University of Maryland Medical System, In Partnership with its Affiliate, UM Shore Regional Health

Commitment to Meeting the Health Care Needs of Our Vulnerable Rural Communities

May 23, 2017

UNIVERSITY of MARYLAND
SHORE REGIONAL HEALTH

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Introduction

The University of Maryland Medical System (UMMS) and its affiliate UM Shore Regional Health (UM SRH) are committed to delivering high quality, safe, accessible and cost effective health care to all residents of the five central counties of our service region on the Eastern Shore. This commitment is at the heart of our mission to be a strong and enduring health care system, dedicated to those we serve, wherever we serve.

Toward the attainment of this commitment – and in the face of recent dramatic change in Maryland's unique hospital reimbursement system, operating under a waiver from the Centers for Medicare and Medicaid Services (CMS) as the nation's only "all payor" state – UMSRH embarked in 2015 on its new strategic plan. To fulfill this strategic plan's mission statement, ***Creating Healthier Communities Together,*** the UMSRH Board of Directors, management and medical staff leadership embarked on an effort to design the best ways to serve the total health care needs of the five central Eastern Shore counties (Caroline, Dorchester, Kent, Queen Anne's and Talbot) with the goal to balance three equally important dimensions:

- **Quality and safety** in the care provided to each patient in every setting with every encounter, every day
- **Access** to all health care services, providing care in the right place and at the right time
- **Cost effectiveness** in the delivery of care and operating in a fiscally responsible manner to permit ongoing re-investment in our programs, services and capital needs

The timing of Shore Regional Health's strategic planning efforts comes at an important and challenging time in Maryland's unique health care arena. Our state's health department (DHMH) and the two independent agencies regulating health service planning and hospital payment (MHCC and HSCRC, respectively) have all stated the need for providers such as UMSRH to "innovate" in care delivery in order to achieve the Affordable Care Act's Triple Aim (better quality, lower cost, better health) and to preserve the CMS waiver for Maryland hospitals.

Indeed, the entire Maryland hospital industry has been asked to craft innovation efforts while also complying with existing regulations set forth by the MHCC and HSCRC pertaining to:

- Hospital-based service payment under new global (fixed) revenue methodologies enacted in January, 2014
- Approval of capital projects for hospital facility renewal and/or replacement (through the Certificate of Need "CON" program and the State Health Plan), including HSCRC approval for a rate increase to fund the interest expense of a facility construction project
- The type of acute care hospital services (both inpatient and outpatient) and location of such services

Maryland's unique hospital reimbursement system and the national trends demanding improved quality at a lower cost present unique challenges in serving rural, vulnerable populations. As our state's health care model continues to evolve toward reducing the total cost of care, strategies must continue to evolve, specifically in rural Maryland, to meet statewide expectations and demands for providing quality, accessible health care.

The Rural Hospital Challenge: An Issue for UMMS/UM Shore Regional Health, Maryland and the Nation

Concerns about the unique needs of rural hospitals and communities are certainly not reserved for Maryland alone. The American Hospital Association's statement on "Rural Health" to the U.S. Senate Committee on Appropriations in May, 2015 cites:

- Remote geographic location, small size, limited workforce, physician shortages and constrained financial resources pose a unique set of challenges for rural hospitals
- The nation's nearly 2000 rural community hospitals frequently serve as the anchor for a region's health-related services, providing the structural and financial backbone for physician groups, health clinics, post-acute and long term care services
- Rural residents on average tend to be older, have lower incomes, have poor health literacy and suffer from higher rates of chronic illness than urban counterparts
- Low patient volumes in small isolated communities put a strain on providers who frequently cannot achieve the economies of scale possible for larger counterparts

Here in Maryland, and across the nation, providers who deliver health care across large geographic areas with low population density face the following hurdles:

- Workforce shortages of health profession programs and maintaining primary care and specialty providers in rural areas
- Maintaining access to emergency services
- Coordinating care for the chronically ill and for those with behavioral health and substance abuse needs
- Supplementing and enhancing publicly funded transportation services and adding specific medical transportation to assure access to care and medical services that often requires door-to-door service for the most vulnerable patients.
- Funding IT infrastructure, electronic health records and telemedicine to improve safety and quality of care
- Understanding and investing in the economic stability of small rural communities
- Competitors skimming profitable unregulated revenue while driving up physician and advanced practice provider costs to provide necessary regulated health care services

This paper explores these issues in the following sections:

I. Uniqueness of Maryland's mid-Shore Five County Region

II. UMMS/UM Shore Regional Health's Vision for Delivering Quality, Accessible, Cost-Effective Health Care

III. What UMMS/UM SRH request from The State of Maryland and key partners to thrive and provide robust services in the five county, mid-Shore region.

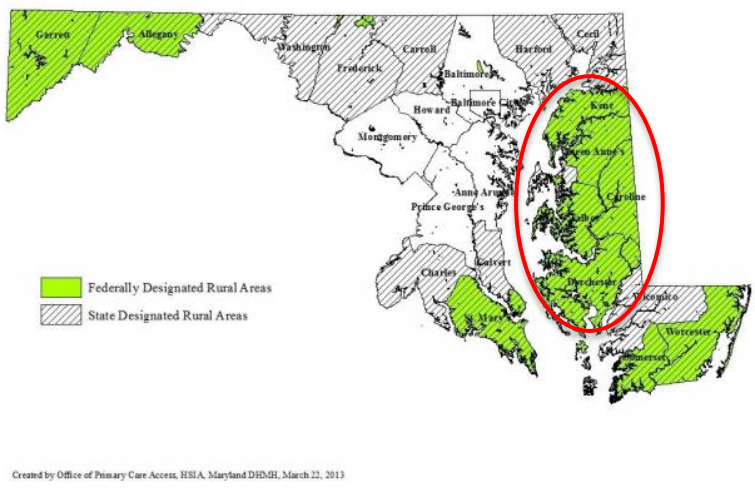
Understanding the Uniqueness of Maryland's Mid-Shore Five County Region

May 23, 2017

Geographically dispersed region

Figure 1 below shows a map of the state of Maryland and the counties that are designated as rural by the federal government. The five "mid-shore" counties served by UM SRH are circled in red. This region covers more than 2000 square miles yet has only 170,000 residents.

Figure 1. State and Federal Rural Designations in Maryland



An Aging Population

The demands placed on a health care system serving rural communities is influenced by the proportion of the population over age 65 who consume a higher level of services as they age and experience multiple chronic conditions. In addition, the underlying insurance coverage of the population tends to be dominated by the public payors, Medicare and Medicaid.

The demographic profile of the UMSRH service area population is reflective of what is seen nationally in rural communities: a higher percentage of residents over the age of 65, as seen in the table below.

County	Total Population	% of Pop. Over Age 65
Caroline	32,850	15%
Dorchester	32,258	20%
Kent	19,730	24%
Queen Anne's	48,929	17%
Talbot	37,278	27%
Total Service Area	171,045	20%
State of Maryland	6,016,447	14.1%
National	323,127,513	14.9%

*http://msa.maryland.gov/msa/mdmanual/01glance/html/pop.html#county

High Rate of Underinsured/Uninsured Population

Insurance coverage of the five county region is also reflective of what is typically found in rural communities. A larger percentage of rural residents either rely upon government-provided health insurance or have no insurance, compared to urban residents, resulting in limited access to health care. The most remote rural residents are the least likely to have health insurance coverage. The underinsured and uninsured face barriers to care compared to people with health insurance coverage. Rural underinsured and uninsured are more likely to delay or forgo medical care because of the cost of care compared to those with insurance creating poorer outcomes, resulting from delays in seeking care.

County	**% Medicare**	**% Medicaid**	**% Uninsured**
Caroline	23	18	13
Dorchester	26	19	10
Kent	29	14	9
Queen Anne's	23	9	6
Talbot	33	11	11
Total Service Area	27	14	8
State of Maryland	19	11	11
National	21	13	15

2016 American Community Survey
www.towncharts.com/Maryland/Maryland-state-Healthcare-data.html
*** People can have more than one type of coverage so totals will exceed 100%*

Significant Chronic Disease Issues

As reported by the Maryland Department of Health and Mental Hygiene (DHMH), the top five health care issues experienced by residents of the five county region are illustrated on the table below.

