

Key Findings from Two-year Evaluation of Health Workforce Pilot Project #173 – Community Paramedicine

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May 6, 2019

Introduction

Community paramedicine, also known as mobile integrated health (MIH-CP) is an innovative model of care that seeks to improve the effectiveness and efficiency of health care delivery by using specially trained paramedics in partnership with other health care providers to address the needs of local health care systems. In November 2014, the California Office of Statewide Health Planning and Development (OSHPD) approved an application from the California Emergency Medical Services Authority (EMSA) to establish a Health Workforce Pilot Project (HWPP) that has encompassed projects testing seven different community paramedicine concepts. Twelve projects are currently enrolling patients and several new projects are expected to begin enrolling patients later in 2019.

EMS agencies that operate pilot projects provide these services in addition to 911 response services. Agencies are not permitted to divert resources from 911 response to provide community paramedicine services. Consistent with requirements for all services EMS agencies provide, community paramedicine pilot projects are also required to serve all eligible persons regardless of their race/ethnicity, gender, age, or type of health insurance.

The HWPP regulations require organizations that sponsor pilot projects to retain an independent evaluator to assess trainee performance, patient acceptance, and cost effectiveness. The Philip R. Lee Institute for Health Policy Studies and Healthforce Center (formerly the Center for the Health Professions) at the University of California, San Francisco, are conducting an evaluation of the community paramedicine pilot projects funded by the California Health Care Foundation. This document provides an overview of the evaluation and summarizes major findings. The latest full report on the evaluation is available [here](#).

Evaluation Methodology

The primary objectives of the evaluation are to assess the safety and effectiveness of the pilot projects and to estimate their potential to yield savings for health plans and health systems.

Safety and Effectiveness

- The evaluation contains extensive information about the safety and effectiveness of the pilot projects.
- Every project has a project manager, a medical director who is an emergency medicine physician, and a quality assurance officer who is most often a registered nurse whose specialty is emergency nursing.
- The pilot projects review records for 100% of the patients they enroll to monitor patient safety.
- Sites are required to report unusual occurrences to EMSA's project manager.
- The independent evaluator reviews data provided by sites for the evaluation and shares any concerns about patient safety that emerge from the data with EMSA and OSHPD.

Cost Analysis

- The independent evaluator conducted an analysis of incremental costs incurred by participating EMS providers. Costs that EMS providers would incur regardless of whether they were participating in the pilot project, such as dispatching ambulances for 911 calls, were not included.
- Estimating costs for labor and vehicles across the pilot projects is difficult due to differences in how projects are staffed, generosity of employee benefits, and the manner in which each site allocates costs for vehicles, supplies, etc., to the pilot project activities.
- The evaluation was designed to estimate the potential of the pilot projects to yield savings for health plans and health systems. It was not designed to assess the cost effectiveness of the pilot projects. Mature programs in other states have been able to demonstrate cost effectiveness.

Dissemination and Use of the Evaluation

- All data received from the sites are included in the quarterly reports that the evaluator submits to OSHPD. Only the evaluator, not EMSA, receives data from the project sites.
- A report summarizing findings from the evaluation for the first year in which the pilot projects were in operation was released in January 2017. An update that described findings from the second year was released in February 2018. An update that presents findings from the first three years of the pilot projects was released in February 2019 and is available [here](#).
- Findings from the quarterly reports and the annual reports on the evaluation are shared with EMSA which has used the findings to make decisions regarding the pilot projects.
 - EMSA discontinued the alternate destination – urgent care projects because the evaluation found that enrollment was low.
 - EMSA required Butte's post-discharge project to change its protocol to provide a home visit to every patient enrolled because the other four post-discharge projects that provided a home visit to every patient had better outcomes.

General Findings

Safety

- None of the pilot projects have resulted in any adverse outcomes for patients.

Collaboration with Other Health Professionals

- In all projects, paramedics collaborate with registered nurses (RNs), mental health professionals, social services providers, and other health professionals. They do not replace any other healthcare personnel.

