INDEPENDENT ASSESSMENT OF THE PROPOSED MERGER BETWEEN MOUNTAIN STATES HEALTH ALLIANCE AND WELLMONT HEALTH SYSTEM

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Purpose of this Report

Mountain States Health Alliance and Wellmont Health System based in, respectively, Johnson City and Kingsport, Tennessee, and hereafter referred to as 'the parties,' have proposed to merge their individual health systems into a single larger health system. If the proposed merger is actualized, the consolidated health system will be the overwhelmingly dominant health system in the region. Consequently, the parties have applied for a Certificate of Public Advantage (COPA) from the State of Tennessee and for a Letter Authorizing Cooperative Agreement (CA) from the Commonwealth of Virginia.

The COPA[1] and CA[2] are intended to protect the interests of the public in cases of anti-competitive mergers. The application processes for the COPA and CA allow the parties and other stakeholders to submit detailed information about the proposed merger that will enable the authorizing state agencies (i.e., the Tennessee Department of Health and the Virginia Department of Health) to critically assess the proposed merger and determine its advantages and disadvantages. More specifically, through the COPA and CA application processes the responsible state officials make a judgment about whether the likely advantages or benefits of the merger outweigh the disadvantages or untoward effects likely to result from reduced competition.

In their COPA and CA applications, the parties refer to the proposed consolidated organization simply as 'the New Health System,' and this is the name I use throughout this report. However, the parties have recently announced that the merged system will be called Ballad Health.[3]

I have been asked by the Federal Trade Commission (FTC) to independently review the parties' applications for the COPA[4] and CA[5] for the proposed merger, hereafter referred to as 'the merger,' and to offer my opinions about the likelihood of the New Health System yielding the benefits claimed by the parties. To the extent that such benefits might be achieved, I also have been asked to opine on how much they would be due specifically and directly to the

[1] *See* https://www.tn.gov/health/article/certificate-of-public-advantage/.
[2] Section 221-10, Purpose. Virginia Code of Regulations, Title 12, Chapter 221, Virginia's Rules and Regulations Governing Cooperative Agreements.
[3] *See* https://www.mountainstateshealth.com/news/Name-chosen-for-proposed-new-health-system.
[4] Mountain States Health Alliance and Wellmont Health System. *Application for a Certificate of Public Advantage, State of Tennessee*. February 16, 2016.
[5] Mountain States Health Alliance and Wellmont Health System. *Application for a Letter Authorizing Cooperative Agreement, Commonwealth of Virginia*. February 16, 2016.

merger, separate and apart from other forces and factors – that is, to what extent the claimed benefits are achievable only through this merger and not through alternative methods that are less harmful to competition. Additionally, I have been asked to opine on any likely problems which might impede implementation of the merger and, as a result, adversely impact achievement of the claimed benefits.

My findings and opinions on the above issues are set forth below, following a brief statement of my qualifications for offering said opinions and a summary of the background and context of the proposed merger.

Qualifications for Offering an Opinion

I presently serve as a Distinguished Professor in the School of Medicine and the Betty Irene Moore School of Nursing at the University of California Davis (UC Davis or UCD) and as Director of the Institute for Population Health Improvement (IPHI), an independent operating unit within the UC Davis Health System.

I established the IPHI in 2011 as a vehicle to operationalize a forward-looking vision of how a university and academic health center could collaborate with state and local government agencies, philanthropies, and other entities to improve population health.[6] The Institute has a diverse portfolio of programs and projects aligned around five strategic objectives – i.e., to (1) provide thought leadership and nurture scholarship in population health; (2) develop and disseminate actionable health intelligence; (3) champion activities which strengthen health security and eliminate health disparities; (4) build health leadership capacity; and (5) advocate for clinical and public health practices and policies which will improve population health. To actualize these strategic aims, we have developed a tactical programmatic foundation in five overlapping and mutually reinforcing thematic areas: (1) data analytics and health intelligence; (2) quality improvement; (3) public health practice; (4) health leadership development; and (5) health policy. We have particularly focused on emerging issues in population and public health and innovative models of healthcare delivery. The Institute is funded almost entirely from extramural sources.

[6] Kizer KW. Improving Population Health through Clinical-Community Collaboration: A Case Study of a Collaboration between State Government and an Academic Health System. In, Callahan RF, Bhattacharya D (eds), *Public Health Leadership: Strategies for Innovation in Population Health and Social Determinants*. 2016. Abingdon, UK: Taylor & Francis Group. Pp 114-135. (This book is in press and should be available the first week of December 2016.) *Also see* http://www.ucdmc.ucdavis.edu/iphi/about.html.

Among my roles at the IPHI and UC Davis, I serve as the Chief Quality Improvement Consultant for the Medi-Cal Quality Improvement Program managed by IPHI through an interagency agreement with the California Department of Health Care Services. This multi-year $5.3 million program works to improve the quality of Medi-Cal funded healthcare and the population health of Medi-Cal beneficiaries. Medi-Cal is California's Medicaid program, the nation's largest in terms of covered lives; it currently provides health insurance coverage for some 13.5 million low income and/or disabled persons at a cost of approximately $95 billion in fiscal year 2015-16. It is California's largest health insurance plan, covering approximately one-third of adults and half of the children in the state. Earlier in my career, I was responsible for managing Medi-Cal in my capacity as Director of the former California Department of Health Services, the states' top health official.[7]

Also within my UC Davis and IPHI-related activities, I serve as the Director of the California Cancer Reporting and Epidemiologic Surveillance (CalCARES) Program. CalCARES manages the day-to-day operations of the California Cancer Registry, one of the largest population-based cancer registries in the world, through a grant from the California Department of Public Health. Of note, I implemented the statewide California Cancer Registry in 1988 when serving as the state health director.

While at IPHI, I have been the principal investigator on programs or projects focused on reducing childhood obesity, developing community paramedicine, implementing health information exchanges, reducing surgical adverse events, evaluating management of the state's supplemental nutrition assistance program (food stamps), reducing heart disease and stroke risk factors, increasing active living, developing local and state population health leaders, assessing quality of care issues in ambulatory surgery centers and renal dialysis clinics, advancing veterans' healthcare, promoting cancer screening, evaluating the quality of cancer care by source of health insurance, implementing homelessness prevention programs, and reducing smoking and tobacco use, to name some.

[7] In addition to managing the Medi-Cal program, as Director of the former California Department of Health Services I was responsible for administering various other publicly funded health insurance programs; overseeing some 150 public health and disease prevention programs; licensing and certifying for Medicare participation (as relevant) approximately 5,300 healthcare facilities, including some 500 general acute care hospitals; and overseeing the remediation of Superfund-designated and other sites contaminated with toxic chemicals and hazardous wastes. In the years since my tenure, the former Department of Health Services has been split into several agencies, including the Department of Health Care Services and the Department of Public Health.

During the 35 years prior to establishing the IPHI, I served as a physician and physician executive in the public and private sectors, academia and philanthropy. My previous positions have included serving as: founding President and CEO, National Quality Forum, a Washington, DC-based national quality improvement and healthcare performance measures standards setting body;[8] Chairman, CEO and President, Medsphere Systems Corporation, a leading commercial provider of open source health information technology;[9] Under Secretary for Health, U.S. Department of Veterans Affairs (VA), and chief executive officer of the nation's largest integrated healthcare system, in which capacity I engineered the internationally acclaimed transformation of the VA Healthcare System in the late 1990s;[10] Director, California Department of Health Services; and Director, California Emergency Medical Services Authority (CEMSA), the state's lead agency for emergency and disaster medical services. As Director of CEMSA, I promulgated statewide guidelines and standards for local EMS agencies and authored statewide regulations for training and certification of EMS personnel and for the development and operation of trauma centers.

During my tenure as Director of the California Department of Health Services I oversaw the state's response to the then new HIV/AIDS epidemic,[11] pioneered Medicaid managed care, implemented California's famed Tobacco Control Program[12] and the '5-a-Day' for Better Nutrition Program that was later adopted by the National Cancer Institute for national implementation,[13] restructured many of the state's public health programs, launched initiatives to improve the quality of nursing homes, and oversaw a dramatically enlarged toxic substances control program and the genesis of the California Environmental Protection Agency.

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[8] Kizer KW. Establishing health care performance standards in an era of consumerism. *Journal of the American Medical Association* 2001; 286(10):1213-1217. *Also see* http://www.qualityforum.org/.

[9] *See* http://www.medsphere.com/about-medsphere/directors/kenneth-w-kizer.

[10] Kizer KW, Demakis JG, Feussner JR. 2000. Reinventing VA health care: systematizing quality improvement and quality innovation. *Medical Care 2000;* 38(Suppl.):I 7–16.

[11] Kizer KW. California's approach to AIDS. *AIDS & Public Policy Journal* 1988; 3:1-10.
Kizer KW, Conant MA, Francis DP, Fraziear T. HIV disease prevention and treatment. A model for local planning. *Western Journal of Medicine*. 149(5):481-485.