County	**Top Health Issues**
Caroline	Smoking during Pregnancy, Excessive Drinking, Diabetes, Cancer, Asthma
Dorchester	Infant Mortality, Cancer, Teen Births, Obesity, Diabetes
Kent	Affordability of Healthcare, Obesity, No Physical Activity, Smoking during Pregnancy, Poverty
Queen Anne's	Teen Births, Affordability of Healthcare, Smoking, Excessive Drinking, Cancer
Talbot	Smoking during Pregnancy, Affordability of Healthcare, Diabetes, Asthma, Excessive Drinking

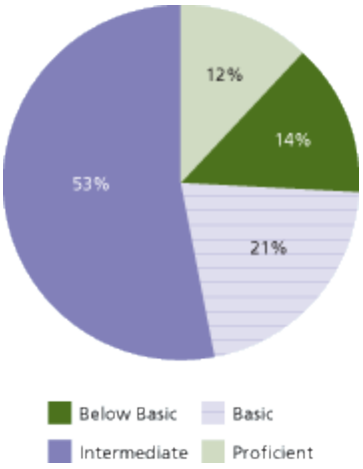
2015 County Health Profiles Mid Shore Health Improvement Coalition and CDC

Low Health Literacy and Other Social Determinants of Health

. Compared to the 38% of Marylanders who have obtained a Bachelor's degree or higher, two Mid-Shore counties scored significantly lower: Caroline (16%) and Dorchester (20%). Low health literacy is a particular problem for people in poverty and people with limited educational attainment or English proficiency. Low or limited health literacy is associated with a lower likelihood of using preventive health services, a greater likelihood of taking medicines incorrectly, and poor health status. While health literacy has not been measured at the local level, a national study showed that **77 million adults have basic or below basic health literacy.**

According to the U.S. Department of Health and Human Services website, "only 12 percent of U.S. adults had proficient health literacy. More than a third of adults were in the basic (47 million) and below basic (30 million) health literacy groups. The majority of adults (53 percent) had intermediate health literacy skills" as shown in Figure 1.

Figure 1. Adults' Health Literacy Level: 2003



Source: U.S. Department of Education, Institute of Education Sciences, 2003 National Assessment of Adult Literacy.
https://health.gov/communication/literacy/issuebrief/

Below Basic	Basic	Intermediate	Proficient
14%	21%	53%	12%

University of Maryland Shore Regional Health is the Region's Largest Employer and Provider of Health Care Services

As the five-county region's largest employer and provider of health care services, UMSRH has a cultural and economic impact on the region in more ways than health care. UM SRH employs 2025 clinical and support service staff throughout the five county region.

Economic Impact of UM Shore Regional Health on the Region

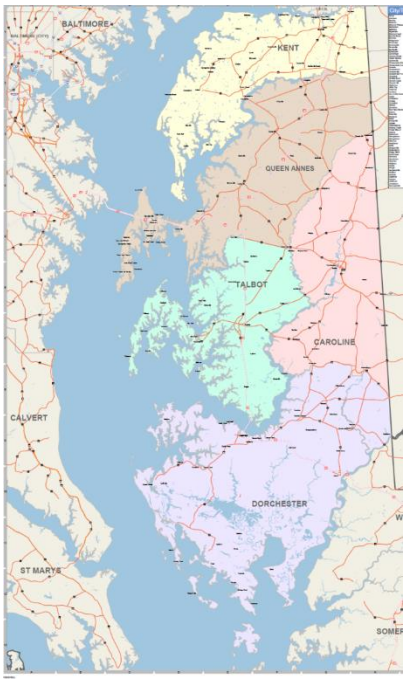
A study (2017) by the University of Maryland at Baltimore Jacob France College of Business shows that as a driver of economic strength and growth in the five county mid-Shore region, UM SRH generates **$488.2 million** in economic activity to the five county region, through employment, locally purchased supplies and services, and the impact on other jobs in the region. The full study is included in **Addendum A** to this document.

Access Challenges Due to Geographic Distance to Care and Population Density

Access can be defined by reasonable distance and travel time for a patient to be diagnosed or treated by a primary care or specialty provider (in either an outpatient setting or in an acute care hospital). Access is also impacted by the availability and affordability of transportation services for outpatient care (during the times these services are open for operation, i.e. weekdays during normal business hours) and inpatient care (available 24/7, 365 days a year)

As noted in Section I, the total area in square miles for these five counties is 2,016. The distance from the northern most point of the UM SRH service area to the southern-most point is approximately 100 miles.

This five-county geography is comparable to an area on the Western Shore that extends from Baltimore City to the southern- most tip of St. Mary's County, as shown on the map.



For residents of this five county area to access care or visiting family and friends admitted to acute care hospitals, it is challenging to get to care or support loved ones who are hospitalized. With limited availability of public transportation, particularly for the sort of flexible, on-demand service which most medical needs require, many patients and families in the region cannot reach care or participate in it. Much of the travel in the region takes a great deal of time and often on slower traveled secondary roads or on highways with significant traffic demands. The number of interstate highway miles in the mid-shore region is 125, reflecting a sharp contrast to a comparable geographic area on the western shore with a total of 715 miles of interstate highway systems.

The table below illustrates both drive times and mileage among the communities served by UM SRH to the towns where UMSRH's acute care hospitals are located (minutes/miles).

Destinations	**Chestertown**	Galena	Rock Hall	Centreville	Stevensville	**Queenstown**	**Easton**	**Denton**	Federalsburg	**Cambridge**	Hurlock
Chestertown		19/15	18/13	23/16	44/34	34/23	49/36	46/32	65/48	68/52	71/52
Galena	19/15		34/27	33/27	46/44	36/33	52/46	47/36	65/51	71/62	71/57
Rock Hall	18/13	34/27		39/29	61/47	50/36	65/49	62/45	81/61	85/65	87/65
Centreville	23/16	33/27	39/29		22/18	12/7	26/20	26/20	45/36	45/35	48/36
Stevensville	44/34	46/44	61/47	22/18		11/10	33/27	37/30	55/45	52/43	54/43
Queenstown	34/23	36/33	50/36	12/7	11/10		26/19	29/20	48/37	44/34	47/35
Easton	49/36	52/46	65/49	26/20	33/27	26/19		25/17	31/20	25/16	30/18
Denton	46/32	47/36	62/45	26/20	37/30	29/20	25/17		22/16	42/32	26/21
Federalsburg	65/48	65/51	81/61	45/36	55/45	48/37	31/20	22/16		31/21	10/7
Cambridge	68/52	71/62	85/65	45/35	52/43	44/34	25/16	42/32	31/21		20/14
Hurlock	71/52	71/57	87/65	48/36	54/43	47/35	30/18	26/21	10/7	20/14	

Health Care Services Require Regional Deployment AND Centralization to be Accessible AND Efficient

Ambulatory Care Services and Locations, UM SRH

County	Name	Type
Caroline	UM Shore Regional Health at Denton	Imaging Center (Unregulated), Laboratory, Primary Care
Caroline	UM Shore Regional Health Rehabilitation at Denton	Rehab Network OP Physical Therapy
Caroline	ChoiceOne Urgent Care	Urgent Care
Dorchester	UM Shore Regional Health Medical Pavilion and Outpatient Services	Primary Care, Specialist care Rehabilitation, Balance Center, Lab
Dorchester	UM Shore Medical Center at Dorchester	Hospital, ER
Kent	UM Shore Nursing & Rehabilitation Center at Chestertown	Long term care and Rehabilitation
Kent	UM Shore Medical Center at Chestertown	Hospital, ER
Kent	UM Shore Regional Health Medical Pavilion and Outpatient Services	Primary and Specialist care, Lab Services
Queen Anne's	UM Shore Emergency Center	Freestanding Emergency Center
Queen Anne's	UM Shore Medical Pavilion at Queenstown	Freestanding Multispecialty ASC
Queen Anne's	UM Shore Medical Pavilion at Queenstown	Primary and Specialist Care, Lab, Imaging, Rehabilitation
Queen Anne's	UM Shore Medical Pavilion at Centreville	Primary Care, Lab
Talbot	UM Shore Regional Health Surgery Center	Freestanding Multispecialty ASC
Talbot	UM Shore Regional Health Diagnostic and Imaging Center	Imaging Center (Unregulated); lab, Breast Center
Talbot	UM Shore Medical Pavilion – Easton	Primary and Specialist care, Lab
Talbot	UM Shore Regional Rehabilitation Center	Rehabilitation, Swallowing Center
Talbot	UM Shore Regional Health Cancer Center	Chemotherapy, radiation
Talbot	UM Shore Medical Center at Easton	Hospital, ER
Talbot	ChoiceOne Urgent Care	Urgent Care

