Community Paramedic Intervention for the Reduction of Emergency Department 72-Hour Return Visits

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Abstract

Purpose. To determine the processes required for a Community Paramedic home intervention 24 hours after Emergency Department discharge to reduce 72-hour ED return visits, while evaluating patient satisfaction and compliance.

Methods. The study took place in a critical access hospital Emergency Department and the surrounding service area. ED providers referred subjects to the study based on suggested criteria identifying increased risk of an unplanned 72-hour ED return. All subjects were discharged home from the ED and above the age of 18 years. Suggested criteria for referral included: no primary care provider, insured by Medicaid, Medicare or not insured, had one or more previous ED visits within the past two months. Exclusion criteria include not being discharged home, live over 80 miles from the discharging hospital, or were under the age of 18 years.

A home visit was performed with the participants within 24 hours after discharge to explore the processes needed, and the feasibility, of a community paramedic visit to mitigate circumstances for a 72-hour unplanned return visit. Of the twelve patients who were referred to the study, five consented to participate. The home visit was performed utilizing a template for reducing unplanned hospital readmissions, the Better Outcomes by Optimizing Safe Transitions (BOOST 8P's) Screening Tool. A post-visit survey explored patient satisfaction and insight to the program.

Results. Several themes were identified as useful areas of focus for the community paramedic home visit. These include reviewing side effects of home medications, confirming a follow-up plan with primary care, the need for a cohesive connection with primary care for order clarification, need for mobile medical record applications, and the need for pre-printed health education materials catered to the patient diagnosis.

Service delivery opportunities include streamlining patient navigation, education, preventative health-care maintenance, on-site treatment without transport, identifying and addressing patients with high ED utilization, and post-discharge follow-up.

Through interviews with local and state level representatives, suggestions were created for establishing a community paramedic program. These include state-level changes for education, certification and protocol development, legislative changes to allow EMS reimbursement for non-transport services, alignment with regional health systems for a cohesive approach to care, and funding options for program startup.

Discussion. System hurdles in program development include limitations in reimbursement opportunities in the Commonwealth of Virginia, lack of detailed community paramedic role and education through the State Office of EMS. Potential solutions include partnerships with regional health systems for medical direction and potential Accountable Care Organization contractual relationships for reimbursement.

Further research is needed to understand the implications of a community paramedic process in the rural health setting. Existing data has primarily surrounded urban communities with a minimal focus on the ED 72-hour return rates. However, the limited data that does exist shows promise for the potential impact of these programs in a broader sense of healthcare quality. With grant funding, limiting the financial risk for health system guidance, a pilot community paramedic program can offer the prime opportunity for outcomes research in a rural setting. With simultaneous efforts at the legislative level, the ability to expand EMS reimbursement for such services can help ensure the continuation of the program for years to come.

Next Steps. The qualitative data collected during this study concludes that a community paramedic program, in a broader sense of healthcare delivery, is very feasible. As a result of this

study, numerous conversations and relationships were developed at the local and State level, attracting interest from a non-profit organization with a desire to fund the development of a rural community healthcare worker program. A committee of stakeholders has been organized and is actively planning for development of a home-health initiative with the financial backing of a non-profit grant-making organization. Currently, this organization funds a full-time social worker position for a rural county in the research hospitals service area. Conversations are in place to propose that the local health system becomes the clinical leader for this endeavor, offering oversight and human resources, while the financial risk is absorbed by the grant funding organization.

Keywords: *community paramedic, rural health, emergency department return visits, logic model, mobile integrated health paramedic, care coordination*

Dedication

I want to dedicate this project to my parents Buck and Geraldine Payne, who not only wonderful role models and parents, but were also my caretakers during many years of recovery after a childhood traumatic accident. This incident not only led me into the healthcare arena but other family members as well.

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Introduction

Community paramedicine (CP) programs, rendering preventative healthcare in the home setting, are gaining popularity in rural settings. Existing literature shows promising results with such programs in improving patient satisfaction, compliance, and reducing unnecessary emergency service utilization. The purpose of this project is to examine the literature to implement a paramedic intervention in the community setting as a tool to reduce Emergency Department (ED) 72-hour return visits, also known as bounce-back, in a rural Virginia critical access area.

As a Doctorate in Nursing Practice project, it demonstrates the potential of collaborative practice between nursing leadership and community resources to improve access to care and prevent ER bounce back in rural communities. The project goals align with the Healthy People 2020 initiatives to: "attain high-quality, longer lives free of preventable disease, disability, injury, and premature death; achieve health equity, eliminate disparities, and improve the health of all groups; create social and physical environments that promote good health for all; and promote quality of life, healthy development, and healthy behaviors across all life stages" (CDC, 2014).

Background

The Page Memorial Hospital (PMH) Community includes four rural mountainous counties in Virginia: Page, Rappahannock, Shenandoah, and Warren. The total population of this area in 2015 was 112,084, with a projected 7.4% increase by the year 2020. Page Memorial Hospital had 94.8% of inpatient discharges, and 90.3% of emergency department visits

originated from the four-county community and 2.8% of inpatient discharges were from outside of the community. In 2014, the community population reported that 7.8% of the population is 65+ and 93.5% White (Valley Health System, 2016).

Key findings in the 2016 community health assessment include numerous primary care concerns. The PMH community is experiencing lower ratio rates when it comes to the number of primary care physicians per 100,000 populations in Page County, and the number of dentists available within the region for Page, Shenandoah and Warren Counties with an additional great need for mental health providers. The PMH community is below the Virginia ratio for these types of providers, according to the County Health Rankings report (Valley Health System, 2016). The counties in the PMH community ranked in the bottom half of all counties in Virginia on "access to care" in the County Health Rankings. The 2016 County Health Rankings measures have changed slightly for the Access to Care indicator to include the ratio of population to mental health providers. Rappahannock and Warren Counties have higher percentages of uninsured residents than Virginia overall, according to the U.S. Census. Page County has a higher percentage (15.3 percent) of uninsured residents than the U.S. average of 14.2 percent. Concerns about access to care were the most frequently mentioned factor contributing to poor health in key informant interviews. Lack of accessible or reliable transportation to health care and a lack of providers who accept new Medicaid, and even Medicare, patients were the most frequently mentioned specific access to care issues in interviews, especially for low-income individuals and senior citizens (Valley Health System, 2016).

The health systems review of community financial hardship and basic financial insecurity showed that Page and Shenandoah Counties had a higher percentage of households with incomes under $25,000 in 2014 than the Virginia state average of 18.2 percent. In the PMH community

in 2014, 2 of the four counties were above the state average for percent of households that had incomes below $25,000, an approximation of the federal poverty level (FPL) for a family of four (U.S. Census Bureau, 2014). According to 2016 data, within the PMH Community, unemployment rates have increased in Warren and Page Counties since 2013. The Page County unemployment rate is the highest among the counties represented at 11.0 percent, higher than the state and national averages. Unemployment in Page County increased by 1.7 percent from the previous year.

The 72-Hour Return Visit. A 2015 study, released by the University of California and Philip R. Lee Institute for Health Policy Studies, reports that return visits to the ED are twice as frequent as was previously reported in 1998 literature; with nearly one in 12 patients returning to an acute care setting within three days increasing to one in five patients in 30 days (Duseja et al., 2015 and Gordon et al., 1998). In many cases, return visits can be prevented with appropriate follow-up and education. However, there are some cases which do warrant an ED return visit for additional diagnostics on a complex complaint. In either situation, appropriate follow-up can both reduce unwarranted return visits and also catch potential life-threatening complications which were not apparent to the provider upon initial ED discharge. Too often the ED is seen as a bridge for the gap in community healthcare resources. Utilizing a community paramedic program for home follow-up care can potentially help ameliorate gaps in care that can occur after ED discharge.

Although controversial, ED quality care indicators highest in concern are the 72-hour return visits and patient complaints. On average, most hospitals have return rates from 3-7%, with 2014 Centers for Disease Control and Prevention National Hospital Ambulatory Medical Care Survey data showing 5.7 percent of ED visits were made by patients who had been seen in

the same emergency department in the preceding 72-hours (Rui, 2015). Arguably, this statistic includes confounding variables such as patient population, the rate of uninsured patients, and availability of follow up services, such as family practice.

Community Paramedic Concept. Paramedics have an opportunity to bridge gaps in rural healthcare. The concept of community paramedicine is an evolving trend in the United States. These programs have community health worker agencies partnering with Emergency Medical Service (EMS) providers to help deliver much-needed health services. They connect patients with community-based resources while increasing access to medical management, decreasing emergency 911 calls and decreasing unnecessary ED visits. Existing programs show promise by directing EMS patients to more appropriate destinations other than the ED while increasing access to primary care. Programs also allow increased EMS staff utilization for agencies in areas of low call-volume areas, thus increasing the number of patient contacts and assessments while developing much-needed skills through experience. Additionally, a better utilization of staff downtime and working hours aids in justification for funding staff positions (Bennett, Yuen, & Merrell, 2017).

An unfortunate pitfall in reimbursement processes hinders EMS ability to be reimbursed for CP home visits. Most state's Medicaid laws require transport for reimbursement. Options to bill for service would include restructuring billing practices to represent CP services as an extension of a hospital service line or to present legislation to the state for Medicaid law revisions to accommodate such services, such as Minnesota in 2012 (Erich, 2013). As in Minnesota, covered activities would include health assessments, immunizations and vaccinations, chronic disease monitoring and education, collection of lab specimens, medication compliance checks, and hospital discharge follow-up care. The scope of practice is variable

from state to state as well in regards to the CP role. Additional work may be required at the level for the State Office of EMS to be more specific on educational requirements and role expectations of a paramedic working in a community health/preventative role. There are templates available that have been successful in other states.

A CP based healthcare program would have similarities to both Home Health and Public Health sectors. However, utilizing paramedics in this capacity can offer solutions to gaps in both EMS and home-based care with one entity, thus offering a more financially responsible service with a broad spectrum of care. Traditionally, the paramedic scope of practice is focused on emergent complaints with rapid stabilization and transport. This training offers a foundational education with the ability to easily expand into preventative healthcare maintenance directives. Expanding this scope can offer a more versatile clinician to meet multiple needs in rural underserved communities.

The Community Paramedic Education

New to the profession, the Board for Critical Care Transport Paramedic Certification (BCCTPC) has developed a competency exam for a newly refined CP curriculum. Over the years, various curriculum designs have been created and are now merged into a more comprehensive and cohesive outline. To enter into a CP training program, the candidate must first be certified as a paramedic. The CP curriculum outlines four main areas of content: community-based needs assessment, interdisciplinary collaboration, patient-centered care, and preventative care and education. Several community colleges and universities across the country conduct such educational programs in two phases. The first phase includes approximately 100 hours of education in foundational skills covering the four main content areas. The second phase includes didactic, clinical skills training which may range from 15 to 146 hours depending on the

student's previous knowledge and background (Paranjape, 2017). The Commonwealth of Virginia has yet to identify education and curriculum needs for a CP process. However, other states, such as Montana and Minnesota, have followed the BCCTPC outline. Montana, for example, has adapted the BCCTPC curriculum to a state led educational and certification program for their paramedics to offer preventative health services in rural communities. Many states have offer such educational programs through community college or university settings, such as University of New Mexico, University of Minnesota, University of North Texas, and University of Tennessee (NAEMT, 2016). (See Appendix A)

Project Purpose

The purpose of the project is to determine the feasibility of a Community Paramedic home visit intervention 24 hours after Emergency Department discharge to reduce 72-hour ED return visits. This project will also identify and report on local barriers to practice. Additional aims include improving patient satisfaction and discharge instruction compliance.

Analytical Framework: Logic Model

The Logic Model is a framework for the evaluation and planning of a process improvement project. The framework includes a graphical representation with textual assumptions of each step within the program as it depicts the specific goals to be accomplished. The model is a series of "if and then" relationships intended to reach the desired outcomes. It describes the relationship between available resources, project activities and how they interact to reach a common goal. It is a common-sense format to implementing a project based on the planning, implementation, and evaluation of program success. One of the most important features of the Logic Model is that it is flexible and evolving. It begins based on our current understanding of an issue and evolves as more information is gathered. It helps us determine

what data we need, how we can collect it and what it should tell us. Through identifying short and long term goals, it helps us identify gaps in information and to create a plan to help fill in these gaps.

This model is successfully used in strategic planning, project management, and during the allocation of resources. The model has three key steps: agree on the mission and target audience, identify and describe assumptions, inputs, and activities, and lastly identify outputs, outcomes, and outcome indicators (Knowlton & Phillips, 2012). The Logic Model has been previously used in the design of a Community Paramedic program utilized in Chicago, IL, Fort Worth, TX, and Raleigh, NC (Healthcare, 2014). (See Figure 1).

Community Health Needs. The Logic Model begins with an overall understanding of the community. Community Health Needs Assessment (CHNA) surveys are performed to insure hospital and public health agencies gather the necessary information to efficiently allocate resources to meet a given community's health needs. Such surveys are conducted every three years and the associated implementation strategies to address these needs are required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. The Virginia Hospital & Healthcare Association in collaboration with the Virginia Health Care Foundation conducted a survey of the data obtained in 73 CHNAs performed in the Commonwealth of Virginia to identify the five most frequently reported health issues and critical service gaps (VHHA, 2016). The top five leading health issues were obesity, behavioral health concerns, heart disease, diabetes and substance abuse. The top 5 service gaps were Behavioral Health, Health education, promotion and preventive services, health care coverage, aging services, and oral health. In this survey, many CHNAs identified gaps in the local health care workforce. The

shortages most frequently cited were behavioral health (85%), primary care (85%) specialty physicians (75%) and dentists (67%) (VHHA, 2016).

The 2016 CHNA for Warren Memorial Hospital (performed on the counties of Warren, Shenandoah, Page, and Rappahannock) and the 2017 CHNA for Fauquier Hospital (Fauquier and Rappahannock) indicated similar needs (Valley Health System, 2016). Most recently, the 2018 County Health Rankings & RoadMaps Program, an annual report put out by the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institutes ranked Rappahannock County 110th and Page County 63rd out of the 133 counties in the Commonwealth of Virginia for Clinical Care (R.W. Johnson Foundation, 2018). This ranking reflects access to doctors, dentists and mental health professionals. It also takes into consideration the number of people without health insurance. It is not surprising that the Health Resources and Services Administration (HRSA), a federal agency that designates communities as Medically Underserved Areas (MUA) and Health Professional Shortage Areas (HPSA), have identified Rappahannock County as a MUA (initially designated in 1978 with latest update in 2016) and as a geographic HPSA in primary care (designated in 12/29/2017) and mental health (designated in 2012 with latest update 10/28/2017).