[12] Bal DG, Kizer KW, Felten PG, Mozar HN, Niemeyer D. Reducing tobacco consumption in California. Development of a statewide anti-tobacco use campaign. *Journal of the American Medical Association* 1990*;* 264(12):1570-1574.

[13] Foerster SB, Kizer KW, Disogra LK, Bal DG, Krieg BF, Bunch KL. California's "5 a day – for better health!" campaign: an innovative population-based effort to effect large scale dietary change. *American Journal of Preventive Medicine* 1995; 11(2):124-131.

I have served on the U.S. Preventive Services Task Force[14] and as Chairman of The California Wellness Foundation,[15] one of the nation's largest grant-giving philanthropies devoted to health promotion and disease prevention. I also have served on the governing boards of a number of managed care and health IT companies, foundations, professional associations and non-profit organizations.

Over the years, I have served as a consultant or advisor to many healthcare organizations and government agencies in the United States and multiple foreign countries on matters relating to the delivery of healthcare or public health. In this regard, I should note that during 2008 and 2009, I served as a consultant on quality improvement and patient safety for the Wellmont Health System.

I am an honors graduate of Stanford University and the UCLA Schools of Medicine and Public Health and the recipient of two honorary doctorates. I am board certified in six medical specialties and/or subspecialties and have authored over 400 original articles, book chapters and other reports in the professional literature. In recognition of my achievements and standing, I have received dozens of awards, am a fellow or distinguished fellow of 11 professional societies, and have been selected as one of the '100 Most Powerful People in Healthcare' by *Modern Healthcare* magazine on several occasions. I also have been elected to both the National Academy of Medicine (NAM)[16] and the National Academy of Public Administration (NAPA).[17] Election to NAM or NAPA is widely considered as one of the highest honors that can be awarded to a health professional or public administrator, respectively. I have served on numerous NAM and NAPA expert study panels over the years, and currently serve on, among others, the NAM Board on Population Health and Public Health Practice and on an expert committee evaluating the Department of Veterans Affairs mental health service programs. I also chair the NAM expert committee on housing, homelessness and health.

A curriculum vitae can be provided upon request.

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[14] The U.S. Preventive Services Task Force is an independent, volunteer panel of national experts in prevention and evidence-based medicine convened by the U.S. Department of Health and Human Services. *See* https://www.uspreventiveservicestaskforce.org/.

[15] The California Wellness Foundation is a conversion foundation whose mission is to improve the health of the people of California by making grants for health promotion, wellness education and disease prevention. *See* http://www.calwellness.org/about_us/mission_goals_philosophy.php.

[16] *See* https://nam.edu. The NAM was known as the Institute of Medicine of the National Academy of Sciences until 2014; https://nam.edu/member/?member_id=BdzKCuH15soo%2FE6fS04tUA%3D%3D.

[17] *See* http://www.napawash.org/fellows/fellows-biographies/fellows-last-names-k-o/740-kenneth-kizer.html.

Documents Reviewed

My opinions on this matter have been informed and developed by my personal review of the parties' applications for a Tennessee Certificate of Public Advantage (COPA) and a Virginia Letter Authorizing Cooperative Agreement (CA), hereafter collectively referred to as 'the application,' along with other publicly available materials; my accumulated knowledge and experience gained through the various positions I have held over the years; and extensive reading of the relevant literature. I have also reviewed the FTC's assessment of the merger, as memorialized in its public comments to the Virginia Department of Health and the Southwest Virginia Health Authority and a draft copy of its comments to the Tennessee Department of Health.[18]

Background and Context of the Proposed Merger

Mountain States Health Alliance (Mountain States or MSHA) and Wellmont Health System (Wellmont or WHS) are integrated delivery systems providing acute and long-term inpatient and outpatient services in northeast Tennessee and southwest Virginia.[19] The parties report their combined geographic service area encompasses 21 counties, most of which are predominantly rural. The two systems are the largest healthcare providers serving the area, together comprising an estimated 70 percent of the hospitals and other healthcare delivery assets in the area. They offer largely the same range and scope of services, and they have intensely competed with each other over the past two decades.

Established in 1998, MSHA is the largest health system in the service area, including 13 hospitals, eight urgent care clinics, and a variety of outpatient imaging, rehabilitation, and specialty care facilities.[20] The Wellmont Health System, established in 1996, includes six hospitals, 10 urgent care clinics,[21] and, like MSHA, an array of ambulatory imaging,

[18] Bureaus of Competition and Economics & Office of Policy Planning, Federal Trade Commission. *Federal Trade Commission Staff Submission to the Southwest Virginia Health Authority and Virginia Department of Health Regarding Cooperative Agreement Application of Mountain States Health Alliance and Wellmont Health System*. Washington, DC. September 30, 2016.
[19] Information about Mountain States and Wellmont health systems was obtained from the application, their websites and other publicly available information.
[20] *See* https://www.mountainstateshealth.com/locations.
[21] *See* https://www.wellmont.org/Our-Facilities/After-Hours-and-Urgent-Care/ (listing ten urgent care facilities); Note, the Wellmont website lists 10 urgent care clinics, including two new facilities, however Table 11.5 of the Tennessee COPA application and Table 14.5 of the Virginia CA application indicate only eight Wellmont urgent care facilities.

rehabilitation, and specialty care facilities.[22] A majority of the hospitals in both systems are small community hospitals; each system has at least one large lead hospital. Both systems have robust medical staffs (including both employed and independent community physicians), utilize advanced medical care technologies, and support a limited number of postgraduate medical education and other training programs. Both systems are considered to provide high quality care. MSHA was the recipient of the National Quality Forum's National Quality Healthcare Award in 2012.[23]

Similar to health systems across the nation, Mountain States and Wellmont are adjusting to sweeping changes in American healthcare, and especially the movement from fee-for-service to value-based payment methods.[24] Like many healthcare systems, and especially those serving rural and other underserved communities, the parties have expressed concerns about their ability to thrive in the changing healthcare economy. They have indicated that their challenges in the emerging value-based healthcare economy are exacerbated by the demographic characteristics and socioeconomic conditions prevalent in many of the communities they serve. Like many areas in rural America, some of the communities served by the parties have higher than average rates of substance abuse, teen pregnancy, low birth weight babies, chronic illness, illiteracy, and unemployment, among other problems. The region's economy is based primarily on a mix of light manufacturing and technology-oriented enterprises, healthcare, educational institutions and technology training centers, distribution centers, and assorted small service businesses.

To address their concerns, Mountain States and Wellmont have proposed to merge and create a single larger health system (i.e., the New Health System) that would be nearly twice as large as each of their individual systems. As with many other healthcare providers, Mountain States and Wellmont are seeking to gain larger size and scale through the merger based on the belief that increased size will better position the New Health System to deal with the new healthcare payment models which seek to incentivize providers to more cost-effectively manage resources and improve the quality and safety of care and healthcare outcomes. If the merger is approved and implemented, then the New Health System would become the overwhelmingly dominant healthcare provider in the region, facing little competition from the remaining

[22] *See* https://www.wellmont.org/Our-Facilities/Hospitals-And-Medical-Centers/ (listing hospitals); https://www.wellmont.org/Our-Facilities/Outpatient-Campuses/ (listing outpatient facilities).
[23] Gardner E. Where everyone is a caregiver. Patient-centered approach earns Tennessee system annual national quality award. *Modern Healthcare*. September 8, 2012.
[24] According to Catalyst for Payment Reform, an independent national nonprofit organization for employers and other purchasers committed to a higher-value health care system (*see* http://www.catalyzepaymentreform.org/), *value-based payment* is defined as "payment methods that reflect or support provider performance, especially the quality and safety of care that providers deliver, and are designed to spur provider efficiency and reduce unnecessary spending." *Available at* http://healthaffairs.org/blog/2014/02/06/the-payment-reform-landscape-overview/.

community hospitals serving the region, which are, of course, also impacted by the dynamics affecting healthcare broadly.

MSHA and WHS have claimed that the merger will improve the efficiency and quality of services provided by the New Health System and that the provisions of the COPA and CA will offset the merger's anti-competitive effects. More specifically, they claim the merger would reduce the escalating cost of healthcare in the region, expand access to healthcare services, improve the quality of care, and enhance overall population health in the region. The parties assert that substantial financial savings will result from the merger by reducing wasteful duplication of services and improving coordination of care, although they do not quantify these savings nor provide specific details about exactly how they will be achieved.

If the application is approved and the merger implemented, the parties have pledged to invest projected savings to enhance healthcare services and improve population health in the region. More specifically, they have committed to spend a total of $450 million over 10 years to improve population health ($75 million); expand specialty care services, including behavioral health and pediatric services ($140 million); implement a single, common health information system for the new organization's hospitals and caregivers ($150 million); and enhance health professional training, research and other academic health activities ($85 million). Again, they have provided little in the way of specific details about exactly how the funds will be utilized. They also have not prioritized the funding allocations or indicated how the funds would be apportioned or which of the areas would not be funded if the projected savings are not realized.

