Community Paramedicine Pilot Program
Summary of Evaluation
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PI for HWPP #173

Lou Meyer
Project Manager
Working Definition of Community Paramedicine

A locally determined community-based, collaborative model of care that leverages the skills of paramedics and EMS systems to address gaps in access to care identified through a community-specific health care needs assessment.

- New models of community-based health care that bridge primary care and emergency care
- Utilizes paramedics outside their traditional emergency response and transport roles
Why Paramedics?

- Trusted and accepted by the public
- In most communities—inner city and rural
- Work in home and community-based settings
- Licensed personnel that operate under medical control as part of a system of care
- Trained to make health status assessments, recognize and manage life-threatening conditions outside of the hospital
- Always available (24 / 7 / 365)
Community Paramedicine Concepts

- Post hospital discharge short-term follow-up
- Frequent EMS user case management
- Directly Observed Therapy for tuberculosis: public health department collaboration
- Hospice support
- Alternate destination to mental health crisis center
- Alternate destination to sobering center
- Alternate destination to urgent care center (Cancelled)
Methods

- Outcomes assessed across three domains
  - Safety
  - Effectiveness
  - Potential savings accrued by other parts of the health care system
## Cumulative Patients Enrolled by Concept through March 2019*

<table>
<thead>
<tr>
<th>Concept</th>
<th># Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Discharge Short-term Follow-Up</td>
<td>1,758</td>
</tr>
<tr>
<td>Frequent EMS Users</td>
<td>260</td>
</tr>
<tr>
<td>Directly Observed Therapy for Tuberculosis</td>
<td>49</td>
</tr>
<tr>
<td>Hospice</td>
<td>363</td>
</tr>
<tr>
<td>Alternate Destination – Mental Health</td>
<td>2,045</td>
</tr>
<tr>
<td>Alternate Destination – Sobering Center</td>
<td>1,627</td>
</tr>
<tr>
<td>Alternate Destination – Urgent Care</td>
<td>48§</td>
</tr>
<tr>
<td><strong>All Projects</strong></td>
<td><strong>6,150</strong></td>
</tr>
</tbody>
</table>

* 42 to 46 months for individual projects, depending on start date except for two alternate destination – mental health projects, two alternate destination - sobering center projects, and one frequent EMS user project.

§ Pilot projects for alternate destination - urgent care closed in 2017.
Enrolled Patients’ Payer Types – Through March 2019

- Medicare: 28%
- Medi-Cal: 9%
- Uninsured: 9%
- Private Insurance: 9%
- Unknown: 16%
- Total: 100%
Post-Discharge Short-term Follow-Up

- Sites varied in the number of diagnoses they targeted
  - 2 sites = 1 diagnosis; 2 sites = 2 diagnoses, 1 site = 6 diagnoses
- Decreased hospital readmissions within 30 days in 8 of 10 project diagnosis dyads
- CPs identified 305 patients (17%) who misunderstood how to take their medications or had duplicate medications and were at risk for adverse effects.
- All five post-discharge projects achieved potential cost savings for payers, primarily Medicare and Medi-Cal.
**Project Impact on 30 Day Hospital Readmission Rate**

### Historical vs Project Readmission Rate (%)

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Historical</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCLA CHF</td>
<td>24.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Butte CHF*</td>
<td>29.6</td>
<td>22.5</td>
</tr>
<tr>
<td>Alameda CHF</td>
<td>23.1</td>
<td>11.1</td>
</tr>
<tr>
<td>San Bernardino CHF</td>
<td>23.1</td>
<td>8.3</td>
</tr>
<tr>
<td>Solano CHF</td>
<td>22.1</td>
<td>9.9</td>
</tr>
<tr>
<td>Butte MI</td>
<td>17.2</td>
<td>10.4</td>
</tr>
<tr>
<td>Alameda MI</td>
<td>16.8</td>
<td>0</td>
</tr>
<tr>
<td>Alameda COPD</td>
<td>19.4</td>
<td>20.7</td>
</tr>
<tr>
<td>Solano COPD</td>
<td>18.9</td>
<td>9.7</td>
</tr>
<tr>
<td>Alameda pneumonia</td>
<td>20.1</td>
<td>15.4</td>
</tr>
</tbody>
</table>

*Estimates are not risk adjusted. All projects except Butte CHF and Alameda COPD showed statistically significant reduction in the readmission rate for enrolled patients relative to the partner hospitals’ historical readmission rates (p value < 0.05).*
Frequent EMS Users

- Reduced numbers of 911 calls, ambulance transports, and ED visits among enrolled patients.
- Assisted patients in obtaining housing and other non-emergency services that addressed the physical, psychological, and social needs that led to their frequent EMS use.
- Community paramedics collaborated with many other organizations in the communities served.
Reduction in Emergency Services: Frequent 911 Users

San Diego 911 calls

Baseline: 955
Post Intervention: 625
35% Reduction

Alameda 911 calls

Baseline: 187
Post Intervention: 150
20% Reduction

Note: 27 months of operation for San Diego, 45 months for Alameda
Directly Observed Therapy for Tuberculosis

- Dispensed appropriate doses of tuberculosis (TB) medications and monitored side effects and symptoms that could necessitate a change in treatment regimen.

