSCRC web site at https://hscrc.maryland.gov/Documents/Hospitals/Compliance/AccountingBudgetManual/2018/SECTION-500-FINAL-03-01-18.pdf

[49] Schedule V1 "Routine Service Volumes and Patient Days" is used by hospitals to report certain inpatient statistics, including admissions (discharges) and patient days for daily hospital service centers.

Schedule V2 "Ambulatory Visits" is used by hospitals to report units of service (visits and relative value units) for inpatient and outpatient for ambulatory service centers.

Schedule V3 "Ancillary Service Units" is used by hospitals to report units of service for inpatient and outpatient for ancillary service centers.

Detailed instructions for each of these schedules can be found on HSCRC web site HSCRC web site at https://hscrc.maryland.gov/Documents/Hospitals/Compliance/AccountingBudgetManual/2018/SECTION-500-FINAL-03-01-18.pdf

For regulated inpatient and outpatient revenue, Chestertown hospital net operating revenues increased 8.5% or an annual average of 2.8%. However, the hospital's operating expenses declined by 5.9% or an annual average decline of 2.0%. The main driver for the reduction in operating expenses is the decline in expenses in the "Salaries, Wage, and Benefit" category. The expense for this category declined 35% in the period for an annual average decline of 13.4%. The following table profiles changes in net operating revenue, operating expenses, and total margin in the regulated and unregulated space.

Table 20: Percent Changes in Regulated Operating Revenue and Operating Expenses between FY 2015 and FY 2018

	Percent Change in Net Operating Revenue		Percent Change in Operating Expenses	
Hospitals	Nominal Change	Average Annual Change	Nominal Change	Average Annual Change
UMSMC at Chestertown	8.5%	2.8%	-5.9%	-2.0%
Shore Regional Health Hospitals	7.1%	2.3%	7.3%	2.4%
Maryland Rural Hospitals	6.8%	2.2%	9.3%	3.0%
Maryland – All Hospitals	8.4%	2.7%	8.0%	2.6%

Table 21: Changes in Unregulated Operating Revenue and Operating Expenses between FY 2015 and FY 2018

Hospitals	Change in Net Operating Revenue		Change in Operating Expenses	
	Nominal Change	Average Annual Change	Nominal Change	Average Annual Change
UMSMC at Chestertown	-24.4%	-8.9%	-8.7%	-3.0%
Shore Regional Health Hospitals	21.9%	6.8%	2.3%	0.8%
Maryland Rural Hospitals	20.1%	6.3%	25.9%	8.0%
Maryland – All Hospitals	24.3%	7.5%	25.6%	7.9%

In summary, the sharp decline in service volume experienced by UMSMC at Chestertown between 2015 and 2018 did not result in a commensurate negative impact on the hospital's financial performance over this period, a result deriving from the Maryland hospital payment model's moderating influence, over the short-term, on how service volume changes are reflected in revenue changes and the hospitals ability to trim expenses.

It should be noted that the accelerated decline in service volume that has occurred after the end of the study period, 2018, especially with respect to inpatient service volume, has resulted in more recent performance that more closely aligns with what the trends of recent years have appeared to portend. The table below profiles net patient service revenue, total operating expenses, and operating income (loss) as reported in audited financial statements for the University of Maryland

Medical System for FY 2015 to FY 2019. These statements can be viewed on the HSCRC web site at https://hscrc.maryland.gov/Pages/hsp-AFS.aspx

Table 22: Revenue, Expenses and Income from Audited Financial Statements – UMSMC at Chestertown, FY 2015 to FY 2019 (all figures in $000s)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Net Patient Service Revenue	$50,443	$53,306	$51,811	$53,243	$43,864
Total Operating Expenses	$49,362	$48,612	$45,571	$46,259	$51,275
Income (Loss) from Operations	$1,340	$4,949	$6,643	$7,494	($7,411)