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Examining Community Paramedicine in Rural West Virginia

Since the expansion of Medicaid under the Affordable Care Act (ACA), the number of people receiving health insurance through Medicaid and the Children's Health Insurance Program (CHIP) has increased more in West Virginia than nearly any other state¹. As of June 2015, West Virginia had approximately 534,495 total enrollment in Medicaid and CHIP and the Medicaid expansion enrollment was 164,461,². According to the data compiled by the state and submitted to the federal Centers on Medicare and Medicaid, more than a quarter of the state's citizens now have health insurance under one of the two programs¹. These data show an increase of more than 43% in Medicaid and CHIP enrollment, the second largest of any state in the country trailing only Oregon, where enrollment increased by nearly 50 percent¹. The Affordable Care Act expanded Medicaid eligibility to any family that makes up to 138% of the federal poverty level, approximately \$33,000 for a family of four³. Prior to the ACA low-income children and pregnant women could obtain health insurance through Medicaid or CHIP, but it was very difficult for low-income parents to obtain Medicaid coverage³. Low income parents can only obtain Medicaid coverage if they earned less than 35% of the federal poverty level, about \$8,300 for a family of four. Adults without children were ineligible¹.

West Virginia has done an exceptional job at increasing enrollment in Medicaid and CHIP. However, low-income West Virginians enrolled in Medicaid, especially in rural areas, often use ambulatory/EMS services and the Emergency Department (ED) in lieu of primary care⁴. Emergency Departments are being used as a substitute for primary care which reflects unmet health needs and lack of access to a primary care provider^{4, 5}. Experts in the field believe

that to reduce ED use the focus should not be solely placed on reducing the number of ED visits, but rather on promoting continuous coverage for those who are eligible and improving access to appropriate care settings⁴. Reducing ED use can be done through access to primary care providers or other alternative methods such as community paramedicine⁴.

Community paramedicine (CP) is an evolving model of community-based health care in which paramedics function outside their general emergency response and transport roles in numerous situations⁶. Community paramedics support appropriate use of emergency medical services by more closely matching patient need with medically appropriate care⁶. Community EMS services could improve continuity of care, reduce the number of patients that visit emergency departments, and reduce health and medical care costs⁶. Rural communities may significantly benefit from community paramedicine services through both health and economic opportunities. Currently, small EMS agencies in isolated rural areas rely heavily on volunteers and have more staff vacancies than larger EMS agencies in urban or rural areas⁷. By integrating community paramedicine into the health system as a paid position, local communities can increase the overall wellness of residents as well as workforce capacity. Community paramedicine also represents a workforce opportunity for military medics trained in service or in the National Guard that could transition into the CP role⁸. However, current payment policies discourage EMS agencies from transporting patients to non-ED settings or treating them on scene without transport mainly because third-party payers only reimburse 9-1-1 calls that result in transportation to an emergency department⁹. The 2007 Institute of Medicine (IOM) report, “Emergency Medical Services: At the Crossroads”, indicated that existing policies for EMS reimbursement add unnecessary costs to the healthcare system and place a burden on already overburdened hospital-based providers⁹. Because these reimbursement policies limit the

flexibility of EMS to provide transport to the most suitable destination for each patient, the IOM recommended that payment policies be updated to enable EMS providers to transport specific patients to primary care clinics, mental health centers, and other alternate healthcare settings⁹.

Despite the reimbursement setbacks of EMS care, several local EMS agencies across the country have implemented patient-centered EMS treatment and transportation programs that better enable their personnel to transport patients to healthcare settings other than the emergency department¹⁰. Several EMS agencies have successfully implemented community paramedic programs that provide primary care and preventative services to specific patients in the home¹⁰. Community-based healthcare aims to address specific local problems and utilize locally developed collaborations between and among emergency medical services (EMS) and other health care and social service providers⁶. Interest in the community-based model of care has grown substantially in recent years as a means to improve access to and quality of care in addition to reducing costs⁶.

