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Population Health Advisor

Community Paramedicine

Case Profiles of Successful Care Models

May 2015

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Making the Case for Community Paramedicine

Project Overview

Introduction to Community Paramedicine

For many organizations assuming population health risk, a central challenge is scaling the care team. This can be especially true for meeting the care needs of frequent ED users, recently discharged patients, and/or at-risk patient populations who lack access to primary care or adequate insurance coverage for home care services.

To fill these care gaps, many health organizations have begun partnering with local EMS providers. These partnerships aim to provide patient-centered in-home health care services to underserved populations as a means of improving access to care, diverting 911 callers to care settings outside the ED when appropriate, and reducing readmissions. A subset of these EMS partnerships that are using "upskilled" or advanced practice paramedics in nontraditional roles is broadly categorized as "community paramedicine."

Community paramedics generally have extensive experience as EMTs or paramedics and undergo additional training to equip them to operate in an expanded role. The responsibilities of community paramedics may vary depending on the community's needs, but generally involve connecting at-risk patients to critical resources and addressing existing gaps in services within the community.

About this Project

This research brief provides case study profiles for developing a community paramedicine program. Case profiles focus on a variety of key elements, including:

- Patient eligibility criteria
- Referral pathways
- Program staffing and training
- Staff deployment (e.g., roles and responsibilities)
- Program impact
- Funding

Overview of Project and Research Methodology

Research Methodology

The Population Health Advisor team conducted a literature review to identify established community paramedicine programs and mobile integrated health care practices. The team interviewed stakeholders from the identified organizations with models demonstrating positive outcomes.

Profiled organizations were selected to represent a broad range of programs that demonstrate innovative staffing, partnerships, and patient management processes.

Advisors to Our Work

With Sincere Appreciation

The Population Health Advisor team would like to express its deep gratitude to the individuals and organizations that shared their insights, analysis, and time with us. The research team would especially like to recognize the following individuals for being particularly generous with their time and expertise.

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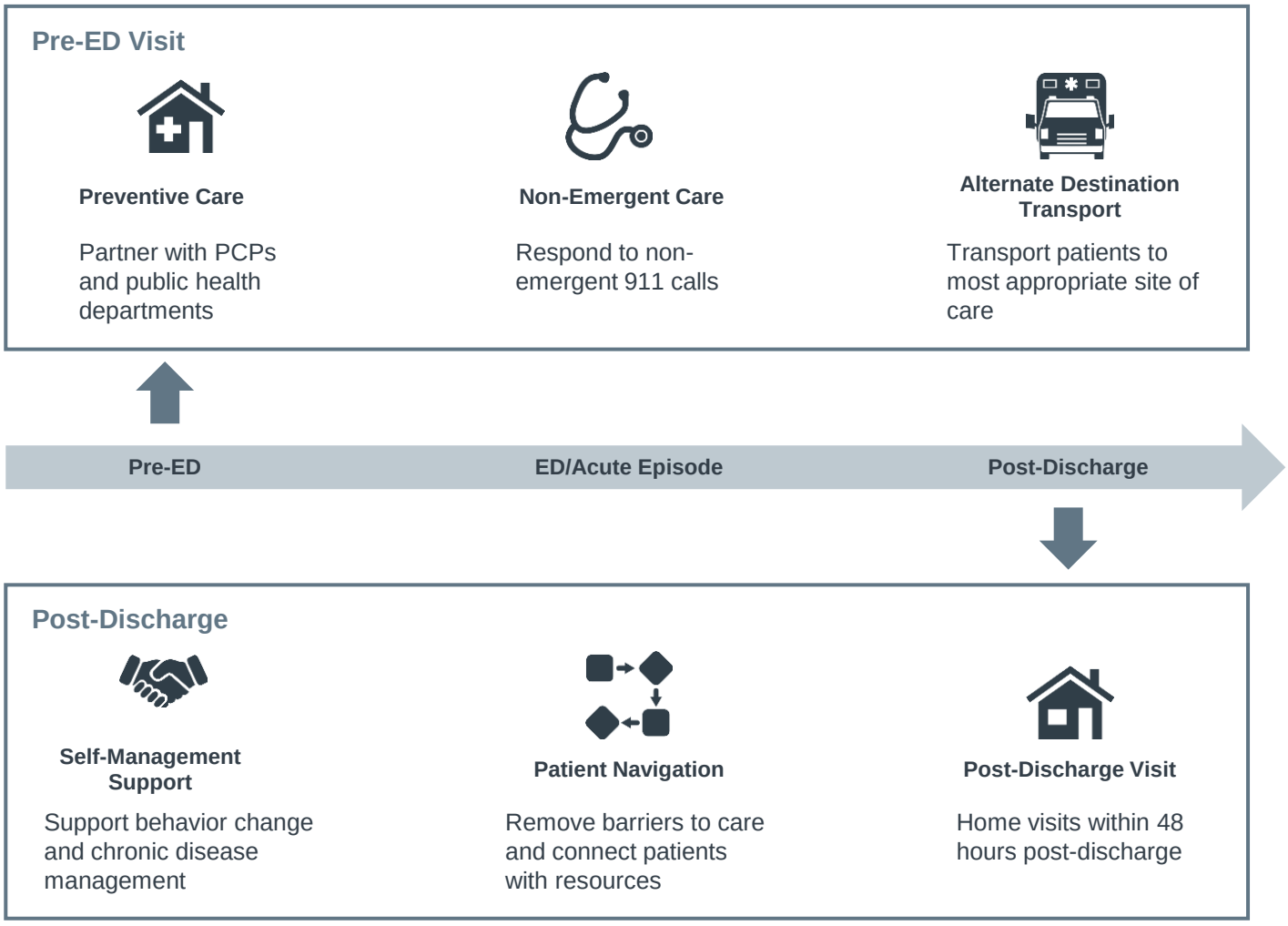
Community Paramedics Cover Wide Range of Services

Programs Designed to Prevent Initial or Recurring Escalation of Care

Community Paramedic Services Before and After Acute Episodes



Key Considerations for Developing a Community Paramedicine Program

1. In determining which services to provide through community paramedicine, identifying gaps in existing community health services and resources is a first priority. The design of the community paramedic role and associated service provisions must be based on clear community health needs.
2. Coordinating with stakeholders across the health organization, from ED case managers to primary care practice staff, on identifying appropriate patients for community paramedic program services increases the number of eligible patients who can be referred to the program and helps ensure that the program maximizes its reach.
3. It is not always necessary to hire additional staff for a community paramedic program. Many programs leverage existing paramedic staff time or partner with fire departments who have excess staffing capacity to fill the community paramedic role.
4. A community's payer mix is critical to a program's financial sustainability. Programs that target uninsured and/or risk-based patient populations are more likely to benefit from reductions in cost and utilization. Thus, these programs may be better positioned for financial sustainability than those that aim to serve all patients regardless of payer source.