Literature Review

A literature review was performed utilizing electronic databases PubMed, CINAHL, Cochrane, and Google Scholar, from 2003 to 2018, for the terms “community paramedicine” and “community paramedic.” Inclusion criteria and search terms were kept as broad as possible to ensure a comprehensive review of the literature. All levels of evidence were included except for expert opinion. Inclusion criteria included reference to the topic of community paramedic utilization, rural community focus, Canadian or the United States, written in the English

language. Exclusion criteria included written in a language other than English, setting outside of Canada or the United States, written before 2003, and urban-focused.

PubMed resulted in 135 titles, Cochrane zero, and CINAHL resulted in 58 titles, in all totaling 193 titles. Google scholar resulted in an infinite number of titles that could not be easily filtered. The abstract for each result was reviewed for specific content: rural community application, community health workers, program startup, program results, funding options, and financial impact. Additional applicable material was found through an ancestry search in these articles, adding fifteen more articles for review. After duplicates being removed, 163 titles remained to require additional abstract review, excluding 136 with non-applicable material, leaving twenty-seven for full-text assessment. After a full-text assessment of the remaining, thirteen were excluded for non-applicable material, leaving 14 titles utilized in this literature review. Of the fourteen titles, four are quantitative, and ten are qualitative (See figure 2).

Limited Knowledge Within-Subject

Very few quantitative research studies were found on this subject, with only four being utilized in this literature review. One of the key findings included a 2017 University of South Carolina study which evaluated the implementation of a rural CP in Abbeville, South Carolina. Beginning in 2013, 193 patients were enrolled (68 enrollees and 125 comparisons), resulting in a 58.7% decrease in ED usage and a 68.8% decrease in inpatient stays. The control group had an increase in both ED visits and inpatient stays. Within the study group, patients diagnosed with hypertension saw a decrease in their blood pressure by an average of 7.2 mmHg ($P < .0001$), and diabetics had lower blood glucose levels by an average of 33.7 mmol/L ($P = .0013$). The goals of the South Carolina program were to address the social determinants of health, reduce system

fragmentation, have a biophysical approach, promote adherence, and increase the utilization of Emergency Medical Services (EMS) services (Bennett et al., 2017).

In an urban setting, a 2005 San Francisco Fire Department pilot project for community paramedicine reported a reduction in ambulance activity for high users and a decrease in ED diversion rates at local hospitals during an 18-month time-frame studied. Unfortunately, funding was rescinded due to departmental budget priorities and the project could not continue. The pilot study reported that after the first contact with a community paramedic team member, individual's utilization of the 911 system dropped 8.6% (Tangherlini et al., 2016).

. In a 2009 San Diego, the EMS data collection system was made available for partnerships with law enforcement, court systems, homeless outreach teams, social workers, and housing providers. Through the use of the data system, frequent utilizers of the 911 system were identified, and contact was facilitated with the appropriate service needed. The study enrolled 51 participants over a 31-month time frame; EMS encounters were decreased by 38%, patient billing charges decreased by 32% and ED encounters decreased by 28%. Across all of the services, charges decreased by over $314,000 (Jensen & Dunford, 2013). Even though the literature review was performed to exclude urban studies, there was one, however, that is felt to offer an important finding for cost savings that could be applicable to rural communities.

A University of Washington systematic review examined eight community paramedicine programs resulting with all programs indicating improved health outcomes or anecdotal evidence of positive impact on their community. The reviewers showed that the most successful programs incorporated community participation in the development of the program (Condino, 2016).

Studies show that patients who bounce back to the ED within 72-hours do have shared characteristics. Some studies show that there are increase bounce-back rates with minority

populations, insured with Medicare or Medicaid, not insured, or lack a primary care provider (Bech, Brabrand, Mikkelsen, & Lassen, 2018; Gabayan et al., 2013; Moskovitz & Ginsberg, 2015).

Impact of the Proposed Project

Findings from this literature review were used to construct a feasibility project that utilized a community paramedic intervention to explore program development to reduce emergency department readmissions. The role of community paramedicine is relatively new, defined to address local problems, such as lack of healthcare access, limited transportation, and marginal compliance, while utilizing local resources of other health care and social service entities (Smith-Houskamp, Balik, & Hauser, 2017). EMS is a historically expensive venture due to high associated fixed costs. With financial strain evident, community EMS agencies are seeking additional sources of financial support while optimizing the use of personnel, assets, and skill (Flomenbaum, 2017). Under the Affordable Care Act, there is an increasing demand for access to healthcare. Hospitals are increasingly filled, with a higher demand for home-health nurses and overcrowding in the ED (Rawal, 2016). Demand for healthcare services is expected to continue to rise as the Baby Boomer generation continues to age. According to the U.S. Census Bureau (2014), there are over 76 million Baby Boomers who are approaching an age that will require more healthcare resources.

Even though literature cites positive outcomes for CP programs, Medicare and other payors offer no financial reimbursement for EMS services unless the patient is transported to a facility or ED. It is reported that between 7% and 34% of Medicare patients transported by ambulance to an ED could have been treated in an out of hospital setting. Due to reimbursement

requirements, there is a perceived incentive for EMS agencies to provide ED transport, even if not warranted or requested, despite more cost-effective alternatives (Munjal & Carr, 2013).

Funding. With healthcare costs high, government-mandated changes are enforcing value-based payments which are designed to improve the experience of healthcare, improve the health of the overall population, and reduce costs (Rawal, 2016). The opportunity exists for the community paramedic to have an impact on the homebound population (O'Meara, Stirling, Ruest, & Martin, 2015). Through home-based assessment, intervention, and follow-up, the community paramedic can help improve patient education, satisfaction and reduce unnecessary return ED visits.

Scope of Project. A traditional model of community paramedicine would have a broad scope of coverage for a variety of patients based on a community needs assessment. The model would increase access to essential health care services using EMS personnel in an expanded role. The care is provided in a non-urgent setting, consistent with the Medical Home Model. The Medical Home Model is described as patient-centered medical care led by a physician or advanced practice provider coordinating all aspects of preventive, acute, and chronic care (Farnsworth, 2017). CP programs can be utilized in a multitude of ways. For this feasibility study, the CP role will be utilized strictly for identifying and evaluating the potential to reduce the 72 hour ED return visit.

Provider Shortages. With one-quarter of the U.S. population living in rural and remote areas, only ten percent of the physicians in the United States reside in these areas. This leads to the identification of Health Professional Shortage Areas (HPSA). A region which meets the Health Services and Resources Administration (HSRA) shortage designation criteria as having a shortage of primary medical care, dental or mental health providers. These regions may be urban

or rural, a specific population group, or may be identified as a specific medical facility. HPSA, also known as Medically Underserved Areas (MUA's), may also be a whole county, or census tracts meeting criteria. These areas usually include groups of people who face economic, cultural or linguistic barriers to healthcare (Peters, Gupta, Stoller, & Mueller, 2009). In such communities, the use of advanced practice providers, such as nurse practitioners and physician assistants, are strategically utilized to extend coverage in areas with limited physician resources. The community paramedic model offers a similar approach by utilizing EMS personnel already residing in such rural communities as an option to augment limited community health services.

The setting of this feasibility study is in the service area of the research hospital. This service area includes 4 counties in the Shenandoah Valley area, most of which are identified as HPSA's by the Health Services and Resources Administration.

The purpose of this project was to examine a rural community paramedic home visit intervention offered to patients within 24 hours of discharge from the Emergency Department. The primary objective of the project was to explore requirements for a CP program developed to reduce the 72-hour ED readmission rate, and improve patient satisfaction and clinical compliance.

Feasibility of a Community Paramedic Program

A nationally recognized method for determining feasibility is through the Six Sigma approach. This approach has been utilized in may corporate settings since its development by the Motorola Corporation in the 1980s as a process to measure and improve product quality. It has been adapted to healthcare quality improvement projects over the past two decades. The Six Sigma process focuses on defects per million opportunities, basing on its theory of a quality

statistic that reveals 3.4 defects per million opportunities being a target level of performance for a process (Truscott, 2012).

According to Six Sigma guidelines, there are five areas of a feasibility study. The products of this feasibility study are intended to help decide to move forward with the proposed project being determined as a wise investment. There are two main criteria for judging feasibility: cost required and value to be delivered. According to Six Sigma, a well-planned feasibility study should offer a historical background of the opportunity, a description of the proposed service, financial details of the operation, market research, and legal requirements (Truscott, 2012).

Soft Savings. Six Sigma equates soft savings to that of "cost savings." Soft savings are the financial benefits that may occur as a result of the proposed project. Soft savings are calculated by using a rational assessment of the expected benefits and the probability of their occurrence (Truscott, 2012). Financial data offered by the research site hospital offered insight into potential cost savings in the event of reduced length of stays and readmissions.

- One day of admission per patient costs an average of $5,217. To reduce one-day length of stay for a patient requiring observation per month, could save $62,604 per year. Earlier patient discharge may be more appropriate in settings where a CP home visit is ensured either the same day or the next day of discharge.
- The average cost of emergency ALS ambulance transport to the hospital is $546.21 ("2019 Ambulance Fee Schedule - Medicaid," 2019). To reduce five ambulance transports per month can save $2,366.91 monthly, totaling an annual savings of $28,402.92.

- The average cost of a clinic visit is $181. To reduce three clinic visits per week for follow up procedures saves $2,353 monthly, totaling an annual savings of $28,236.
- Data over the past two years report overall hospital readmission rates to range from 1.8% to 11.8%, with the target to be less than 9.75%. Key behaviors identified the hospital to improve this metric include improving compliance with a seven day follow-up appointment, patient education utilizing the teach-back method, and post-discharge phone calls to clarify questions (Page Memorial Hospital, Valley Health System, 2019). These behaviors coincide with the findings from the paramedic intervention site visits.

Hard Savings. Hard savings is the occurrence of reduced costs or expenses resulting in improved financial performance. Examples of this would be cost reduction projects and revenue enhancement projects.

- In a local county with career EMS staff coverage, there are reported to be four EMS employees on duty at all times. During times of low call volume, there is significant downtime without billable activities. Adding community paramedic services can maximize full-time employee (FTE) utilization and maximize the return on investment for existing human resource expenses will reimbursable activities. Reimbursement can be obtained through contractual relationships with the local health system or through accountable care organizations.
- In a neighboring county, there are no career EMS staff. Response times vary and can be lengthy depending on the availability of volunteers. Continuous Advanced Life Support coverage cannot be guaranteed. Offering community paramedic

services could provide the platform with at least one daytime coverage paramedic to help supplement volunteers. The career community paramedic can detour from home health visits to respond to an emergency if necessary. This program can potentially offer revenue to offset tax dollars required to establish career staff coverage. Thus, alleviating the burden to volunteers, improving delayed response times, and improving ALS availability.

- The salary for a paramedic in the region is $46,641 (Salary.com, 2019). The program startup may initiate through non-profit grant funding, the local health system, the local EMS system, or through a combination any combination of those mentioned.
- Potential revenue return could include:
    - Reimbursement for one home health visit averages $135 ("Help Paying for Senior Home Care | Elderly Home Care Costs & Pricing," 2013). With an average of 10 home health visits per week, expected revenue would approximate $1,350, and $70,200 annually.
    - Even though reducing ambulance transports are a cost savings, they are also a potential revenue opportunity as well. Ambulance transports completed by the paramedic are reimbursable by Medicaid. According to the 2019 Medicare Ambulance Fee Schedule, the lower quartile of ambulance transports with Advanced Life Support (paramedic level) care, in rural Virginia are reimbursed $546.21 ("2019 Ambulance Fee Schedule - Medicaid," 2019).
    - Utilizing a CP service for follow up immediately after ED discharge offers a realistically achievable timeline of service delivery rather than seeking a

home health referral. Utilization of an existing EMS system offers a more timely response upon discharge with direct communication and oversight from the ED. Utilizing existing home health agencies takes time, and may not be effective in reducing ED returns within a 72 hour window.

- Utilization of existing local EMS equipment and technology would offset the startup expense.

Hurdles in Revenue Return. According to the Virginia Office of EMS, for an EMS agency to be reimbursed for home health activities, it would require licensure as a home health agency with the Virginia Department of Health Office of Licensure and Certification. If services were to be provided by an EMS division operated by a health system, contractual relationships within the health system with oversight by the existing home health division may be possible to provide an opportunity for reimbursement. The community paramedic on site delivering care would require appropriate licensure under the home health division's oversight which may include dual certification such as Certified Nurses Aid (CNA) or Home Health Aid (HHA). However, a stand-alone EMS agency, currently in Virginia, is not able to bill for home health services. Any billing for such services would need to be done by the appropriately licensed home health agency (Perkins 2019).

The State Office of EMS reports that there is a movement towards a system where EMS agencies could be reimbursed for home health specific services. However the current dynamic in the state equates "treat, no transport" to "refusal." To change this will require changes in State guidelines, law, and pre-hospital provider scope of practice (Perkins 2019).

Valley Home Health leadership reports that home health services are reimbursed in various ways. The Outcome and Assessment Information Set (OASIS) is a patient-specific, standardized assessment tool used in Medicare home health care to plan care, determine

reimbursement, and measure quality (Dalton, 2000). For patients covered by Medicare - Tricare, services are reimbursed per episode. The initiation of the home health services begins with an OASIS assessment, a risk stratification tool, completed by a registered nurse or physical therapist at the home location. A financial reimbursement code is then created, which will identify the cost of services for sixty days. This timeframe is considered to be one episode. After the initial on-site assessment, continued services throughout the episode may be completed by a variety of healthcare providers licensed for home healthcare delivery, including Registered Nurse, Physical Therapist, Certified Nursing Assistant (CNA), and Certified Home Health Aide (CHHA) (St. Jacques, 2019). Currently, paramedic certification does not fall under the proper care provided for Medicaid reimbursement. However, it would not be unreasonable for a paramedic to obtain certification as a CNA or CHHA for reimbursement purposes. Of course, this would limit their services on site to be within the scope of practice of a CNA or CHHA and require the services to be rendered under the auspices of a licensed home health entity.

Current Efforts

State EMS Officials report that a workgroup made up of healthcare stakeholders are addressing this very topic. Currently, there is no detailed plan available as the discussion is relatively new.