EMS personnel have typically focused on providing emergency treatment for individuals suffering serious medical problems in a community, transporting these patients to a hospital emergency department (ED), or between hospitals as needed⁶. Emergency care is more costly than many other types of health care services, and because of this, it is necessary for EMS systems and hospital EDs to prepare for a variety of both routine and unusual problems that may occur in such an environment⁶. EMS systems are seen as an essential part of the health care delivery system in the United States. However, EMS systems function at the juncture of public health, health care, and public safety and have not been well-integrated into the health care delivery system due to their coinciding roles and responsibilities⁶. The 2007 IOM report noted that “local EMS systems are not well integrated with any of these groups and therefore receive

inadequate support from each of them”⁹. The incentives for care coordination and greater use of community-based care provided by the Affordable Care Act offer countless gains in the areas of care coordination and utilization of community-based care. The ACA presents an important opportunity for further integration of EMS into the health care delivery system through new models of care, such as community paramedicine⁶.

Community paramedicine calls for the utilization of community health workers and primary care providers in underserved areas to collaborate in providing preventive care⁶. The community paramedicine model of care has the potential to see that many patients are treated appropriately in a location other than a hospital emergency department⁶. Community paramedicine may also reduce overcrowding in EDs so fewer patients with non-emergency conditions are using ER services, potentially reducing costs and making more efficient use of ED resources⁶. Emergency Department diversion rates and EMS wait times may also be reduced by implementing a community paramedicine model⁶.

Paramedics are often very familiar with frequent 911 callers and multi-visit patients (MVPs) who are facing additional hardships such as mental health or substance abuse issues, homelessness, or lack of access to other social services⁶. Community paramedics would be better connected to other community resources where patients could receive assistance in meeting their basic needs such as housing and food⁶. Patients with additional needs would thus be able to more appropriately integrate themselves into the health care system including health self-management. Community paramedicine brings with it the potential to bridge gaps between primary care and emergency care as well as reduce the number of unnecessary 911 calls and hospital readmissions¹¹. By capitalizing on the skills paramedics already have, the feasibility of paramedics serving communities that have little access to health care increases¹².

For example, MedStar, a private EMS provider in Fort Worth, Texas serves approximately 880,000 residents and responds to an estimated 112,000 EMS calls each year¹³. MedStar initiated an EMS Community Health Program (CHP) in 2009, focusing initially on individuals who use EMS frequently and as a source of primary health care¹³. The program was developed after an analysis concluded that 21 patients had been transported to a local ED over 800 times in a 12-month period, accounting for almost \$1 million in ambulance charges and astronomical ED expenses¹³. The main goals of the CHP are to direct patients toward more appropriate non-ED health care options, reduce unnecessary 911 responses and EMS transports that overburden an already overburdened EMS system, and reduce overall costs of health care¹³.

As the program matured, MedStar began utilizing CHP paramedics to provide routine home visits to educate patients, conduct patient assessments, and refer patients to their primary care physician as deemed necessary¹³. For 23 patients enrolled in a congestive heart failure (CHF) program over a 12-month period, program administrators concluded that 44 hospital admissions were prevented, a 47% decrease¹³. In addition, there was a substantial decrease in the use of ambulance transports to the Emergency Department—a 44% decrease during the program and 56% after completion of the program¹³. MedStar calculated their savings to be over \$16,000 per patient enrolled in the program¹³. In June 2012, MedStar implemented a new enrollment protocol, adding 10 patients at risk of CHF readmissions to the program¹³. The program took place over an 8-month period during which no 30-day readmissions occurred and only one cardiac-related ED visit was necessary¹³. Savings were estimated at almost \$39,000 per patient enrolled in the CHF program¹³.

In Kanawha County, West Virginia, a Mobile Integrated Healthcare (MIH) Program pilot project is in the planning phase¹⁴. MIH is defined in this pilot project as “the provision of

healthcare using patient-centered, mobile resources in an out-of-hospital environment integrated with the healthcare system in its entirety”¹⁴. The MIH program stems from a partnership between the Kanawha County Emergency Ambulance Authority, Charleston Area Medical Center, and AstraZeneca and targets former military trained paramedics and experienced local paramedics to fill the primary community paramedic role¹⁴. Services provided through MIH include but are not limited to discharge transition, readmission reductions, lab services, immunizations, transportation to alternate locations, and in-home monitoring which reduces frequent ED use¹⁴. The program has already identified five paramedics for community paramedicine training.