Based on the parties' above noted spending commitments, which the parties state are to come from merger-related savings, the merger will have to achieve savings of, on average, at least $45 million per year over the next 10 years.

General Assessment, Findings and Conclusions

After carefully reviewing and considering the application and other publicly available materials, I find there to be a pronounced paucity of detail and lack of specificity about how the claimed benefits will be achieved. In fact, the application is generally so vague about the means and mechanisms by which purported benefits will be achieved that it is impossible to determine whether they are plausible. As a result, I do not find them to be credible. That is, many of the claims of efficiencies and savings, improved access and quality of care, and better population health lack credibility because the parties have not provided a reasonable explanation for how the claimed benefits will be accomplished.

Providing specific and detailed descriptions and plans about how the quality and efficiency improvements will be accomplished is necessary to judge whether the projected outcomes and operational savings are realistic and to determine whether the merger *per se* is required to achieve the claimed benefits. Based on the information the parties have presented, it appears that many, if not all, of the outcomes claimed as benefits of the merger could be achieved in other ways.

Aside from the lack of sufficient and meaningful explanations for how the claimed benefits will be achieved, there are affirmative reasons to believe the benefits will not occur. For example, the parties already are integrated delivery systems of significant scale, offering much the same range and scope of services. It is not apparent how the parties, if merged, would complement the services offered by each other or in what areas the merger will yield synergies or strategic advantages. It is true that the merger would create a larger integrated delivery system, but it is also not apparent how simply gaining a greater mass of much the same range of services will yield savings anywhere near the amounts claimed. As observed by the Health Care Advisory Board, "… benefits of scale are increasingly hard to come by as the health care industry evolves and matures."[25] Likewise, there are a number of issues that could adversely impact the merger's implementation and outcome, causing it to fail in part or in whole. These potential implementation problems could materially reduce the projected savings, and might even end up increasing costs. Again, as observed by the Health Care Advisory Board in its 2014 report on hospital mergers and acquisitions, "Many studies of M&A both inside and outside of health care show that a majority of deals fail to create value, and what's more, far too many actually destroy value."[25]

Many of the claimed benefits, such as improving the organization and integration of care, could be achieved by each of the systems working on its own or working in collaboration with each other as independent entities. Importantly, a non-merger alliance or collaboration could include other community hospitals in the region, thereby providing a vehicle or potential means for all the hospitals in the region to benefit. As discussed below, numerous alliances and collaborations among independent health systems are being successfully operationalized.

Despite these doubts about the merger yielding the claimed benefits, even if one were to suppose that the claimed benefits would occur there is a marked lack of substance in the stated reasoning about why the merger itself is necessary to achieve them and how the merger *per se* will lead to the claimed savings, quality improvements and other benefits. Many of these benefits

[25] Health Care Advisory Board. *M&A - To What End?* Washington, DC. The Advisory Board Company. January 22, 2014.

could be achieved, and are being achieved, by health systems across the country, either on their own or through collaborations with other organizations that do not involve merging with a close competitor. It is my understanding that for purposes of approval of the application, the only benefits that can be attributed to the merger are the benefits that would be achieved solely by the merger and not by any other means. Those benefits are not readily apparent.

In sum my main conclusions are:

(1) The merger is not necessary to achieve the benefits sought through larger size and scale; there are other ways to achieve those benefits without sacrificing competition and local control;
(2) The claimed benefits of the merger are both speculative and unsubstantiated;
(3) The merger itself is unlikely to result in improved quality;
(4) The merger is not necessary to improve population health; and
(5) There are several potential impediments to implementing the merger and achieving the claimed benefits.

The above findings and opinions are further discussed in the following sections.

The Merger is Not Necessary to Achieve the Benefits Sought through Larger Size and Scale

The parties assert in their application that a merger is the only way to achieve the benefits of larger scale; however, they have not provided a clear rationale for why a merger with a non-competitor (or insignificant competitor) could not achieve the same claimed benefits or why some type of non-merger alliance or collaboration would not achieve the potential advantages of larger size and scale while allowing the members to remain autonomous. This latter option would seem to be especially attractive in so far as it also might be utilized by other hospitals in the region. A non-merger alliance or collaborative arrangement among the parties and other hospitals in the service area, such as has been developed in many other locations and such as MSHA has done with the Vanderbilt Health Affiliated Network and Wellmont has done with the Vanderbilt University Medical Center, would seem to be a more inclusive and promising long-term approach to addressing the challenges of providing healthcare in northeastern Tennessee and southwest Virginia in the emerging value-based healthcare economy because it would offer a means by which all the hospitals in the region might benefit.

In an effort to address the changing healthcare marketplace, many independent healthcare systems, especially in rural areas,[26] have joined together in recent years to form various types of alliances, partnerships or other collaborations to achieve the economies and benefits of larger scale. These alliances or collaborative ventures have taken many different forms, and the aggregate experience of these ventures indicates that diverse types of cooperative arrangements among independent organizations can yield the benefits of larger size without consolidating into a single organization. These non-merger collaborations have demonstrated that independent health systems working together have been able to achieve substantially more than they could on their own, while maintaining their independence and a steadfast focus on the local communities they serve.

Five examples of health system alliances or collaborations, which did not involve a merger, are briefly described below to illustrate the diverse nature of these partnerships.[27] These examples are Granite Health in New Hampshire, the BJC Collaborative in Missouri and Illinois, the Trivergent Health Alliance and Advanced Health Collaborative in Maryland, and Stratus Healthcare in Georgia. All of these examples include a mix of small and mid-sized health systems serving rural areas.

Granite Health.[28] Guided by an aligned vision of providing higher quality, more cost-effective care, five independent health systems in New Hampshire -- i.e., Catholic Medical Center in Manchester, Concord Hospital in Concord, LRG Healthcare in Laconia and Franklin, Southern New Hampshire Health System in Nashua, and Wentworth-Douglass Health System in Dover -- came together in 2011 to improve population health management and to achieve operational efficiencies by sharing resources, knowledge, competencies and infrastructure. This initially informal partnership evolved into a more formal partnership, i.e., Granite Health, which works to both improve care at the individual facilities and to operate a statewide health plan -- i.e., Tufts Health Freedom Plan -- in conjunction with Tufts Health Plan, an insurance company based in Massachusetts. Recently, Exeter Health Resources in Exeter and Concord has joined Granite Health.[29]

[26] Vesely R. The Power of Rural Alliances. *Trustee*. January 12, 2015.
[27] In citing these examples of alliances and collaborations it should be understood that I am not rendering a judgment about them from an antitrust perspective. I did not review then from that perspective, nor do I have the expertise to do so in any case.
[28] *See* http://www.granitehealth.org/.
[29] Bradley B. Exeter Health Resources joins Granite Health. Granite Health. September 14, 2016. *Available at*: http://www.granitehealth.org/news/2016/09/14/exeter-health-resources-joins-granite-health/.

Granite Health focuses on leveraging data analytics and the combined population served by the several health systems. The collaborative collects, analyzes, and uses business analytics to promote care coordination and use of evidence-based practices, population health management initiatives, and risk-based contracts. Representative of the ways Granite Health has operationalized its collaborative approach for data analytics, multi-disciplinary teams from the Granite Health partners analyzed utilization data on magnetic resonance imaging (MRI) for acute lower back pain, identified best practices for managing this condition, and developed clinical guidelines and a clinical decision support tool for each health system's electronic health record. These efforts have resulted in significantly decreased and more appropriate use of MRI for lower back pain. Likewise, other teams worked to improve emergency department wait times and to develop evidence-based tools for managing asthma and for screening for depression to improve management of diabetes and congestive heart failure. Overall, through the Granite Health collaboration, these independent health systems are now offering more coordinated care with improved patient outcomes at a lower cost.

BJC Collaborative.[30] The BJC Collaborative is an alliance of eight independent health systems in Missouri and southern Illinois. Originally, four independent health systems -- i.e., BJC HealthCare of St. Louis, MO; Cox Health of Springfield, MO; Memorial Health System of Springfield, IL; and Saint Luke's Health System of Kansas City, MO -- joined together in 2012 to increase their purchasing power for supplies and materials, address common issues such as emergency preparedness and government relations, and pursue data aggregation and data analytics to support population health management and risk contracts.[30,31] Based on the success of the Collaborative, four additional health systems joined the Collaborative – i.e., Blessing Health System of Quincy, IL; Southern Illinois Healthcare of Carbondale, IL; Sarah Bush Lincoln Health System of Mattoon, IL; and Decatur Memorial Hospital of Decatur, IL.[32] Organized as a limited liability company, the BJC Collaborative was reported to have revenues of more than $9 billion in 2015.

