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## University of Vermont Medical Center Critical Care Transport Community Paramedicine Pilot Inclusion/Exclusion Criteria and Supplemental Materials

Cyrus N. Thomas-Walker  
Cyrus.Thomas-Walker@med.uvm.edu

Sean Muniz  
sean.muniz@med.uvm.edu

Amy B. Golinker  
Amy.golinker@med.uvm.edu

Ryan D. Clouser DO  
ryan.clouser@uvmhealth.org

Randall Lanier  
Randall.Lanier@uvmhealth.org

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# University of Vermont Medical Center Critical Care Transport Community Paramedicine Pilot

Sean Muniz, Cyrus Thomas-Walker, Amy Golinker, Ryan Clouser DO, Randall Lanier

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## Abstract

The University of Vermont Medical Center (UVMCC) Critical Care Transport (CCT) team received a grant in 2020 to trial one Community Paramedic to reduce high volume utilizers of UVMCC's ED enrolled in Vermont's accountable care organization (ACO), OneCareVT. That summer, this team helped develop and analyze the implications of that program.

The current literature surrounding Community Paramedicine was explored, focusing particularly on studies that analyzed costs savings of these programs, rural areas with similar populations as Vermont, and the average cost of an ED visit. The reviewed literature and annotations are included in this work.

Initially, our plan was to analyze data obtained from the Critical Care Transport team's pilot program. However, the program was slated to begin at the beginning of April 2020 and was postponed in the wake of the COVID-19 pandemic. The department's Community Paramedic was instead reallocated to set up the drive-through COVID-19 testing site for Chittenden County. The reallocation of resources from UVMCC's CCT team prompted this team' to pivot efforts toward the fundamental establishment of the program – particularly patient selection.

78 high utilizers of UVMCC's ED for six months in 2020 were reviewed. Following the chart review trends in chronic underlying conditions and chief complaints were established within this cohort. With these data, inclusion criteria and exclusion criteria for a community paramedic pilot program were generated further taking into the considerations the abilities and limitations of community paramedics, safety, and other community resources available for this patient population. These criteria are included within this work.

With the pivot from data collection to assisting with program set up, a mail-out letter to send to potential patients who might benefit from the program was written. Additionally, a script for contacting these patients via telephone to enroll them in the program was also written. These resources are also included within this work.

## Literature Review Outline: What is Community Paramedicine?

Paramedics are trained in assessing and treating the critically sick and injured. Over the course of their careers, however, they are exposed to a spectrum of illness and injury that offers the opportunity for paramedics to work outside of their traditional responsibilities. Community Paramedics are, with additional education and training, augment the healthcare system by assisting in caring for patients at

home/the point of contact without the necessity of transporting to an emergency department for further evaluation.

Citations:

- 1.) Systematic Review of Community Paramedicine and EMS Mobile Integrated Health Care Interventions in the US
- 2.) A Scoping Review Of Community Paramedicine - Evidence and Implications for Interprofessional Practice

On frequent ED utilization

The emergency department is not only where patients find themselves in their worst moments, but often acts as a primary source of care for many community members. Fundamentally, emergency departments in many hospitals were not designed for this and find themselves haphazardly augmenting their care delivery in order to treat many outpatient-care level complaints. Additionally, many emergency departments have identified patients in their communities who over-utilize the emergency department for a multitude of reasons. These “high-utilizers” have often been failed by the health system in some other capacity, but unfortunately now are of significant burden to the operations of the emergency department and the cost to insurance and public health funding. There are a number of targeted policies and procedures being implemented and explored across the world to adequately serve this population whilst reducing cost and burden.

Citations:

- 1.) Avoidable ED Visits – UHG
- 2.) Contributing factors of frequent use of the emergency department: A synthesis
- 3.) Frequent Users of Emergency Departments: The Myths, the Data, and the Policy Implications
- 4.) Costs and effects of interventions targeting frequent presenters to the emergency department: a systematic and narrative review

A Look at issues in Vermont

Here in Vermont, the UVM Health Center has not been immune to these issues. Additionally, Vermont’s progressive policies have developed innovation solutions to health access and funding problems including the program OneCare. This program allocates a set amount of funding to providers to keep patient’s healthy preventatively, instead of the “sick system” that American healthcare largely operates as now. Unfortunately, high frequency utilizers of the emergency department cost facilities and providers a significant amount of money when OneCare funding runs out.

Citations:

- 1.) Proprietary Data

How Community Paramedicine could function in Vermont

To address high frequency utilizers, Community Paramedics can implement targeted interventions to keep patients healthy and safe at home. By addressing health implications directly at the source, and assisting patient’s navigation of the health care system, we believe that we will see a reduction of unnecessary ED visits.