Services Provided at Profiled Programs

	Pre-ED Visit Services			*Post-Discharge Services*		
	Preventive Care	**Non-emergent Care**	**Alternate Destination Transport**	**Post-Discharge Visit**	**Patient Navigation**	**Self-Management Support**
Scott County Health Care Collaborative	✓					
Eagle County Paramedic Services	✓	✓		✓	✓	✓
North Shore-LIJ Health System		✓				
Regional Emergency Medical Services Authority (REMSA)		✓	✓	✓		✓
Wake County EMS			✓	✓	✓	✓
Park Nicollet Methodist Hospital				✓		
Allina Health System				✓		
MedStar Mobile Healthcare				✓	✓	✓
New Hanover Regional Medical Center				✓	✓	✓
Abbeville County Emergency Services				✓	✓	✓
Baylor Medical Center at McKinney				✓	✓	✓

Summary of Community Paramedicine Programs

Organization	Target Patient Population	EMS Affiliation	Primary Program Services	Results
Scott County Health Care Collaborative	Uninsured and underinsured patients	Municipal EMS System	Mobile clinic provides primary care services, connects patients to resources Community paramedics assist with immunizations, health screenings	50-75% of patients who visit the mobile clinic are successfully connected to area medical homes
Eagle County Paramedic Services	• Mental health patients • New mothers • Patients lacking access to primary care	Municipal EMS system	Community paramedics perform post-discharge home visits Community paramedics assist mental health patients in crisis or in need of assistance Community paramedics provide check-ups for all infants in county at 48 hours and 6-months after birth Community paramedics participate in yearly vaccination project	Calculated $412K net health care cost savings over 3 year period, after accounting for community paramedic program costs
North Shore-LIJ Health System	Homebound, mostly elderly, patients with multiple chronic conditions and functional impairment	Health-system owned	Community paramedics provide physician extender services using telemedicine in patient homes	Estimated $2.1M cost savings after first year
Regional Emergency Medical Services Authority (REMSA)	• All patients eligible for transport to alternative destinations • High ED utilizers • CHF, post-cardiac surgery, post-MI, pneumonia, and COPD patients at high risk of readmission	Independent EMS provider	EMT and paramedic staff transport clinically eligible patients to alternative destinations (e.g., urgent care centers, clinics, community triage center, mental health hospital, substance abuse facility, etc.) with patient consent Community paramedics perform post-discharge home visits for high-risk patients for up to 30 days post-discharge	In the program's first year, reductions in readmissions, ED visits, and ambulance transports from community paramedic visits yielded an estimated cost savings of $1.6M
Wake County EMS	• Mental health and substance abuse patients • High 911 utilizers • CHF and diabetes patients at high risk of readmission	Municipal EMS system	Advanced practice paramedics (APPs) screen patients with mental health and substance abuse issues and offer transport to mental health or substance abuse facilities APPs work with a multidisciplinary team to monitor diabetes and CHF patients and support patient self-management	Of a sample of 25 APP assigned patients, 72% experienced a decrease in ED visits, and total ED visits dropped 34% from 641 to 424 between 2012 to 2014, representing a cost savings of approximately $325K
Park Nicollet Methodist Hospital[1]	All patients discharged from hospital to one of five participating cities, excluding hospice and new mothers	Municipal fire-department-based EMS system	Firefighter EMTs conduct post-discharge home visits within 24 hours of discharge to smooth transition home and prevent potential readmissions	99% of patients would recommend an EMT post-discharge home visit to a family member or friend, and 96% reported feeling more confident in their self-management of medications

1) Program utilizes EMTs rather than paramedics, and is designated as a mobile integrated health care program.

Source: Population Health Advisor research and analysis; additional sources in case profiles and appendix.

Summary of Community Paramedicine Programs (continued)

Organization	Target Patient Population	EMS Affiliation	Primary Program Services	Results
Allina Health System	• Mental health patients • High ED utilizers • Seniors • CHF, COPD, and diabetes patients at high risk of readmission	Health-system owned	Mental health patients provided with transportation to follow-up appointments Community paramedics provide post-discharge home visits within 48 hours and sometimes an additional follow-up visit	For all patients who had frequent ED visits over the previous 30 days, 78% do not return to the ED within the next month. Medicare 30-day readmission rates for CHF, COPD, and diabetes patients in the program is 5%, compared to national average of 18.4%
MedStar Mobile Healthcare	• High 911 utilizers • CHF patients at high risk of readmission • Patients considered for observational admission • Patients at risk of hospice revocation	Independent EMS provider	Community paramedics conduct home visits over 30-90 days to support self-management of conditions and address barriers to care	$2.5M ROI since program inception from reduced ambulance transports, ED visits, and admissions
New Hanover Regional Medical Center	• High ED utilizers • CHF, COPD, pneumonia, and stroke patients at high risk of readmission	Hospital-owned EMS system	Community paramedics perform home visits for up to six weeks with high-risk patients, focusing on chronic disease management and community resource navigation	9.3% 30-day readmission rate for CHF patients after initial pilot program, compared to 19.3% CHF readmission rate prior to program launch
Abbeville County Emergency Services	• High ED utilizers • CHF, COPD, diabetes, and hypertension patients at high risk of readmission	Municipal EMS system	Community paramedics perform home visits to support patient self-management for three months on average	Of the 51 patients enrolled in the program for at least 3 months, ED utilization and visits decreased by 64% and 42% respectively. Of 28 patients with hypertension, systolic and diastolic blood pressure decreased by an average of 6% and 4% respectively. Of 14 patients with diabetes, average blood glucose levels decreased by 31 points
Baylor Medical Center at McKinney	• High 911 utilizers • All CHF, COPD, pneumonia, and other patients at high risk of readmission	Municipal fire-department-based EMS system	APP firefighters perform scheduled home visits to remove barriers to care and assist patients with self-management of their conditions	In its first year, the program saved $4,295 per patient in direct costs to the hospital and reduced indigent/underinsured gross revenue charges by $585,832

Source: Population Health Advisor research and analysis; additional sources in case profiles and appendix.

Mobile Clinic Increases Primary Care Access

Community Paramedics Travel to Rural Areas within County

Case in Brief: Scott County Health Care Collaborative

- Partnership involving Scott County Public Health, Mdewakanton Sioux Community, and Faith Communities of Scott County, located in Minnesota, and launched in 2007
- **Challenge**: Uninsured and underinsured patients within the rural community had difficulty accessing services and establishing a relationship with a primary care medical home
- **Solution**: Mobile clinic staffed by providers, community paramedics, and community nurses, provides wellness check-ups and identifies primary care medical homes for patients
- **EMS Affiliation:** Municipal EMS system
- **Payer Mix:** Most patients seen in mobile clinic are uninsured or underinsured (exact percentages unavailable)
- **Results:** 50-75% of patients that visit the clinic are subsequently connected to area medical homes

Programmatic History

State Grant Funds First Community Paramedicine Program in MN

- Scott County first piloted the mobile clinic community paramedicine program in 2007 with a grant from the state of Minnesota's Office of Rural Health and Primary Care
- The mobile clinic program was designed to increase access to primary care for the Scott County rural community's uninsured and underinsured patients. In addition, a number of Scott County patients experienced cultural and/or language barriers to care
- Patients of the mobile clinic connected to medical homes in the community for ongoing care

Patient Eligibility and Identification Process

Focus on Uninsured and Underinsured Patients

- All patients who visit the mobile clinic are eligible for services, but the program primarily targets the community's uninsured and underinsured populations, including:
  - Immigrant families
  - Young uninsured
  - Elderly patients with multiple chronic conditions

Patient Referral Pathways

Community Outreach Spreads Awareness of Mobile Clinic, Services

- The mobile clinic program promotes its services throughout the community in several ways, including:
  - Postings within community workforce center where patients receive aid and services
  - County monthly newsletter
  - Website
  - Word of mouth through religious and ethnic organizations in the community

Source: Population Health Advisor research and analysis.