Instead of collectively taking on risk contracts, the Collaborative has worked to develop the foundational skills and capabilities needed to manage the total cost of care for a patient population in eight operational areas, including revenue cycle management, emergency

[30] *See* http://www.bjc.org/About-Us/The-BJC-Collaborative.
[31] Kutscher B. Bang without the buck? Bypassing merger, four systems look for buying power, reduced costs with collaboration. *Modern Healthcare*. October 27, 2012. *Available at* http://www.modernhealthcare.com/article/20121027/magazine/310279960.
[32] Butcher L. 3 Ways Hospitals Can Collaborate Without Merging. *Hospitals & Health Networks*. July 19, 2016. *Available at:* http://www.granitehealth.org/news/2016/07/19/hospitals-health-networks-3-ways-hospitals-can-collaborate-without-merging/.

preparedness, telehealth, and government relations. To support population health management and risk-based contracting, the Collaborative has also focused on data aggregation and data analytics and the development of disease registries and clinical care pathways and protocols.

Trivergent Health Alliance Management Services Organization (Trivergent).[31,33] In response to the rapidly changing healthcare landscape in Maryland, where all hospitals were moving to a capitation-based global payment system that caps hospitals' revenues regardless of the number of admissions, Trivergent Health Alliance Management Services Organization (MSO) was established in 2014 by three health systems in Maryland as a way to achieve the benefits of consolidation, or merging, while remaining independent. These were Western Maryland Health System in Cumberland, Meritus Health in Hagerstown, and Frederick Memorial Hospital in Frederick. The Trivergent MSO seeks to reduce costs, improve clinical outcomes, and enhance population health.

The health systems are both owners and customers of the Trivergent MSO, which had annual revenues of about $1.2 billion and more than 1,200 staff in 2015. Working to understand their similarities, differences, and opportunities to save money by working together, Trivergent staff have focused on six operating areas – i.e., pharmacy, information technology, laboratory, revenue cycle, human resources, and materials management – with a goal of saving $40 million over three years. Significant savings have been achieved in the purchase of antibiotics, while also improving appropriate use of the drugs and antibiotic stewardship, reduced insurance claims denials, improved cash flow, and reduced supply costs. The Alliance also successfully competed for a state planning grant for population health management with which it has identified the most common population health issues and strategies to address them. This information was used to support an implementation grant proposal.

Advanced Health Collaborative.[34] In early 2015, the Trivergent Health Alliance came together with four other independent Maryland health systems – i.e., Adventist HealthCare, LifeBridge Health, Mercy Health Services, and Peninsula Regional Health System – to create the Advanced Health Collaborative. By harnessing the collective strengths of its members, this limited liability corporation offers its members the ability, without merging, to share ideas and explore opportunities to enhance the quality of care, reduce costs, and improve population health. The Advanced Health Collaborative expects to achieve cost savings through shared population health

[33] *See* https://www.trivergenthealth.com/.
[34] *See* http://www.ahcmaryland.org/; Advanced Health Collaborative. Five Maryland-Based Health Systems Come Together to Form "Advanced Health Collaborative." Baltimore, Maryland. News Release. February 24, 2015. *Available at:* http://www.ahcmaryland.org/press-release/.

and care coordination resources and services, shared learning, and a unified focus on improving the health of the communities they serve while maintaining their independence and autonomy.

Stratus Healthcare.[35] The largest of its kind in the southeast, Stratus Healthcare is a collaborative partnership of 13 health systems, 21 hospitals, and over 1,500 physicians in central and southern Georgia. These parties have come together to achieve the benefits of larger size while maintaining their independence and local focus.[36] The partnership, which now serves at least 60 counties, was founded in 2013 to exchange best practices, share resources, develop coordinated information systems, reduce costs and manage the health of populations. It is a vehicle to prevent duplication and over-utilization of healthcare resources. The partnership seeks to provide a clinically integrated network of healthcare providers working together to coordinate patient-centered, high quality and efficient care, while providing a foundation and forum for innovation. Originally constituted as a non-equity partnership, Stratus formed a nonprofit limited liability corporation governed by a board composed of physicians and CEOs from the alliance members.

The partnership has reported significant performance improvements through economies of scale. It reports considerable success in reining in costs in shared saving opportunities through, among other things, employee health plan development, supply chain leverage, group purchasing, product and vendor evaluation, shared business resources, and contracting for hospital-based specialists such as hospitalists and anesthesiologists. It has also reported success in achieving clinical integration through developing clinical guidelines and sharing clinical outcomes data, patient transfer arrangements and timely electronic exchange of patient-specific information, as well as increased range of specialty services provided, use of telemedicine (which has allowed small rural hospitals to retain patients and increased referral to network specialists), reference laboratory services, and mobile imaging. Population health management has been supported by creating standardized evidence-based care plans for quality improvement and care coordination, sharing population data and clinical resources for service lines, health information exchange for information interoperability, data warehousing and enterprise analytics.

Mountain States and Wellmont Affiliations. In considering the above alliances and collaborations, it should be noted that both MSHA and WHS already participate in alliances like the ones described above. The parties have not shown why they could not participate in

[35] *See* http://www.stratushealthcare.org/; https://www.ruralhealthinfo.org/community-health/project-examples/887/.
[36] Commins J. Stratus Healthcare Alliance Strategy Detailed. *HealthLeaders Media*. July 24, 2013. *Available at:* http://www.healthleadersmedia.com/leadership/stratus-healthcare-alliance-strategy-detailed/.

additional non-merger collaborations. Mountain States participates in the Vanderbilt Health Affiliated Network (VHAN), an alliance of 13 health systems and more than 50 hospitals in Tennessee and neighboring states, including the MSHA hospitals in Virginia.[37] The network allows its members to share best practices and collaborate clinically with other hospitals.[38] Its initiatives have enabled member providers to share patient records, clinical data, and reduce healthcare costs.[39] This affiliation allows its members to gain the benefits of large scale without giving up the local control that many health systems believe is important for their communities. Indeed, in discussing MSHA's affiliation with the VHAN, Dr. Wright Pinson, Deputy Vice Chancellor for Health Affairs for Vanderbilt University, said, "…In putting this affiliation together, we have gained all the advantages of a large health system but we have not given up any local control."[38] Additionally, Wellmont has achieved cost savings through a purchasing collaboration with Vanderbilt University Medical Center, which enables Wellmont "to improve the value of health care delivered to the community by lowering supply, pharmaceutical and purchased services costs."[40]

The Claimed Benefits Resulting from the Merger are Speculative and Unsubstantiated

The parties assert that the merger will consolidate and eliminate duplicative services that have arisen over the years due to the intense competition between the two health systems; however, scant detail is provided about which existing services will be consolidated or eliminated, which technology assets will be reallocated, or, except for pediatrics to some extent, which planned or projected future services will or will not be pursued as a result of the merger. The parties do not provide a plan or other detailed basis to understand exactly how the projected savings will be achieved and, thus, do not provide an adequate or sound basis for judging whether the claimed savings are realistic. Based on my experience as Director of the California Department of Health Services and as CEO of the VA Healthcare System, I am acutely aware of how difficult it is to close facilities or reallocate services. The information provided in the application does not give me confidence that any purported wasteful duplication will be eliminated as a result of the merger, raising serious doubts about the likelihood of any significant savings being achieved from asset reallocation.

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[37] *See* http://vhan.com/about/.
[38] Castle K. Mountain States Health Alliance Announces Affiliation with Vanderbilt University Medical Center. *Bristol Herald Courier*. May 3, 2013. *Available at* http://www.heraldcourier.com/news/local/article_b4c48e72-b3ed-11e2-a6f1-0019bb30f31a.html.
[39] *See* http://vhan.com/providers/why-vhan/.
[40] *See* https://www.wellmont.org/News/2015/Wellmont-Has-Solid-Financial-Year,-Growing-Operating-Income-and-Net-Income-Significantly.aspx.

It is intimated in the application that one of the existing trauma centers will be eliminated, although it is not clear if a final determination has been made in this regard (should the application be approved) and, if so, which of the trauma centers would be eliminated. Opening or closing a trauma center is a complex matter that entails consideration of, among other things, population size, density and dispersion; the nature, types and amount of trauma which occur in the service area; routes and modes of emergency medical services transportation; availability of necessary professional personnel; weather, geographic and road traffic conditions; and health insurance coverage of the population served. No plan for eliminating an existing trauma center has been made publicly available. Further, it is not clear from information in the application whether it would be medically prudent or advantageous to close any of the trauma centers. And even if the data show that it would be reasonable to close a trauma center, such an action would almost certainly generate a significant amount of public concern and opposition, impeding its actualization.

The application indicates that The New Health System will reallocate and expand pediatric and behavioral health services, but little detail is provided about the specific plans for operationalizing these stated goals. As such, it is not possible to render a judgment about the utility or benefit of such claims or the likelihood of such service enhancements being realized.