Primary Care & Specialty Services and Locations, UM SRH

County	Name	Type
Caroline	UM CMG – Primary Care	Primary Care
Dorchester	UM Shore Medical Pavilion at Dorchester	Cardiology, Neurology & Sleep Medicine, Pediatrics, Urology, ENT, OB/GYN
Kent	UM Shore Medical Pavilion at Chestertown and Outpatient Center	Continence & Pelvic Health, Primary Care, Urology, OB/GYN, Breast Center, Diabetes and Endocrine
Kent	UM CMG – Primary Care	Primary Care
Queen Anne's	UM Shore Medical Pavilion at Queenstown	Cardiology, ENT, Sinus & Hearing, Neurology & Sleep Medicine, Surgical Care, Urology, Woman's Health
Queen Anne's	UM CMG – Primary Care	Primary Care
Talbot	UM Shore Medical Pavilion at Easton and Outpatient Centers	Continence & Pelvic Health, ENT, Sinus & Hearing, Neurology & Sleep Medicine, Neurosurgery, Urology, Woman's Health; OB/GYN
Talbot	UM Shore Medical Pavilion at Easton	Cardiology, Pediatrics, Primary Care, Pulmonary, Surgical Care Wound Care

Access Challenges Due to Availability of Primary Care and Specialty Physicians

The number and availability of physicians and Advanced Practice Providers (APPs, including nurse practitioners, physician assistants, midwives) whose practices are open to new patients and/or who have reasonable wait times to schedule such care have a profound impact on the service area's population in rural communities. The number of physicians (not including Advanced Practice Providers, NPs, PAs) in active practice and located in the five county region is approximately 300. With a population of 170,000 people in the region, that equates to a per provider panel of 567 patients.

By comparison, the number of licensed physicians located on Maryland's western shore is approximately 10,500 and represents 390 physicians per 1,000 population. This is an indicator of the lower availability of physicians to care for the broadly dispersed rural population on Maryland's mid- Shore five county region.

The UM SRH physicians ***and*** Advanced Practice Providers (APP's) number 558 in total and are presented in the table below.

Physician and APPs	**Number**
UM SRH Employed Physicians	62
UM SRH Community Based, Independent Medical Staff	472
UM SRH Employed APPs	14

The lack of an adequate numbers of physicians and APPs limits UM SRH's ability to arrange for and provide a breadth of service beyond the towns in the region with the most population density.

In addition, a significant concern to UM SRH is the aging medical workforce serving the region. A recent UM SRH medical staff development plan identified 92 physicians in active practice and over the age of 60. This reality requires UM SRH, in partnership with physicians practicing in the community, to develop and implement succession plans for physicians as they approach retirement and/or reduce their hours of practice and therefore, availability.

The Medical Staff Development Plan also estimated the number of additional physicians needed to serve the region. The need was estimated at 37 and of this number, 15 are in the primary care specialties and 22 are in the medical and surgical subspecialties.

Recognizing that the healthcare workforce extends far beyond physicians and APPs, UM SRH has assessed its current workforce of nurses, physical therapists, behavioral health specialists, social workers, pharmacists, laboratory/radiology professionals and technicians and identified 351 over the age of 60. In addition, the average time to recruit health professional team members to practice across a variety of UM SRH's hospitals and outpatient settings within the service area is 172 days. Urban facilities and practices usually offer better salaries and benefits. Medical professions which require longer and more expensive training can be less affordable for rural students. Small, rural communities offer fewer job opportunities for spouses with professional careers, which makes recruiting rural providers especially difficult.

HIRING AND RETAINING PHYSICIANS

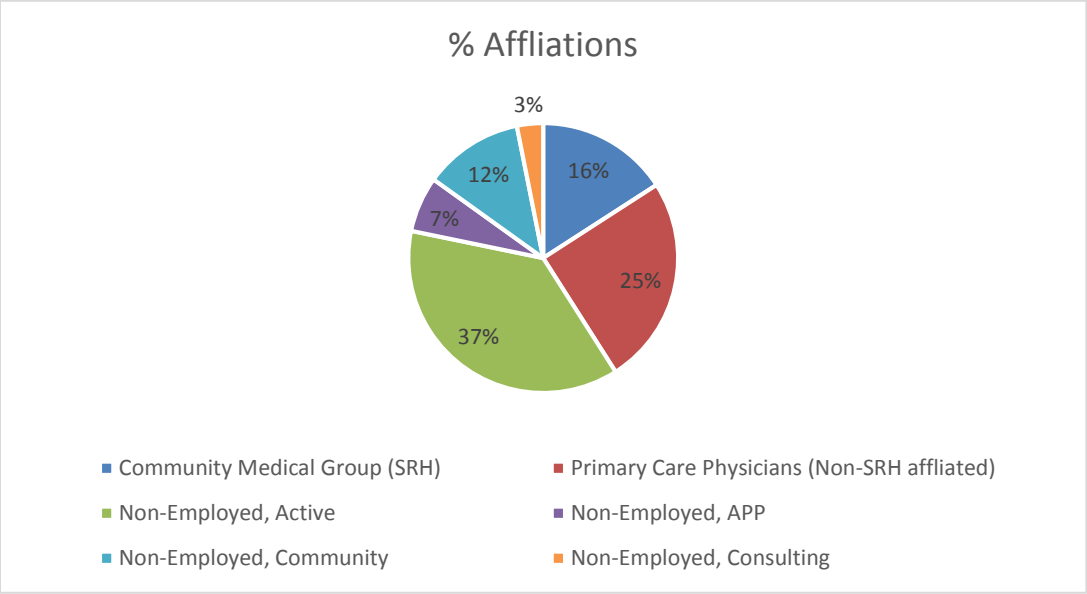
As a consequence of the challenges outlined above, within UM SRH, investments in hiring and retaining physicians and APPs are on the rise and occurring at a significant cost to the health system. UM SRH has employed a total of 72 physicians over the last five years.

Not only is UM SRH employing a greater number of physicians and APPs, it is experiencing significantly higher employment costs for physicians and APPs over each of the past five years. Specifically, the percent of physician employment contracts paying in excess of 50th, 60th and 75th percentile of benchmarked provider compensation has grown by the following:

Percentile > than	2012	Present
50th	40%	50%
60th	20%	25%
75th	0%	25%

With only one private physician group in existence for nearly all specialties in the rural mid-Shore, supply and demand economics continue to drive up costs. Employing more physicians and providers, and higher salaries and benefits, are challenging the resources available to retain health care services in our communities. Other health care systems, using the mid-Shore as their secondary market—particularly for well-insured patients and higher revenue outpatient services—are also driving up employment costs as they attempt to hire UM SRH physicians and shift market share to their primary service area.

As a result of the increasing move toward physician and provider employment, the configuration of the UM SRH service area's physician community reflects these changes and highlights an additional source of both future risk and/or increased costs to maintain physician and provider access.

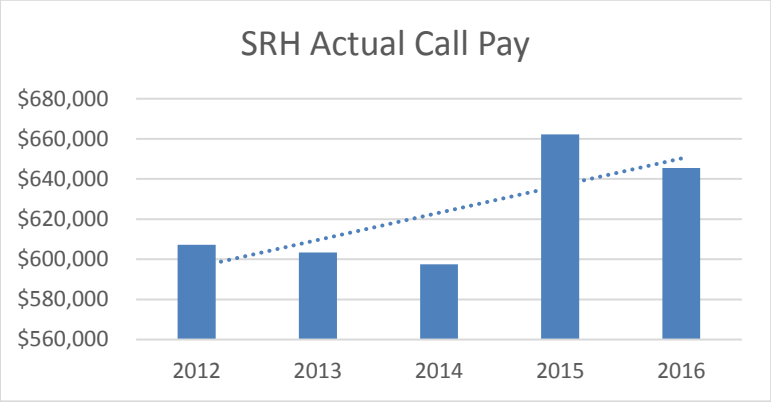


Practice Support Agreements

UM SRH also faces higher costs when independent physician practices seek to add or replace providers. UM SRH often needs to offer Practice Support Agreements (PSAs) to assist in these practices' recruitment efforts. A practice support agreement typically entails financial assistance for recruitment and salary stabilization over a specific period of time. PSAs provide practices with needed financial resources to mitigate losses with hiring additional providers. UM SRH is currently sponsoring six PSAs for the mid-Shore region.