Centra Health. Considering the current inability for EMS to be reimbursed for home health services, there are some EMS agencies in Virginia offering such services without reimbursement. One of these is the EMS division for Centra Healthcare. They have initiated a pilot program offering community paramedic services, to include home health follow up visits, free of charge. Leadership for the Centra program reports that their primary goal is to “make the patients health and life better long term,” with “reducing readmissions, reducing ER utilization

and visits and in turn, cutting down on EMS systems resources utilization" (Mitchell, 2019). However, an alternative option for reimbursement of services could be a contractual relationship directly with private insurance companies while not charging the individual insurance plan on the patient. The EMS division would be a contracted service provider for individual's under a specific health plan (Mitchell, 2019).

Valley Health. Valley Health System, in Winchester, is in the process of developing a pilot community paramedic program that will operate through its two West Virginia critical access hospitals. According to their home health division leadership, his pilot program will utilize their existing EMS division stationed at those hospitals, Valley Medical Transport, and partner with the home health services within the system. Together, these two hospital divisions will devise a protocol for follow up services that improve quality care indicators for their patient population, while maximizing utilization of the existing EMS staff (St. Jacques, 2019).

Methods

Design

This project was designed as an evidence-based CP program using a convenience sample of patients in a rural setting to guide establishing a CP program while attempting to establish validity of such a program to reduce 72-hour ED readmission rates. The ground work of the program was developed with guidance of the Logic Model by identifying: population needs assessment, inputs and resources needed, outputs and activities expected, and evaluation of actual outcomes. Much of the population needs assessment for the Page County region was provided through an existing assessment provided by Valley Health System, and is documented throughout this paper. However, the information available for Rappahannock County was marginal. Through participating in a steering committee in rural health initiatives in

Rappahannock, a needs assessment specific to that county was created. (See Appendix G) The following pages will cover the resources required for a CP program, outputs and activities expected, and outcome evaluation (results). See Figure 1.

Description of the Sample

Study participants were selected based on the ED providers assessment and judgment to refer to the study. Following suggested criteria, providers referred patients based on their risk for returning to the ED within 72-hours of discharge. Subjects were selected on convenience secondary to the preselected, intermittent available days for home visits. During the 24 hours before each preselected date, the ED provider on duty referred up to 4 patients per shift based on his or her judgement while following suggested criteria for guidance described below. A telephone-based translation service, through the hospital, was made available if a non-English speaking subject were enrolled. All subjects enrolled, however, were English speaking.

Inclusion Criteria

Inclusion criteria included patients who were discharged home from the ED, consented to home visit follow-up within the following 72-hours and were over the age of 18 years. Additional suggested criteria included components which would make the patient a high risk for ED return within the next 72-hours. These risk factors included one or more of the following: no primary care provider, insured by Medicaid or Medicare or are not insured, had one or more previous ED visits within the past two months. The ED provider considered the suggested criteria when making their decision to include a patient in the study.

Exclusion Criteria

Exclusion criteria included patients that were not discharged home from the ED, refused participation, lived over 80 miles from the discharging hospital and were under the age of 18 years.

Setting

This project took place at Page Memorial Hospital, a Valley Health System Critical Access Hospital, located in Page County, Virginia and its surrounding service area. Support was obtained from the health system and hospital leadership. (See Appendix C) Internal Review Board support was obtained through Valley Health System, the parent health system for Page Memorial Hospital, VH IRB File #: 20180908. The University of Virginia IRB is also tracked this project, UVA Study Tracking #: 21046.

Intervention

The intervention for this feasibility study was the home visit made to the patient within 72 hours of ED discharge. The visit was done explicitly by a licensed paramedic trained in the process of preventive and chronic disease assessment and care, and post-discharge follow-up assessment and support. In full disclosure, in this study, the paramedic was also licensed as a registered nurse and a nurse practitioner. For this feasibility project, the paramedic performing the intervention did not provide patient transport in any fashion and performed a fundamental evaluation of needs at the home. The paramedic did not render any specific clinical care requiring specific protocols. If care was necessary, the paramedic on site communicated this need to additional home health, social work and hospital resources that had been pre-aligned in supporting this study. Additional resources were sought in the event that emergent or non-emergent transport was required. The intervention time period occurred during a four week period in October and November of 2018. The intervention was strictly designed to study the

processes required to initiate a community paramedic program and not specific clinical outcomes.

BOOST 8P's Screening Tool. The intervention itself, the home visit and patient interaction, was based on a screening tool developed by the Society of Hospital Medicine, the Better Outcomes by Optimizing Safe Transitions (BOOST) toolkit. This eight point screening tool examined the risk for adverse events among eight themes: medications, psychological, primary diagnosis, physical limitations, health literacy, support, prior hospitalizations, and palliative care (See Figure 3) (Hansen et al., 2013). It was initially designed to be a risk assessment tool completed at admission to identify patients who have an increased risk of adverse events post-hospitalization and utilizing the duration of the hospitalization to mitigate these risks as much as possible. The identified risks and treatment plans should then be communicated with the patient's post-hospitalization providers. Even though designed as a tool to be initiated during a patient admission, the BOOST 8P tool covers all critical aspects of patient follow up and has applicability to the post-discharge setting.

The BOOST 8P's Screening Tool was utilized in a 2013 CP study in rural South Carolina. The program reported a successful reduction in patient blood pressures, decreased blood glucose in diabetics, and decreased overall ED and inpatient visits (Bennett et al., 2017). With the BOOST toolkit as the template for the home visit, the CP evaluated any potential issues which needed further assistance from additional outpatient resources and helped bridge access of these resources to the patient if necessary.

Satisfaction Survey. A satisfaction survey for the site visit was conducted using returning a prepaid postage return mailed survey. (See Appendix B) The survey gathered feedback and overall satisfaction of the site visit. The survey was left with the study participant

after the site visit with a prepaid stamped envelope for return. The survey was designed on a five-point Likert scale covering seven questions. The questions explored the patients perspective of timing, clarity, and usefulness.

Paramedic Journal. The paramedic kept a journal entry of each visit summarizing thoughts, concerns, suggestions, and potential implications of the intervention. No identifying data was placed in the journal entry or the survey.

Procedures

Before the study period, meetings were with ED providers, in both group and individual settings, to inform them of the study purpose and design. Providers were encouraged to refer up to 4 patients per shift on preselected dates based on the convenience of scheduling for the follow-up intervention. The researcher was available on site during the days of enrollment and obtained consent from the subject before discharge from the ED. Before the end of the shift of the preselected subject enrollment date, the paramedic was provided patient information on each follow-up visit to be performed. The paramedic had access to a digital format of chart review provided by the hospital on a secure iPad through a remote Epic log-in. The information provided to the paramedic included demographics, home address, most recent history and physical if available, ED chart, ED discharge summary, and a copy of the patient's discharge instructions. Information given to the paramedic was provided based on a confidentiality agreement with the facility and consent provided by the study participant. The medical record was reviewed upon the completion of the study timeframe to evaluate if the patient returned to the ER for additional care within 72 hours of their initial discharge.

All processes in which the patient identified the need for assistance, was managed on-site at the residence through phone calls to the available resources at the hospital. If further follows up was needed after the site visit, the hospital case coordinator would continue contact.

Measures

Quantitative data retrieved for the study included: study participant number, date and time of ED visit, age, diagnosis from ED discharge, race, gender, marital status, patient residence miles from the ED, number of chronic conditions, date and time of return visit if done within 72-hours, number of ED visits in the past 12 months, number of hospitalizations in the past 12 months, health insurance status, number of referrals to community resources.

Qualitative data included: any major sentinel event presented or prevented, the paramedic suggestions and interpretative journal of each visit along with the patient's responses to the follow-up satisfaction survey.

Data Collection

Descriptive statistics analysis was conducted to identify the demographic characteristics of participants. The following feasibility measures were determined and reported: the proportion of ED providers who agreed to participate by referring patients, the proportion of ED providers who referred patients, the proportion of referred patients who consented to a visit, and the average length of time, including travel time, of each visit.

Patient satisfaction with the visits was measured by the Satisfaction Survey. Means and standard deviations were reported for the scores for each item in the survey. Responses to the open-ended questions were summarized.

The cost of the 72-hour ED return visits was evaluated through the hospital’s Quality Improvement Department and offer insight into the potential cost savings of reducing such

events. With the potential of cost savings, a descriptive analysis was performed to determine the feasibility of utilizing paramedic services in the setting of a community paramedic for patient discharge follow up purposes.

Additionally, the rate of the 72-hour return within the study participants was determined. It was compared to the rate for the same calendar period in the preceding year, using an exact chi-square test.

Satisfaction Survey. Additional data evaluated included patient responses from a follow-up survey conducted through a mailed return. The survey was a 7-item survey utilizing a 5-point Likert scale, with two open-ended additional questions. No identifying data was recorded with the patients' interview responses. This survey was designed specifically for this particular project. (See Appendix B.)

Cost Savings Potential. The cost of 72-hour ED return visits were evaluated through the hospital's Quality Improvement department and offered insight into the potential cost savings of reducing ED return visits. With the potential of cost savings, a descriptive analysis was performed to determine the feasibility of a community paramedic position funding. A variety of funding possibilities were explored and outlined.

Protection of Human Subjects

Institutional Review Board (IRB) approval was obtained from the Valley Health System Internal Review Board. Project support was obtained from ED providers and leadership at the health system (See Appendix C). A study information flyer was given to patients chosen as potential study participants (See Appendix D). For those subjects who agreed to participate, consent was obtained from the patient upon discharge from the ED by the primary researcher on site (See Appendix E).

Confidentiality and Data Security. Data security was maintained through data storage utilizing the University of Virginia secure data portal and Identity Token. The UVA Identity Token is a secure USB authentication device. Using the Identity Token, two-factor authentication is established through both the hardware in possession and password protection. No printed hospital records were necessary for any of the visits. All data was recorded onsite and entered into Qualtrics Research Software, through a dedicated iPad. All data entry required from the chart was done at the hospital. No data entry from the medical record was completed on a personal use computer. The researcher funded the expense of this dedicated laptop while the UVA School of Nursing IT department set up the device security requirements.

Strengths of the design

This feasibility project utilized the partnership of local EMS, a critical access hospital, and community resources to defragment healthcare in a rural community covering nearly 314 square miles identified as a Health Provider Shortage Area.

Design Weakness

The project was staged strictly as an exploration of required resources to provide CP services in this community, performed over a limited time-frame with a limited number of participants. There was only one community paramedic performing the intervention limiting the time to capture a larger sample size. Thus, the small sample size limited the generalizability of this project and did not show statistical significance amongst the participants' ED 72 hour return rates.

Research Team Safety

Homesite visits offer an excellent opportunity to evaluate the socioeconomic dynamic in the patient's overall health. However, the safety of the researcher(s) was a paramount concern.

To ensure safety, home site visits were not done alone. At all times, the community paramedic was accompanied by local EMS staff member while utilizing transportation through official EMS vehicles provided by the locality.

Results

The study was conducted during the Fall of 2018. Patients consented on five different days through the specified procedures. A total of 12 patients were referred by physicians as potential participants, and 5 of the 12 consented to participate. Of those that consented, the ages ranged from 65 to 85 years, with a mean of 77 years. The ED discharge diagnosis included community-acquired pneumonia, chronic obstructive pulmonary disease (COPD) exacerbation, bilateral leg cellulitis, congestive heart failure, acute urinary tract infection, essential hypertension, and hyponatremia. All participants were Caucasian, three were female, two were male, three were married, and two were widowed. All participants lived within 25 miles or less from the discharging hospital. The number of chronic conditions for the participants ranged from 3 to 28. The majority of participants had between 3 and eight chronic conditions, with one participant having 28. All of the participants had at least one ED visit within the past year, before their current visit. The number of previous ED visits, within the past year, ranged from 1 to 2. All participants had one hospitalization within the previous 12-month time frame. All of the participants were insured by Medicaid. During the visits, there were no required referrals to community resources. All of the follow-up visits took place within 24 hours of ED discharge. The time visiting with each patient ranged from 20 to 36 minutes, with an average of 26 minutes. The average drive time, one way, to each residence ranged from 4 minutes to 32 minutes, with an average of 17.6 minutes.

Of the 5 participants, three patient satisfaction surveys were returned. The survey responses for all of the questions resulted in either excellent (a rating of 5/5), or very good (a rating of 4/5). All of the responses reported that they would recommend such a service to others. Comments made by the participants included, “discussion was clear and to the point,” “I think it would help people be healthier and have a better quality of life, longer and [help our] own bodies move,” and mentioned the most helpful aspect of the visit to be “linking the elderly with other community resources.”

The journal completed by the community paramedic had identified important areas of discussion with the subjects. They include: reviewing side effects of home medications, confirming a follow-up plan with primary care, the need to have a more cohesive connection with primary care providers to clarify home health orders, the importance of mobile medical record applications, and the need for pre-printed health education materials catered to each patients diagnosis.

Interpretation

As a result of completing the actual home follow-up process, the community paramedic and the researcher identified six themes for possible service delivery through patient interviews and process journal reflection. These themes were identified with a qualitative review of the documented journal entries for each visit. Journal entries included a reflection of thoughts and insights of useful aspects to the CP follow up process. These include, 1) streamline patient navigation, 2) patient education, 3) preventative health care maintenance, 4) on-site treatment without transport, 5) identifying and addressing patients with high ED utilization, and 6) post-discharge follow up care.

Within those categories, a multifaceted approach was utilized to create potential solutions and process development for each. These conclusions were derived from existing literature review, local EMS protocols, policies and procedures, interviews with State and local officials, and interviews with hospital and home health leadership.

1. Streamline Patient Navigation. The study participants shared a common theme of exposure to fragmented healthcare. They all have a variety of healthcare encounter needs that include: home health, wound care, behavioral health management, primary care, urgent care, specialist consultation, and transportation needs to all of these various entities. Participants express the lack of a dedicated resource that streamlines access to all of these areas as they tend to occur in different health systems. Fragmented access and delivery of care are confusing and frustrating to patients, negatively impacting compliance.

2. Patient Education. The participants all received a variety of education during their healthcare exposure. They had a variety of educational backgrounds, literacy levels, and deficits in healthcare knowledge. Many cannot understand some of the materials presented to them during their ED discharge. During the site visits, the participants reported feelings of being rushed out of the clinical setting with minimal insight into their healthcare plan. Some presented discharge paperwork which lack clear diagnosis and plan for follow-up. In some instances, there were discharge materials with a diagnosis and prescriptions listed related to that diagnosis, but with no identified follow up instructions. An opportunity exists for home follow up visits to provide more in-depth, cohesive and customized education delivery.