Enrollment

- Each of the pilot projects was implemented in response to local needs and serves people with specific health care needs within specific parts of the healthcare system. Projects were designed at the local level by the local EMS authority, emergency (911) response partners, and health care delivery system partners to meet the needs of specific groups of people in their communities.
- Due to large differences in the demographic characteristics of people in different regions of California, the demographic characteristics of persons served by the pilot projects should not be expected to reflect the demographic characteristics of California's overall population.
- There are multiple reasons why the numbers of patients enrolled by pilot projects have been lower than the numbers that sites projected in their applications. These reasons include
 - Limitations of data that were available to pilot sites to estimate the number of people who would be eligible to enroll in the pilot projects.
 - Some sites have had staffing challenges that have prevented them from offering community paramedicine services to all eligible patients.
 - All patients are offered the option to accept or decline enrollment. Some eligible people have chosen not to enroll.

Concept Specific Findings

Alternate Destination – Mental Health Crisis Center

- The three alternate destination – mental health project enrolled 825 persons between September 2015 and September 2018.
- Persons enrolled in the alternate destination – mental health projects receive care from a mental health professional more quickly than persons with mental health needs who were not enrolled in one of the pilot projects because they do not have to first go to an ED for a medical evaluation and then be transported to a mental health crisis center.
- Stanislaus' pilot project only enrolls Medi-Cal beneficiaries and uninsured persons because the mental health crisis center that participates in the pilot project is operated by Stanislaus County and only accepts Medi-Cal

beneficiaries and uninsured persons. The other two Alternate Destination – Mental Health projects enroll all eligible patients regardless of insurance status.

- The rate at which patients transported to mental health crisis centers are transported to an ED within six hours of admission is low.
 - Only 3% of the patients transported to a mental health crisis center (22 of 825 patients) had a secondary transport to an ED.
 - Only two patients were admitted to a hospital for inpatient medical care; all others were treated in an ED and released or transferred to a psychiatric facility.
 - The savings associated with transporting 803 patients directly to the mental health crisis center without first transporting them to an ED for medical clearance exceeds the costs associated with secondary transports to an ED for 22 patients.

Alternate Destination – Sobering Center

- San Francisco's alternate destination – sobering center project enrolled 1,176 persons between February 2017 and September 2018.
- RNs on the San Francisco sobering center's staff monitor acutely intoxicated patients closely and focus exclusively on their needs.
- The evaluation is collecting data on the number of people transported to San Francisco's sobering center who are turned away by RNs on the sobering center's staff.
 - From February 2017 through September 2018, the staff refused to admit only 2 of the 1,176 patients transported to the sobering center.
 - In both cases, the patients were refused because they did not meet the sobering center's criteria for admission.
 - Both patients were transported to an ED, treated, and released.
- The rate at which patients transported to San Francisco's sobering center are transported to an ED within six hours of admission is low.
 - Only 2% of the patients transported to San Francisco's sobering center (24 of 1,176 patients) had a secondary transport to an ED.
 - Only one patient was admitted to a hospital for inpatient medical care; all others were treated in an ED and released or transferred to a psychiatric facility.
- The savings associated with transporting 1,150 patients directly to the sobering center instead of first transporting them to an ED for medical clearance exceed the costs associated with secondary transports to an ED for 24 patients.
- The intensity of case management and supportive services available to acutely intoxicated persons treated at the sobering center is greater than the intensity of services provided by EDs in San Francisco.