The Merger Itself is Unlikely to Result in Improved Quality

The application claims that the merger will improve the quality of care provided by the parties. However, these claims need to be examined or viewed through the lens of the general experience of hospital mergers on healthcare quality, albeit with an understanding that the general experience might be different in any particular instance because of its specific circumstances and details.

Healthcare as an enterprise or industry accounts for about one-fifth of the U.S. economy. Healthcare expenditures reached $2.6 trillion in 2014.[41] Hospital expenditures, the single largest category of healthcare spending, accounted for more than a third of these expenditures (37.9 percent) in 2014.[41] Given the importance of healthcare and hospital expenditures in the American economy and the predominantly private sector, market-based nature of the industry, the relationship between hospital quality and competition has been an issue of great interest over the years. Questions about the impact or effects of competition between and among hospitals on

[41] National Center for Health Statistics. *Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities*. Hyattsville, MD. 2016. *See* http://www.cdc.gov/nchs/data/hus/hus15.pdf.

quality of care have given rise to a substantial research literature and evidence base. Overall, this literature finds that competition between hospitals improves quality,[42] and it provides little basis for believing *a priori* that hospital mergers and local market consolidation are likely to improve quality. When speaking to the American Hospital Association's annual meeting in 2014, James Orlikoff, president of Orlikoff & Associates, Inc., when referring to studies about hospital mergers and quality of care, commented that "... quality didn't improve in 8 out of 11 mergers. Only two of the mergers demonstrated substantial quality improvement."[43]

Notwithstanding that competition between and among hospitals is generally better for quality, it is possible that a particular merger may improve quality, as observed by Dr. Orlikoff, and I have evaluated the case-specific evidence presented for this merger. I conclude that the evidence is not convincing that this merger will improve quality.

There is little, if any, experiential or empirical evidence that shows quality of care improves as a result of facility mergers or consolidation of services when the parties are already providing high quality care. A hospital merger may lead to improved quality when one of the merging hospitals has much higher pre-merger quality than the other.[44] In this type of situation, improved quality comes about because the hospital providing inferior quality care is brought under the management of the hospital having superior performance, which then improves the lower performing hospital's processes. However, such circumstances do not apply in this instance. Publicly reported performance data indicate that both MSHA and Wellmont provide generally high quality care, and the application does not offer evidence that there are significant systematic pre-merger quality differences between them.

The parties suggest that quality of care will improve because a higher volume of services will be provided. The only service that the parties have specifically identified that is likely to have a volume-outcome relationship is trauma.[45] Improved quality of care has been correlated with higher volumes of cases of certain types of complex medical conditions or surgical procedures (e.g., some types of cardiovascular or cancer surgery or joint replacement surgeries),

[42] Gaynor M, Ho K, Town RJ. The Industrial Organization of Health-Care Markets. *Journal of Economic Literature* 2015; 53(2): 235-284.
[43] MacDonald I. Are hospital mergers destined to fail? *FierceHealthcare*. May 5, 2014. *Available at* http://www.fiercehealthcare.com/healthcare/are-hospital-mergers-destined-to-fail.
[44] Romano PS, Balan DJ. A Retrospective Analysis of the Clinical Quality Effects of the Acquisition of Highland Park Hospital by Evanston Northwestern Healthcare. *International Journal of the Economics of Business* 2011; 18(1): 45-64.
[45] The parties have also identified pediatrics as a service that could be consolidated, but they have not provided sufficient information about their intentions in this regard to determine whether a possible volume-outcome relationship is applicable.

but the application provides no information about which hospitals would see larger volumes of cases nor does it offer any projections about changes in the volumes of relevant procedures. To the contrary, the application states that most patients will continue to get their care at the facilities they have historically used. Obviously, if a facility or a service at a facility were to close, then patients would have to go elsewhere for that service; however, the application does not provide details in this regard.

Specifically with regard to trauma care, the application suggests that a trauma center may be closed. However, there is no reason to believe the quality of trauma care would improve if one of the Level 1 trauma centers were to close and the cases shifted to another center, since the current trauma centers already treat a large enough number of cases that an additional volume-outcome advantage is unlikely. Indeed, in order to be designated a level 1 or 2 trauma center a hospital must treat a large number of cases - e.g., 1200 cases per year to be designated a level 1 trauma center by the American College of Surgeons. In their application, the parties reference an article indicating that the generally accepted trauma volume-outcome threshold is about 650 trauma admissions per facility per year.[46] Both Mountain States and Wellmont appear to have independently exceeded this number of cases according to the information they provided to the Trauma Care Advisory Committee of the Tennessee Department of Health.[47] Further in this regard, the volume of major trauma admissions has been found not to influence outcome at either level 1 or 2 trauma centers, ostensibly because of the large number of cases required to be designated as a level 1 or 2 trauma center.[48] In other words, a volume-related improvement in quality is unlikely even if trauma centers were consolidated because the existing trauma centers are already treating a sufficiently large number of cases that additional volume is not likely to result in a significant quality advantage.

Importantly, even if there were any volume related benefits these benefits would have to be weighed against the disadvantages and possible untoward effects that might arise from diminished access to that particular service and any associated services. For example, closure of a trauma center may result in reallocation of other specialists and supportive services at the affected facility. Consolidating services would most likely mean longer travel times for some

[46] Nathans AB, Jurkovich GJ, Maier RV, et al. Relationship Between Trauma Center Volume and Outcomes. *Journal of the American Medical Association* 2001; 285(9):1164-1171. *Available at* http://jama.jamanetwork.com/article.aspx?articleid=193615.
[47] Trauma Care Advisory Council. *Trauma Care in Tennessee: A Report to the 2010 107th General Assembly*. Nashville, TN. Tennessee Department of Health. November 8, 2010. *Available at*: https://www.tn.gov/assets/entities/health/attachments/2010_Trauma_Care_in_TN_Report.pdf.
[48] Demetriades D, Martin M, Salim A, Rhee P, Brown C, Chan L. The Effect of Trauma Center Designation and Trauma Volume on Outcome in Specific Severe Injuries. *Annals of Surgery* 2005; 242(4):512-519.

patients, and these longer times could have negative health consequences, depending on the specific service changes.

It is worth noting that recent research has raised questions about whether a volume-outcome relationship exists at all, even for the complex procedures or services for which it traditionally has been thought to exist. A recently published study of hospital volume-outcome relationships has challenged on methodological grounds the earlier studies that seemingly established the volume-outcome relationship.[49] This new study raises potential questions about much of the literature linking better outcomes with higher case volumes. However, and importantly, even if the older literature is correct, as discussed above, it is unlikely this merger would generate benefits due to higher volumes.

The Merger is Not Necessary to Improve Population Health

The parties argue that the merger will allow the New Health System to improve population health, and they commit to invest no less than $75 million over ten years in population health improvement. However, and assuming the savings actually would be achieved, they do not detail specifically what the New Health System would do to improve population health, and particularly how what they would do will address the social and environmental factors that are the root causes of so many of the prevailing population health problems - e.g., unemployment and poverty, lack of education, food insecurity, inadequate housing, unreliable transportation, inactive life styles, and substance abuse and addiction problems. They also do not explain why the merger is necessary for the parties to work with local communities to address these social determinants of health.

The parties assert they would "commence the population health improvement process by preparing a comprehensive community health improvement plan that identifies the key strategic health issues for its focus over the next decade." In conjunction with East Tennessee State University, they say they will develop a 10-year health improvement action plan that would especially target: (1) programs to reduce the incidence of low birthweight babies and neonatal abstinence syndrome, decrease the prevalence of childhood obesity and Type 2 diabetes, improve the management of childhood diabetes, and increase the percentage of children in third grade reading at grade level; (2) programs to decrease premature mortality from diabetes, cardiovascular disease, and breast, cervical, colorectal and lung cancer; (3) programs to prevent the use of tobacco and controlled substances in youth and teens, reduce the over-prescription of

[49] Kim W, Wolff S, Ho V. Measuring the Volume-Outcome Relation for Complex Hospital Surgery. *Applied Health Economics and Health Policy* (2016) 14:453-464.

painkillers, and provide crisis management and residential treatment for individuals addicted to drugs and alcohol; and (4) programs to decrease avoidable hospital admission and emergency department use through intensive case management support and primary care. These are all important population health improvement goals, although there is nothing novel or unusual about the areas targeted for improvement. These are high priority areas for population health improvement throughout the United States, and especially in rural and other underserved communities. These are the types of problems that I have dealt with in my prior positions and are the types of issues the IPHI is engaged in addressing through our collaborations with state agencies and others. Importantly, these problems have much more to do with the social determinants of health than the delivery of healthcare per se. There is no compelling reason why the parties could not now or in the future pursue strategies to address these problems as independent health systems.

