

Supporting the on-call primary care physician with community paramedicine*

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Older adult patients in the United States account for 15% of emergency department (ED) visits and utilise emergency medical services (EMSs) at more than four

Abstract

Prior to being referred to the emergency department (ED), patients such as the frail elderly often call their primary care physician. However, the on-call primary care physician or covering provider does not always have the tools to make an accurate and safe assessment over the phone or to treat patients remotely. This often results in preventable transport to an ED, avoidable admissions and iatrogenic events. An opportunity exists to reduce unnecessary ED referrals by enhancing the capabilities of the on-call primary care physician. In this communication, we describe the development of a community paramedicine programme that supports on-call primary care providers managing a high-risk patient population with the goal of reducing avoidable ED referrals.

times the rate of younger patients. Once in the ED, they are more likely to be admitted, and have a higher risk for functional decline, institutionalisation and mortality following an ED visit.¹ In Australia, older patients who are discharged are more likely to re-present.²

Primary care physicians (PCPs) caring for older adults often face significant challenges when supporting these patients in the community and helping them to avoid hospitalisation. First, more than 15% of US adults aged 65 years and older are estimated to be frail and nearly 2 million are completely or mostly homebound.³ The World Bank estimates that at least 8% of the world's population is age 65 or older and according to the

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Commonwealth Fund, at least one of eight older adults across 11 countries report having three or more chronic conditions.⁴ Despite this, there has historically been little to no reimbursement for complex care coordination.

Perhaps most challenging is the so-called 'tyranny of the urgent', where patients with multiple chronic conditions are prone to acute complications and fluctuations in symptoms, that require frequent on-demand evaluation.⁵ Many primary care practices lack the support resources to handle acute complaints 24 h a day and 7 days a week. Canadian, Swedish, Norwegian and US respondents to the Commonwealth Fund International Survey of older people were the least likely to be able to get a same-day or next-day doctor's appointment when sick without using the ED.⁴

To address this, a growing number of home-based primary care groups provide urgent home visits.⁶ The Mount Sinai Visiting Doctors (MSVD) programme, for example, is a teaching, research and clinical care initiative that serves 1500 homebound elderly patients in New York City and performs more than 6000 urgent and routine home visits each year. Despite this, patients often perceive that primary care offices or on-call PCPs lack the tools to address urgent conditions. Although there is a shift in the United States and elsewhere towards realigning health-care finances with improved outcomes rather than the quantity of care provided, a significant number of MSVD's homebound patients are still frequently – and often unnecessarily – transported to the ED despite having access to this high-quality home-based primary care programme.⁷ This is evidenced by the 842 ED visits and 482 admissions by MSVD patients in 2015.⁸

Thus, both actual and perceived gaps in care lead to potentially avoidable ED visits and hospitalisations, resulting in fragmented care for older patients and increased costs to health systems worldwide. An opportunity exists to reduce unnecessary ED referrals by enhancing the capabilities of the on-call PCP.

To address this health challenge in the United States, MSVD worked with partners in EMS to create a community paramedicine (CP) programme in September 2015. CP programmes such as this one, sometimes also known as mobile integrated healthcare, aim to keep patients in their home through delivering personalised care in a coordinated effort between paramedics and physicians. Internationally, CP programmes have been described for the past 10 years. Although few randomised controlled trials exist, systematic reviews of existing CP programmes in the UK, Australia and Canada demonstrate that paramedics can safely practice with an expanded scope and improve system performance and patient outcomes.⁹ These programmes are part of a growing movement that has long been envisioned by EMS leaders and has recently gained traction in the United

States.^{10,11} Because laws and regulations in some US states are highly restrictive, preventing the expanded practice paramedic model described by Bigham *et al.*,⁹ the Mount Sinai CP (MSCP) pilot programme focuses on filling a gap in the management of urgent complaints in a coordinated manner with the primary care team.

Serving both the MSVD programme as well as Mount Sinai's hospitalisation at home programme (HaH), the programme is initiated when an MSVD or HaH patient calls the office with a potential emergency. The on-call physician can opt to dispatch a non-911 EMS unit staffed with specially trained paramedics to evaluate the patient at home. With the help of telemedicine technology, certified paramedics participate in real-time consultation with the physician to coordinate the care and treatment of the patient. Finally, the physician and the patient participate in a shared decision-making conversation to determine whether or not transport to the ED is warranted (Fig. 1).

Prior to participating in the MSCP programme, physician and paramedics underwent specialised training. Mount Sinai worked with the local Regional Emergency Advisory Committee to develop a unique certification programme enabling PCPs to participate in EMS real-time oversight via telemedicine. Approximately 18 PCPs completed the certification process, which consisted of formal didactics, a written exam and observation time with EMS physicians giving telephone orders to paramedics.

As paramedics did not change their scope of practice, there were no formal certifications required; instead we created a 16-h course that included didactics and clinical experiences, and familiarised paramedics with the different contexts in which they would be providing care. The decision to maintain paramedics' scope of practice allowed quicker implementation of the pilot programme and compliance with state regulations that limit their ability to participate in non-emergency care. As a consequence, the model presented here is highly generalisable to EMS systems across world even in jurisdictions with restrictive regulatory policies.

The MSCP programme was activated 36 times during the 5-month pilot period for patients who contacted the PCP with an acute change in condition. In a survey administered after each patient encounter, 89% of physicians rated the intervention as 'very helpful' or 'helpful' and 94% said that having the paramedic on scene strengthened confidence in the clinical assessment. One physician reported, 'It was helpful to have another tool in our toolbox when we were on call'. Another said, '(Community paramedicine) significantly improves our ability to safely treat patients with acute medical conditions at home'. In addition, 87% of paramedics felt comfortable leaving the patient at home after the assessment.