Community Paramedics Integrated in Multidisciplinary Team

Also Participate in Public Health Initiatives

Program Staffing

Multidisciplinary Team Staffs Mobile Clinic

- The mobile clinic is staffed by physicians, two public health nurses, one volunteer, and four community paramedics
- Mobile clinic is available to patients once per week for six hours, with an average of 14-20 patients seen per session
- Medical van visits one of five areas within Scott County every other week. Once per month, the clinic visits the public health campus at Shakopee to see patients that are already there to obtain assistance with food, employment, and other needs
- One community paramedic and up to two community paramedic students work with each provider at a time on patient care
- Community paramedics trained at Hennepin Technical College, completing 114 didactic hours and 196 clinical hours for certification

Staff Deployment (e.g., Roles, Responsibilities)

Mobile Clinic Delivers Primary Care and Public Health Services to Rural Population

Primary Care Services

- Community paramedics collect patients' histories, including medical history and social assessments. They also perform medication reconciliation for each patient
- Nurses at the mobile clinic help connect patients with a medical home to boost their access to primary care services
- Most patients (50-75%) are connected to medical homes through MNSure and switch providers after visiting the mobile clinic. However, some patients that have difficulty obtaining medical insurance for legal reasons (e.g., elderly immigrants currently sponsored by their children and are ineligible for Medicare) may continue to visit the clinic for years

Public Health Initiatives

- The mobile clinic occasionally assists with county public health initiatives, including immunizations and health screenings. Community paramedics staff the clinic and work with patients during these initiatives

Program Impact

50-75%

Percentage of patients who visit the clinic that are subsequently connected to a primary care medical home in the area

Funding

Initial funding for the program provided by a grant from the state of Minnesota's Office of Rural Health and Primary Care. Current funding for community paramedics provided by Scott County

Minnesota's Medicaid program reimburses up to $15 per 15 minute unit for community paramedic services[1] and pays for supplies at a clinic level of reimbursement

1) "Minnesota's Community Paramedic Services State Plan Amendment," Feb. 2013. Available at: http://www.medicaid.gov/State-resource-center/Medicaid-State-Plan-Amendments/Downloads/MN/MN-12-016-Att.pdf; Minn. Stat. 256B.0625, subd. 60 (authorizing Medicaid reimbursement for community paramedic services).

Source: Population Health Advisor research and analysis.

Rural Program Provides Diverse Range of Services

Multiple Referral Sources Allow Program to Assist Patients Across Community

Case in Brief: Eagle County Paramedic Services (ECPS)

- EMS organization located in Eagle County, Colorado, that provides 911 services, medical support, and community paramedicine services to a rural community of 50,000 year-round residents
- **Challenge**: ECPS ambulances were regularly responding to patients with complications that could have been avoided, and to calls that while medical in nature, were not true emergencies
- **Solution**: ECPS implemented community paramedicine program that includes wellness check-ups, behavioral health check-ins, primary care physician referrals, and check-ups for all newborns
- **EMS Affiliation**: County-funded EMS Service
- **Payer Mix**: 80% Medicare/Medicaid, 2% private insurance, 18% uninsured
- **Results:** $412K net health care cost savings over 3 year period, after accounting for community paramedic program costs; Medicaid hospital readmission rates decreased from 4% to 1% after implementation of community paramedicine program

Programmatic History

Local Community Organizations Collaboratively Launch Program

- Initial funding for 2010 pilot program provided by the Colorado Department of Health and Environment, the Colorado Health Foundation, the Caring For Colorado Foundation, and Eagle County
- ECPS partnered with Colorado Mountain College to develop community paramedicine curriculum to train paramedics for new roles and responsibilities

Patient Eligibility and Identification Process

Program Targets Patients Without Access to Care

- While there are no eligibility requirements to enter the program, the program targets patients who lack access to primary care
- Given the high geographic elevation of Eagle County, there is a low incidence of chronic conditions in this community and thus, the program does not focus on providing care management

Patient Referral Pathways

Multiple Pathways for Referrals

- Most patients are identified for program by nurses and front desk staff at local primary care practices
- EMS also identifies potential program participants when entering homes on emergency calls
- Participants can also be referred into program by EMS, hospitals, home care, hospice, HHS, and Adult Protection Services
- Community paramedics will identify the needs of all patients referred into the program and determine the most appropriate course of care
- If EMS is called for a mental health emergency, community paramedics communicate with local PCPs to determine proper course of treatment
- All enrollments require a signature from a physician in Eagle County

Source: Population Health Advisor research and analysis.

Small Team Deployed Across Multiple Programs

Mental Health Patient Support and Infant Check-Ups Included in Responsibilities

Program Staffing

Additional Education Important for Added Responsibilities

- Program utilizes 1 FTE out of a maximum allotment of 1.2 FTE
- 4 trained community paramedics on staff
- Program averages between 4-8 patient home visits per week per community paramedic
- Approximately 200 patients received home visits in 2014
- Community paramedics complete 12-week didactic college course, 32 hours of lab sessions, and 150 hours of clinical practice, in addition to traditional paramedic training
- ECPS coordinates with local clinic to provide clinical trainings to community paramedics

Staff Deployment (e.g., Roles, Responsibilities)

Community Paramedics Provide Variety of Services

Community Paramedics Assist Patients at Home

- Community paramedics provide hospital discharge follow-up visits, blood draws, medication reconciliation, and wound care, as necessary
- Number of home visits/follow-ups depends on patient needs
  - Patients needing medication adjustments may only require one visit
  - Patients that need continuous support but do not qualify for homecare may never graduate from program
- Community paramedics can provide bed-side lab results with mobile lab
- Home evaluations and safety checks are conducted to assess risk factors that are not evident during office visits

Non-traditional Roles of Community Paramedics

- Community paramedics can be deployed to the home of a mental health patient in crisis or if a mental health counselor has reason to believe a patient may need assistance
- Community paramedics provide check-ups for every infant in Eagle County at both 48 hours and six months after birth
- Community paramedics participate in yearly vaccination project

Program Impact

$412K

Calculated net health care cost savings over 3 year period, after accounting for community paramedic program costs

28

Ambulance transports avoided in 2014 resulted in approximately $150,000 in savings

Funding

$90K

Eagle County Paramedic Services' community paramedicine program operates on an annual budget of $90,000 from funding received from Eagle County

Source: Population Health Advisor research and analysis.

Home-Bound Seniors Targeted For Primary Care Services

Community Paramedics Extend Physician Reach to Patient Homes

Case in Brief: North Shore-Long Island Jewish (LIJ) Health System

- Integrated health system based in Great Neck, New York, with 18 hospitals, home care, hospice, SNF, and rehab facilities, as well as a range of outpatient services. North Shore's Center for Emergency Medical Services has over 600 EMTs and paramedics on staff and receives over 135,000 requests for service each year.
- **Challenge**: Seniors with multiple chronic conditions with functional impairment have frequent deteriorations in health status and have difficulty getting to traditional outpatient primary care and specialty services, leading to a reliance on ambulance transport, ED and hospital care
- **Solution**: Community paramedics integrated into existing House Calls program to provide physician extender services within the homes of seniors requesting assistance
- **EMS Affiliation:** Health system-owned EMS system
- **Payer Mix:** All patients served by community paramedicine are covered by Medicare or Medicare Advantage
- **Results:** Estimated $2.1 million cost savings after first year

Programmatic History

Existing House Calls Program Enhanced Through Community Paramedic Visits

- North Shore-LIJ provides primary care for home-bound seniors through its House Calls program. The House Calls program was looking for a way to support patients with symptom exacerbation or other needs after business hours. These identified needs led to the integration of community paramedics with the House Calls program.

Patient Eligibility and Identification Process

House Calls Program Serves Homebound Patients in Community

- Patients within the House Calls program have multiple chronic conditions and functional impairment
  - Average age is 87 years old
  - 65% of patients have 5-6 activities of daily living (ADL) dependencies
  - Common conditions include dementia, diabetes, CHF

Patient Referral Pathways

Call Center Triages Patient Requests and Dispatches Community Paramedics

- Patients with exacerbations of their conditions or other medical needs call a 24/7 clinical triage call center
  - Triage nurses ask the patient a set of questions and apply a de-escalation algorithm to determine the level of care needed for the patient
  - Triage nurses also consult the on-call provider to determine the appropriate level of care when needed
  - A patient may receive transport to the ED, a community paramedic visit, or over-the-phone support after calling

Source: Smith, K., et al., "I Am Worried, Can you Send Someone to See My Mom?" Community Paramedicine Insights Forum, December 2014. Available at: http://cpif.communityparamedic.org/Portals/CPIF/Recordings/2014/Dec2014/lib/playback.html; Population Health Advisor research and analysis.