On-Call Payments

On-call payments are growing significantly at UM SRH, to address specialty physicians' practice compensation needs. This is due to several factors, including new provider hires that require less on-call time in their employment agreements. In addition, according to medical staff bylaws, providers who are 60 years old or older with 20+ years of experience are no longer required to take call. These experienced providers are no longer taking call beyond requirements but when they agree to serve on the call schedule, they do so expecting remuneration. The graph below illustrates the increase in UM SRH's call pay costs.



Contracted Service Subsidies

UM SRH must also contract with and provide financial subsidies to certain hospital-based specialty services, including anesthesia, emergency medicine, laboratory/pathology, radiology and hospitalist specialties. The practice subsidies to provide these specialty services at the each of UM SRH's hospitals and freestanding emergency department are increasing every year due to poor payor reimbursements, increased expense to recruit and retain providers and the need to provide more areas of specialty services. UM SRH's *annual* cost (FY 17, annualized) to provide these services is:

- Anesthesia	$2,341,967
- Emergency Departments	$6,032,040
- Radiology	$ 332,400
- Pathology	$ 591,421
- Hospitalists	$3,932,372
ANNUAL SUBSIDIES TOTAL:	**$13,230,200**

Critical Mass and Quality

As illustrated in the statistics above describing the health care workforce, the lack of adequate Primary Care Providers (PCPs), who serve as the foundation of delivering high quality population health, impacts the quality of health care for the UM SRH communities. Recruiting and retaining a robust cadre of primary care providers is difficult.

Poor reimbursement rates for primary care providers, coupled with the reality that most providers are saddled with significant debt incurred during their medical school education and post-graduate residency training, often precludes career entry into primary care specialties. UM SRH's challenge in recruiting physicians to practice in rural communities is not limited to primary care specialties. It also impacts the ability to recruit physicians across a broad array of specialties, particularly those where the national demand exceeds supply, thus making employment a competitive initiative of national proportions. Endocrinologists, psychiatrists, surgeons, urologists, gastroenterologists, orthopedic surgeons, rheumatologists, nephrologists—all of these specialists and more are on the "endangered" list in rural communities.

The rural nature of the mid-Shore region also impacts quality. As mentioned previously, transportation to health care providers and services is challenging for our populations given scarce public transportation and the time it takes for family members to take a loved one to outpatient treatment appointments or physician office visits during the work day. Our current health care system is designed around face-to-face contact. Often, patients from rural communities lacking certain types of providers, particularly specialists, must travel longer distances or forego care. This reality coupled with economic and technological barriers that exist and limit the widespread use of telemedicine to provide access to distant health care providers is further challenged by the lack of broadband capabilities in certain regions of this service area and therefore, limit the ability to effectively implement home or physician office-based telemedicine programs and access. Examples of where expanded use of telemedicine could benefit this rural region include tele-pharmacy which could offer patients convenience of remote drug therapy monitoring, authorize prescriptions, provide patient counseling, and monitor compliance with care plans remotely. Tele-psychiatry can also assist patients in need of behavioral health services who may otherwise have to drive hours. Tele-psychiatry allows mental health professionals to speak to and evaluate patients via videoconferencing

In addition to improving access, telemedicine offers patients the ability to access health care on a more flexible basis, using secure online video or through secure email with the added benefit of reducing travel to health care facilities or provider offices.

The Challenges of Competition

An additional dynamic which should not be overlooked is the effect of competing health systems entering the mid-Shore region and implementing opportunistic strategies to recruit and employ individual physicians or entire specialty or primary care practices to become part of their health system. These competitive actions require a necessary fiscal response by UM SRH to retain those physicians and practices that have served the UM SRH mid-Shore region. The cost to UM SRH therefore increases significantly. Competition drives up cost.

Competing health systems who employ these strategies are not necessarily committed for the long term to serve the mid-Shore region and may relocate or close acquired practices if they are not delivering the intended "return on investment". In contrast, UM SRH is here to stay and highly motivated to retain, recruit and expand its affiliated medical staff to continue fulfilling its mission to meet the health care needs of all of its communities across this five county region.

There *are* some possible solutions to this collision of a free market economy with the realities of costly, duplicative, primary health care market-skimming or poaching of unregulated revenues from Maryland's rural mid-Shore region and other such vulnerable regions of the State. Solutions begin with an acknowledgement at the State level of the threat of urban competition in a rural health care region.

There are considerable financial challenges to providing and sustaining quality, accessible and affordable health care in the five county mid-Shore region, with its unique qualities and issues. While all of the challenges outlined here are significant, none threaten the sustainable future of regional health care like the impact of the competitive environment.

The University of Maryland Medical System and

UM Shore Regional Health Vision

For the Delivery of Quality, Accessible,

Cost-Effective Health Care

May 23, 2017

Background and Guiding Principles of the UMMS/ UM SRH Vision for the Five County Mid-Shore Region

A team of health care leaders—UM SRH Board, health system physicians, executives and management – convened a work process to identify trends, probe the impact felt nationally and regionally on inpatient volumes caused by declining hospital use rates, and consider the shift to outpatient surgery, efforts to reduce length of stay and avoidable inpatient admissions as well as avoidable use of the emergency departments, through better coordination of care and management of patients, particularly those with chronic disease. Joined by a team of national leaders in the fields of planning data, health system design, facilities management and finance, the UM SRH Workgroup started with a comprehensive overview and inventory of existing UM SRH facilities. From critical infrastructure assessments to improvements in the patient and physician experience (including safety, privacy and accessibility), each of Shore's three hospitals, freestanding emergency center, outpatient medical facilities and ambulatory centers and the array of medical offices was evaluated for short and long term needs and an assessment of the resources needed to meet these needs. Regional service arrays were explored, using population, demographic and drive time studies.

Technology, facility design, new models of care and the emerging population health models were reviewed. The workgroup concluded its assessments and issued a position paper of "working assumptions" that ultimately resulted in the following guiding principles adopted by the UM SRH Board as the basis of a roadmap for the future regional health system.

- Focus on Quality Performance and the Triple Aim
- Implementation of a robust primary care strategy is critical to future success
- Physician and provider resource needs are significant on the Shore and must be addressed creatively
- Success requires a long term commitment to improving, expanding and stabilizing health care access for the people of the entire five county region
- All hospital facilities require significant resources to maintain or upgrade existing infrastructure, suggesting consideration of appropriate level modern replacement facilities
- New medical services pavilions in outlying communities will improve access and convenience to providers and health services
- Access to community outreach, education, health literacy, prevention and screenings must be expanded, working in partnership with community agencies and organizations as appropriate.

Essential Elements of the Vision

The UMMS/UM SRH vision is built upon a robust primary care foundation of providers—physicians and advanced practice professionals—whose access points are in locations at major population centers throughout the five county region to maximize access to existing public transportation and related services such as diagnostics, therapies and allied health/pharmacy services. This network of primary care providers and services must be highly integrated—digitally as well as operationally—to optimize quality outcomes, coordinated care, smooth transitions of patients within the health care continuum, the sharing of best practices and communication among and between providers (primary and specialist). This care integration requires a high degree of electronic connectivity between providers, facilities and—ultimately, patients— necessitating strong and widespread broadband and internet connectivity and electronic medical records.

County By County Strategies Create a Network of Health Care

With its rural challenges, including small population, slow growth rate, overall high incidence of chronic disease and many social determinants of poor health, and lack of robust transportation for medical needs, the five mid-Shore counties are best served by taking a regional approach for its health care needs. Compounding county by county strategies magnifies access to services; when these strategies are viewed as a combined system of care, integration, coordination of care, quality and cost-effectiveness can be achieved in a way that narrow, jurisdiction-specific efforts, viewed in isolation, cannot attain.

The UM SRH vision for the region, by county, includes the following strategies for an integrated health care delivery system:

Caroline County

UM SRH is planning to open a new state of the art UM Shore Medical Pavilion at Denton in winter, 2018, to locate in one convenient center a hub of primary care, diagnostic lab and imaging services, suites for specialist rotation and telemedicine visits, outpatient rehabilitation services, community education and support groups and outpatient behavioral health services. An urgent care center has recently been opened in partnership with Choice One in a location nearby. This new medical pavilion is anticipated to be part of a growing medical services hub for the future, where related social services and health providers will cluster.