3. Preventative Health Care Maintenance. Regardless of the frequency of primary care follow up, all of the participants had outstanding health maintenance screening.

Outstanding screenings included vaccinations, such as influenza, pneumonia, and tetanus; lipid screening, and diabetes quality indicators such as urine microalbumin and hemoglobin A1C.

4. Non-Transport On-site Treatment. There appears to be potential for on-site treatment for those patients who have difficulty in finding transportation for acute visits, thus delaying care until the situation requires EMS transport and ED utilization.

5. High ED Utilization: None of the patients who participated in the visits were considered to overutilize the Emergency Department. There were none with over 3 ED visits in the past year. However, the follow up visits offer an opportunity to guide patients with high ED utilization into primary care settings and follow up to help alleviate unnecessary ED returns.

6. Post-Discharge Follow Up Care. None of the participants for this project had a return visit to the ED within 72 hours. However, the hospital reports overall hospitalization return rates ranging from 1.8% to 11.8% over the past two years. An opportunity exists for post-discharge follow up to prevent readmissions in all areas including ED and inpatient.

Recommendations

State Level. As health systems move into the community paramedic process, it would be beneficial for smaller community entities to have the ability to offer such services as well. To do this, State statute would need to be modified to allow the Virginia Office of EMS to have the oversight ability to create new training and certification processes, protocols, rules, and regulations. This may include a partnership with the existing State home health oversight board. The skill set and scope of practice for the Community Paramedic will need to be clearly defined and educational requirements for such certification to be outlined. A nationally recognized paramedic training and certification board, the Board for Critical Care Transport Certification

(BCCTC) have created a community paramedic curriculum and certification exam that can be used as a template for initiating a State-level program.

Local Level. Local EMS programs will need to educate the public on the role of the community paramedic to ensure appropriate utilization of services. For increased safety and cohesiveness, it is highly recommended that any local level service develop a partnership with the regions primary health system. Partnerships with the local health system can offer required physician medical direction oversight, access to electronic medical records, and a seamless transition of services to defragment existing systems. The community paramedic, partnered with the regional health system, can be the solution to gaps in health care that have previously been difficult to fill. It will be beneficial to determine the potential financial impact on rural physician practices while making every attempt to minimize any negative impact that could threaten their existence.

Funding. Funding for a community paramedic program with the State's current dynamics will be difficult. It will require either grant funding, private health insurance contracts, or financial support through a larger health system serving the region. Regardless of the way a program is created, from the beginning, there must be a forward movement to develop incentives for EMS agencies to modify their service delivery models to offer care for patients not being transported to an ED. Additionally, efforts should be made to obtain reimbursement for services delivered eventually. For a program to be successful long term, it must not only show improved healthcare outcomes and cost savings but must also be financially self-sustaining. EMS agencies should be reimbursed for treatments on site in the home and treatment to alternative care environments while expanding the current fee for service model, or integrate pre-hospital EMS

into a shared savings model through an Accountable Care Organization, such as done by Central Health.

Limitations

Through research on the state and local level, accompanied with the health system and regional leadership interviews, a reasonable conclusion can be made for the next steps in creating a program that would be self-sustaining. Specifically, to the reduction of ED 72-hour returns, the limited number of study participants restricts this studies ability to offer any analysis to identify effectiveness, as it was not intended to do so. However, through the processes of identifying, interviewing and exploring the roles of key players within the system, feasibility for the establishment of a community paramedic program can be assumed. This assumption is based on the development of a broader scope of community paramedic role in the overall healthcare process without a specific focus on the reduction of ED 72-hour returns. ED return reduction would be one of the many potential benefits of the program.

The Logic Model offered a flexible framework to guide changing dynamics within the project. Future investigations into the CP process should include a more in depth look at the Lean Six Sigma methodology which would explore roles and insights of key individuals within the process while summarizing their input to create a streamlined proposal.

Discussion

Nursing Practice Implications

This project was dedicated to the overall improvement of the quality of care, compliance, and utilization of healthcare resources, all fundamental principles for leadership as a Doctor of Nursing Practice. The project underscored collaboration with nursing and a multitude of other healthcare professionals while not only have the potential for reducing Emergency Department

returns but allowed the potential for information sharing across specialties including EMS, nursing, discharge planners, and medical providers. This project highlights nursing leadership in its reaches to the overall success of the healthcare system as a whole.

Products of the DNP Project

The products of this feasibility study offer practical insight into the potential of supporting a Community Paramedic position in a critical access community while offering patient follow up to reduce 72-hour ED return visits. This initiative can have implications of improving clinical compliance, patient satisfaction while reducing overall costs. The final report of this project has the potential for submission for publication to the J*ournal of Rural Health*, the *Journal of Emergency Medical Services*, and to the *Emergency Medicine* journal.

Conclusion and Next Steps

The qualitative data collected during this study concludes that a community paramedic program, in a broader sense of healthcare delivery, is feasible and could help fill current gaps in care for high risk ED discharge patients. As a result of this study, numerous conversations and relationships were developed at the local and State level, attracting interest from a non-profit organization with desire to fund the development of a rural community healthcare worker program. A committee of stakeholders has been organized and is actively planning for development of a home health initiative with the financial backing of a non-profit grant-making organization. Currently, the grant organization funds a full-time social worker position for a rural county in the area and wishes to expand this to a healthcare delivery process at home. Conversations are in place to involve the local health system in hopes that they become a leader for the project, offering oversight and human resource guidance, while the financial risk is

absorbed by the funding grant organization. Additionally, the program can be funded as a Quality Improvement initiative, thus not requiring consent as a research study.

Further research is needed to understand the implications of a community paramedic process in the rural health setting. Existing data is primarily surrounded urban communities with a minimal focus on ED 72-hour return rates. However, the limited data that does exist shows promise to the potential impact for community paramedicine in a broader sense of healthcare quality. With grant funding, limiting the financial risk for health systems guidance, a pilot community paramedic program can offer the prime opportunity for outcomes research in a rural setting. With simultaneous efforts at the legislative level, the ability to expand EMS reimbursements for such services can help ensure the continuation of the program for years to come.

The role of the DNP Advanced Practice Registered Nurse and Clinical Nurse Leader, uniquely qualified to assess system opportunities for improvement, promote interprofessional collaboration, maximize appropriate use of existing resources, and navigation of health systems, offer excellent leadership directives to champion improvements.

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Table 1

Summaries of Articles on Lack of Knowledge in Community Paramedicine (*n* = 4)

Author, Year, and Overall Design	Subjects & Setting/ Period of Data collection	Outcomes based on stated aims	Limitations
Bennett et al., 2017 A pre/posttest with a comparison group	Abbeville, SC Univ. S. Carolina Jan 2011 to Aug 2015 193 patients (68 enrollees, 125 comparison) Subjects eligible if visited ED more than 2 times in a 1 month period. Recruited from local ED, primary care office and free clinic. Required to have 1 chronic disease. Utilized BOOST screening. Better Outcomes by Optimizing Safe Transitions. 8P screening tool: medications, psychological, primary diagnosis, physical limitations, health literacy, support, prior hospitalizations, and palliative care. Satisfaction interviews on exit.	58.7% decrease in ER usage, 68.8% decrease in inpatient stays. the comparison group increased ED visits by 4.0% and inpatient visits by 187.5%. Those with HTN, had average systolic decrease of 7.2 mmHg ($P < .0001$) Those with DM, had lower BG levels by 33.7 mmol/L ($P = .0013$) Goals to address social determinants of health, reduce system fragmentation, have a biophysical approach, promote adherence, increase EMS utilization.	Recruitment of participants seemed complicated and unclear
Tangherlini et al., 2016 Pilot Study	18 month timeframe San Francisco Fire Dept	Reduction in ambulance use for high users ED diversion rates decreased Utilization of 911 system dropped 8.6%	Study ended early due to budget collapse
Jensen, Dunford, 2013	San Diego Frequent users of 911 identified	EMS encounters decreased by 38%, charges decreased by 32%, ED visits by 28%.	Inner city population, not rural community based.

	and contacted for study. 51 participants over 31 months	Savings of $314,000.	Study remains in review due to importance of financial impact findings
Omera et al., 2015 Ethnographic case study	Renfrew County, Ontario direct observation of practice, informal discussions, interviews and focus groups four researchers during the summers of 2012 and 2013 34 semi-structured interviews	Opportunity exists for the "community paramedic" to have a high impact on areas of need with the homebound population Observational ethnographic approach to describe and analyse a CP program in rural Canada Discussed RESPIGHT community paramedicine model of care (not applicable in this analysis)	Canadian Qualitative

Table 2

Summaries of Additional Supporting Literature on Community Paramedicine (*n* = 7)

Author, Year and Type of document	Summary of relevant material
Valley Health System	Total population of PMH service area in 2015 was 112,084, with a projected 7.4% increase by the year 2020. Page Memorial Hospital had 94.8% of inpatient discharges and 90.3% of ED visits originated from the four county community and 2.8% of inpatient discharges were from outside of the community. In 2014, the community population reports that 7.8% of population are 65+ and 93.5% White The counties in the PMH community ranked in the bottom half of all counties in Virginia on "access to care" in the County Health Rankings.
Codino, 2016	University of Washington Systematic literature review of 8 community paramedic programs All reported improved health outcomes or anecdotal evidence of positive community impact.
Rawal, 2016 Literature Review	ACA contributed to hospitals filled to capacity Higher demand for home-health nurses Overcrowding ED's
American Academy of Orthopaedic Surgeons, 2017 Curriculum Outline	Overview of community paramedic curriculum Weak content to the extent beyond normal paramedic care
Flomenbaum, 2017 Journal Article	EMS historically a very expensive, high fixed costs Financial strain on agencies, seeking additional sources of financial support optimizing the use of personnel, assets, and skill

Munjal, Carr, 2013 Journal Article	little consideration has been given to how fee-for-service reimbursement in out-of-hospital care limits the ability of emergency medical services (EMS) to provide more patient-centered care and reduce downstream health care cost 7% and 34% of Medicare patients transported by ambulance to an emergency department could have been safely treated in an alternate environment Medicare provides no reimbursement for out-of-hospital care unless the patient is transported to an ED perceived incentive for agencies to transport patients to the ED, event if it is not warranted or requested, despite more cost effective alternative
Smith-Houskamp et al, 2017 Journal Article	role of community paramedicine is fairly new, defined to address local problems while utilizing local resources of other health care and social service entities