Telemedicine Provides In-Home Medical Oversight

Real-Time Integration with Care Team Allows for Complex Patient Management

Program Staffing

Community Paramedics Use Available Time to Make House Calls

- House Calls program staffed by physicians from hospice, family medicine, and internal medicine, 11 NPs, social workers, medical coordinators, nursing staff, and community paramedics
- 40 total community paramedics in North Shore's Center for Emergency Medical Services perform their regular duties and respond to house call patients during any excess time
- Across the program, paramedics make 2-5 total visits per day
- Community paramedics available 24/7 for home visits, but cannot perform scheduled visits due to New York state regulations
- Internally developed training for community paramedics provides an additional 40 hours of instruction beyond the critical care paramedic requirements

Staff Deployment (e.g., Roles, Responsibilities)

Telemedicine Enables Community Paramedics to Provide Physician Extender Services in Home

Physician Extender Services

- Community paramedics use telemedicine devices, including a video conferencing device, to connect patients with a physician and a nurse. The three-way conference lasts approximately five minutes. Real-time medical control allows for immediate care plan modification
- Community paramedics stay within scope of practice of critical care paramedics, as required by New York state regulations. Tasks performed within patient homes without transport include medication administration, pain management, burn care, and diagnostics (e.g., blood glucose, vital signs, environmental assessment)

Program Impact

$2.1M

Estimated cost savings in avoided admissions, ED visits, and ambulance transports that were not medically necessary or preventable, as a result of community paramedicine program in one year

Funding

Funding is currently supported by North Shore-LIJ Health System with planned cost savings from risk-based populations, including patients in the system-owned health plan.

Source: Smith, K., et al., "I Am Worried, Can you Send Someone to See My Mom?" Community Paramedicine Insights Forum, December 2014. Available at: http://cpif.communityparamedic.org/Portals/CPIF/Recordings/2014/Dec2014/lib/playback.html; Population Health Advisor research and analysis.

Three Integrated Programs Reduce Inappropriate ED Use

Different Patient Populations Supported by Each Intervention

Case in Brief: Regional Emergency Medical Services Authority (REMSA)

- Nonprofit EMS organization based in Reno, Nevada, that serves as the exclusive ground and helicopter ambulance provider for Washoe County. REMSA works with local fire departments and four area medical centers
- **Challenge**: REMSA set a goal of reducing total patient cost of care by $10.5 million over three years for Washoe County patients
- **Solution**: REMSA implemented three Community Health programs: a nurse health line, ambulance transport alternatives, and community paramedic home visits
- **EMS Affiliation:** Independent EMS company
- **Payer Mix:** Community Paramedicine: 69% Medicare, 11.1% self-pay, 11.1% commercial, 7.9% Medicaid, 0.9% other; Ambulance Transport Alternatives: 42.8% Medicaid, 33.5% self-pay, 18% Medicare, 4.6% commercial, 1% other
- **Results:** In the program's first year, reductions in readmissions, ED visits, and ambulance transports from community paramedic visits yielded an estimated cost savings of $1.6 million

Programmatic History

HHS Grant Spurs Community Health Programs and Partnerships

- In 2012, REMSA was awarded a $9.9M Health Care Innovation Award from the U.S. Department of Health and Human Services to carry out its Community Health Early Intervention Team programs
- REMSA leveraged existing partnerships with the University of Nevada-Reno School of Community Health Sciences, Washoe County Health District, State of Nevada Office of EMS, and local hospital systems to implement programs
- Community Health Early Intervention Programs include the Nurse Health Hotline, Ambulance Transport Alternatives, and Community Health Paramedics

Patient Eligibility and Identification Process

All Patients Eligible for Transport Alternatives

- All patients are eligible for transport to alternative destinations (e.g., urgent care centers, clinics, detox facilities, mental health hospital)
- Patients are prioritized for community paramedicine interventions according to their ED utilization and disease condition:
  - Superutilizer patients with 12 or more ED visits in a year
  - Frequent utilizer patients with 4 or more ED visits in a year
  - Targeted disease states include CHF, post-cardiac surgery, post-MI, pneumonia, and COPD

Patient Referral Pathways

Post-Discharge and Primary Care Referrals Engage Patients Across the Continuum

- Calls to REMSA's Nurse Health Hotline can lead to a community paramedic visit if the patient's concern cannot be resolved telephonically
- Area hospitals refer discharged patients with eligible conditions and are at risk for readmission to the hospital or who have high 911 utilization to receive community paramedic visits
- Physicians may refer patients to Nurse Health Hotline for after-hours evaluation or directly to the community paramedicine program for a home visit

Source: Population Health Advisor research and analysis; additional sources in appendix.

Promoting Lower-Acuity Care Settings Yields Cost Savings

Post-Discharge Follow-Up Also Reduces Avoidable Utilization

Program Staffing

Initial Community Paramedic Training Shortened for Efficiency

- 9 grant-funded community health paramedics
- Community health paramedics received training through a course affiliated with the University of Nevada-Reno. The first group received 500 hours of additional training but the training was subsequently reduced to 200 hours when an evaluation showed that the initial training included unnecessary components

Staff Deployment (e.g., Roles, Responsibilities)

All EMTs Provide Diversionary Services, Community Health Paramedics Perform In-Home Assessments

Diversion of Non-Emergency Patients to Alternate Destinations

- All EMT and paramedic staff trained in advanced screening protocol to determine if patients are clinically eligible to be transported to an alternative destination (e.g., urgent care centers, clinics, community triage center, mental health hospital, substance abuse facility, etc.)
- Currently 15 alternative destinations identified for REMSA patients
- In all cases, the EMT staff obtain patient consent

Post-Discharge Follow-Up For Program Enrollees

- Community health paramedics perform an intake assessment for all patients enrolled in program
- Community health paramedics typically visit patients 2-3 times per week for up to 30-days post-discharge
- Aim to enhance patient understanding and adherence to medical care plan, perform medication reconciliation and point of care lab tests, and provide personal health literacy support, if needed
- Current care protocols available for CHF, post-cardiac surgery, post-MI, pneumonia, and COPD

Program Impact

$1.6M

Approx. cost savings from reductions in readmissions, ED visits, and ambulance transports from community paramedic visits between June 2013 and June 2014

$2M

Approx. cost savings from alternate destination transport program between Dec. 2012 and June 2014

Funding

$9.9M

Funding for all community health programs implemented by REMSA came from a HHS Health Care Innovation Award

Program leaders are currently working on developing outside reimbursement with various payers and hospital partners to sustain the program when grant funding runs out in 2015

Source: Population Health Advisor research and analysis; additional sources in appendix.