Dorchester County

Dorchester's aged hospital facility, located in Cambridge, Maryland, must be replaced. UM SRH envisions—and community leaders have shared their support for—the conversion of this facility from an acute care hospital to a Freestanding Medical Facility (FMF) to be located just a few miles away from the existing hospital in Cambridge. The proposed site has better highway and road access for the entire county and visibility for the traveling public. It is located in an area served well by public transportation and it is adjacent to other community services and businesses.

The FMF will include an emergency department with full 24/7/365 access, observation beds and a modern helipad. The adjacent UM Shore Medical Pavilion at Cambridge is anticipated to include primary care providers, diagnostic lab and imaging services, suites for specialist rotation and telemedicine visits, an ambulatory surgery center, outpatient rehabilitation services, outpatient behavioral health services, and a community education and support group center.

Kent County

UM SRH believes that the nature of rural Kent County, its distance from other hospital services and its socio-economic vulnerabilities create a need to re-define, modernize and strengthen health care services there within the framework of a unique, Rural Community Access Hospital that affords care for mild to moderate complexity patients to be treated locally as inpatients for up to four days in Chestertown, with a defined inpatient and outpatient surgery capability. [See Page 26 for further details]. Additionally, an expanded Shore Medical Pavilion is effective in co-locating primary care, specialists, diagnostics and therapies to improve access to health care for the community.

Queen Anne's County

With a robust freestanding emergency department and adjacent medical pavilion with ambulatory surgery center, primary care, specialists, diagnostics, therapies and community education in Queenstown anchoring necessary health care services in the county, and longstanding primary care and diagnostics in Centreville, Queen Anne's County has a strong head start on the new model of health care access.

With the addition of observation beds at the freestanding emergency center and the possible expansion of higher priority level patients transported to this center by EMS as applicable, the facilities and services in Queen Anne's County will mirror that in Cambridge, where an FMF conversion is proposed. Access to further diagnostic services, increasing access to a variety of specialists, and increased telemedicine capabilities at this location will complement the medical campus that has been created and expanded to meet the needs of the county's residents.

Talbot County

The existing hospital in Easton is an aged facility that has been anticipated for replacement for over a decade. Its aged infrastructure and antiquated patient care design significantly limit the outcomes of quality and efficiency, as well as the experience and satisfaction of patients,that must be achieved. The replacement of this hospital (119 beds) and its full service 24/7/365 emergency department, centrally located on a new site at US Route 50 near the community center and airport, will signal that this county and—more importantly, this five county region—have entered the modern era of health care. In order to achieve the replacement hospital and the regional vision, particularly as it relates to Dorchester County, this new facility should include an expanded bed count to include the projected need for 20 medical/surgical beds from the conversion of the Dorchester hospital to an FMF. The replacement hospital should also house the relocated inpatient behavioral health unit (17 beds projected) from the conversion at Dorchester and should include an enhanced and expanded outpatient behavioral health unit and substance abuse services on the new campus.

Regional clinical specialties, designed to insure quality, accessible and lower cost health care will be strengthened and expanded. These presently include obstetrics, pediatrics, cancer treatment, interventional cardiology, orthopedics, neurology, neurosurgery, critical care/intensive care, stroke center and acute rehabilitation.

Region-wide Population Health and Wellness

Beyond the bricks and mortar and specific clinical program needs represented in the UM SRH vision, there lies the regional underpinning of population health and the promotion of community wellbeing which are required to make the vision successful and health care's Triple Aim achievable. The critical components of this vision, reaching beyond the walls of our hospitals, emergency departments or medical pavilions, include:

- Resources and partnerships to provide expanded education, health literacy training, screenings and prevention initiatives in a wide regional geographic distribution, targeting even to the sub-zip code level where the incidence of chronic disease is most prevalent and access to care most limited
- Taking it on the road: deploying a mobile clinic to remote or less populated areas as a routine way to provide essential primary care, prevention and health education.
- The safety net of coordinated primary care, urgent care and emergency care for communities within reasonable travel times
- Disciplined and coordinated efforts that follow discharged patients and those treated and released from emergency or urgent care to insure that necessary follow up occurs with providers, home based services, nursing home care, and social agencies and services
- Community and region-wide partnerships with agencies, providers, services, organizations, the faith community and businesses to create and sustain an organized network of care for the peoples' bodies, minds and spirits
- Sufficient and coordinated access to the full continuum of care for behavioral health and substance abuse, including prevention, crisis response, treatment and continuing support
- Sufficient and streamlined access to quality home care, skilled nursing, hospice and palliative care services for people through the continuum of their health care needs.
- Resources and partnerships that enable a reasonable, effective, coordinated, on-demand, flexible and broad-based regional transportation system specifically designed to support medical transportation needs for the general public

Action and Support Needed
To Make this Vision a Reality

Policy, Legislation and Regulatory Support and Changes at the State and Federal Levels Are Necessary

While rural health issues are shared in all of the nation's states, Maryland remains singularly unique because of its CMS waiver. Solutions and innovations which exist in other states, such as critical access hospitals, and other approaches to providing rural care, are not permitted under Maryland regulation.

Along with regulatory innovations and grants supported by the MHCC and HSCRC, Freestanding Medical Facility (FMF) legislation is only one of the strategies necessary to address the unique challenges posed to Maryland's acute care rural hospitals and health systems serving geographically remote, small, widely dispersed and vulnerable populations.

In order for Shore Regional Health to fulfill its mission of *Creating Healthier Communities Together* and meet the total health care needs of the five central Eastern Shore counties (Caroline, Dorchester, Kent, Queen Anne's and Talbot), it is critical to convene Maryland's health department leadership, agencies and policymakers to engage the state's rural healthcare providers, partners and other stakeholders to develop new rural health policies that fit within Maryland's unique environment and the CMS waiver requirements.

New state health policies and regulations must specifically assure the viability of a handful of small rural hospitals in vulnerable communities and facilitate their delivery of accessible and safe, high quality care. On the pages that follow, there are specific suggestions for improving the access to care in the vulnerable rural areas of Maryland's mid-Eastern Shore five county region.

ADDENDUM B of this complete document includes a chart of initiatives that could aid in achieving the vision outlined here and to support the State of Maryland in its goals for a healthier population with better quality of life, access to necessary care and an efficient use of resources.

In order for these efforts to come to fruition, collaborative action is required from UMMS/UM SRH, the Department of Health and Mental Hygiene, the regulatory commissions, the Governor's Office, MIEMSS and local and state jurisdictions. The actions we recommend are grouped in Addendum B according to the critical issue outlined in this White Paper to which they pertain. These suggestions could provide a path forward in any vulnerable rural community in Maryland.

Capital/Facility Investments

In our short and long-range plans, UM Shore Regional Health has a number of capital projects for hospital renewal / replacement, and relocation of existing services, that require the support and approval from the Maryland Health Care Commission (MHCC), the Health Services Cost Review Commission (HSCRC) and the Maryland Institute for Emergency Medical Services System (MIEMSS):

1. **Certificate of Need for a replacement hospital in Easton**

   To allow replacement of existing Washington Street acute care hospital with a new hospital on Route 50 near the Easton Airport (Summer 2022)

2. **Certificate of Need Exemption for relocation of Inpatient Medical / Surgical beds (estimate 20 beds) from UM Shore Medical Center - Dorchester to the proposed new hospital in Easton**

3. **Certificate of Need Exemption for relocation of Inpatient Behavioral Health beds (estimate 17 beds) from UM Shore Medical Center-- Dorchester to the proposed new hospital in Easton**

4. **Certificate of Need Exemption for conversion of UM Shore Medical Center-Dorchester to a Freestanding Medical Facility and adjacent Medical Office Pavilion located in Cambridge (Summer 2022)**
   - Emergency Department with 24/7/365 Access, helipad
   - Observation Beds
   - Medical Office Pavilion with Primary Care, Diagnostics, specialists in rotation and telemedicine capabilities.
   - Ambulatory Surgery Center

5. **Develop a new model of a "Rural Community Access Hospital"and a funding mechanism that recognizes its critical nature, for small, vulnerable, rural communities** whose isolation and vulnerability require inpatient, acute care services with small bed count and critical acute services. Use this new definition to re-define UM SMC-Chestertown as a "Rural Community Access Hospital," given that the hospital in Chestertown is greater than 35 miles from the closest Maryland hospital.
    - Create a Short-Stay Medical Unit with up to 15 beds for mild to moderately complex inpatients with projected length of stays of ≤ 4 days (exclude ICU, Peds, OB, Nursery)
    - Create an Observation Unit with Observation Beds
    - Maintain full service 24/7/365 Emergency Department with existing capabilities
    - Defined inpatient and outpatient surgery capabilities
    - Enhance Medical Office Pavilion capabilities to support needed services and specialists.