- CPs achieved better compliance (99.95%) than community health workers (93.0%) because they were able to serve patients who could not access care on weekdays during daytime hours.

- Demonstrated capability for collaborative work with public health professionals.
Hospice Support

- Provided hospice patients and their families with psychosocial support and administered medications in consultation with a hospice nurse, until nurse could arrive.
- In accordance with patient wishes, reduced rates of ambulance transports to an ED.
- Potential savings for Medicare and other payers by reducing unnecessary ambulance transports, ED visits, and hospitalizations.
Percent of 911 Calls for Hospice Patients Resulting in Transport to ED

(38 months data; N=363 hospice patient calls to 911)

Prior to the pilot (all hospice calls): 80%
During the pilot (911 calls for patients of partner hospices): 27%
Alternate Destination – Mental Health

- Performed medical screening to determine whether patients could be safely transported directly to a mental health crisis center
- Three projects enrolled 2,045 persons through March 2019
- Across the three projects, 28% to 45% of patients screened were transported to a mental health crisis center
- These projects help reduce ED overcrowding by transporting people with mental health needs to crisis centers that specialize in acute psychiatric care
- Strongly supported by law enforcement because these projects reduce the amount of time required for mental health calls
Alternate Destination – Mental Health

- 98% of patients enrolled were evaluated at the mental health crisis center without the delay of a preliminary ED visit.
- Over study period (42 months), 2% of patients required subsequent transfer to the ED (47 patients); only 4 of the 47 were admitted for inpatient medical care, all others treated in ED and released or transferred to a psychiatric facility.
- Potential savings for payers, primarily Medi-Cal, due to reduced ED visits and subsequent transports to mental health centers.
Alternate Destination-Sobering

- Performed medical screening to determine whether patients could be safely transported directly to a sobering center
- Transported 1,627 patients since February 2017
- Thirty-two patients (2%) were transferred to an ED within six hours of admission to the sobering center due to medical complaints; only 2 of the 32 was admitted for inpatient medical care, others were treated in the ED and released or transferred to a psychiatric facility
- Potential savings for payers, primarily Medi-Cal, due to reduced ED visits
Alternate Destination – Urgent Care

- Insufficient number of patients to make firm conclusions about this model
- No patients experienced an adverse outcome, although two patients (4%) were transferred to an ED following admission to an urgent care center
- Nine patients were rerouted to an ED because the urgent care center declined to accept
- Projects closed: Multiple barriers to this model in California, although successful in other states
## Potential Cost Savings
Accrue Primarily to Hospitals and Payers

<table>
<thead>
<tr>
<th></th>
<th>UCLA</th>
<th>Butte</th>
<th>Alameda</th>
<th>San Bernardino</th>
<th>Solano</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post Discharge</strong></td>
<td>$403,284</td>
<td>-$23,634</td>
<td>$125,777</td>
<td>$489,702</td>
<td>$340,386</td>
</tr>
<tr>
<td><strong>Frequent EMS Users</strong></td>
<td>Alameda</td>
<td>San Diego</td>
<td>San Francisco</td>
<td>Ventura</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$91,936</td>
<td>$551,760</td>
<td>$379,912</td>
<td>$289,728</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$1,372/patient</td>
<td>$14,912/patient</td>
<td>$4,871/patient</td>
<td>$798/patient</td>
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</tbody>
</table>
# Potential Cost Savings
Accrue Primarily to Hospitals and Payers

<table>
<thead>
<tr>
<th>Alt Destination Urgent Care</th>
<th>UCLA</th>
<th>Orange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$624</td>
<td>$3,016</td>
</tr>
<tr>
<td></td>
<td>$52/patient</td>
<td>$89/patient</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Alt Destination Mental Health</th>
<th>Stanislaus, Gilroy, Fresno</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$2,197,800</td>
<td>$1,075/patient</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alt Destination Sobering Center</th>
<th>San Francisco</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$551,257</td>
</tr>
<tr>
<td></td>
<td>$339/patient</td>
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</tbody>
</table>
Conclusion

- Specially trained paramedics can provide services beyond their traditional and current statutory scope of practice in California
- Projects have improved patients’ well-being
- No adverse outcomes for patients
- No other health professionals displaced
- In most cases, yielded savings for health plans and hospitals