Of note, the parties do not explain how the proposed community health improvement plan described in the application differs from or is anything more than the Community Health Needs Assessment they are required to prepare under the new provisions for filing their community benefit form (Section H) with the Internal Revenue Service to receive a nonprofit tax exemption.[50]

Consistent with general views on the subject, at the Institute for Population Health Improvement we have defined *population health* as "the overall health status or health outcomes of a specified group of people resulting from the many determinants of health, including healthcare, public health interventions, and social and environmental factors." Similarly, we have defined *population health management* as "taking purposeful actions to influence the health status or health outcomes of a specified group of people through coordination, integration and alignment of healthcare, public health interventions, and social and environmental determinants of health."[6]

In considering population health improvement efforts it is important to keep in mind what a health system can and cannot do to influence the many determinants of health. For example, in a classic study about the impact of healthcare on preventable mortality, it was determined that healthcare was able to materially affect only 10 percent of preventable mortality, with the majority of preventable deaths being due to social status and behavioral factors.[51] Simply put, a

[50] Young GJ, Chou C, Alexander J, Lee SY, Raver E. Provision of Community Benefits by Tax-Exempt U.S. Hospitals. *New England Journal of Medicine* 2013; 368 (16): 1519-1527.
[51] McGinnis JM, Williams-Russo P, Knickman JR. The Case for More Active Policy Attention to Health Promotion. *Health Affairs* 2002; 21(2): 78-93. *Available at* http://content.healthaffairs.org/content/21/2/78.full.

health system, however effective or well-meaning, cannot by itself fix the social and environmental problems that negatively impact health. Nonmedical social and environmental factors (e.g., education, employment, housing, transportation, food security, life style, and public safety, among other things) are foundational to population health, and these social determinants of health are largely outside the control of health systems. Healthcare providers have little ability to influence a community's lack of jobs and associated poverty, the availability of affordable nutritious food in local markets or convenience stores, the lack of public transportation, the quality of schools and educational programs, or the lack of safe and secure housing, to name a few of the limitations of health systems in influencing population health.

Importantly, whatever ability the parties might have to influence the types of factors in the region discussed above, it would be unrelated to the proposed merger. To the extent that health systems may be able to influence the social determinants of health they do not need to merge or consolidate. If hospitals and health systems are to help address the socioeconomic problems that adversely impact population health then they must participate in broad inter-sectoral community partnerships aimed at creating jobs, improving schools and education, assuring the availability of safe and affordable housing, increasing food security, and enhancing public transportation, among other things. A health system merger is not needed to participate in community-based partnerships to do these types of things, and to the extent that a health system can help address these socioeconomic problems, both Mountain States and Wellmont could be working toward these ends as independent health systems now and in the future.

Further to the above, it should be noted that the triple aim of healthcare reform and the new value-based healthcare payment models being implemented to actualize the triple aim (e.g., shared savings programs, the Hospital Readmissions Reduction Program, and Accountable Health Communities) are increasingly driving healthcare providers to think more broadly about the health of their patients and to consider the delivery of healthcare services within the broader context of the social determinants of health.[52] The emerging value-based healthcare economy envisions a fundamental change in how healthcare systems operate in so far as these payment models seek to drive healthcare providers to more holistically manage the care of their patient populations with chronic conditions and multiple co-morbidities, aggressively encourage health-promoting behaviors, and ensure care is coordinated, continuous, and provided in the most appropriate and least costly settings. However, again, the merger is not needed for the parties to pursue these goals. Mountain States and Wellmont already are integrated health systems that serve patient populations across the region and include a range of healthcare providers, including

[52] Whittington JW, Nolan K, Lewis N, Torres T. Pursuing the triple aim: The first 7 years. *The Milbank Quarterly* 2015; 93(2): 263–300.

tertiary hospitals, community hospitals, outpatient facilities, and employed physicians across several specialties. As independent organizations they are already well positioned to partner with communities to address population health problems.

Overall, the application does not sufficiently explain the ways the merger will result in more effective population health management than will result from healthcare reform and the shift to value-based payment methods. Further, the parties have not provided a convincing rationale for why this merger is necessary or advantageous for addressing population health problems prevalent in the region, or specifically how it would facilitate efforts to address problems such as high rates of obesity and poor nutrition, substance abuse and drug addiction, below grade reading levels and illiteracy, smoking and other tobacco use, or teenage pregnancy. The application also does not explain what has prevented the parties from already partnering with the communities they serve to address the root causes of these types of population health problems.

There are Several Potential Impediments to Implementing the Merger

The parties repeatedly assert that the proposed merger will improve quality and operational efficiency and, as a result, yield large savings. However, in considering these claims it should be understood that the majority of health system mergers "fail to significantly improve the overall performance of the involved organizations."[53] Moreover, many mergers are not financially successful. In a study of 219 health system mergers occurring between 1998 and 2008, Booz & Company found that only 41 percent of mergers ended up being financially successful.[54] This study also found that 18 percent of the acquired hospitals went from positive margins before the merger to negative margins two years afterwards. Another recently published study that specifically assessed rural hospital mergers found that mergers "may not improve bottom-line profitability."[55] These recent evaluations of hospital mergers are not materially dissimilar to what was observed with regard to various types of vertical and horizontal health system integrations in the 1990s; namely, "While the forms of integration varied across hospitals

[53] D'Aunno T, Chiang Y, Gilmartin M. *Appendix D. Collaboration Among Health Care Organizations: A Review of Outcomes and Best Practices for Effective Performance*. In, Committee on Evaluation of the Lovell Federal Health Care Center Merger; Board on the Health of Select Populations; Institute of Medicine. *Evaluation of the Lovell Federal Health Care Center Merger: Findings, Conclusions, and Recommendations*. Washington, DC; National Academies Press. 2012.

[54] Saxena AB, Sharma A, Wong A. *Succeeding in hospital & health systems M&A. Why so many deals have failed and how to succeed in the future.* Strategy& and PWC. Chicago, IL. 2013. (Originally published by Booz & Company, 2013). *Available at*: http://www.strategyand.pwc.com/reports/succeeding-hospital-health-systems.

[55] Noles MJ, Reiter KL, Boortz-Marx J, Pink G. Rural Hospital Mergers and Acquisitions: Which hospitals are being acquired and how are they performing afterward. *Journal of Healthcare Management* 2015; 60(6): 395-407.

and markets, their economic performance, after a decade of experience, was generally uniform: Nothing worked."[56]

The above referenced Booz &Company study also observed that the more the scopes of services of the merger parties complimented each other by filling in technology or service delivery gaps, the more likely the merger was to succeed.[54] Likewise, health systems which were able to raise their admissions and occupancy rates were more likely to be successful, while merger drivers such as geographic proximity, increasing bed capacity, and payer concentration in the market were not found to be reliable predictors of success. From the application and other materials reviewed, it is not readily apparent how the Mountain States and Wellmont scopes of services will complement each other, how they might raise their admissions or occupancy rates without closing some hospitals, or if there are other likely merger success factors.

In addition to the above general considerations, implementation of this particular proposed merger, should it move forward, may encounter several potentially serious problems that could materially undermine its success. Prominent among the potential implementation problems are the ones briefly noted below.

The application shows little evidence of merger implementation planning. Implementing change of the magnitude involved with the proposed merger requires a great deal of specific and detailed planning. This type of planning is especially important in this instance because of the merger's anti-competitive nature and the need for it to be approved under the provisions of the Tennessee COPA and Virginia CA requirements. Without detailed planning that makes clear how the claimed benefits of the merger will be achieved and that those means and mechanisms are reasonable and realistic, it will be impossible for the Tennessee and Virginia Departments of Health and the Southwest Virginia Health Authority to make truly informed decisions about the validity of the claimed benefits. However, it appears from the information provided in the application that the requisite planning has not yet been done, which raises concerns about whether the merger implementation would be successful, if it were to be approved.

Consistent with general knowledge about achieving healthcare change, as well as my own experience in leading healthcare change efforts, a recent study found that inadequate implementation planning was the leading cause of hospital change initiatives failing to achieve

[56] Burns LR, Pauly MV. Integrated Delivery Networks: A Detour On The Road To Integrated Patient Care? *Health Affairs* 2002; 21(4): 128-141.

their desired outcomes.[57] Inadequate planning and overly aggressive implementation timelines were identified as the primary barrier to success by 73 percent of the hospital leaders queried in this study.