Citations:

- 1.) Rationale and Methods of an Evaluation of the Effectiveness of the Community Paramedicine at Home (CP@home) Program for Frequent Users of Emergency Medical Services in Multiple Ontario Regions: A Study Protocol for a Randomized Controlled Trial
- 2.) The HOME Team: Evaluating the Effect of an EMS-based Outreach Team to Decrease the Frequency of 911 Use Among High Utilizers of EMS
- 3.) MIH to reduce post discharge acute care visits - a pilot study
- 4.) A pilot mobile integrated healthcare program for frequent utilizers of emergency department services

Developing a Community Paramedic Program through the UVM Health Network

We have identified a list of high frequency ED utilizing patients that visit the UVM Medical Center. These patient's all are OneCare recipients and live regionally in Chittenden County. These patients will be contacted by phone and informed of our pilot Community Paramedicine program and offered free enrollment through a regimented script. Additionally, a letter about our program will be sent out to patient's meeting these inclusion criteria. The UVM Health Network has received a grant to sponsor a paramedic 16 hours per week to engage in this program. On the Critical Care Transport team through UVM Health Network, we have a Critical Care Paramedic with experience and education in Community Paramedicine. Beginning late summer 2020, he will begin seeing patients as a Community Paramedic.

Citations:

- 1.) None at this time

Moving Forward: Improving further outcomes in our region through Community Paramedicine

Through this initial program, we will assess and analyze the services rendered to these patients. It is our hope that ED utilization will decrease, and that health outcomes for many of the patients may increase. Following this rollout, it will be imperative to assess for ways to improve the utilization on the above measures as well as scaling the project out to offer this service more broadly. Additionally, there are multiple other concerns on our radar that we believe Community Paramedicine can address including leveraging the workforce for field and home testing for the SARS-CoV-2 virus, the social determinants of health that may be negatively impacting ethnic and racial minority groups in Vermont, as well as the ongoing health and access concerns associated with Vermont's significantly rural population.

Citations:

- 1.) None at this time

**Literature Review Citations: Community Paramedicine Research Bibliography**

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### **Patient Enrollment Contact Letter**

University of Vermont Medical Center  
Community Paramedicine Program  
111 Colchester Avenue  
Burlington, Vermont 05401

June XX, 202X

UVM Health patients,

The University of Vermont Medical Center is beginning to offer free home health services through our Community Paramedic program. Our Community Paramedics are highly trained providers that work on our Critical Care Ambulance teams. As experienced health care professionals with a large knowledge of taking care of our community, they are excited for the opportunity to offer this new form of care to you. Community Paramedics will coordinate with your primary care physician to provide you in home care that can keep you healthy and safe by offering the following services:

**After Visit Summary Review** – Keeping up with your doctor’s orders or discharge summaries can be difficult, especially if you see multiple doctors or have been to the hospital multiple times in a year. Our Community Paramedics will go over all the paperwork you have been sent home with to help manage your medical conditions and keep track of all these important instructions.

**Home Safety Assistance** – We can help with your home environment to best accommodate your daily living activities. Our Community Paramedics are trained to recognize dangers in the home you might otherwise not have noticed to keep you safe.

**Medication Reconciliation** – Managing your medications is important for staying healthy for the long term. We know that this is difficult when your medication list is long. Our Community Paramedics will help make sure that you have a system in place to help you stay on top of taking your medications and keeping an organized, safe schedule.

Community Paramedics observe safety precautions by wearing personal protective equipment and maintaining appropriate physical distance from anyone who you live with. We are also offering telehealth and phone visits if you would rather receive this service without a physical visit.

If you are interested in receiving any or all of these Community Paramedic services or have any questions, please feel free to contact us via e-mail: [XXX@uvmhealth.org](mailto:XXX@uvmhealth.org) or by phone at 802-XXX-XXXX. We will reach out to you again in the coming weeks to gauge your interest in this program.

Sincerely,

XXX  
UVM Medical Center Community Paramedic

XXX  
UVM Health Network  
Critical Care Medicine Physician

## **Inclusion + Exclusion Criteria for Patient Selection**

### **Exclusion**

-Reason for admission/ED encounter based on psychiatric complaint >50%

-Patients may be discharged with diagnosis of psychiatric symptom, but so long as presenting *complaint* is not psychiatric, the patient can be considered.