6. **Enhance capabilities within the Shore Emergency Center in Queenstown with observation beds**

    - Increase priority level capabilities, as applicable
    - Further support diagnostic capabilities and access to specialists in the Medical Office Pavilion, as needed
    - Clear the regulatory path to allow for full conversion of this campus to a Freestanding Medical Facility

7. **HSCRC provide sufficient funding in rates for Easton and maintain regulated rates for Cambridge FMF to cover full debt service for Easton/Cambridge capital projects; and create new funding resources for Rural Community Access Hospital in Chestertown**

Overcoming Access Issues and Barriers to Care

Our goal is to ensure every patient is receiving the right care in the right place and at the right time. However, remote geographic location, small size, limited workforce, physician shortages and constrained financial resources pose a unique set of challenges for rural hospitals. Issues for consideration include maintaining access to emergency services and coordinating care for the chronically ill.

Rural residents on average tend to be older, have lower incomes and suffer from higher rates of chronic illness than urban counterparts. Patient volumes in small isolated communities put a strain on providers who frequently cannot achieve the economies of scale possible for larger counterparts

The important dimensions of access include:

- Access defined by reasonable distance and travel time for a patient to be diagnosed or treated by a primary care or specialty provider (in either an outpatient setting or in an acute care hospital);

- Access defined by the availability of sufficient numbers primary care and specialty physicians and advanced practice providers whose practices are accepting new patients and/or have reasonable wait times to schedule such care;

- Access to the array of community based health care services (such as pharmacies, therapy centers, senior support services, etc.) that are difficult to maintain due to small populations and underlying economies of scale;

- Access impacted by available technology and rural IT infrastructure that permits care delivery via telemedicine programs and services;

- Access impacted by the availability and affordability of transportation services for outpatient care (during the times these services are open for operation, i.e. weekdays during normal business hours) and inpatient care (available 24/7, 365 days a year).

Improving Medical Transportation

Across the mid-Shore, there have been limited investments in creating a public transportation infrastructure. Where public transportation is available, it is often not efficient for healthcare services, not accessible to remote destinations with vulnerable populations, doesn't reach remote areas or provide schedule and route flexibility and connections are often difficult to comprehend and coordinate.

Group transportation options are not well-suited to medical transport needs for the elderly, disabled, chronically ill, or patients receiving treatment for oncology, behavioral health or

dialysis services. Medical appointment transportation for patients and non-medical family transport between UMMS facilities is often non-existent other than for emergencies and inter-facility transfers.

State and local jurisdictions can positively address assess and barriers to care with their efforts to:

- ✓ Support services, through public and/or privately funded mechanisms, for transportation that allows for the timely access of patients seeking care to the appropriate providers. This also addresses rural ambulance providers that incur higher per-trip costs because of longer travel distances and fewer transports of patients, assuring timely access to emergency services (Medicare increased payments by 2% and extended through January 2018)

- ✓ Supplement and enhance publicly funded transportation services and add specific medical transportation to assure access to care and medical services that often requires door-to-door service for the most vulnerable patients.

- ✓ Secure a decommissioned passenger bus from the Maryland Department of Transportation which will be refurbished for re-use as a mobile health clinic providing direct health care access to vulnerable populations across the mid-Shore. This mobile health clinic will also assist in hospitals' population health efforts and allow for education/screenings throughout all five counties.

- ✓ Work with public transit to add flexibility to routes, stops and schedules.

- ✓ Work with municipal governments to improve funding for public transportation

- ✓ Build a dedicated medical transportation service to serve the mid-Shore region's needs for local and inter-facility medical transportation

- ✓ Collaborate with the private sector (UBER, Lyft, etc.) to creatively provide cost-effective and convenient medical transportation services at a reduced cost for patients and families in rural communities

Workforce Development

There are workforce shortages for a number of health professions, often making availability of primary care and specialty providers in rural areas difficult. Challenges include recruiting physicians, spouses and families to small communities, low physician reimbursement rates in Maryland, burden of debt for graduates of medical school and other health professional education, and the aging of the physician workforce. State, Federal and local support and efforts include:

- ✓ Support for recruitment of individuals into allied health and medical professions. For example, the National Health Services Corps (NHSC) provides scholarships to health profession students and assistance for graduates of health profession programs with loan forgiveness in return for service in underserved rural areas
- ✓ Streamline and simplify the Maryland Loan Assistance Repayment Program
- ✓ Allocate up to three J-1 Visa slots each year for rural communities
- ✓ Accelerate efforts to recruit additional primary and specialty care providers and services across the five county region by deferring local and state taxes as applicable
- ✓ Engage physician and community support to attract and retain new physicians, advanced practice providers and allied health professionals to the region
- ✓ Increase provider reimbursement for physician and provider services to make rural Maryland more competitive and attractive as a destination option

Community-Based Services

Patients often experience issues with access to the array of community-based health care services such as pharmacies, outpatient therapy centers, senior care services, social services, etc. that may struggle to remain in operation due to small populations and underlying financial viability. Initiatives which could prove valuable include:

- ✓ Strengthen relationships with county health departments, social service agencies, EMS, FQHCs and expand or create new collaboration and partnerships with community agencies
- ✓ Use the existing model of Local Health Improvement Coalitions to create and fund a regional approach to comprehensive, coordinated, integrated and accessible community health planning toward achievement of the goals of population health and creating healthier communities together
- ✓ Identify grant funding and/or philanthropic foundations with mission to address rural health challenges

Telemedicine

Ensuring the availability of telemedicine services facilitates greater access to care by eliminating the need to travel long distances to see a qualified provider. Supporting and enabling telemedicine, necessary broadband deployment and adequate reimbursement for telemedicine services will be critical to success to:

- ✓ Enable nursing and physicians to assist in diagnosis, management, stabilization and transfer decisions concerning the most complex patients through expansion and funding of resources such as tele-ICU, operated by UMMS and already in place within UM SRH rural hospitals
- ✓ Fill gaps in subspecialist and primary care
- ✓ Assist patients in need of behavioral health services, who may otherwise have to drive hours, by offering tele-psychiatry in more local centers and linking scarce psychiatric resources to patients throughout a wide rural region
- ✓ Offer patients convenience of remote drug therapy monitoring, authorizing prescriptions, patient counselling and medication compliance through tele-pharmacy
- ✓ Offer patients the ability to access health care on a more flexible basis, using secure online video or through secure email, with the added benefit of reducing travel to health care facilities or provider offices.

Funding Support Will Assist in Achieving Access to Quality Health Care in Rural Maryland

- ✓ Funding support from HSCRC to increase UM SRH hospital rates to cover full debt service for defined capital/facility projects
- ✓ Funding through hospital rates that recognizes the challenges of rural health care in the face of competition that tears at the fragile fabric of rural financial structure
- ✓ Funding increases for physicians and advanced practice professionals working in rural parts of Maryland
- ✓ Loan forgiveness legislation for MDs / APPs
- ✓ State funded Practice Support Agreements to minimize initial losses practices face when adding providers in rural areas
- ✓ Tax credits for providers relocating to rural communities in Maryland
- ✓ Grants for Rural Maryland healthcare facilities in multiple areas
    - Transportation
    - Telemedicine
    - Mobile Integrated Health Care programs (MIHC) for rural counties, with the ability to be flexible in responding to unique community needs and support structures
    - Funding for health care information technology and infrastructure, electronic health records and telemedicine to improve safety and quality of care.

THANK YOU

Thank you for understanding the unique health care needs and for investing in the economic viability of Maryland's vulnerable rural communities and the citizens who make their homes there.

We acknowledge that there are indeed bold steps to be taken to address the issues of health care access in rural, vulnerable communities in our State. We look forward to working with all of the stakeholders toward powerful solutions to these issues.