Post-Discharge

- The five post-discharge projects enrolled 1,679 people between June 2015 and September 2018.
- The one post-discharge project for which patients have a higher rate of hospital readmission within 30 days of discharge than the hospital's historical rate originally did not offer home visits to all patients. EMSA has required this project (Butte) to revise its protocol to visit every patient in his or her home at least once unless the patient declines, effective November 2017.
- Persons enrolled in the four post-discharge projects that have always provided a home visit to every patient (Alameda, San Bernardino, Solano, and UCLA – Glendale) have 30-day readmission rates that are lower than their partner hospitals' historical readmission rates except for persons enrolled in Alameda's project who have chronic obstructive pulmonary disease.
- The quarterly reports that the evaluator provides to OSHPD and the public reports on the evaluation include data on revisits to an ED within 30 days of hospital discharge and note differences between the site that originally did not offer home visits (Butte) to all patients and the four sites that did.
- The rates of ED revisits reported in the quarterly reports to OSHPD are for all ED revisits regardless of whether those revisits resulted in readmission to an inpatient ward.
- The post-discharge project that originally did not offer home visits to all patients (Butte) has a higher rate of ED visits that did not result in a hospital readmission than the four post-discharge projects that have always provided a home visit to every patient.
- The public report on the evaluation does not compare the impact of the post-discharge projects on repeat visits to the ED and placement of patients on observation status because the project lacks a source of readily available historical data on repeat ED visits and use of observation status at hospitals participating in the pilot projects. Comparisons that rely on data from other hospitals may not reflect the actual experience of participating hospitals.

Frequent EMS Users

- The three Frequent EMS user projects enrolled 185 persons between July 2015 and September 2018.
- All three Frequent EMS user projects utilize community paramedics on a full-time basis. When these paramedics are working as community paramedics they are not scheduled to respond to 911 calls. They only respond if a 911 call involves one of their clients.
- The Frequent EMS user projects link clients to organizations that provide a wide range of services including medical care, mental health services, drug and alcohol treatment, food assistance, housing assistance, transportation assistance, and domestic violence resources.
- San Diego's project has encountered challenges that have constrained its ability to meet patients' needs. In December 2016, the community paramedics working on San Diego's project were reassigned to traditional 911 response crews. Their employer was experiencing difficulties meeting contractual obligations for 911 response and determined that all paramedics needed to be assigned to 911 response crews. According to San Diego management, these difficulties were not due to the community paramedicine pilot project, and they intend to restart the project in 2019.

Hospice

- Ventura County's hospice project enrolled 345 people between August 2015 and September 2018.
- Since this is a pilot project, Ventura County's EMS agency only partners with a small number of hospices with which it has close relationships.
- The community paramedics support RNs who work for partner hospices by responding rapidly to 911 calls. If a hospice RN is not already on scene, the community paramedic who responds to the call contacts a hospice nurse who provides guidance on how to care for the patient.
- The hospice project has reduced the percentage of hospice patients transported to an ED from 80% to 27%.
- For Ventura's hospice project, the evaluation used a higher baseline rate of transports of hospice patients who called 911 than the rate Ventura reported in its application to participate in the pilot project. Subsequent to submission of the application, Ventura conducted a more thorough electronic search of its records of 911 calls. That analysis identified additional 911 calls that involved transport of hospice patients to an ED.

Directly Observed Therapy for Tuberculosis

- Ventura County's directly observed therapy for tuberculosis project enrolled 46 people between June 2015 and September 2018.
- The community paramedics who participate in Ventura's directly observed therapy for tuberculosis project receive direction from the county's tuberculosis control physician and RN manager.
- The community paramedics who participate in Ventura's directly observed therapy for tuberculosis project have not displaced any community health workers. Ventura County has not terminated nor has it reduced the hours of any community health workers employed by the tuberculosis control program. Paramedics complement community health workers, enabling Ventura County to provide directly observed therapy to more people with tuberculosis.
- The community paramedics dispensed 99.95% of doses prescribed by the tuberculosis control physician due to their availability after hours and weekends and their ability to serve people in all parts of the county.

Alternate Destination – Urgent Care Center

- The three alternate destination – urgent care projects enrolled 48 people between September 2015 and September 2017.
- EMSA cancelled the alternate destination – urgent care projects due to the low enrollment which made it impossible to conclusively evaluate the safety and effectiveness of the concept and to estimate the potential for this approach to yield savings for health plans and health systems.

Acknowledgements

Funding for this project was provided by the California Health Care Foundation.