Advanced Practice Paramedics Avert Unnecessary Utilization

Behavioral Health Patients Directed to Most Appropriate Site of Care

Case in Brief: Wake County Emergency Medical Services (EMS)

- EMS organization in Wake County, North Carolina, that partnered with Duke Raleigh Hospital, other providers, Community Care of Wake and Johnson Counties (CCWJC), one of 14 networks within Community Care of North Carolina[1] that provides population health services for Medicaid, Medicare, and commercially-insured populations, and Capital Care Collaborative (CCC), CCWJC's sister organization for the uninsured population
- **Challenge:** Across North Carolina, a shortage of psychiatric beds and funding for community programs led to increased calls from mental health patients to EMS providers for transport to medical EDs. This inappropriate utilization of health care resources increased cost of care for the population and strained medical ED resources.
- **Solution:** Wake County EMS developed the Advanced Practice Paramedic (APP) program in which specially trained paramedics provide a range of home-based services for high-risk patients and divert behavioral health patients away from medical EDs based on screening protocols and a close collaboration with community partners
- **EMS Affiliation:** Municipal EMS system
- **Payer Mix:** Primarily Medicaid
- **Results:** Of a sample of 25 APP-assigned patients, 72% experienced a decrease in ED visits, and total ED visits dropped 34% from 641 to 424 between 2012 to 2014, representing a cost savings of approximately $325K[2]

Programmatic History

Multi-Stakeholder Collaboration Leads to Program Implementation

- In 2009, Community Care of Wake and Johnson Counties (CCWJC) initiated this collaboration with the Wake County community paramedicine program as part of its comprehensive plan to improve health outcomes and decrease costs for its patient populations

Patient Eligibility and Identification Process

Protocols to Divert High-Risk Behavioral Health Patients Away From ED and Hospital

- All mental health and substance abuse patients are eligible for diversion directly to a mental health facility based on screening protocol
- APP support eligibility determined by number of ambulance calls (4 times in any rolling 30-day time period) or by staff referral (based on observation or whether the patient has been recently discharged)

Patient Referral Pathways

Patients Referred Automatically and by Community Partners, EMS Staff

- Patients are referred in one of three ways for APP support:
  - Automated referral based on number of ambulance calls (4 times in any rolling 30-day time period)
  - Referrals from other community partners and hospital groups (includes recently discharged patients for care and coordination support to reduce readmissions)
  - Referral from EMS staff based on observation

1) Statewide nonprofit.
2) Methodology did not account for possible reduction in avoided inpatient admissions as a result of proper mental health treatment.

Source: Population Health Advisor research and analysis.

APPs Collaborate with Area Providers, Update Care Plans

APP Monitoring Reduces Downstream Utilization of High-Risk Patients

Program Staffing

APP Coverage Spans County

- 16 FTE APP positions staff five teams during the day and two at night, with two supervisor positions
- Patients are typically assigned geographically to an APP for monitoring visits, but all APPs have access to information for the full panel for emergent cases that may arise
- APPs split their time roughly evenly between responding to 911 calls, monitoring high-risk patients, and quality management tasks
- APPs receive 200 hours of lecture-based and clinical instruction prior to serving as APPs

Staff Deployment (e.g., Roles, Responsibilities)

APPs Incorporated into Multi-Disciplinary Care Teams, Connect Patients to Appropriate Services

Diversion of Mental Health Patients to Appropriate Facilities

- APPs screen patients who have mental health or substance abuse issues as their primary complaint. Those who pass the medical screening protocol are eligible to be transferred directly to a community mental health or substance abuse facility rather than the ED
- In all cases the APP completes a phone consultation with personnel at the appropriate facility for potential placement. Law enforcement or EMS may provide transport to these locations, where the APP completes their care with a face-to-face report to the mental health facility personnel

High-Risk Patient Monitoring

- APPs work with a multi-disciplinary care management team[1] to monitor diabetes and CHF patients, who may also have medication adherence and/or behavioral health issues. The team educates these patients, conducts medication reconciliation, and makes sure they understand their care plans and disease-specific red flags
- The multidisciplinary team provides feedback to primary care, specialty, and hospital providers on what their home situation is like and whether there are any additional barriers to care that providers may not have known about beforehand

Program Impact

$325K

Estimated cost savings to Duke Raleigh Hospital due to a 34% reduction in ED visits between 2012 and 2014 for a sample of 25 managed patients[2]

350

Patients diverted from the hospital between 2010-2013

Funding

Funding for the APPs is currently provided by Wake County

Wake County EMS is not reimbursed for home visits or transportation to non-hospital destinations, but are in the process of collecting evidence to justify Medicaid reimbursement from the state

1) Includes staff from CCWJC, CCC, hospital providers, state agencies.
2) Methodology did not account for possible reduction in avoided inpatient admissions as a result of proper mental health treatment.

Source: Population Health Advisor research and analysis.

Firefighter EMTs Provide Immediate Post-Discharge Support

In-Person Visit Ensures Seamless Transition Home

Case in Brief: Park Nicollet Methodist Hospital

- 426-bed acute care hospital based in St. Louis Park, Minnesota, part of the HealthPartners system
- **Challenge**: Hospital's transitions of care workgroup identified the initial 24-48 hours post-discharge as a care gap in which patients lacked in-person support before a home care RN visit or follow-up PCP appointment could further assist
- **Solution**: Park Nicollet partnered with the St. Louis Park Fire Department and fire departments in four other cities to deploy firefighter EMTs to visit patients at home within 24 hours of discharge
- **EMS Affiliation:** Municipal fire-department-based EMS system
- **Payer Mix:** Unknown
- **Results:** 99% of patients would recommend an EMT post-discharge home visit to a family member or friend and 96% reported feeling more confident in their self-management of medications

Programmatic History

Gap in Post-Discharge Support Readily Filled by Fire Department

- The St. Louis Park Fire Department approached Park Nicollet Methodist Hospital to discuss partnering to implement a mobile integrated healthcare program. At the time, Park Nicollet's transitions of care workgroup was looking to develop a program that would support patients during the 24-48 hours post-discharge before a home care RN visit or follow-up PCP appointment could further assist them
- Both organizations jointly piloted the Firefighter Post-Discharge Visit program in May 2014 to provide an in-person visit to patients discharged home and reinforce discharge education and instructions

Patient Eligibility and Identification Process

Post-Discharge Program Covers Five Surrounding Cities

- All patients discharged from Park Nicollet Methodist Hospital to their home in one of the five cities covered by the program are eligible to receive a post-discharge firefighter visit
- Program excludes new mothers and hospice patients, who are covered by existing programs

Patient Referral Pathways

Inpatient Case Management Identify Patients for Coordinator Follow-Up

- Inpatient social workers and RN care coordinators identify patients who will be discharged home to an eligible city. They then discuss the program with the patient and call the hospital-based program coordinator who obtains the patient consent
- If the patient agrees to participate, the program coordinator faxes an after-visit summary to the fire department on the day of discharge, and the fire department works with the patient to schedule a visit

Source: Population Health Advisor research and analysis.

Flexible Staffing Accommodates Variation in Patient Referrals

Firefighter EMTs Emphasize Home Safety, Understanding Medication, Nutrition

Program Staffing

Flexible Staffing Allows for Cross-City Coverage

- In each of the five participating cities, 4-6 firefighter EMTs are trained to perform the post-discharge home visits
- The shift supervisor assigns home visits during firefighter EMT shifts and can prioritize same-day visits for discharged patients
- Home visits occur between 9:30AM-8PM
- In rare cases when one city's firefighter EMTs do not have time to make all of the assigned home visits, another city's fire department can cover those visits

Staff Deployment (e.g., Roles, Responsibilities)

Post-Discharge Follow-Up Emphasizes Home Safety, Medication Understanding

Post-Discharge Follow-Up

- Firefighter EMTs obtain vitals, review the after-visit summary with patients, ask patients if they understand their medications along with providing a pill holder if necessary, evaluate food security, and perform a home safety assessment
- Firefighter EMTs refer patients with food security concerns to partner community organizations, such as local food shelves
- For any questions or issues that arise during home visits, Firefighter EMTs can call a triage nurse or pharmacist at Park Nicollet for assistance

Program Impact

99%

Patients who would recommend an EMT post-discharge home visit to a family member or friend

96%

Patients who feel more confident in their self-management of medications after a post-discharge visit

Funding

No fee-for-service reimbursement available for firefighter EMT post-discharge visits, but program leaders anticipate that in the near future, the Minnesota state legislature will pass a law to provide Medicaid reimbursement for EMT home visit services

Source: Population Health Advisor research and analysis.