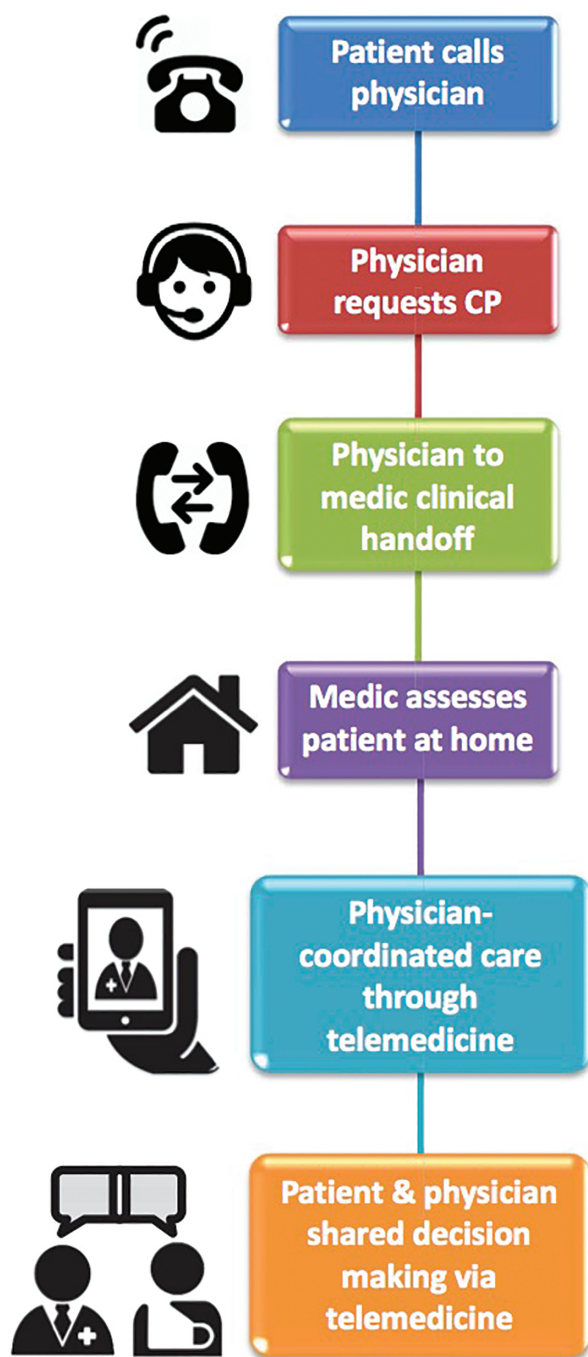


Figure 1 Schematic description of the flow of the Mount Sinai community paramedicine (CP) programme. When a patient calls their primary care provider with an urgent need, the physician is able to request a CP assessment. After the assessment is performed on-site, the physician, paramedic, patient and caregivers determine whether an emergency department visit is warranted.

Furthermore, the programme initially appears to be highly effective in decreasing the number of ED visits. Of the 36 patient encounters, only five encounters led to

patients being transported to the ED. After each encounter, physicians were asked if in the absence of this programme they would have recommended transport to the ED, and in 23 instances (64%) they said yes. Although a more formal utilisation review and cost analysis is planned, it would seem that the programme was highly successful in keeping patients at home.

Discussion

Despite the prospect of CP offering important benefits to on-call PCPs, several barriers exist to disseminating this type of programme. First, the certification process for PCPs to provide orders to paramedics is often lengthy and burdensome. While preserving standards for medical oversight is important, so too is finding a more flexible model to involve the PCP in providing coordinated care to their patients.

Furthermore, there may be additional regulatory challenges related to the scope of practice for EMS personnel depending on the nature of the programme desired. In New York State, for example, paramedics are limited to urgent care and cannot participate in preventative primary care services as they can in other regions both domestically and internationally. There is a definite need for PCPs to use their influence in shaping public policy to better align regulations governing EMS with the needs of patients in the community.

A particularly large barrier CP faces is reimbursement. Typically, EMS in the United States is not reimbursed unless a patient is transported to an ED.¹² As a result, most CP programmes do not receive reimbursement from traditional healthcare payers and are currently reliant on grant funding to support programme development. PCPs should consider integrating CP into their practices and work with EMS to build the economic case for dissociating assessment from transportation.¹³ By contrast, the UK, spent more than 5 million dollars investigating new approaches to allow EMS personnel to safely care for patients in their homes such as CP or improved telephone triage. These changes enabled them to reduce ED transport rates from 90% in 2000 to 58% in 2012.¹⁴ Many examples of similar initiatives help provide a strong case for both expanded scope for paramedics in the community and improved reimbursement for care provided in the home.

Addressing the complex needs of patients, especially homebound elderly patients with high-utilisation patterns, is a national priority, especially given that CP programmes internationally have been shown to reduce cost and receive high patient satisfaction. CP allows these patients to receive care in their preferred location and avoid the potential risks of hospitalisation while empowering the on-call PCP to support their patients having acute symptoms. CP has the potential to both relieve

overburdened healthcare delivery systems and prevent unnecessary utilisation of EDs by the elderly, thus supporting the triple aim of improving patient satisfaction, improving patient care and reducing cost.

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