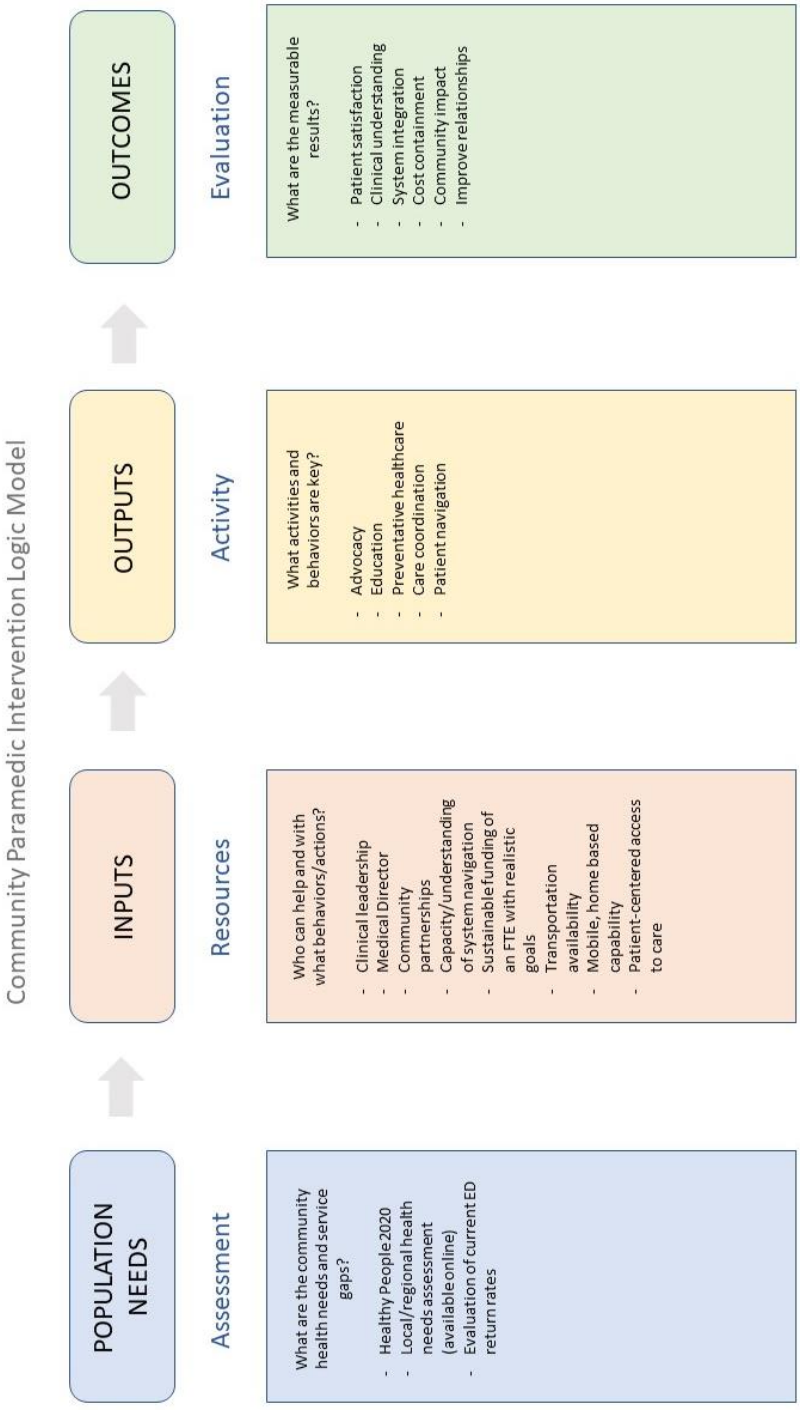


Figure 1. Community Paramedic Intervention Logic Model

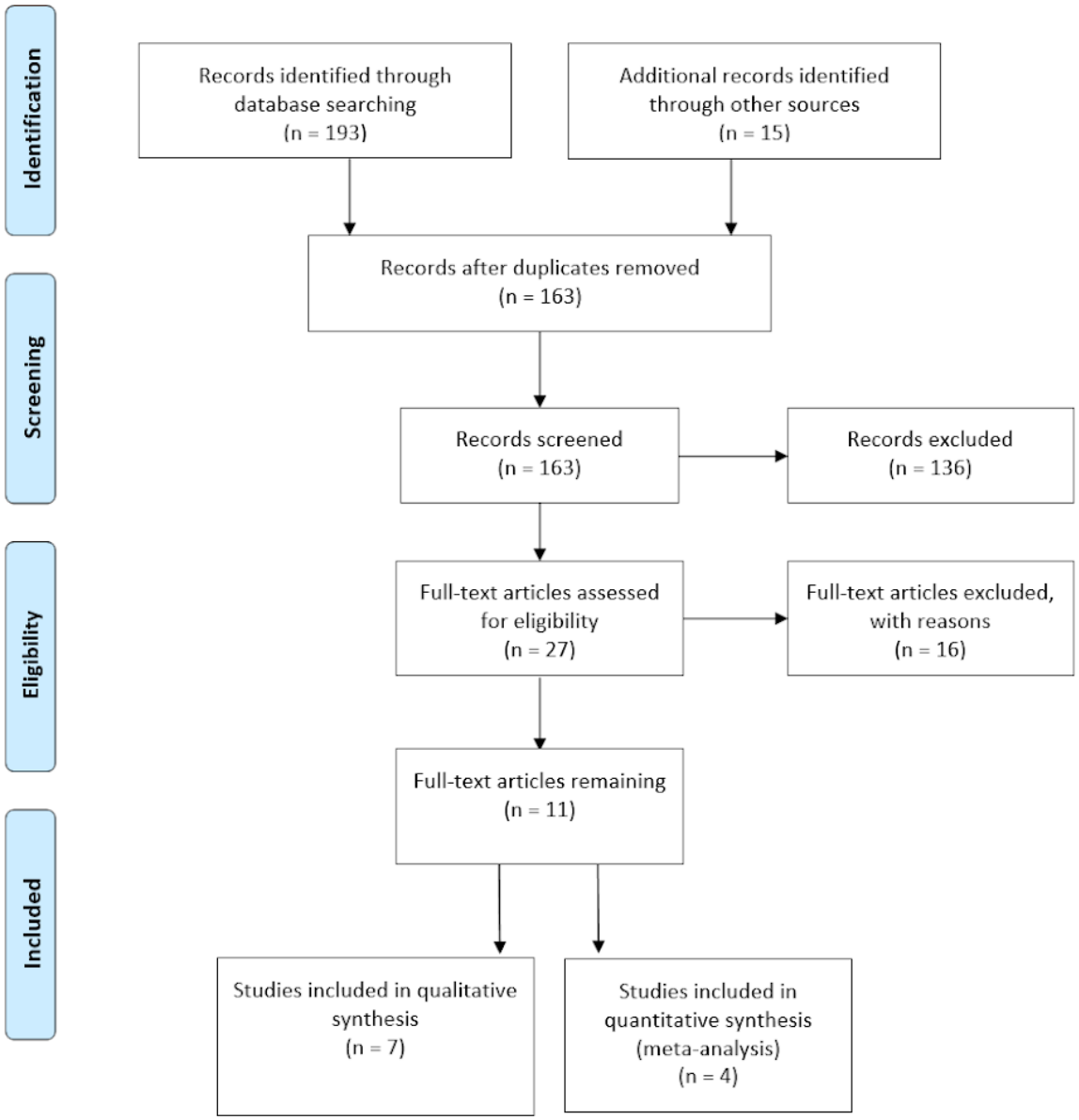
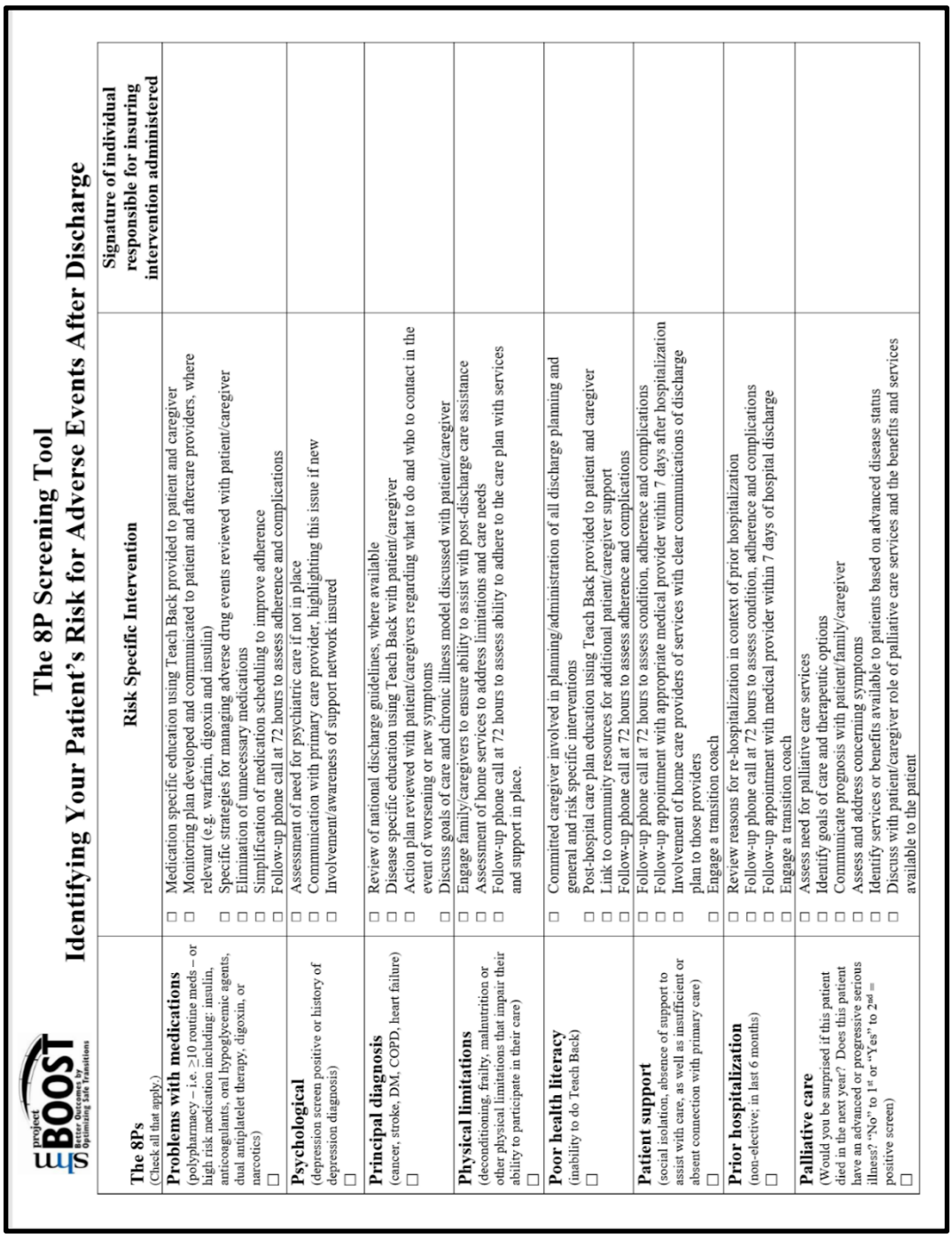


Figure 2. *Literature Search Procedure.*



project BOOST Better Outcomes by Optimizing Safe Transitions

The 8P Screening Tool

Identifying Your Patient's Risk for Adverse Events After Discharge

The 8Ps (Check all that apply.)	Risk Specific Intervention	Signature of individual responsible for insuring intervention administered
Problems with medications (polypharmacy – i.e. ≥10 routine meds – or high risk medication including: insulin, anticoagulants, oral hypoglycemic agents, dual antiplatelet therapy, digoxin, or narcotics) ☐	☐ Medication specific education using Teach Back provided to patient and caregiver ☐ Monitoring plan developed and communicated to patient and aftercare providers, where relevant (e.g. warfarin, digoxin and insulin) ☐ Specific strategies for managing adverse drug events reviewed with patient/caregiver ☐ Elimination of unnecessary medications ☐ Simplification of medication scheduling to improve adherence ☐ Follow-up phone call at 72 hours to assess adherence and complications	
Psychological (depression screen positive or history of depression diagnosis) ☐	☐ Assessment of need for psychiatric care if not in place ☐ Communication with primary care provider, highlighting this issue if new ☐ Involvement/awareness of support network insured	
Principal diagnosis (cancer, stroke, DM, COPD, heart failure) ☐	☐ Review of national discharge guidelines, where available ☐ Disease specific education using Teach Back with patient/caregiver ☐ Action plan reviewed with patient/caregivers regarding what to do and who to contact in the event of worsening or new symptoms ☐ Discuss goals of care and chronic illness model discussed with patient/caregiver	
Physical limitations (deconditioning, frailty, malnutrition or other physical limitations that impair their ability to participate in their care) ☐	☐ Engage family/caregivers to ensure ability to assist with post-discharge care assistance ☐ Assessment of home services to address limitations and care needs ☐ Follow-up phone call at 72 hours to assess ability to adhere to the care plan with services and support in place.	
Poor health literacy (inability to do Teach Back) ☐	☐ Committed caregiver involved in planning/administration of all discharge planning and general and risk specific interventions ☐ Post-hospital care plan education using Teach Back provided to patient and caregiver ☐ Link to community resources for additional patient/caregiver support ☐ Follow-up phone call at 72 hours to assess adherence and complications	
Patient support (social isolation, absence of support to assist with care, as well as insufficient or absent connection with primary care) ☐	☐ Follow-up phone call at 72 hours to assess condition, adherence and complications ☐ Follow-up appointment with appropriate medical provider within 7 days after hospitalization ☐ Involvement of home care providers of services with clear communications of discharge plan to those providers ☐ Engage a transition coach	
Prior hospitalization (non-elective; in last 6 months) ☐	☐ Review reasons for re-hospitalization in context of prior hospitalization ☐ Follow-up phone call at 72 hours to assess condition, adherence and complications ☐ Follow-up appointment with medical provider within 7 days of hospital discharge ☐ Engage a transition coach	
Palliative care (Would you be surprised if this patient died in the next year? Does this patient have an advanced or progressive serious illness? "No" to 1st or "Yes" to 2nd = positive screen) ☐	☐ Assess need for palliative care services ☐ Identify goals of care and therapeutic options ☐ Communicate prognosis with patient/family/caregiver ☐ Assess and address concerning symptoms ☐ Identify services or benefits available to patients based on advanced disease status ☐ Discuss with patient/caregiver role of palliative care services and the benefits and services available to the patient	

Figure 3. BOOST 8P's Screening Tool. Reprinted from *Society of Hospital Medicine. 2018, Retrieved from* https://www.hospitalmedicine.org/globalassets/clinical-topics/clinical-pdf/8ps_riskassess-1.pdf. *Copyright 2017 by The Society of Hospital Medicine. Reprinted with permission.*

Appendix A
Community Paramedic Curriculum Outline

Certified Community Paramedic (CP-C) Detailed Content Outline

1. Community Based Needs		**25**
A.	Participate in the community's health assessment as it applies to the population's needs	**Questions in this section**
B.	Increase community awareness of health prevention and promotion	
C.	Develop a network of resources for patient/client	
D.	Identify social determinants affecting patient/client care (e.g., individual, community, transportation, economics, environment, social support)	
E.	Identify cultural variables affecting patient/client care (e.g., Language, Religion, Sexual Orientation, Ethnicity, Race)	
F.	Identify medical variables affecting patient/client care (e.g., autism, physical disabilities, dementia, age)	
G.	Identify mental health variables affecting patient/client care (e.g., cognitive disorders, substance disorders, schizophrenia and psychotic disorders, anxiety)	
H.	Identify special needs variables affecting patient/client care (e.g., autism, abuse, neglect, malnutrition, PTSD, medical literacy)	
I.	Operate within the financial framework to provide healthcare	
2. Interdisciplinary Collaboration		**25**
A.	Participate in a plan of care to meet an individual's needs	**Questions in this section**
B.	Coordinate health services for patients/clients	
C.	Determine need for community resources (e.g., Mental health, substance abuse, public health, social services)	
D.	Provide referrals to community resources (e.g., Mental health, substance abuse, public health, social services)	
E.	Collaborate with the healthcare team in the management of chronic disease (e.g., diabetes, asthma, Coronary Artery Disease)	
F.	Refer for needs matched time appropriate care	
G.	Collaborate with health professionals to ensure continued care of the patient/client	
H.	Communicate with health professionals to ensure continued care of the patient/client (e.g., condition, reaction to interventions, significant incidents)	
I.	Serve as a patient/client advocate (e.g., program enrollments, liaison with healthcare professionals)	
J.	Document patient/client visits and follow-up care in healthcare records	
K.	Access patient/client electronic and/or paper medical records	
L.	Evaluate related health records (e.g., lab results, medication list, most recent visit summary)	
M.	Maintain patient confidentiality (e.g., HIPAA)	

Certified Community Paramedic (CP-C) Detailed Content Outline

3. Patient Centric Care	42
A. Perform an initial comprehensive history and physical assessment exam B. Perform an ongoing comprehensive longitudinal history and physical assessment exam C. Measure vital signs D. Administer breathing treatments E. Monitor wound care F. Monitor intravenous therapy G. Administer intravenous therapy H. Manage chronic disease (e.g., diabetes, asthma, Coronary Artery Disease) I. Monitor chronic disease (e.g., diabetes, asthma, Coronary Artery Disease) J. Administer point of care testing (e.g., drug tests, glucose monitoring, INR, iSTAT) K. Manage patients/clients experiencing an acute medical condition L. Manage patients/clients experiencing a transitional medical condition (e.g., post-operative care, hospital discharge, home health discharge, rehabilitation) M. Manage patient's status using laboratory values N. Manage patient's status using diagnostic tests (e.g., pulse oximetry, chest radiography, capnography) O. Assist with home mechanical ventilation (e.g., CPAP/BIPAP) P. Administer pharmacologic agents: 1. Intravenous 2. Intramuscular 3. PO 4. Subcutaneous Q. Educate about pharmacologic agents: Trans-dermal R. Administer intranasal immunizations S. Manage patients with conditions related to the following systems: 1. Appearance (e.g., fever, weight loss) 2. Eyes 3. Ears, Nose, Mouth, Throat 4. Cardiovascular 5. Respiratory 6. Gastrointestinal 7. Genitourinary 8. Musculoskeletal 9. Integumentary (skin and/or breast) 10. Neurological 11. Psychiatric 12. Endocrine 13. Hematologic/Lymphatic 14. Allergic/Immunologic	Questions in this section