Addendum A: Economic Impact Study

UNDERSTANDING AND ADDRESSING THE NEEDS OF MARYLAND'S VULNERABLE RURAL HOSPITALS AND THEIR COMMUNITIES

Economic Impact of University of Maryland Shore Regional Health

May 2017

Richard Clinch
UNIVERSITY OF MARYLAND AT BALTMORE
JACOB FRANCE INSTITUTE

Executive Summary

The University of Maryland Shore Regional Health network operates three hospitals, an emergency center, a nursing home and a host of other healthcare facilities serving the five county mid Shore region of Maryland. As part of the University of Maryland System, Shore Regional Health brings the nationally recognized health care capabilities of UMMS to its rural service area. Shore Regional Health's vision is *to be the region's leader in patient centered health care*. As the sole healthcare system located in Maryland's Mid Shore region, the health system has its most important impact on the region by providing needed health, medical and wellness services, with 10,769 hospital admissions, 136,146 outpatient visits and 79,064 emergency room visits in fiscal year 2016. In doing so, Shore Regional Health also not only contributes to the general health and welfare of the region's population, it supports the economic health and vitality of the region as well. With FY2016 revenues of $309.1 million, UM Shore Regional Health generated $488.2 million in economic activity in the five county Mid Shore regional economy; supported 3,855 jobs earning an estimated $195.8 million in labor income; and generated estimated state and local government revenues of $19.5 million. The operations of Shore Regional Health generated $1.58 in economic activity for each $1 in revenue.

Table ES-1: Economic Contribution of UM Shore Regional Health

Item	Output ($s)	Labor Income ($s)	Employment (Jobs)	State/Local Tax Revenue ($s)
Total - UM Shore Regional Health				
Direct Effect	$309,089,815	$139,989,687	2,252	$7,527,594
Indirect Impacts	$82,430,054	$27,416,448	776	$4,963,046
Induced Impacts	$96,676,962	$28,435,468	827	$7,036,918
Total Impact	$488,196,819	$195,841,603	3,855	$19,527,559
Multiplier	1.58	1.40	1.71	2.59

Source: UMMS and IMPLAN

Conclusion -- UM Shore Regional Health makes important contributions not only to the overall health and quality of life of the Mid Shore region of Maryland but to the economic vitality of the region as well.

Economic Impact of Shore Regional Health on the mid Shore Region

The University of Maryland Shore Regional Health network retained the Jacob France Institute to assess the economic contributions made by the health system on the five county Mid Shore of Maryland region. As the sole health care system serving this area, Shore Regional Health has its main impact on the region as the primary provider of hospital, emergency and health care services to the region. In doing so, the health system also make important contributions to the regional economy, which will be analyzed in this report.

UM Shore Regional Health's Operations

University of Maryland Shore Regional Health is a regional, nonprofit, medical delivery care network formed on July 1, 2013, through the consolidation of two University of Maryland partner entities, the former Shore Health and the former Chester River Health.

The UM Shore Regional Health network serves the Mid-Shore region, which includes Caroline, Dorchester, Kent, Queen Anne's, and Talbot counties. In addition to its three hospitals — University of Maryland Shore Medical Centers at Chestertown, Dorchester and Easton — UM Shore Regional Health includes the UM Shore Emergency Center at Queenstown and UM Shore Medical Pavilions at Chestertown, Dorchester, Easton and Queenstown, UM Shore Nursing and Rehabilitation Center at Chestertown, and a broad array of inpatient and outpatient services in locations throughout the five county region.

As a member of UMMS, UM Shore Regional Health is able to enhance its various clinical programs and facilities and facilitate physician recruitment, bringing world-class medical care to the residents of Maryland's Mid-Shore region. The organization's affiliate, UM Community Medical Group, employs physicians and advanced practice providers in family practice and diverse specialties, including behavioral health, breast health, cardiology, diabetes and endocrinology, internal medicine and palliative care, neurology and sleep medicine, nephrology, neurological surgery, obstetrics and gynecology, otolaryngology, pain management, pediatrics, rehabilitation, surgical and wound care, and urology and continence. These practitioners provide care in office and clinical locations in towns throughout the five county region, including Cambridge, Centreville, Chestertown, Denton, Easton, Galena, and Queenstown.

The UM Shore Regional Health network is the primary provider of hospital services in the five county Mid Shore area of Maryland, with its three hospitals and emergency center being the only hospitals in their service area. Selected operational characteristics of UM Shore Regional Health are presented in Table 1, and include the following:

In FY2016, UM Shore Regional Health had $309.1 million in revenues and employed 2,252 workers;

- In FY2016 UM Shore Regional Health had 10,769 in-patient admissions, 136,146 outpatient visits, and 79,064 emergency room visits; and
- In FY2016, UM Shore Regional Health conducted 4,936 outpatient and 3,424 surgery center cases.

In the absence of UM Shore Regional Health network, many of these Mid Shore patients would need to seek treatment outside of the region.

Table 1: University of Maryland Medical System - Mid Shore Health Operations

Item	UM Shore Medical Center at Easton	UM Shore Medical Center at Dorchester	UM Shore Medical Center at Chestertown	UM Queen Anne's Emergency Center	Total - UM Shore Regional Health[1]
Health System Operations					
Hospital Admissions	7,412	1,761	1,596	0	10,769
Outpatient Visits	64,729	38,854	32,563	0	136,146
Emergency Visits	27,987	20,924	14,259	15,894	79,064
Outpatient Surgical Cases	3,279	516	1,141	0	4,936
Surgery Center Cases	3,059	0	0	365	3,424
Health System Revenues and Expenses					
Revenues	$190,594,931	$44,239,077	$53,563,073	$6,243,673	$309,089,815
Employment	1,203	324	256	59	2,252
Wages, Salaries and Benefits	$66,390,276	$17,728,559	$18,011,067	$2,007,746	$139,773,258

(1) Total - UM Shore Regional Health - includes Home Health and some other operations, and thus as total revenues and employment that are larger than the total for the four hospitals analyzed.

Source: UM Shore Health

Economic Contribution of UM Shore Regional Health's Operations on the Mid Shore Region of Maryland

UM Shore Regional Health network makes important contributions to the Mid Shore region through the payments it makes to workers residing and suppliers located in the region. UM Shore Regional Health had total estimated direct impacts (revenues) of $309.1 million in FY2016. As presented in Table 3, these revenues generated $488.2 million in economic activity in the five county Mid Shore regional economy, amounting to an output multiplier of 1.58, or $1.58 in economic activity supported for each $1 in revenue. UM Shore Regional Health's direct employment of 2,252 is supplemented with an additional 776 *Indirect Impact* jobs from the local purchases of goods and services to support its operations and 827 *Induced Impact* jobs attributable to the increase in local incomes from its operations for a total of 3,855 jobs directly or indirectly supported by UM Shore Regional Health. These 3,855 jobs account for 0.4 percent of total regional employment. There is a total of $195.8 million in labor income associated with the jobs supported by UM Shore Regional Health's operations and estimated state and local government revenues of $19.5 million.

In addition to analyzing the economic activity associated with UM Shore Regional Health, the Jacob France Institute also analyzed the economic activity associated with each of its three component hospitals as well as for the UM Queen Anne's Emergency Center. A summary of the results of the individual economic activity analysis associated with each institution is as follows:

- UM Shore Medical Center at Easton directly generates $190.6 million in revenues and employs 1,203 workers. These direct impacts are augmented with $50.8 million in economic activity and 478 jobs in the form of *Indirect Impacts* from local purchases and $48.2 million and 412 jobs in the form of *Induced Impacts* from the increase in household incomes associated with the hospital for a total regional impact of $289.5 million in economic activity, supporting 2,093 jobs earning $97.6 million in labor income, and generating $10.5 million in State and local government revenues;
- UM Shore Medical Center at Dorchester directly generates $44.2 million in revenues and employs 324 workers. These direct impacts are augmented with $11.8 million in economic activity and 111 jobs in the form of *Indirect Impacts* from local purchases and $12.5 million and 107 jobs in the form of *Induced Impacts* from the increase in household incomes associated with the hospital for a total regional impact of $68.5 million in economic activity, supporting 542 jobs earning $25.4 million in labor income, and generating $2.6 million in State and local government revenues;
- UM Shore Medical Center at Chestertown generates $53.6 million in revenues and employs 256 workers. These direct impacts are augmented with $14.3 million in economic activity and 134 jobs in the form of *Indirect Impacts* from local purchases and $13.2 million and 113 jobs in the form of *Induced Impacts* from the increase in household incomes associated with the hospital for a total regional impact of $81.0 million in economic activity, supporting 503 jobs earning $26.7 million in labor income, and generating $2.9 million in State and local government revenues; and
- UM Queen Anne's Emergency Center directly generates $6.2 million in revenues and employs 59 workers. These direct impacts are augmented with $1.7 million in economic activity and 17 jobs in the form of *Indirect Impacts* from local purchases and $1.5 million and 13 jobs in the form of *Induced Impacts* from the increase in household incomes associated with the Emergency Center for a total regional impact of $9.5 million in economic activity, supporting 89 jobs earning $3.1 million in labor income, and generating $0.3 million in State and local government revenues.