The overall goal of the MIH program is to provide care in patients’ homes when possible and make appropriate referrals when necessary. Providing more home-based healthcare services will reduce and/or eliminate patient transports to approved destinations¹⁴. Currently, EMS agencies are reimbursed based solely on completing a patient transport to an approved destination¹⁴. The MIH model will create the need to develop new methods to encourage and promote reimbursement¹⁴. Therefore, a new reimbursement model is essential for the long-term financial sustainability of the MIH program¹⁴. The role of the community paramedicine professional will be to respond to identified health needs in underserved areas, ultimately improving the quality of life and health of West Virginians living in rural and remote areas¹⁴. Various roles of the CP professional will include outreach, wellness, health screening assessments, health education, providing immunizations, and disease management¹⁴. The paramedicine professional must clearly understand diabetes management, congestive heart failure and other high cost diseases¹⁴. CPs will need to be able to comprehend treatment methods as well as medical terminology¹⁴. Furthermore, CPs must be competent in recognizing mental

health issues and know the process for appropriate referral into the existing mental health care system¹⁴.

In January 2015, the West Virginia Rural Health Association Policy Committee initiated a study that aims to determine whether per-patient EMS costs, number of return patient calls, and number of return patient visits are higher and more costly in a county without a hospital compared to a county with a hospital. The MIH Program currently in progress in Kanawha County is serving as the model for the WVRHA's study currently being conducted in the rural counties of Jackson, Lewis and Wyoming. Lewis County was selected as a representative rural county with a hospital because a substantial amount of data has been collected on the EMS/Ambulance System in Lewis County. Jackson County also has a hospital while Wyoming County does not.

In close collaboration with the WV Bureau for Public Health Office of Emergency Medical Services (OEMS) and local third-party EMS providers in Jackson, Wyoming and Lewis Counties, the WVRHA will collect and compare data between the three counties. First, hospitals where Wyoming County transfers EMT patients will be identified. Second, the number of patients transported to Emergency Departments by EMS services in Jackson, Lewis and Wyoming Counties and the costs associated with ED transports will be examined. Finally, the WVRHA plans to track and compare the number of multi-visit patients in Jackson, Lewis and Wyoming counties.

West Virginia OEMS uses different medical command systems to coordinate EMS services, therefore understanding differences in medical command systems must be considered when comparing data from these three counties. According to the West Virginia OEMS, Lewis County is located in region 6/7 with its central location at WVU Hospitals in Morgantown and

Wyoming County is located in region 1 with its medical command located at Raleigh General Hospital¹⁵. Jackson County's medical command is located in region 5 at CAMC Health System¹⁵. Jackson and Lewis Counties each have a Level IV trauma center hospital and are both located approximately 50 miles from Level 1 trauma facilities in West Virginia¹⁶. Wyoming County does not have a trauma center rated hospital and is almost 100 miles away the nearest WV Level 1 trauma center¹⁶.

Increasing community paramedicine services in rural West Virginia using the MIH model will enhance access to appropriate healthcare services and overall community health at a local level as well as result in significant cost savings and reduction in use of ED services. New reimbursement methods and competency requirements in the WV State EMS system will be necessary to implement a promising community paramedicine model. In order to further develop community paramedicine in West Virginia, I recommend the continuation of current and future pilot or demonstration projects with a focus on education and training including core competencies for CPs. Collaboration among local EMS systems, hospitals, and primary care providers is essential to effectively and efficiently evaluate the value of community paramedicine in meeting the needs of West Virginia residents. Information such as cost-effectiveness and Medicaid and private-pay reimbursements to determine the appropriate role that models such as community paramedicine will have in West Virginia and how best to integrate community health programs into the current healthcare system are necessary. The West Virginia Rural Health Association will continue to analyse data provided by the WVOEMS and third party providers in Lewis, Jackson and Wyoming Counties as well as identify and develop ways to facilitate West Virginia National Guard, current and former military service members into the state EMS system.

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Disclaimer: Due to the incomplete nature of the data provided and collected from both Lewis and Wyoming Counties, the ability to cohesively provide a full analysis on this topic is inhibited. The WVRHA study is currently ongoing and the data provided is not definitive and is subject to change.