-Multiple encounters for psychiatric distress with:

- psychotic features
- suicidal ideations
- homicidal ideations

- Multiple encounters due to overdose or acute distress secondary to substance use disorder
- Multiple encounters leading to admission for surgical issues/complications
- Multiple encounters related to acute event
- Current resident of long-term care with skilled staff
  - Patients in assisted living may be included based on level of care provided, assessed need for additional services within that facility, and ability for community paramedic to practice within the facility

### **Inclusion**

- All patients are enrolled in VT OneCare Accountable Care Organization (ACO)
- Evidence of poor self-care including but not limited to:
  - Medication non-compliance
  - Recurrent falls
- Patients with a psychiatric diagnosis complicating multiple visits to ED for somatic complaints e.g. anxiety
- Chronic medical conditions including but not limited to:
  - Chronic Obstructive Pulmonary Disease
  - Congestive Heart Failure
  - Coronary Artery Disease
  - Diabetes Mellitus
- COVID Concerns
  - Community Paramedics have nuanced understanding of current COVID concerns within community and are well-positioned to assess anxiety or overuse of COVID testing resources

### **Examples of patients with nuanced inclusion based on criteria above**

- Patients with chronic medical issues complicated by substance use disorder:
  - Cyclic vomiting syndrome
  - Pancreatitis

### **Patient Enrollment Telephone Script**

## **Community Paramedicine Patient Enrollment Script**

*If you get the patient's voicemail:*

"Hello [patient's name], my name is \_\_\_\_\_ and I am calling on behalf of the University of Vermont Medical Center's Community Paramedicine program. You have been identified as a patient that could benefit from this free program the medical center is offering to help patients improve their health with home or telemedicine visits from a paramedic. If this is a service you are interested in, please call 802-XXX-XXXX and ask for XXX. Thank you for your time"

*If the patient picks answers:*

"Hello, my name is \_\_\_\_\_ and I am calling from the University of Vermont Medical Center, may I please speak with \_\_\_\_\_ patient name \_\_\_\_\_.

I am calling on behalf of the University of Vermont Medical Center's Community Paramedicine program. Do you have a few minutes to hear about this *free* program and how we may be able to help you maintain your health at home?"

*If no:*

"Is there a better time when a member of our team can call back to speak with you further?"

*If patient is not interested in contact with the Community Paramedicine program:*

"Thank you for your time, if in the future you are interested in receiving service from this program, feel free to contact XXX at 802-XXX-XXXX"

*If yes:*

"You have been identified as a patient that could benefit from follow up at home through the University of Vermont Medical Center's Community Paramedicine program. This is a *free* program that the hospital is offering to help patients [with their post-discharge recovery/improve their health]. Our Community Paramedic, XXX, works with both your primary care provider and other providers that you have seen to best coordinate the care you receive from UVMHC. Would you be willing to have our paramedic XXX help in your care?"

*If yes, "Would you prefer an in-home or telemedicine visit?"*

*If in home:*

“Great. XXX can provide a number of in-home services to help monitor your health and will be using all the appropriate protective equipment to keep you safe.”

*If patient has questions about what these services are:*

- Home safety assistance: This means that he can help with your home environment to best suit your daily living activities. He is trained to recognize dangers in your home you might not have noticed to help keep you safe.
- He will take a medical history and do a brief physical
- He will take your vital signs, including blood pressure, pulse, breathing rate and oxygen saturation. If any of your vitals are abnormal, he will figure out the best course of action to keep you healthy.
- He will do a medication reconciliation. This means that XXX will help make sure that you have a system in place to stay on top of taking all your medications.
- He can help you with discharge instructions. XXX will go over any discharge paperwork you have been sent home with to help manage your medical conditions and keep track of these important instructions.
- XXX will also arrange any follow-up appointments with primary care that you may need.”

*If the patient has questions about any of those options, here is a further breakdown of each category:*

- Home Safety:
  - Evaluation of steps, stairways and walkways (fall prevention) – find resources to repair issues
  - Handicap access evaluation
  - Windows and door evaluation
  - Room layout for fall prevention
  - Bathroom safety evaluation
  - Adequate lighting and ventilation
  - Fire/CO2 alarms
  - Food security evaluation
  - Necessities Assessment
  - Refrigerator/pantries have some food stock
  - House Hygiene Assessment
    - Is living environment relatively clean enough for patient to thrive

- File of life access
- Is your medication, allergy and health problem list readily accessible for first responders?
- Are your Advanced Directives readily accessible? Do you wish to talk about Advanced Directives?
- Medication Reconciliation
  - Does after visit summary match home medication list
  - Are home medications being taken on time?
    - If not, assess potential reasons for “non-compliance”
  - Are medications being stored appropriately
- Discharge Summary Review
  - Does the patient understand the discharge instructions?
  - Is the patient able to comply with the discharge instruction?
  - Are the patient’s recent discharge instructions and medical records readily accessible and organized?

*If telemedicine: (to a telemedicine visit)*

“Great! XXX can provide a number of services remotely, including a virtual home safety check, virtual medication review, and discharge instruction review.”

*If patient has gotten this far:*

“Do you have any questions about the Community Paramedicine program?”

*If yes, answer the questions.*

*If no:*

“XXX will be in contact with you in the next few weeks to schedule your first Community Paramedicine appointment. If you have any further questions, please feel free to reach out to us by phone at 802-598-0896. Thanks, and have a great day”

*(repeat phone number twice and slowly)*