Difficulty in integrating and unifying the MSHA and Wellmont cultures. Based on various statements made by the parties, as well as my own observations when serving as a consultant for the Wellmont Health System in 2008-2009, MSHA and Wellmont have long competed with each other and have evolved different organizational cultures. In so far as the two systems have been staunch competitors for almost 20 years, it would be surprising if they did not have different cultures. Indeed, as Dr. Dale Sargent, the Medical Director of Hospitalist Programs for Wellmont commented in an editorial, "MSHA and WHS have been battling one another since the two health systems formed. Our cultures are incompatible. We could never bury the hatchet."[58] It is logical and reasonable to expect that there will be some degree of difficulty with integrating and unifying the two organizational cultures in the New Health System. Of course, if the cultures are not well integrated and unified, then there would be little reason to expect the merger to succeed.[59]

Organizational culture has been likened to an iceberg in the sense that most of it lies below the surface and is invisible. Culture is part of an organization's invisible architecture.[60] Culture is based on the organization's values and is an organization's unspoken understanding of the rules and 'how things really get done.' And while largely invisible, organizational culture is continuously expressed through what people say and do and in the ways it influences behavior, relationships, decision making and, ultimately, organizational effectiveness. Culture cannot be changed by directive or edict or by standardizing processes in a new and different way. Culture change occurs by 'changing hearts and minds' and is fundamentally about changing how people feel and what they believe to be important. Achieving culture change requires careful planning and assiduous attention to detail when implementing the change plan. Achieving lasting organizational culture change typically takes at least several years.

It is well established in healthcare, as well as in other enterprises, that difficulty in integrating and unifying disparate organizational cultures is a primary reason why mergers do

[57] Longenecker CO, Longenecker PD. Why Hospital Improvement Efforts Fail: A View From the Front Line. *Journal of Healthcare Management* 2014; 14 (2): 147-157.
[58] Sargent D. It's Up to Us: We Alone Can Seize Opportunities for Region's Health Care. *Bristol Herald Courier*. November 8, 2015. *Available at* http://www.heraldcourier.com/opinion/editorials/we-alone-can-seize-opportunities-for-region-s-health-care/article_c8679895-b573-55c8-a998-882c4267413c.html.
[59] Van Dyke M. When Two Cultures Merge. *Healthcare Executive*. November-December 2015. Pp 20-28.
[60] Kizer KW. What Is a World-Class Medical Facility? *American Journal of Medical Quality* 2010; 25(2): 154-156.

not achieve their anticipated benefits and often fail.[61] The difficulty of merging organizational cultures was impressed upon me when I served as the CEO of the VA Healthcare System from 1994 through 1999 and effected a dramatic system-wide transformation. While on a much larger scale than the proposed MSHA-WHS merger, the VA transformation embodied much of what Mountain States and Wellmont seek to do by merging into the New Health System. More specifically, the VA transformation sought to create an accountable management structure and management control system, integrate and coordinate service delivery, expand access to care, improve the quality of care and standardize high quality care, align finances with desired outcomes through a capitation-based global payment (i.e., resource allocation) methodology, and modernize information management through system-wide deployment of an electronic health record (EHR) and the use of other advanced communication and information technologies.[62] In addition to completing the largest deployment of an EHR anywhere to date, dramatically improving quality of and access to care, reducing operating costs by almost a billion dollars per year,[63] and reducing per capita expenditures by over 25 percent,[64] this re-engineering of the VA Healthcare System included merging some 52 individual hospitals into 25 two- or three-campus medical centers. Notwithstanding that the VA Healthcare System is completely administratively and financially integrated, and has a longstanding well-defined mission, there were significant challenges in merging facilities under common management primarily because of the often disparate local cultures prevalent at individual facilities – even when in some instances they were geographically separated by only a few miles and served much the same population.

The application contains no meaningful description of how the two organizational cultures will be integrated and unified. While the proposed new governing board may be able to provide high level oversight, it would not be reasonable to expect that it could develop, lead and execute a cultural unification plan.

Difficulty in closing or realigning facilities and services. My experience in trying to close and consolidate facilities or services -- which is consistent with general industry experience in this regard -- is that it is very difficult to close existing services absent dire circumstances, and especially when the service is something as visible as a trauma center. Such efforts are

[61] Scanlan L. 2010. *Hospital Mergers - Why They Work, Why They Don't*. Chicago, IL. Health Forum, American Hospital Association.
[62] Edmondson AC, Golden BR, Young GJ. *Turnaround at the Veterans Health Administration (A)*. Harvard Business School Case 608-061. July 2007. (Revised January 2008).
[63] General Accounting Office. 1998. *VA Health Care - Status of Efforts to Improve Efficiency and Access. GAO/HEHS-98-48,* Washington, DC. *Available at* http://www.gao.gov/products/GAO/HEHS-98-48.
[64] Kizer KW, Dudley RA. Extreme makeover: Transformation of the Veterans Health Care System. *Annual Review of Public Health* 2009; 30:313-339.

essentially always opposed by the local communities losing the service because of the resultant lessened convenience and access to the service, perceived diminution in hospital stature or quality of care, and perceived negative impact on community identity. Consolidation efforts are generally also opposed by the medical staffs of the 'losing facility.' Public, medical staff, and political opposition to the reassignment, reduction or elimination of services, especially when the health system governing board is composed of community representatives, makes it very difficult to close or consolidate healthcare facilities or services. It is unclear how the proposed new governing board of the New Health System would surmount these challenges.

If consolidation of facilities and services were actualized, however, that could impede timely access to care, in which case healthcare outcomes could be adversely impacted. Additionally, closing a service could adversely affect the financial and operational status of the involved facility. The application is silent about these potential eventualities.

Problems with consolidation of electronic health record systems. In the application, the parties commit to "invest approximately $150 million over ten years to facilitate the regional exchange of health information among the participating providers and to establish an electronic record system within the New Health System that ensures a common platform and interoperability among its hospitals, physicians, and related services." They assert that these efforts "will allow providers in the New Health System the ability to quickly obtain full access to patient records at the point of care" and will "facilitate the increased adoption of best practices and evidence based medicine," "provide immediate, system-wide alerts and new protocols to improve quality of care," and "reduce the risk of clinical variation and lower the cost of care by decreasing duplication of health care services." However, in proposing to move all hospitals in the New Health System to a single EHR, the parties do not adequately explain why moving to a common information technology (IT) platform is necessary and in what specific ways the common IT platform will yield material benefits over the EHR and other IT systems currently in place. Likewise, the application does not provide details about how the common EHR would be implemented and how the risks associated with making such a change would be mitigated. In particular, they do not address possible cost overruns and disruptions in patient care that commonly occur when switching EHRs.

Both Mountain States and Wellmont utilize electronic health record (EHR) systems that are fully integrated across their respective hospitals and which provide access to patient records at the point of care. Wellmont launched its Epic system in 2014.[65] MSHA uses Siemens Soarian

[65] Hayes H. Wellmont Launches Epic Electronic Health Record System, *Kingsport TimesNews*, March 20, 2014. *Available at* http://e-edition.timesnews.net/article/9074700/wellmont-launches-epic-electronic-health-record-system.

in its hospitals and Siemens Allscripts for its employed practitioners.[66] Soarian and Allscripts EHR systems interconnect with each other.[67] MSHA has recently met federal requirements for one year or more of Stage 1 Meaningful Use of its EHR system.[68] Additionally, MSHA has been named a "Most Wired" healthcare system by Health Forum, an American Hospital Association company, each year for the past several years. This honor acknowledges a high level of sophistication in creating and using electronic medical records.[69]

Since both MSHA and WHS currently have fully implemented EHR systems, to create a common IT platform (i.e., a common EHR) one or both of the parties will have to change to an EHR different than the one it currently uses. This is likely to take a significant period of time (e.g., two years), entail substantial costs, and disrupt operations to some degree. MSHA is reported to have spent $50 million as of 2013 to update its core information systems to share data seamlessly.[70] Wellmont's conversion to Epic lasted nearly 18 months for a six-hospital system.[65] If the New Health System replaces one or both of the current EHR systems with a new EHR system, then the money spent on the replaced systems is not likely to be recoverable.

The potential for cost overruns and adverse effects on patient care when switching to a new EHR are frequently underestimated and not adequately planned for, whether concomitant with or independent of a merger. Even implementation of minor enhancements to an EHR can disrupt patient care, as illustrated earlier this year by a computer glitch related to implementing enhancements to MSHA's EHR that caused delays in hospital patient care for nine days.[71]

Although there could be potential benefits to having a single EHR in the new Health System, the potential benefits must be viewed with an eye towards the substantial financial and operational impacts of changing EHR systems which have been repeatedly observed in recent years. For example, the market research firm Black Book found that the majority of more than 3,200 hospital executives and clinicians who had switched EHRs since 2011 expressed doubts

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[66] *See* http://www.medicexchange.com/news-article/msha-selects-allscripts-ehr-and-pm.html; http://investor.allscripts.com/phoenix.zhtml?c=112727&p=irol-newsArticle&ID=1371346.
[67] *See* http://investor.allscripts.com/phoenix.zhtml?c=112727&p=irol-newsArticle&ID=1371346.
[68] Levine A. Mountain States, *A Message from Our CEO: Let's Talk 'Meaningful Use'*, THE MOUNTAIN STAR. May 26, 2014. *Available at* http://www.mshanews.org/news/article.aspx?id=1858.
[69] *See* https://www.mountainstateshealth.com/news/msha-again-named-most-wired-health-system; https://www.mountainstateshealth.com/news/MSHA-named-2012%20Most%20Wired%20Health%20System.
[70] DeGaspari J. Payer Partnerships and Population Health: Premier Healthcare Alliance Shares Insights of its Members' Accountable Care Initiatives. *Healthcare Informatics*. June 11, 2013. *Available at* http://www.healthcare-informatics.com/article/payer-partnerships-and-population-health?page=3.
[71] Hayes H. Computer Glitch at MSHA Slowed Down Care. *Kingsport TimesNews*. February 2, 2016. *Available at* http://www.timesnews.net/business/2016/02/02/computer-glitch-at-msha-slowed-down-care.