Community Paramedics Ensure Mental Health Follow-Up

Post-Discharge Program Expands to Manage Chronic Disease Patients at Home

Case in Brief: Allina Health

- Nonprofit health system located in Minneapolis, Minnesota with 13 hospitals and over 1,800 beds. Allina Medical Transportation responds to over 90,000 emergency calls each year within a large geographic area that includes urban, suburban, and rural areas
- **Challenge:** Over 25% of mental health patients discharged from Allina hospitals never made it to their follow-up appointments
- **Solution:** In 2013, Allina Health piloted the Mobile Integrated Health Care program to provide mental health patients with free transportation to their follow-up appointments. Success of pilot program led to expansion of program to include post-discharge home visits for high risk patients with chronic conditions
- **EMS Affiliation:** Health system-owned EMS system
- **Payer Mix:** 50% Medicare, 10% Medicaid, remaining 40% unknown
- **Results:** Over 600 home visits have been performed since April, 2014. For all patients who had frequent ED visits over the previous 30 days, 78% do not return to the ED within the next month. Medicare 30-day readmission rates for CHF, COPD, and diabetes patients in the program is 5%, compared to national average of 18.4%

Programmatic History

Program Seeks to Close Gaps in Chronic Condition Care Continuum

- Allina Health identified a gap in care for mental health, CHF, COPD, and diabetes patients between the time of discharge from the hospital and when they were next seen by a physician
- The community paramedicine program was originally developed to help transport mental health patients to their follow-up appointments. Success of pilot lead to program expansion to incorporate home visits for patients with chronic conditions

Patient Eligibility and Identification Process

Multiple Populations Now Targeted by Program

- Program services are currently only available for patients discharged from Mercy Hospital and Unity Hospital; program leaders plan to expand the program to serve the entire health system in the future
  - Exception: All mental health patients in Anoka County, MN and all Senior Care Transition participants (regardless of location) are eligible for transportation/home visit program
- Mental health patients, frequent ED utilizers, patients at risk for 30-45 day readmissions, and seniors enrolled in the Senior Care Transition program qualify for the Mobile Integrated Health Care program
- Targeted chronic conditions are limited to CHF, COPD, and diabetes

Patient Referral Pathways

Referrals to Program Come From Multiple Sources

- Patients are referred to the program through case managers and social workers working at Mercy Hospital, Unity Hospital, and their respective emergency departments
- Majority of home visits referrals provided by inpatient case managers, smaller percentage come from emergency department managers
- The referring care provider calls the Mobile Integrated Health Care dispatch center to schedule an initial visit

Source: Gerhardt, G., et al., "Data Shows Reduction in Medicare Hospital Readmission Rates during 2012," *Medicare & Medicaid Research Review*, 2013, 3(2): E4; Population Health Advisor research and analysis.

Post-Discharge Home Visits Decrease Readmission Rates

Community Paramedic Integration with Physicians Extends Reach into Homes

Program Staffing

Extensive Experience Helps Community Paramedics

- Allina Health currently staffs 12 community paramedics certified by the state of Minnesota
- Each community paramedic averages 30 years' experience
- Community paramedics average two program home visits per day each
- Program services are restricted within 30 miles of participating hospitals
- Allina Health provides training to community paramedics to ensure safety when entering a patient's home

Staff Deployment (e.g., Roles, Responsibilities)

Community Paramedics Provide Thorough Home Visits

Home Visits Deliver Valuable Insight

- Initial home visit ideally occurs within two days of discharge; follow-up visit is scheduled for the following week
- Home visits typically last between 1-1.5 hours
- Most patients require only one or two visits
- During a visit, the community paramedic will:
  - Ensure the patient understands their condition
  - Evaluate the individual's independence level, including his/her current financial situation
  - Determine if the patient can drive or if a care giver can provide transportation to follow-up appointments
  - Perform a home safety assessment to identify and eliminate potential hazards

Communication with Physicians

- During a Senior Care Transition program visit, community paramedics will call the patient's physician to ensure proper course of care
- If needed, the physician can order new medication that the community paramedic will deliver the same day to the patient

Program Impact

78%

Percentage of patients with frequent ED visits during prior 30 days who do not return to the ED within the 30 days after enrollment in program

5%

Medicare 30-day readmission rates for CHF, COPD, and diabetes patients in program who receive home visits

Funding

Although Minnesota provides Medicaid reimbursement for some community paramedicine services, Allina Health chose not to seek reimbursement due to the community's minimal Medicaid patient population. The community paramedicine program is viewed by Allina Health as a cost avoidance program

Source: Population Health Advisor research and analysis.

Community Partnerships Lead to Diverse Interventions

Community Paramedics Deployed with Hospitals, ACO, and Hospice

Case in Brief: Area Metropolitan Ambulance Authority (MedStar Mobile Healthcare)

- MedStar Mobile Healthcare (MedStar) is an EMS provider based in Forth Worth, Texas, that serves as the exclusive ambulance service provider to 15 Tarrant County cities
- **Challenge**: In 2009, MedStar found that 21 patients had been transported to local EDs 800 times over a 12-month period, generating more than $950,000 in ambulance charges
- **Solution**: Community paramedics provide in-home and telephone-based support to patients who frequently call 911 and/or call 911 for low-acuity issues, are at-risk for a CHF-related readmission, can be referred to monitored home care instead of observational admission, or are at-risk for a hospice status revocation
- **EMS Affiliation:** Independent EMS provider
- **Payer Mix:** Most patients are uninsured
- **Results:** $2.5M ROI since program inception from reduced ambulance transports, ED visits, and admissions

Programmatic History

Initial Success Leads to Wide Range of Programs

- In 2009, MedStar found that 21 patients had been transported to area EDs 800 times over the past year, generating more than $950,000 in ambulance charges, excluding hospital ED charges. Recognizing that most of these patients were uninsured, Medstar developed its EMS Loyalty Program to target and support high utilizer patients
- After initial success of EMS Loyalty Program, Medstar partnered with (1) hospitals to implement a CHF readmission avoidance program, (2) an ACO to implement an observation admission avoidance program, and (3) a hospice agency to implement a hospice revocation avoidance program, among others

Patient Eligibility and Identification Process

Various High-Risk Patients Supported by Community Paramedics

- ***EMS Loyalty Program:*** Patients who have called 911 at least 15 times in the last 90 days; patients close to the 15-call threshold may be flagged for monitoring for later enrollment
- ***CHF Readmission Avoidance:*** CHF patients with at least 1 readmission for diagnosis of CHF within previous 30 days of current admission and active PCP or cardiologist who Medstar paramedic can contact
- ***Observation Admission Reduction:*** Patients in local EDs considered for observational admission referred to MedStar
- ***Hospice Revocation Avoidance*:** Hospice agency uses risk assessment to identify patients at high risk for hospice revocation

Patient Referral Pathways

In-Person Handoffs Enhance Information Exchange

- ***EMS Loyalty Program:*** Internal report lists patients with more than ten 911 calls in the past month
- ***CHF Readmission Avoidance:*** Caseworker identifies eligible patients and reviews with CHF liaison, who contacts Medstar coordinator to set up in-hospital visit from community paramedic
- ***Observation Admission Reduction:*** ED staff refer patients to MedStar, which sends community paramedic to meet with physician and patient
- ***Hospice Revocation Avoidance*:** Hospice staff contact Medstar program manager for enrollment and schedule joint home visit with hospice nurse and MedStar community paramedic

Source: Population Health Advisor research and analysis; additional sources in appendix.