Table 3: Economic and Fiscal Impacts of the University of Maryland Medical System - Mid Shore Health

Item	Output ($s)	Labor Income ($s)	Employment (Jobs)	State/Local Tax Revenue ($s)
Total - UM Shore Regional Health[1]				
Direct Effect	$309,089,815	$139,989,687	2,252	$7,527,594
Indirect Impacts	$82,430,054	$27,416,448	776	$4,963,046
Induced Impacts	$96,676,962	$28,435,468	827	$7,036,918
Total Impact	$488,196,819	$195,841,603	3,855	$19,527,559
Multiplier	1.58	1.40	1.71	2.59
UM Shore Medical Center at Easton				
Direct Effect	$190,594,931	$66,460,276	1,203	$3,911,837
Indirect Impacts	$50,781,733	$16,931,699	478	$3,052,077
Induced Impacts	$48,157,210	$14,164,356	412	$3,505,468
Total Impact	$289,533,867	$97,556,330	2,093	$10,469,382
UM Shore Medical Center at Dorchester				
Direct Effect	$44,239,077	$17,744,806	324	$993,890
Indirect Impacts	$11,786,972	$3,930,024	111	$708,419
Induced Impacts	$12,517,033	$3,681,612	107	$911,112
Total Impact	$68,543,080	$25,356,443	542	$2,613,420
UM Shore Medical Center at Chestertown				
Direct Effect	$53,563,073	$18,030,739	256	$1,075,388
Indirect Impacts	$14,271,238	$4,758,331	134	$857,728
Induced Impacts	$13,160,167	$3,870,763	113	$957,966
Total Impact	$80,994,475	$26,659,834	503	$2,891,082
UM Queen Anne's Emergency Center				
Direct Effect	$6,243,673	$2,112,949	59	$116,035
Indirect Impacts	$1,740,332	$512,796	17	$113,445
Induced Impacts	$1,516,096	$445,917	13	$110,388
Total Impact	$9,500,101	$3,071,662	89	$339,868

Total - UM Shore Regional Health - includes Home Health and some other operations, and thus as total revenues and employment that are larger than the total for the four hospitals analyzed.

Source: UMMS and IMPLAN

Methodology and Terms

The University of Maryland – Shore Health retained the Jacob France Institute to prepare an analysis of the economic contribution of the health system on the five county Mid Shore region of the State of Maryland. This economic contribution analysis used the IMPLAN input-output model for the five jurisdictions analyzed. IMPLAN is one of the most widely used models in the nation, and can be used to analyze the impacts of companies, projects, or of entire industries. An input-output analysis examines the relationships among businesses and among businesses and final consumers. Input-output analysis is based on the use of multipliers, which describe the response of an economy to a change in demand or production. Multipliers measure the effects on an economy from a source of economic activity, in this case the provision of hospital, medical, nursing home, and emergency medical services.

The economic activity generated in a city, county, region or state is greater than the simple total of spending associated with the event or activity being studied. This is because as this money is earned it is, in turn, spent, earned and re-spent by other businesses and workers in the state economy through successive cycles of spending, earning and spending. However, the spending in each successive cycle is less than in the preceding cycle because a certain portion of spending "leaks" out of the economy in each round of spending. Leakages occur though purchases of goods or services from outside of the region and federal taxation. The IMPLAN multipliers used in this analysis capture the effects of these multiple rounds of spending. This analysis focuses on four measures of economic impact:

- **Output**. The total value of production or sales in all industries;
- **Employment**. The total number of full and part time jobs in all industries;
- **Labor Income**. The wages and salaries, including benefits, and other labor income earned by the workers holding the jobs created; and
- **State and Local Government Revenues**. The revenues accruing to the State of Maryland, county and municipal governments.

Four measures of the economic activity and impact of the jobs supported UM Shore Regional Health and its component units are included in this report:

- **Direct effects**. The change in economic activity being analyzed—in this case the provision of health care services;
- **Indirect effects**. The changes in inter-industry purchases, for example the purchase of medical supplies by a hospital, in response to the change in demand from the directly affected industries;
- **Induced effects**. The changes in spending from households as income and population increase due to changes in production; and
- **Total effects**. The combined total of direct, indirect and induced effects.

Addendum B: Summary of Considerations and Solutions

Critical Issues		What could be considered	Status
1	Facilities Investments/Access to capital	• CON Easton replacement hospital • CON exemption for conversion to FMF,Cambridge • Add observation beds to QA Freestanding Emergency Center to become FMF • HSCRC to provide sufficient funding in rates for Easton and maintain regulated rates for Cambridge, to cover full debt service for these capital/facility projects • New Rural Community Access Hospital designation and funding (mild-moderate inpatient care ≤4 days, inpatient/outpatient surgical capacity to be defined), Chestertown	• UMMS/UM SRH discussion
2	Competitive Environment	• Acknowledge the disruptive and threatening nature of urban health system competition in the rural environment • Develop disincentives for competition and incentives to support sustainability for rural hospitals affected by competition	• Concept/discussion

	Critical Issues	What Could Be Considered	Status
3	Provider Recruitment and Retention	• Student Debt mitigation/loan forgiveness programs built up and streamlined, with earmarks for rural students • J-1 Visa program with rural slots guaranteed • Support rural primary care residencies; require rural residency obligation in medical school • State subsidies for practice support in rural areas • Increase reimbursement for primary care in rural areas	• Discussion and details at Rural Health Study Workgroup
4	Transportation	• Wellmobile: support units operated locally and financially support a sustainable deployment of Governor's Wellmobile with UMSON staff to key rural locations • MICH: sustainable funding support for expanding and developing programs in rural areas • Explore medical transit network system w/vouchers • Consider tax incentives to automobile dealerships to support rural medical transportation • State-led initiative to leverage existing Federal and State resources	• MDOT donation requested • SRH supporting QA County • Initial discussions with MDOT for funding

	Critical Issues	What Could be Considered	Status
5	Workforce Development	• Tuition subsidies • Loan Forgiveness for rural health care employment commitment	• Discussions at Rural Health Study Workgroup
6	New Models of Care	• Effective coordination and resources for rural behavioral health and addictions treatment programs • Funding for rural transitional housing and home care model for addiction treatment • Creation of Rural Community Access Hospital designation • Mobile Integrated Health Care sustainably funded by State and local jurisdictions in rural areas • Change the 72 hour rule for inpatient requirement prior to skilled nursing, rehabilitation and home care admission; enable even home to skilled nursing, rehabilitation or home care. • State funding through rates/grants for provision of health literacy education by health systems in rural areas	• Discussions with regional providers and addictions task force groups • Concept exploration • Discussions of concepts with Rural Health Study Workgroup • Particularly important to discuss at State level in view of next phase of the Waiver

	Critical Issues	What Could Be Considered	Status
7	Rural Health Planning	• Strengthen/focus local regional health planning • population health improvement/coordination of care • Financial support for rural initiatives/collaboratives that come out of that local health improvement planning • Enable rural independent providers to collaborate in care under "safe harbor," similar to what is enabled through FQHCs	• Initial regional health planning & vision discussion for five mid-Shore counties, possible Local Health Improvement Coalition model (LHIC) through DHMH oversight
8	Telemedicine	• Expand broadband access to homes • Firm up payment models for physicians using telemedicine • Support technology at institution and patient/home level	• Rural broadband discussion and planning at Regional Rural Maryland Council • UMMS telemedicine strategy for Maryland

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