Certified Community Paramedic (CP-C) Detailed Content Outline

T. Perform minor medical procedures: Fluid replacement U. Maintain patient confidentiality (e.g., HIPAA) V. Prepare patient/client to navigate the healthcare system independently W. Communicate with patient/client to ensure continued care (e.g., medication adherence, follow-up care)	
4. Preventative Care and Education	**33**
A. Assess safety risks for the community paramedic (e.g., unsafe situations, animals, diseases) B. Assess safety risks for the patient/client (e.g., disease, falls, environmental health hazards) C. Assess the safety of the work environment D. Educate on proper use of healthcare resources E. Provide oral health education and/or screening F. Educate on identified healthcare goals G. Perform a physical safety inspection (e.g., home, property, vehicle) H. Screen for chronic disease (e.g., diabetes, asthma, Coronary Artery Disease) I. Differentiate injury patterns associated with specific mechanisms of injury (e.g., falls, elder abuse) J. Provide service with the local public health agency (e.g., immunization, disease investigation, TB-DOT) K. Provide service with the local social service and aging agencies (e.g., adult protection, child protection, senior services, housing) L. Participate in wellness clinics (e.g., immunization and screening) M. Provide education for: 1. chronic disease 2. medical condition 3. community resources 4. wellness and nutrition 5. medications N. Identify the impact that professional boundaries have on patient/client/family and provider health (e.g., ethics, compassion fatigue, stress) O. Apply coping methods to reduce stress	**Questions in this section**
Total questions on the exam	**125**

End of DCO

NOTE: *Each test form includes 10 unscored pretest items in addition to the 125 scored items for a total of 135 items in a 2.5-hour test timeframe.*

Community Paramedic Curriculum Outline. Reprinted from The Community Paramedic Board. Retrieved from http://communityparamedic.org/Portals/CP/Documents/CP-C%20DCO%202016%20for%20public%20release.pdf?ver=2016-01-04-155410-000. Copyright 2016 by The Board for Critical Care Transport Certification. Reprinted with permission.

Appendix B

COMMUNITY PARAMEDIC PATIENT SATISFACTION SURVEY

YOUR VISIT WITH THE CP:

EXCELLENT(5) VERY GOOD(4) GOOD(3) FAIR(2) POOR(1)

1. Willingness to listen carefully to you	5	4	3	2	1
2. Taking time to answer your questions	5	4	3	2	1
3. Amount of time spent with you	5	4	3	2	1
4. Explaining things in a way you could understand	5	4	3	2	1
5. Instructions regarding medication	5	4	3	2	1
6. Instructions regarding follow-up care	5	4	3	2	1
7. Advice given to you on ways to stay healthy	5	4	3	2	1

WOULD YOU RECOMMEND THE SERVICE TO OTHERS? Yes No

PLEASE EXPLAIN FURTHER WHY:

_____

_____

_____

IF THERE IS ANY WAY WE CAN IMPROVE OUR SERVICES TO YOU, PLEASE TELL US ABOUT IT:

_____

_____

_____

Appendix C
Letters of Support

ValleyHealth
Healthier, together.

September 4, 2018

To Whom It May Concern:

The leadership team at Page Memorial Hospital has reviewed and discussed the proposed feasibility project by Matthew Payne, FNP, entitled *The Feasibility of a Community Paramedic Intervention for the Reduction of 72-hour ED Return Visits*, sponsored by the University of Virginia School of Nursing. We offer support for this project as it progresses through the next phases of Valley Health System Internal Review Board (IRB) approval and are happy to offer guidance and insight as the project unfolds. Should you need any additional information, please contact me at 540-743-2887

Sincerely,

Benjamin D. Dolewski
Page Memorial Hospital
Operations Manager
135 Memorial Drive
Luray, VA 22835
Phone: 540-743-2887

Appendix D
Information Flyer

UVA | SCHOOL of NURSING

Study Announcement

The Feasibility of a Community Paramedic Intervention for the Reduction of Emergency Department 72-Hour Return Visits

Researcher: Matt Payne, MSN, FNP, EMT-P (DNP Student)

Contact Information: c) 804-641-9462, email) mpp3c@virginia.edu

Location: Page Memorial Hospital Emergency Department, Luray, VA

Institutional Review Board (IRB) Information:

Valley Health System IRB File #: 20180908, WMC Version 1 dated 09/05/18

University of Virginia Study Tracking #: 21046

Timeframe: Late October into early November

A University of Virginia Doctorate of Nursing Practice student will be performing a feasibility study at Page Memorial Hospital Emergency Department in the Fall of 2018. The study itself, is designed to research a process, not a clinical outcome. This feasibility study will occur over approximately four days, spaced out over late October to early November. Exact dates will be announced to the ED staff prior to them occurring. Please contact the researcher above with any questions or concerns.

During this study, a UVA researcher will be in the ED closely working with the ED providers and nurses to identify possible study participants. There are inclusion and exclusion criteria outlined below. The researcher will offer study enrolment to those patients who meet the criteria and if they are willing to participate, they will be consented by the researcher.

The goal of the study is to create a process in which certain high-risk patients are followed up at home, within 24 hours of their discharge. During this follow up visit, a paramedic will perform an interview based on a predetermined template. The goal of the visit is to identify the understanding of discharge instructions and plans to follow through with prescribed treatment plans. The paramedic will utilize available hospital and community resources to aid the patient in compliance with treatment plans. Examples of this may include social services, transportation, or aiding in scheduling a primary care visit. Similar programs exist across the country but have rarely been described in literature. The goal of such a program would be to reduce 72-hour ED returns while increasing patient compliance, clinical understanding, and satisfaction.

Inclusion criteria will be as follows (not requiring all aspects): over the age of 18, no primary care provider, insured by Medicaid or Medicare, not insured, or had one or more previous ED visits within the past two months. Exclusion criteria: live over 80 miles from Luray or under the age of 18.

Appendix E
Consent Form

Participant's Name_____

RESEARCH CONSENT FORM

--CONSENT TO PARTICIPATE IN A RESEARCH STUDY--

What is this study about?

Students at the University of Virginia in the United States are trying to learn more about ***the feasibility of a Community Paramedic home visit for the reduction of Emergency Department 72-hour return visits***. This is called a research study.

The reason to do this research study is **improve healthcare processes**.

You are asked to be in this research study because ***you meet the criteria suggested to the Emergency Department Provider taking care of you today.***

The researcher in charge of this study is ***Matthew Payne and Dr. Kathryn Reid at The University of Virginia School of Nursing.***

This study will take place ***at Page Memorial Hospital in Luray, Virginia*** and will last for ***four weeks***. However, your participation in this study will only require one home-visit, lasting approximately 45 minutes within 24 hours of your discharge from the Emergency Department.

What will happen during the study?

The procedure of this study will include a paramedic trained in community health, to visit with you at your home, or other location of your choice, to evaluate your care after discharge from the Emergency Department. The paramedic will ask you questions regarding your Emergency Department visit and answer any questions you have regarding diagnosis, medications, and treatment plan. If there are additional resources needed for your care, the paramedic can help obtain those for you through the hospital. If you require additional information regarding your care that the paramedic can not provide, additional resources will be sought through the hospital as well.

VH IRB File #: 20180908
WMC Version 1 dated 09/05/18
UVA Study Tracking #21046
Approved on: __09/26/2018_____

Expires on: ___09/26/2019_____

Could the research hurt me?

Sometimes things happen to people in research studies that may hurt them or make them feel bad. These are called risks. The risks of this study are minimal to none. Any changes in your plan of care will be made by your primary care physician or the Emergency Department physician on call for that day.

Could the research help me?

People also might have good things happen to them because they are in research studies. These are called benefits. The benefits to you of being in this study might be ***understanding your diagnosis and care plan more clearly, and you helping obtain additional healthcare services at home.***

The benefits of this research to your community might be ***an improved understanding of the effects of a paramedic follow up to reduce unnecessary Emergency Department returns, and improving the way hospitals provide patient-centered care.***

The doctor and/or the researcher will inform you of any relevant information found from the conduct of this study that is important to your personal medical care or situation.

How will my privacy be protected?

Study records that identify you will be kept confidential as required by United States privacy regulations. You agree to allow ***Page Memorial Hospital, Researcher Matthew Payne*** and their staff (researchers associated with their staffs and the University of Virginia) to use and disclose health information about you to conduct this study. These individuals, or the University of Virginia on their behalf, may also release your medical records, the consent form associated with this study, this authorization and the information about you created by this study to the ***Researcher Matthew Payne*** or their designates. In addition, the information created about you may be shared with other institutions doing this study. Other persons who may have access to your records include groups such as data and safety monitoring boards which oversee the safety of a study including accrediting agencies, United States federal, state and local agencies having oversight over this research, for example, the United States Department of Health and Human Services (DHHS); and the University of Virginia Research Compliance staff and Institutional Review Board (IRB) members or designates.

Expires on: ___09/26/2019_____

If you sign this form, you have given us permission to release information to these other people. There is no expiration date to this permission. If you decided to withdraw your permission and end this agreement to release the information collected about you, please contact ***Researcher Matthew Payne at (804) 641-9462, mpp3c@virginia.edu***. He will help you document in writing your decision to withdraw this permission. Please note that any information already obtained will continue to be used.

Your participation in this research study is voluntary. However, you will not be allowed to participate in this research if you do not sign this form.

Do I have to participate?

You do not have to be in this study if you do not want to. This means your participation is voluntary.
It is up to you to decide whether or not being in the study is in your best interest.
You can also stop participating in this study at any time. Any information gathered about you before you decide to stop this study will continue to be used. If you decide to stop, no one will be angry or upset with you. No one will treat you differently if you decide not to be in this study.

Who can I contact with questions about this study?

Matthew Payne, Researcher
Email: mpp3c@virignia.edu
Cell: (804) 641-9462

Signatures

Please ask as many questions as you need to make sure you understand the study before you sign this form. Signing this document means that the research study, including the above information, has been explained to you, and that you voluntarily agree to participate.

VH IRB File #: 20180908
WMC Version 1 dated 09/05/18
UVA Study Tracking #21046
Approved on: __09/26/2018_____

Expires on: ___09/26/2019_____

Consent From Adult

_____	_____	_____
PARTICIPANT (SIGNATURE)	PARTICIPANT (PRINT)	DATE

To be completed by participant if 18 years of age or older.

If an interpreter is involved in the consent process because the potential subject does not speak English well or at all, the participant should NOT sign on the line above – leave this line blank. Instead, the participant should sign the Short Form written in the language they can understand.

Consent From Impartial Witness

If this consent form is read to the subject because the subject is blind or illiterate, an impartial witness not affiliated with the research or study doctor must be present for the consenting process and sign the following statement. The subject may place an X on the Participant Signature line above.

I agree the information in this informed consent form was presented orally in my presence to the subject and the subject had the opportunity to ask any questions he/she had about the study. I also agree that the subject freely gave their informed consent to participate in this trial.

_____	_____	_____
IMPARTIAL WITNESS (SIGNATURE)	IMPARTIAL WITNESS (PRINT)	DATE

VH IRB File #: 20180908
WMC Version 1 dated 09/05/18
UVA Study Tracking #21046
Approved on: __09/26/2018_____

Expires on: ___09/26/2019_____

Person Obtaining Consent

By signing below you confirm that you have fully explained this study to the potential subject, allowed them time to read the consent or have the consent read to them, and have answered all their questions.

_____	_____	_____
PERSON OBTAINING CONSENT (SIGNATURE)	PERSON OBTAINING CONSENT (PRINT)	DATE

VH IRB File #: 20180908
WMC Version 1 dated 09/05/18
UVA Study Tracking #21046
Approved on: __09/26/2018_____

Expires on: ___09/26/2019_____

Appendix F

Definition of Terms

Community Paramedicine: One or more services provided by Emergency Medical Services (EMS) agencies and practitioners that are administratively or clinically integrated with other healthcare entities.

Mobile Integrated Healthcare - Community Paramedic (MIH-CP): Care provided by an array of healthcare entities and practitioners that are administratively or clinically integrated with EMS agencies.

- MIH-CP may include, but not be limited to, services such as:
  - Increasing access to care in underserved areas
  - Providing telephone advice to 9-1-1 callers without requisite dispatch of response units
  - Using community paramedics or other specially trained EMS practitioners for the management of patients who utilize the system with high frequency, patients who are at high risk for hospital readmission, for monitoring patient compliance and achievement of prescribed patient outcomes in their discharge plans, advocating for healthy choices and preventive care, and encouraging post-hospital discharge follow-up visits.
  - Transport or referral of patients to a broad spectrum of appropriate healthcare resources, not limited to only hospital ED's. (NAEMT et al, 2016)

Unplanned Return to ER w/in 72-Hrs – Rate %: Percentage of patients that returned to the ER within 72-hours.

BOOST 8 P's: A screening tool developed by the Society of Hospital Medicine, the Better Outcomes by Optimizing Safe Transitions (BOOST) covering evaluation of eight themes: medications, psychological, primary diagnosis, physical limitations, health literacy, support, prior hospitalizations, and palliative care.

Health Professional Shortage Area (HPSA): A region which meets the HSRA shortage designation criteria as having a shortage of primary medical care, dental or mental health providers. These regions may be urban or rural, a specific population group, or may be identified as a specific medical facility. An HPSA, also known as Medically Underserved Areas (MUA's), may also be a whole county, or census tracts meeting criteria. These areas usually include groups of people who face economic, cultural or linguistic barriers to healthcare (Peters et al., 2009).

Appendix G

Rappahannock County Virginia Needs Assessment, January 2019

Authored by: Rappahannock Benevolent Fund Rural Health Committee

Introduction

It is well known from surveys and newspaper articles that the people of Rappahannock love their county. Because we live in a rural setting, we are resilient, self-sufficient, and independent in nature. In general, the current demographics indicate the people of the county are older with a larger population of people in need compared to the counties that surround us. Community Health Needs Assessment Surveys have documented that access to healthcare is one area that needs improvement. This document was put together to identify the people that reside in Rappahannock County as well as the specific healthcare needs and resources that are currently available. The data contained within come from statistical analyses obtained online from Community Health Needs Assessment Surveys, newspaper articles published either online or in print in Rapp News, some of which were provided by the Foothills Forum, Government agencies, and face to face interviews or phone calls. The purpose of this document is to evaluate the need/desire for a community paramedic/nurse to assist with home health care.