In-Depth Assessment Informs Comprehensive Care Plan

Community Paramedics Work Closely with Patient and Family to Reach Goals

Program Staffing

Community Paramedics Provide 24/7 Patient Coverage

- 5.5 FTEs dedicated to program
- Medical directors and operations managers participate in program-related duties as part of their regular job responsibilities
- One community paramedic is on duty 24/7, with an additional community paramedic working 8 hours each weekday to assist with home visits
- Community paramedics split shift time between Community Health Program and other duties
- Community paramedics trained through 16-day program developed internally

Staff Deployment (e.g., Roles, Responsibilities)

Community Paramedics Perform In-Depth Home Visits and Participate in Care Planning

In-Home Medical Assessment

- During the initial home visit, the community paramedic checks vital signs, blood glucose levels, oxygen saturation levels and other key indicators. The community paramedic then reviews current medication use, making note of any potential problems to be discussed with prescribing physician(s) and reviews chronic conditions and self-management techniques
- Each home visit includes an evaluation of existing support and resources, including financial resources, insurance coverage, access to primary care and home health care, mental health services, transportation and other relevant factors. The community paramedic also assesses the patient's ability to manage his or her own care using the EuroQol (EQ-5D) Health Assessment Questionnaire[1]
- The community paramedic works with the patient and family to develop an individualized care plan that outlines their needs and responsibilities related to managing the patient's health. The community paramedic may contact other providers to complete the care plan. The community paramedic follows up periodically through home visits and telephone calls until patients can fully manage their care
- Typical patient enrollment for EMS Loyalty Program is 30-90 days

Program Impact

$2.5M

ROI since program inception from reduced ambulance transports, ED visits, and admissions

72%

Reduction in readmissions from high-risk CHF patients after participation in program

Funding

MedStar self-funds the programs, but receives fee-for-service reimbursement from local ACO for Observation Admission Avoidance Program and a hospice agency for Hospice Revocation Program

1) A standardized tool for measuring health outcomes; available at http://www.euroqol.org/.

Source: Population Health Advisor research and analysis; additional sources in appendix.

Program Integration with Inpatient Setting Boosts Coordination

Community Paramedics Meet with ED Staff to Discuss Patients, Improve Support

Case in Brief: New Hanover Regional Medical Center (NHRMC)

- Urban, 628-bed nonprofit hospital located in Wilmington, North Carolina
- **Challenge**: In 2013, New Hanover Regional EMS, the hospital-owned EMS service, determined that 29% of 911 calls and resulting ED transports in New Hanover were not medically necessary. In 2012, 702 EMS responses were attributed to only 10 individuals
- **Solution**: Trained a field operations medic to meet the care needs of recently discharged patients at high risk of readmission and other high risk patients referred to the program from the inpatient setting and ED
- **EMS Affiliation:** Hospital-owned EMS system
- **Payer Mix:** Most patients enrolled in community paramedicine program are covered by Medicare, with a minority covered by Medicaid and/or are uninsured (exact percentages unavailable)
- **Results:** ED visits by targeted frequent utilizers decreased 86% after the program launched in 2013[1]; 9.3% 30-day readmission rate for CHF patients after initial pilot program, compared to 19.3% CHF readmission rate prior to program launch; patient satisfaction scores average 4.6 out of 5

Programmatic History

Initial Pilot Program Success Leads to Full Scale Implementation

- In 2013, NHRMC piloted a six-month community paramedicine program with two patients:

Targeted Patients	ED Visits, Hospital Admissions	
	Pre-enrollment	Post-enrollment
High ED Utilizer[2]	13	1
CHF Patient[3]	5	1

- Results of NHRMC pilot provided data to apply for and receive a Duke Endowment Fund grant to expand program

Patient Eligibility and Identification Process

Program Targets High Risk Patients

- Program initially targeted frequent ED users, CHF, COPD, pneumonia, and stroke patients; program currently accepts all high risk patients
- Inpatient CHF patients receive automatic bedside consult about community paramedicine program if they demonstrate any of the following:
  - Lack strong family support system
  - Have care needs that cannot be met while living at home
  - Were readmitted to the ED in the last 30 days
- Patients must live within 50-mile radius of NHRMC

Patient Referral Pathways

Most Program Participants Referred from Inpatient Case Management and Nursing Departments

- Community paramedics review frequent ED utilizer data with nursing staff and case managers to determine which patients to refer to the program
- Program accepts referrals from PCPs, hospice, home health agencies, and other community partners
- Majority of referrals come from inpatient setting

1) Results based on limited patient pool from 2013 program pilot.
2) Number of ED visits were compared one year prior to enrollment to 6 months after enrollment.
3) ED Visits and hospital admissions were compared five weeks prior to enrollment to 6 months after enrollment.

Source: "New Hanover, N.C., Finds Promising Results in Community Paramedicine," Journal of Emergency Medical Services, Jan. 2015. Available at: http://www.jems.com/article/new-hanover-nc-finds-promising-results-c; Population Health Advisor research and analysis.

Home Visits Focus on Chronic Disease Management

Community Paramedics Also Navigate Patients to Community Resources

Program Staffing

Community Paramedicine Training Includes Relationship Building

- Community paramedics perform an average of 5 home visits per day
- 5 FTE positions
- Community paramedics work 9 am to 5pm Monday-Friday with occasional weekend visits. Outside business hours, patients are encouraged to call 911
- Beyond traditional paramedic training, community paramedics complete 100 hours of web-based training and 200 clinical hours working within the community to help build relationships

Staff Deployment (e.g., Roles, Responsibilities)

Community Paramedics Advise Patients on Community Programs

Chronic Disease Management

- Initial community paramedic visit lasts a minimum of one hour with the purpose of building trust, setting expectations about the program, and making a shared decision plan between the community paramedic and patient on initial health goals and action steps
- Majority of patients require only 1-2 home visits
- Goal is to have patients discharged from program within 6 weeks
- Community paramedics conduct a range of in-home services including:
  - Inspecting the home for potential dangers, such as loose carpets and fire hazards
  - Evaluating patients' diets and providing education on improving nutrition choices
  - Performing medication reconciliation and medication management assistance

Navigating Community Resources

- Community paramedics provide a list of community outreach organizations in New Hanover County and make recommendations based on a patient's needs
- Community paramedics will refer patients to community resources, such as church groups that provide free ramp construction and housing agencies that provide pro bono work

Program Impact

9.3%

30-day readmission rate for CHF patients after initial pilot program. Prior to the program launch, CHF 30-day readmission rates were 19.3%

CHF patients in the program have a 0% 30-day readmission rate as a result of CHF-related complications

Funding

$475K

Funding is currently provided two grants, the most recent of which enabled the hiring of additional case managers and a pharmacist to support the program

NHRMC hopes to convince traditional payers to reimburse program costs by demonstrating cost savings through reductions in avoidable ED visits and readmissions

Source: Population Health Advisor research and analysis.