about the benefits of doing so.[72] This survey of 1204 hospital executives and 2133 health IT users who had completed an EHR replacement since 2011 found that 87 percent of financially challenged hospitals regretted their decision to switch EHRs.[73] In fact, after replacing their EHR, 14 percent of all hospitals were losing revenues greater than the cost of their new EHR. Some 62 percent of health IT staff reported a significant negative impact on care delivery that was directly attributable to replacing the EHR, and 90 percent of nurses reported the EHR process changes diminished their ability to deliver effective care. Additionally, 63 percent of health care executive-level respondents considered their jobs to be in jeopardy as a result of the EHR replacement process, while 19 percent of managers said that staff layoffs were directly caused by implementation delays, cost overruns, budget underestimates, or unavailability of trained personnel. Finally, some 88 percent of hospitals that replaced their EHRs reported that the new system provided no competitive advantages as far as attracting doctors.

Illustrative of the potential financial impact of switching EHRs, the vaunted Brigham and Women's Hospital in Boston reported a budget shortfall last year for the first time in over 15 years, due in large part to the unexpected costs of switching its EHR to Epic.[74] Instead of generating an expected surplus of $121 million in 2015, the hospital ended up with a $53 million deficit, causing it to eliminate 100 positions.[74,75] Similarly, Lahey Health, a hospital network based in Burlington, Massachusetts, reported that costs associated with switching its EHR to Epic was a notable factor in causing it to lay off 130 people and lose $21 million in the first six months of 2015.[76] In another recent example, Lake Health, which operates 16 facilities in two counties in northeastern Ohio, recorded a $30 million loss in 2015 and 2016 – the first time the health system has run a deficit since 2000 – due to the conversion of its EHR.[77] These are just a

[72] Landi H. Survey: EHR Switches Resulted in Higher Than Expected Costs, Layoffs. *Healthcare Informatics Magazine*. April 29, 2016. *Available at* http://www.healthcare-informatics.com/news-item/survey-ehr-switches-resulted-higher-expected-costs-layoffs-negative-impact-healthcare.
[73] Murphy K. EHR Replacement Rush a Regret for Many Struggling Hospitals. *EHR Intelligence*. April 29, 2016. *Available at* https://ehrintelligence.com/news/ehr-replacement-rush-a-regret-for-many-struggling-hospitals.
[74] Bailey M. Hospitals face budget woes with switch to electronic records. *STAT*. December 7, 2015. *Available at* https://www.statnews.com/2015/12/07/brigham-budget-electronic-health-records/.
[75] McCluskey PD. Brigham to cut 100 jobs as costs rise faster than revenues. *Boston Globe*. August 31, 2015. *Available at* https://www.bostonglobe.com/business/2015/08/31/brigham-cut-jobs/4FhQLAidPXFQxN4n4eyN9N/story.html.
[76] McCluskey PD. Lahey Health to lay off 130 workers at three hospitals. *Boston Globe*. May 20, 2015. *Available at* https://www.bostonglobe.com/business/2015/05/20/lahey-health-lay-off-workers/uXbvA2UcBpBLa8PLfRy5tJ/story.html.
[77] Segall G. Lake Health takes $30 million loss, blames IT conversion. *The Plain Dealer*. November 15, 2016. *Available at* http://www.cleveland.com/metro/index.ssf/2016/11/lake_health_takes_30_million_loss_blames_it_conversion_photos.html.

few examples of the many hospitals and health systems which have suffered untoward financial consequences from switching EHRs.

In light of the potential pitfalls of switching EHRs, it is notable that the application does not sufficiently address specifically how the proposed common IT platform would materially benefit patient outcomes, especially for patients who continue to use the same physician(s) and hospital(s) they currently use, nor how interoperability would be materially and meaningfully improved over what can be achieved through the OnePartner Health Information Exchange (HIE) that operates in the region.

OnePartner HIE "is a physician-owned and physician-led health information exchange fostering the electronic exchange of health-related information across the care continuum for the purpose of strengthening provider collaboration to improve quality care and patient outcomes."[78] By using the OnePartner HIE, "…health care providers across the region are able to securely access patient health information electronically to help facilitate quality care and reduce costs. The information exchange reduces costs by providing access to recent or previous test results and important patient health information which can avoid duplication of services and medical errors in addition to improving efficiency. The safe, secure and timely access to critical health information at the point of care is proven to be safer for patients by allowing physicians a more complete view of the patient health record so they can accurately and quickly diagnose and treat the patient. The OnePartner HIE provides an auditable record of access, making it safer and more secure than traditional methods of sharing patient information by phone or fax."[79] The OnePartner HIE allows participating providers to see clinical patient information at the point of care, regardless of place of service. The HIE uses Allscripts dbMotion platform to foster the exchange of patient records.[78] The OnePartner HIE can harmonize data from every electronic records system and deliver it to the provider's existing workflow.[80] Both Mountain States and Wellmont currently participate in the OnePartner HIE.

Additionally, the application does not address how the merger's approach would be materially advantageous to the enhanced interoperability that will be required of healthcare providers pursuant to the Medicare Access & CHIP Reauthorization Act of 2015 (MACRA) or

[78] *See* http://www.onepartner.com/news/onepartner-hie-has-partnered-with-allscripts-dbmotion.
[79] *See* http://www.onepartner.com/news/mountain-states-health-alliance-announces-participation-with-onepartner-hie.
[80] *See* http://www.onepartner.com/hie/.

how it would be better than EHR industry-wide efforts to increase interoperability, such as Epic Systems' recent reported efforts to substantially improve that EHR's interoperability.[81]

Overall, I find the application unconvincing as to the need to migrate to a common IT platform to achieve operational improvements or cost savings, and I do not believe it presents a balanced assessment of the risks and rewards of changing to a common EHR. In particular, I do not think the application presents a dispassionate view of the potential disruptive effects on patient care that may result from switching EHR systems.

Potential implementation oversight problems. In so far as the proposed merger would result in the New Health System spanning both Tennessee and Virginia, notably absent from the application is a discussion of how efforts to eliminate or consolidate services might be affected by state or local interests and possible efforts to ensure continuation of a service in one or both of the states if the New Health System decided to eliminate, regionalize or otherwise reallocate its resources. Indeed, this highlights a seemingly significant challenge in the oversight of the New Health System in so far as it will span two states but will be independently overseen by Tennessee and Virginia authorities.

Increased Academic and Research Opportunities

The parties commit to "invest not less than $85 million over ten years to develop and grow academic and research opportunities, support post-graduate healthcare training, and strengthen the pipeline and preparation of nurses and allied health professionals." However, they provide scant details about, among other things, how these funds will be allocated, how the funds would be used to catalyze or leverage additional educational or research investments, or how these pledged funds relate to the parties' current expenditures in this regard. As a result of this lack of detail, it is impossible to render any judgment about what value the parties' claims in this regard might have. However, it should be understood that the parties' commitment to invest $85 million over 10 years is quite modest. As a point of reference, I would note that the parties' commitment is essentially the same amount of extramural funds that I, as just one faculty member, have brought into UC Davis during the past five years.

[81] Versel N. Epic Systems VP defends company's interoperability record. *MedCity News*. November 8, 2016. *Available at*: http://medcitynews.com/2016/11/epic-systems-interoperability/?rf=1.

Conclusion

After carefully considering the application, I find that the benefits claimed by the parties are unlikely to be achieved and that any benefits of the merger that might actually accrue are not likely to be significantly better than what could be achieved by alternative means that did not reduce competition. As discussed and illustrated in this report, there are alternatives to the merger that would allow the parties to retain their independence and local control while still achieving meaningful operational efficiencies and cost savings and the ability to collaborate across networks. I also find the claimed benefits to be speculative and unsubstantiated because the specific mechanisms and means by which they would be achieved are not described or explained in sufficient detail to understand how the purported efficiencies, quality improvements, and other claimed benefits would be achieved or to judge the likelihood that they actually could be realized. This includes the parties' claims about improving quality of care and population health. Again, they have not provided adequate detail to substantiate these claims nor to demonstrate that the benefits will actually occur. Finally, there are several potential significant problems with implementing the merger, if it were to go forward, which could materially diminish the likelihood of its success and, thus, diminish or obviate any likelihood that the claimed benefits would be achieved.