Geography:

Rappahannock County, located in the Commonwealth of Virginia, is 266 square miles. The County is part of the Northern Piedmont Region of the Commonwealth and is considered to be part of the Washington DC metropolitan area. Rappahannock is surrounded by Warren County to the Northwest, Fauquier County to the Northeast, Culpeper County to the Southeast, Madison County to the Southwest and Page County to the West.

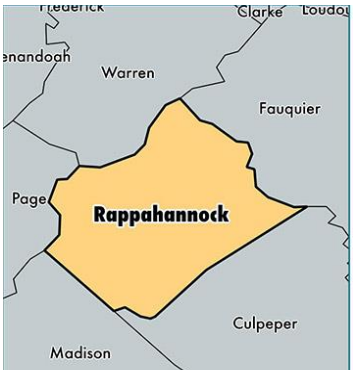
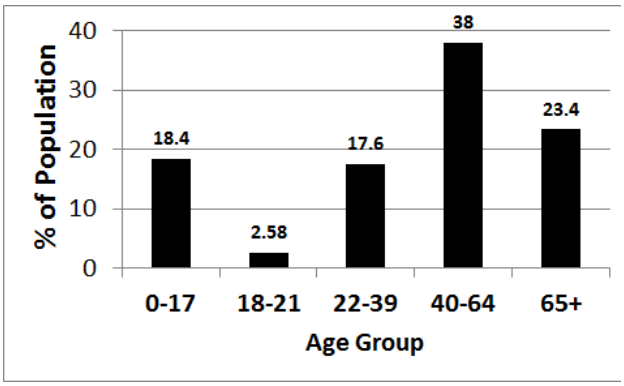


Figure 1. Map of Rappahannock County

Demographics:

The population of Rappahannock County is 7388[1] with a population density of 28 people per square mile. The community is generally older with a median age of 49.1 years.[1] The median age in Rappahannock is significantly older than the median age in Culpeper County, 38.9 years, or median age in Fauquier County, 41.6 years.[1] The age breakdown of the population within the County is: 23.4% 65 years of age and older, 38% 40-64 years of age, 17.6% are 22-29 years of age, 18.4% are 0-17 years of age and 2.58% are 18-21 years of age.[1] Rappahannock County is not ethnically or racially diverse: 92.18% of the population are white, 4.19% are black, 3.47% are Hispanic with the remaining percentages being mixed (2.54%), Asian (0.65%), and other (0.26%). [1]



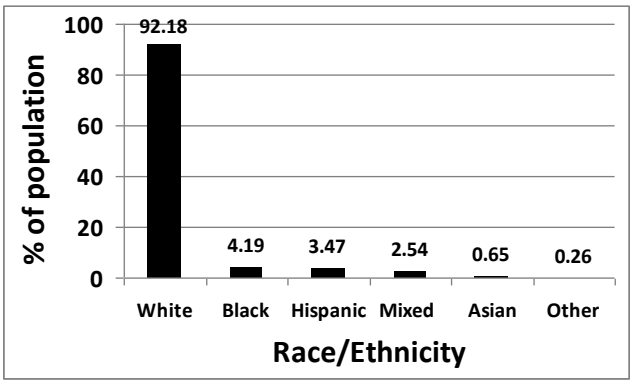


Figure 2 Age distribution of Rappahannock County

Figure 3 Race/Ethnic Distribution of Rappahannock

There are 3247 households within Rappahannock County. Of these households, 58.8 % are married, 5.7% are single female households, 4.9% are single male households and 26.6% are single person (living alone) households.[2] Non-family households, defined by households living with other people that are not family members, make up 4%. Of those families with children, 77.5% are married, 10.3% are single Moms and 12.3% are single Dads. 20.4% of families with children contain children under the age of 18.[2]

Socioeconomics: Rappahannock County has one of the highest rates of income inequality in the United States, having the 64th highest rate among the entire 3064 jurisdictions (counties and county equivalents) .[3] In comparison, Fauquier county ranked 857th and Culpeper County ranked 2750th.[3] To further illustrate this point, Rappahannock households in the top 1% income bracket earn 33x that of households in the bottom 1%. Median household income is $58, 026 which is below the state median of $65,011 but is skewed given the wealthy sector of the county's population.[4]

Of the counties making up the Northern Piedmont Region (Fauquier, Culpeper and Rappahannock), Rappahannock County has the highest poverty rate at 9.2% (2016), although this is below the state poverty rate (11.4%).[4] The poverty rate is higher for children (16%), racial minorities, and women. Standardized poverty levels determine eligibility for state and federal assistance, including Medicaid, Affordable Housing vouchers, Head Start, Supplemental Nutrition Assistance Program (SNAP), free and reduced lunch and weatherization assistance. Public assistance benefits received in Rappahannock County were $4170, above both the state ($2980) and national ($3490) averages.[4] It should be noted, Federal Poverty levels (FPL) are far below the living wage, meaning that individuals and families who live at the FPL but below a living wage may need assistance but are ineligible for safety net programs. The United Way has labeled these individuals as "ALICE" (asset limited, income constrained, employed). In 2015, 32% of the people living below the poverty threshold in Rappahannock County were below the ALICE level while 52% was above the ALICE level.[1]

The food insecurity rate for the total population of the county is 9%. Food insecurity is higher for children (19%), but even higher for children who are food insecure but ineligible for assistance (37%). SNAP is the primary means of supporting food insecure families and it is provided to 6% of Rappahannock households. Only one grocery store in the county is authorized to accept SNAP benefits and there are no grocery stores accepting Women, Infants, and Children (WIC) benefits. The percentage of students eligible for free and reduced lunches is another indicator of poverty and economic need. According to the Virginia Department of Education, 22.95% of Rappahannock County High School students and 35.59% Rappahannock Elementary School students were eligible for the free lunch program during the 2017-2018 school year.[5]

Community Health Needs: Community Health Needs Assessment (CHNA) surveys are performed to insure that hospital and public health agencies gather the necessary information to efficiently allocate resources to meet a given community's health needs. These needs assessment surveys, conducted every three years, and the associated implementation strategies to address these needs are required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. The Virginia Hospital & Healthcare Association in collaboration with the Virginia Health Care Foundation conducted a survey of the data obtained in 73 CHNAs performed in the Commonwealth of Virginia to identify the five most frequently reported health issues and critical service gaps.[6] The top five leading health issues were

obesity, behavioral health concerns, heart disease, diabetes and substance abuse. The top 5 service gaps were Behavioral Health, Health education, promotion and preventive services, health care coverage, aging services, and oral health. In this survey, many CHNAs identified gaps in the local health care workforce. The shortages most frequently cited were behavioral health (85%), primary care (85%) specialty physicians (75%) and dentists (67%).[6]

The 2016 CHNA for Warren Memorial Hospital (performed on the counties of Warren, Shenandoah, Page, and Rappahannock)[7] and the 2017 CHNA for Fauquier Hospital (Fauquier and Rappahannock) [8] indicated similar needs. Most recently, the 2018 County Health Rankings & RoadMaps Program[9], an annual report put out by the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institutes ranked Rappahannock County 110th out of the 133 counties in the Commonwealth of Virginia for Clinical Care. This ranking reflects access to doctors, dentists and mental health professionals. It also takes into consideration the number of people without health insurance. It is not surprising that the Health Resources and Services Administration (HRSA), a federal agency that designates communities as Medically Underserved Areas (MUA) and Health Professional Shortage Areas (HPSA), have identified Rappahannock County as a MUA (initially designated in 1978 with latest update in 2016) and as a geographic HPSA in primary care (designated in 12/29/2017) and mental health (designated in 2012 with latest update 10/28/2017).[10]

Rappahannock County Healthcare Resources (See Appendix: Table 1 for Summary)

Primary Care: There are currently three primary care physicians that reside in the county. Dr. John McCue sees patients 3-4 days a week. Dr. Brooke Miller at the Valley Health Clinic sees patients 6 times a month. The Valley Health Clinic also employs a Nurse Practitioner, Ann Miller, who sees patients 4 days a week. Together the Valley Health Clinic sees approximately 175-200 patients a month, with most of these patients residing in Rappahannock County. As of May 2018, the Valley Health Clinic has available the telemedicine program RevUp, a service available to Medicare patients who have 2 chronic conditions.[11] Patients enrolled in this program have contact with a nurse navigator once a month to see how a patient is doing with their treatment plan. To date, only 10% of eligible patients have signed up for this service.[11] The third primary care physician in the county is Dr. Christopher Nagle. Dr. Nagle has his practice, Wilderness Medicine, in the Mountainside Physical Therapy Building. Currently, he is not open for primary care services, but has plans to do so in the near future. He is a preventive medicine physician who's specialty is Public Health and Preventive Medicine. He currently does not accept Medicare and some private insurers.[11] The most recent addition to the primary care doctors caring for people in the county is Dr. William Simpson. Dr Simpson recently created "Doc at your Door" a service that provides acute, chronic and preventive mobile care in Rappahannock, Fauquier and surrounding counties.[12] He is based in Warrenton, has no office, and works from his car. He does not take insurance and patients only pay for the actual time he spends with them.

Other Health Care Services: Other sources for health care in the county include the Rappahannock County Public Health Department and the Fauquier Free Clinic. The Rappahannock County Public Health Department provides nutritional counseling for Women, Infant and Children (WIC) mothers, immunizations, family planning assistance, sexually transmitted disease (STD) screenings, and nursing home screenings to support the Rappahannock County Department of Social Services. A nurse is present 2 days a week. Costs for the health care provided are dependent on income. It should be noted that the Public Health Department does not provide chronic illness follow-up care or home visits for elder care. Current patient workload according to Ruth Partlow, nurse at the Rappahannock County Public Health Department is: 12-16 people per month for WIC services and car seat safety education, 6

people per month for family planning, the majority of which are women, and 3 people/month both for sexually transmitted disease investigation and nursing home pre-screening.

The Fauquier Free Clinic helps people who cannot afford health insurance or health care. Requirements for service include proof of residency, meeting the household income requirements, and confirmation of Medicaid coverage. A total of 2000 patients are seen at all locations of the Fauquier Free clinic, of these XXXX are seen in the Rappahannock county site. The Rappahannock Clinic for the Fauquier Free clinic provides only medical care to the community and is open the 3rd Wednesday evening of each month. The doors of the clinic open at 5pm for walk-ins and no appointment is required. The Free Clinic provides preventive screenings, lab work, flu shots, medications, referrals, follow-up care for hospital visits and sick visits. It does not provide immunizations, HIV and STD testing, pregnancy testing, TB testing or maternity and prenatal care.

Emergency Medical Services: Rappahannock County relies solely on volunteers to respond to emergencies. There are seven fire and rescue companies within the county: Washington, Amissville, Castleton, Chester Gap, Sperryville (fire) Sperryville (rescue) and Flint Hill. At the end of 2017, there were a total of 220 volunteers. These volunteers responded to 1217 calls (Jan-Nov 2018) consisting of 282 fire, 280 advanced life support, and 655 basic life support.[13] The demographic makeup of the fire and rescue volunteers reflects the county's demographics: 25% are older than 60 years of age and 46% are at least 50 years of age. Concerns have been raised regarding the rising age of these volunteers and the inadequate number of young volunteer firefighters due to the low number of young people in the county as well as the lack of employment opportunities to keep them in the county.[14,,15] To insure that the quality of emergency services remains high, the county instituted the following guidelines. Fire and rescue must: 1)respond to a call within 8 minutes 90% of the time;2) be at the scene within 25 minutes and 3) be able to respond to 2 emergency events in the county and administer first aid and medical transport to the hospital.[12] It should be noted, response report times for the first six months of 2018, indicate the county's fire and rescue companies respond to a scene within 24 minutes 99% of the time suggesting for now, these companies are providing exceptional service to the community.[14]

Transportation: Many medical services for county residents can be obtained out of the county. In these instances, transportation can often be an issue. Transportation services in the county depend on small networks of volunteer drivers. The Rappahannock Senior Center schedules drivers for county residents that are 60+ years of age: RappMedRides are used to transport individuals to doctor appointments and medical treatments; RappRides are used for shopping trips.[16] From January to November of 2018, there were 144 requests for rides, of which 108 were for RappMed Rides. In addition to the Rappahannock Senior Center, The Foothills Area Mobility Center (FAMS), based in Culpeper, operates a call center that helps finds rides for people in a 5 county area, which includes Rappahannock County. Rappahannock County had 174 ride requests in 2017 and 266 ride requests until October 2018 from FAMS.[16] VolTran provides free transportation services to Fauquier, Rappahannock and North Culpeper counties. They provide services for the elderly (60+ years), legally bind (any age), wheelchair bound (any age), disabled (any age), and others in serious need for medical appointments and social needs. Last year, VolTran had 579 requests as of October, of which 116 (20%) originated from Rappahannock county.[16] Most of the ride requests were for medical purposes. They are open Monday through Friday from 9am to 3pm. A 2 day notice is required for normal transport services, a 5 day notice is required for a handicap van. Unfortunately, 1 in 5 requests are not met due to the lack of volunteer drivers. The Rappahannock Rapidan Community Services in Culpeper provides transportation services for the elderly and disabled individuals in Culpeper, Fauquier, Madison, Orange and Rappahannock Counties. Transportation is provided to individuals to and from rehabilitation programs,

out-patient services, nutrition programs and other services operated by Rappahannock Rapidan Social Services and private providers. Rapp at Home, a member-volunteer "community village" organization provides rides to members for doctor visits, therapy, shopping, and social events using volunteer drivers. They have a comprehensive data base for other transportation options available to their members. A 3 day notice for transportation services is required.

Hospitals: There are no hospitals within the county. Individuals who require hospital services need to travel a significant distance to nearby hospitals located in adjacent counties. These include Warren Memorial Hospital in Front Royal, Fauquier Health in Warrenton, Novant/UVA/Culpeper Regional Hospital in Culpeper and Page Memorial Hospital in Luray.

Pharmacies Urgent Care Centers, Mental Health Clinics: The county has no pharmacy, urgent care center or Mental Health Clinic. The lack of a local pharmacy is a major problem for those who need medications for their health. This has lead to the Valley Health Clinic to consider putting in a limited pharmacy.

Dentists: There are 2 dentists in the county. Dr. Stella Liong operates a dental clinic in Flint Hill which is open from 11:30am to 5pm every weekday but Wednesday. A second dental clinic is run by Basiony Hagar in Washington, but is only open one day a week, Friday, from 9am to 2pm.