Home Visits Help Patients Transition to Primary Care

Community Paramedics Manage Chronic Diseases, Increase Access to Care

Case in Brief: Abbeville County Emergency Services (ACES)

- EMS organization partnered with Abbeville Area Medical Center (AAMC), a 25-bed hospital located in Abbeville, South Carolina. The city of Abbeville is a small, rural community with approximately 26,000 residents
- **Challenge:** With a limited number of clinical professionals, Abbeville aimed to deploy EMS services more effectively to provide robust primary care services to the community and reduce unnecessary 911 calls
- **Solution:** Recognizing that both parties could benefit from reducing readmission rates and improper ED use, AAMC and ACES partnered to develop the first community paramedicine program in South Carolina
- **EMS Affiliation:** Municipal EMS system
- **Payer Mix:** Majority of community paramedicine program patients are uninsured. A minority are enrolled in Medicaid/Medicare or have private insurance (exact percentages unavailable)
- **Results:** Of the 51 patients enrolled in the program for at least 3 months, ED utilization and visits decreased by 64% and 42% respectively. Of 28 patients with hypertension, systolic and diastolic blood pressure decreased by an average of 6% and 4% respectively. Of 14 patients with diabetes, average blood glucose levels decreased by 31 points

Programmatic History

Excess EMS Capacity Staffs Community Paramedicine Program

- ACES wanted to provide robust primary care services to its rural community by using EMS services more effectively
- ACES, by design, has excess staffing capacity to ensure ability to respond to high-acuity, large scale emergencies
- During less busy times, the community paramedicine program allows for the utilization of the excess workforce and resources

Patient Eligibility and Identification Process

Chronic Conditions Remain Focus of Program

- Pilot program initially identified 50 frequent users of emergency services who had chronic conditions and no assigned medical home
- In addition to frequent ED utilizers, the current community paramedic program also targets patients with diabetes, hypertension, COPD, CHF, and behavioral health issues
- Program participation requires referral from an AAMC-affiliated physician

Patient Referral Pathways

Referrals to Program Come From Multiple Sources

- Patients can be enrolled through the ED, the United Christian Ministry free clinic, or PCP
- Referring physicians must be affiliated with AAMC
- As eligible patients visit the ED, the ED nurse or care transition nurse inform patients about the program and seek physician approval
- As program liaison, the care transition nurse reviews weekly ED records to identify eligible patients and processes referrals from AAMC physician staff, AAMC inpatient and ED staff, and EMS staff to determine eligible participants. The care transition nurse subsequently assigns patients to a community paramedic

Source: Population Health Advisor research and analysis.

Community Paramedics Visit Patients During Down Time

Rural Community's Lower 911 Volumes Provides Additional Staff Capacity

Program Staffing

Community Paramedicine Program is a Team Effort

- Abbeville has 3 community paramedics (2 more currently in training)
- 20:1 Average patient to community paramedic ratio
- Community paramedics work in a dual capacity, performing both EMT and community paramedic duties
  - Community paramedics will schedule home visit appointments with program patients, but emergency calls will take priority over appointments
- Community paramedics complete 100 hours of didactic online training, 200 hours of clinical training, in addition to traditional paramedic training

Staff Deployment (e.g., Roles, Responsibilities)

Community Paramedics Provide Personalized Care For Each Patient

Community Paramedics Build Trust with Patients

- During initial visit, community paramedics provide a patient with educational materials from the hospital regarding his/her specific condition as well as a health diary to track progress
- Community paramedics communicate by phone with care transition nurse and medical control physician while performing home visits to remain informed of patients' conditions
- Care transition nurse develops care plans that are approved by the medical director, joins community paramedics on home visits, and provides case management for participants
- Community paramedics take vital signs and ensure medication compliance

Health Improvements Lead to Graduation

- Initial home visit occurs within 2-3 days of enrollment in program
- Complex patients with multiple risk factors may be seen up to twice per week, less complex patients may only require a single visit
- As complex patients improve, community paramedics will reduce visits to once every two weeks, or once a month
- Eventually patient may only require occasional check-ins by phone
- Goal of program is to stabilize patients' health and discharge to PCP within 2-3 months

Program Impact

413

Home visits for the 51 patients who had been enrolled in the community paramedicine program for at least 3 months

42%

Decrease in ED visits for the 51 patients who were enrolled in the program for at least 3 months

Funding

$300K

Funding is currently provided by a two-year grant from the Duke Endowment Fund.

Abbeville County currently funds one full-time community paramedic

Source: Population Health Advisor research and analysis.

APP Firefighters Provide Home-Based Education and Services

Case Management Involvement in Care Planning Increases Care Coordination

Case in Brief: Baylor Medical Center at McKinney

- 143-bed acute care hospital located in McKinney, Texas, part of the Baylor Scott & White Health system
- **Challenge**: Patients within the city of McKinney experienced difficulties accessing the health care system, causing some to rely on 911 and the emergency department for care and others to struggle managing their conditions at home
- **Solution**: Partnership with McKinney Fire Department led to home-based community paramedicine program to assist frequent 911 callers and patients at high risk for hospital readmission
- **EMS Affiliation:** Municipal fire department-based EMS system
- **Payer Mix:** 72% Medicare, 28% other
- **Results:** In its first year, the program saved $4,295 per patient in direct costs to the hospital and reduced indigent/underinsured gross revenue charges by $585,832

Programmatic History

Program Tailored to Patient Needs and Community Demographics

- The McKinney Fire Department approached Baylor Medical Center to pilot the community paramedicine program and further leverage the training and expertise of their firefighter-paramedics. The program included the Hospital Corporation of America's (HCA) Medical Center of McKinney before launching
- While program leaders used Texas-based MedStar's program as a starting point, they adjusted the program to fit their community. The city of McKinney has a largely insured population with older patients who have multiple chronic conditions, leading to the development of the scheduled home visit community paramedicine model

Patient Eligibility and Identification Process

High Utilizer Group Patients Targeted by Community Paramedics

- Patients using the ED for routine health care or who have a high risk of readmission to the hospital are targeted for program participation; examples include:
  - High utilizer group patients defined as those who called 911 four or more times within 6 months
  - CHF, COPD, pneumonia, and other patients identified as high risk for readmission
  - Patients in need of additional education about their medical conditions
  - Patients who cannot obtain medications or a doctor without assistance

Patient Referral Pathways

Fire Department, Hospital Staff Both Refer to Program

- McKinney Fire Department staff can refer patients to the program if they meet eligibility criteria; staff monitor patient 911 call frequency to identify high utilizer patients
- Two area hospital case management departments (Baylor and HCA) refer patients to the program by applying eligibility and exclusion criteria and filling out a referral form
- Case management staff discuss potential program participants with the community paramedicine program director to further determine appropriateness before admission to the program

Source: Population Health Advisor research and analysis.

Program Yields Significant Cost Savings to Hospital

Regular Home Visits Support Patient Self-Management, Decrease Utilization

Program Staffing

Advanced Practice Paramedic (APP) Firefighters Paired for Home Visits

- McKinney Fire Department has 8 fire stations (5 with ambulances) and 42 firefighter paramedics on duty per day
- 9 total APP firefighters are staffed 2 per 24-hour shift
- Both APP firefighters make joint home visits to patients
- Program currently providing care for 50 active patients
- APPs attend a eight-week intensive training course at Collin College
- As needed, a pharmacist at Baylor Medical Center reviews patient medication lists to identify duplications, interactions, and concerns

Staff Deployment (e.g., Roles, Responsibilities)

APP Firefighters Provide Home-Based Patient Education and Support, Participate in Care Planning

Scheduled Home Visits

- During each home visit, APP firefighters perform a full physical exam, obtain patient vitals, and weigh the patient
- Additional tasks depend on the patient's needs and may include performing point of care blood work, conducting medication reconciliation, providing education on nutrition and exercise, or supporting lifestyle and behavior changes for the patient
- For patients with access issues, APP firefighters may help provide connections to community resources
- Every week, the community paramedics and program director meet to discuss every patient in the program and evaluate progress and status. Representatives of Baylor Medical Center and HCA's case management department attend for one hour to discuss referred patients
- The program aims to graduate patients within six months; however, some high-risk patients with greater needs may stay in the program for a year or longer until they have stabilized

Program Impact

$4.2K

Direct cost savings per patient to the hospital in first year of the program

$586K

Reduction in indigent/underinsured gross revenue charges in first year of the program

Funding

The McKinney Fire Department currently funds the entire program

Source: Population Health Advisor research and analysis.

Appendix

- Sources for REMSA and MedStar case profiles

Sources for REMSA and MedStar Case Profiles

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