Physical Therapy: Physical Therapy services can be found in the Mountainside Physical Therapy building. Mountainside Physical Therapy sees approximately 500 patients a month, but could see more if additional certified physical therapists could be found.[11]

Adult Medical Education: Rapp U is a nonprofit adult education and training school located in Sperryville. They have courses leading to certification as a nurse's aid, home healthcare aid or medical assistant. In the last two years, there have been 52 people that have enrolled in these programs.[11] However, the number of enrollees that complete the course, obtain the certification, and remain in the county to work is currently unknown. In addition to Rapp U, 14 Rappahannock High School students have taken nurses aide certification classes at the high school.

Home Health Care: There are no home health care agencies based in the county. Care Perfections is based in Warrenton and can provide education and instruction for a family care provider. Open Home Care is based in Culpeper. Home Instead is private paid service based out of Winchester, Virginia. Rapid Home is a friendly visitor program that provides companionship only.

Resources to Identify and Aid Individuals in need (See Appendix, Table 2 for Summary):
Department of Social Services: The Department of Social Services (DSS) is responsible for administering federal, state and local public assistance and social work service programs. These services include fuel and energy assistance, Virginia Initiative for Employment, adult and child protective services as well as medical assistance (Medicaid), medical needs after hospital discharge, and assessments for the need of nursing home level of care. Referrals to DSS can come from the local Fire and Rescue Squads, the Rappahannock Food Pantry, the Rappahannock Senior Center, the Benevolent Fund, the Public School System, faith based organizations, the Public Health Department, as well as the nearby hospitals.

Recent changes in Medicaid eligibility have increased the number of people eligible for this health insurance. It is estimated that 300-400 additional Rappahannock residents will now be eligible for coverage.[11] Individuals who have Medicaid and who have seen a doctor are covered for physical

therapy, occupational therapy and nursing assessments for a period of 30 days. Extensions are given based on need and assessment. Unfortunately, many individuals identified by DSS for health care needs often do not have Medicaid and need to apply for this social service benefit. According to Joseph Kimpflen, Family Services specialist at the Rappahannock DSS, this is approximately 1 of every 4 calls. Once identified, these individuals often need assistance filling out the application due to physical (sight and hearing) or mental limitations and require follow-ups to ensure that all of the paperwork has been completed, submitted, and verified to minimize denials. Unfortunately, health care services are urgently needed for these individuals during the transition period from applying to Medicaid to Medicaid approval, a period of approximately 45 days. During that time period, the health care status of these individuals must be checked on a day to day basis. Once Medicaid has been approved, advocates are needed to ensure that the care provided is adequate to the health care needs of the patient.

Existing staffing at DSS is not adequate to insure that all individuals that need assistance will receive attention and care in a timely manner. For instance, Joseph Kimpflen has a caseload of 30 people/month. 90% of home visits performed by DSS are dependent on need. 50% of these home visits identify an urgent need that must be addressed. 70% of the urgent needs identified address: the care given in the home, unreliable home health care visits, problems with heating or electricity, substandard housing, or need for a new doctor and medication refills. Only 1 of every 15-20 calls come from individuals with no change in status. Another unmet need is to identify those individuals that need help but do not make contact with DSS. This is difficult since 40% of the people reside in villages, while 60% live in the county's often remote outskirts.

Rappahannock Food Pantry: The Rappahannock Food Pantry is a volunteer non-profit organization which assists Rappahannock County residents who are in need of food and other related services. Need is based on household size, income, the amount of other assistance received, and housing expenses. The Food Pantry provides fresh fruit and vegetables, canned and non-perishable foods, deli items, breads and baked goods, frozen food and pet food. Food donations are received from local donors (farmers, orchardists, and gardeners), the U.S. Department of Agriculture, Regional supermarkets and other retail outlets. They are open three days a week: Tuesdays and Thursdays 9:00am-11:30am (food drop off), 12:00pm (noon)-4:00pm (food pick up) and Saturdays 9:00am-10:00am (food drop off) and 10am-2pm (food pick up).

The Benevolent Fund: The Benevolent Fund was started in 2008 by three local churches, the Department of Social Services with assistance of the William and Mary Grieve Foundation. The Fund provides assistance to Rappahannock County individuals and families facing emergency situations for whom there is no public assistance available. In 2018, the fund assisted 150 local families with 190 grants. These included 88 for rent and utilities, 58 for housing, 30 for transportation, 10 miscellaneous, and 4 for children. Grant recipients are directed to financial counseling and are encouraged to volunteer for community service. "Safe and Healthy Homes" is the newest initiative of the Benevolent Fund. This new initiative assists county residents in home repairs to enable families and the elderly to remain in their homes. In addition, with funding assistance from local churches, the Benevolent Fund provides a part-time Community Coordinator who works with the Rappahannock Benevolent Fund clients to identify services and behaviors that can help them improve their situations. The Benevolent Fund meets at noon the second Wednesday of the month at the Washington Baptist Church and is open to the public.

The Rappahannock County Senior Center: The Rappahannock County Senior Center provides a nutritious meal and fellowship for eligible seniors aged 60 and over. Eligible seniors need to be active

and self sufficient or are present with a caregiver. In addition, the Center offers a wide variety of opportunities that include the opportunity to socialize, meet new friends, participate in educational opportunities and wellness programs as well as enjoy interesting and fun activities. Door to door transportation can be provided in most cases. The Senior Center is open Monday through Thursday from 10:00am to 2:00pm.

Medical Loan Closet: The Medical Loan closet is a Sperryville-based service which loans wheelchairs, walkers, crutches, canes, hospital beds, raised toilet seats and other medical equipment without charge to Rappahannock County residents. According to Bud Corder, one volunteer and current president of the organization, the loan closet fills the needs for approximately 20-25 people per month, with its greatest need for hospital beds, bedside commodes, transport chairs and wheelchairs.

Thrift Store: Firehouse Treasures is a thrift store that is manned by the Ladies Auxiliary of the Washington Fire and Rescue Squad. The store provides clothing, shoes, and limited houseware items at minimal cost. The store is open Tuesdays and Wednesdays from 10am to 5pm and Saturdays from 10am to 1pm.

Rapp at Home: Rapp at Home is a member organization of seniors in Rappahannock County who form a "village" organization of members and volunteers dedicated to helping the county's seniors stay in their homes as they age. Membership is open to individuals 50 years and older in Rappahannock and surrounding counties for a modest annual membership fee (reduced or free for those with financial need). The organization coordinates and centralizes access to information, services and social activities. The organization contains a list of service professionals, social service agencies and organizations to provide assistance. Volunteers help with jobs around the house, and provide rides to members to doctors and therapy visits, arrange prescriptions pick ups and provide respite for caregivers. Office hours are Monday through Thursday from 10:00am to 5:00pm and Fridays from 10:00am to 2:00pm.

The Community Paramedic

The Community Paramedic is a new and evolving healthcare model that allows paramedics to assist with public health, primary healthcare and preventive services to underserved populations in the community. This model has been seen as a way to address the needs of rural residents in a more efficient and productive way. The Joint Committee on Rural Emergency Care has the following working definition of a community paramedic: " a state licensed EMS professional that has completed an appropriate education program and has demonstrated competence in the provisions of health education, monitoring, and services beyond the role of the traditional emergency care and transport and in conjunction with medical direction". In this model of healthcare, the **specific roles and services are determined by community health needs in collaboration with public health and medical direction**. Common roles include:

- Providing and connecting patients to primary care services
- Completing post-hospital follow-up care
- Integration with local public health agencies, home health agencies, health systems and other providers
- Providing education and health promotion programs
- No duplication of the available services within the county

90.3% of paramedicine programs have the common goal of managing chronic diseases.[17] Other goals include reducing emergency department visits (83.9%) and reducing costs (83.9%).[17] Target populations include the chronically ill (90.3%), post hospital discharge patients (80.6%) and frequent EMS users (64.5%).[17]

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Appendix

Table 1. Healthcare Resources in Rappahannock County

	Resources	Notable Characteristics
Hospitals	In County: None Out of County: Warren Memorial Hospital Fauquier County Hospital Page Memorial Hospital Novant/UVA/Culpeper Memorial Hospital	
Primary Care Physicians	Dr. Brooke Miller: Valley Health Clinic	6 days/month: approximately 175-200 patients/month

		RevUp program- 10% of eligible patients have enrolled
	Dr. John McCue	3-4 days per week
	Dr. Christopher Nagle: Wilderness Medicine	Currently does not take medicare and some private insurances
	Dr. William Simpson: "Doc at your Door"	Warrenton based service that provides for acute, chronic and preventive mobile primary care; does not accept insurance, pay only for time actually spent with the doctor
Nurse Practitioner	Ann Miller: Valley Health Clinic	4 days a week
Urgent Care Centers	In county: none	
Clinics	Fauquier Free Clinic	Open 3rd Wednesday evening of each month. Opens at 5pm for walk ins. Medical services only Need to meet household income requirements, verify residency and confirm Medicaid coverage
Physical Therapy	Mountainside Physical Therapy	500 patients a month; could increase that amount if certified physical therapist can be found in the area
Transportation	<u>In County:</u> Rappahannock Senior Center Rapp Med Rides	 Transportation to medical treatments and doctors appointments
	Rapp Rides	Shopping
	RappatHome	Provides rides to members for doctor visits, therapy, shopping, social events using volunteer drivers; has comprehensive data base for other transportation options available; 3 day notice required
	<u>Out of County:</u> Foothills Area Mobility Center (Culpeper based)	Call center based in Culpeper that finds rides for people in a 5 county area that includes Rappahannock County
	VolTran	Free transportation services to

		Fauquier, Rappahannock and N. Culpeper Counties; services for elderly, legally blind, wheelchair bound and disabled
	Rappahannock-Rapidan Community Services: Culpeper Based	Transportation to elderly and disabled persons to and from rehabilitation programs, out patient services, nutrition programs
Fire and Rescue (911)	Washington Volunteer Fire and Rescue Amissville Volunteer Fire and Rescue Castleton Community Volunteer Fire Company Sperryville Volunteer Fire Department Flint Hill Volunteer Fire and Rescue Sperryville Volunteer Rescue Squad	All Volunteers Total amount 214 as of Jan 1, 2018 46% of the volunteers are 50 and older Response time report indicates that ambulances and fire trucks get to the scene within 24 minutes of fire or emergency calls 99 % of the time
Mental Health Providers	None	
Dentists	Stella M Liong: Flint Hill Basiony Hagar: Washington	Open every weekday except Wed Open on Friday only
Pharmacies	None	
Public Health Department	Nurse: Ruth Pantlow	2 days a week Nutritional Counseling for WIC mothers Immunizations Family planning assistance STD screening Nursing home Screening in support of Department of Social Services
Heath Care Training/ Education	Rapp U	Enrolled 52 individuals over the last 2 years to become certified for health care jobs (nurses aide or clinical medical assistant) Unknown how many received the certifications and stay in the county to work
Adult Home Health Care:	None based in the County	<u>Out of County</u> Care Perfections Health Services: Warrenton Open Home Care Home Instead: Winchester

		Rapid Home: Companion only; no medical services

Table 2. Resources to identify/assist Individuals in Need

Resources	Characteristics
Rappahannock Food Pantry rappahannockpantry.org	Volunteer non profit organization which assists residents who are in need of food Hours: Tuesdays and Thursdays 9-11:30 (food dropoff); Noon-4pm (food pickup); Saturdays 9-10 (food dropoff) 10-2 (food pickup)
Benevolent Fund rappbenevolentfund.org	Provides assistance to individuals and families facing emergency situations for whom there is no public assistance available: Includes grants for rent, utilities, medical costs, transportation Public meeting: Noon second Wednesday of the month at Washington Baptist Church
Department of Social Services financialhelpresources.com/details Rappahannock_county_department_of_social-services	Administers federal, state and local public assistance and social services programs. This includes Medicaid, SNAP, WIC, and TANF.
Rappahannock Senior Center rrcsb.org/senior-services/senior-centers/	Provides a meal (lunch) and fellowship for eligible seniors. Focuses on nutrition, education, socialization and improved well being.
Rapp at Home www.rappathome.org	Member and volunteer organization dedicated to help the county's seniors remain in their home as they age Coordinates and centralizes access to information services and social activities Office hours: Monday-Thurs 10-5; Friday 10-2
Medical Equipment Loan Closet	Volunteer non-profit that supplies medical equipment free of charge to Rappahannock County Residents

Appendix H
Journal Author Guidelines

Emergency Medicine Journal
Website http://emj.bmj.com/pages/authors/

Emergency Medicine Journal is committed to the publication of high quality research, educational material, and perspective that will be of interest to a broad audience of emergency practitioners, including physicians, nurses and paramedics, within different settings and in different countries. Our scope includes emergency department care, urgent care, pre-hospital care and the interface of emergency medicine with colleagues in other specialties and public policy. Our priorities are to:

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- Ensure that a fair, independent and respectful peer review system is in place
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We receive far more papers than we can publish; thus all papers are reviewed by the Editor in Chief on submission but only some will be sent on for external peer review. Our goal is to give you a decision within one week for submissions we are not sending on for further review. The editors have provided some guidance on how to create a paper with the best chance of being accepted.
Read these instructions here.
Watch the videos: our Editor Ellen Weber explains how to get your paper published.

- Editorial policy
- Reporting guidelines
- Article publishing charges
- Submission guidelines

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Please review the below article type specifications including the required article lengths, illustrations, table limits and reference counts. The word count excludes the title page, abstract, tables, acknowledgements, contributions and references. Manuscripts should be as succinct as possible.

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- Short reports
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- Commentary
- The view from here
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Full length articles reporting research. Authors of original articles and systematic reviews are required to comply with one of the appropriate reporting guidelines endorsed by the EQUATOR Network. A completed guideline checklist must be included with the submission.
All clinical trials require prospective registration.
Abstract: 300 words
Word count: up to 3000 words
Illustrations and tables: up to 6
References: 25

Additional information (such as data collection tools, surveys, etc) may be placed on the web site as a data supplement. In some cases, we may ask to publish the abstract in print and the full-length article on the website only. You also have the option to publish the abstract of your paper in your local language. If you wish to do this, please upload a Word copy of your abstract to your manuscript on Scholar One and save it as 'supplementary material'. We have specific requirements for before and after (pre-post) studies. Please see Goodacre, March 2015 'Uncontrolled before-after studies: discouraged by Cochrane and the EMJ'.

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