Community Integrated Paramedicine:
An Emerging Model to Improve Outcomes in Rural AZ

Will Humble, MPH
Director,
Health Policy and Evaluation
The University of Arizona Center for Population Science and Discovery

Arizona Rural Health Conference, August 4, 2015
Determinants of Health

Factors Influencing Health Status

- Genetics: 30%
- Behavioral Patterns: 40%
- Social Circumstances: 15%
- Environmental Exposure: 5%
- Health Care: 10%

Improvements in Longevity

100 Years of Progress

http://www.cdc.gov/mmwr/preview/mmwrhtml/00056796.htm
Factors that Affect Health

- Smallest Impact
  - Counseling & Education
  - Clinical Interventions
  - Long-lasting Protective Interventions
  - Changing the Context to make individuals’ default decisions healthy
  - Socioeconomic Factors

Examples
- Condoms, eat healthy
- Rx for high blood pressure, high cholesterol
- Immunizations, brief intervention, cessation treatment, colonoscopy
- Fluoridation, 0g trans fat, iodization, smoke-free laws, tobacco tax
- Poverty, education, housing, inequality
Community-Based EMS

What is Community Paramedicine?

“Community paramedicine is a locally designed, community-based, collaborative model of care that leverages the skills of paramedics and EMS systems to address care gaps identified through a community-specific needs assessment.”

What is a Community Paramedic?

“A community paramedic is a paramedic with additional standardized training who works within a designated community paramedicine program under local medical control as part of a community-based team of health and social services providers.”

Community Paramedicine Expands the Role, Not the Scope of Paramedics

UC Davis Article, pp. 7-8
The goal of an EMS and trauma system is to:

“Get the right patient, to the right treatment, at the right time.”

The goal of Community Paramedicine is to:

“Get the patient to the right care, delivered to the right provider, at the right time, resulting in the best outcomes and most efficient use of health care resources.”

Community Paramedicine

Integrated EMS & Trauma Care
EMS integrates with other services and systems to maintain and enhance community health and safety.

EMS operates at the crossroads of health care, public health and safety.

EMS often announces the emergence of significant public health problems (outbreaks and epidemics).
Community Paramedicine is the Continued Evolution of EMS

The Vision - EMS of the future will:

- be community-based health management
- be integrated with the overall health care system
- identify and modify illness and injury risks
- contribute to treatment of chronic conditions
- contribute to community health monitoring

-1996 NHTSA
Community-Based EMS

Why Community Paramedicine?

- Increased Demand for Health Care
- Decreased Availability of Health Care Resources

POPULATION OF RURAL AMERICANS 25%
PRACTICING DOCTORS 10%
Community-Based EMS

Why Community Paramedicine?

• In 2012, 54 million Americans lived in areas having shortages of primary medical care.

• 14% - 27% of ED visits are for non-urgent care and could be treated elsewhere, saving $4.4 billion annually (2010 Rand study).

• Frequent users comprise 4.5-8% of ED patients and account for 21-28% of visits (2010 Annals of Emergency Medicine).

• Patients with a regular healthcare provider have fewer preventable ED visits and hospitalizations.
## Community-Based EMS

### A Paradigm Shift for Paramedic Practice

<table>
<thead>
<tr>
<th>EMS Function</th>
<th>Expanded Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Assessment</strong></td>
<td>Checking Vital Signs&lt;br&gt;Blood Pressure Screening &amp; Monitoring&lt;br&gt;Prescription Drug Compliance &amp; Monitoring&lt;br&gt;Assessing Patient Safety Risks</td>
</tr>
<tr>
<td><strong>Patient Treatment &amp; Intervention</strong></td>
<td>Breathing Treatments&lt;br&gt;Wound Care &amp; Dressing Changes&lt;br&gt;Patient Education&lt;br&gt;Intravenous Monitoring</td>
</tr>
<tr>
<td><strong>Patient Referrals</strong></td>
<td>Mental Health &amp; Substance Use Disorder Referrals&lt;br&gt;Social Service Referrals</td>
</tr>
<tr>
<td><strong>Prevention &amp; Public Health</strong></td>
<td>Immunizations&lt;br&gt;Well Baby Checks&lt;br&gt;Asthma Management&lt;br&gt;Disease Investigation</td>
</tr>
</tbody>
</table>
Community-Based EMS

• Are relevant to both rural and urban areas, with differing services
• Are extenders of primary healthcare providers
• Address specific local problems
• Use paramedics trained to provide specific needed services
• Provide paramedic level services under physician direction and supervision
• Use locally developed collaborations between EMS and other healthcare and social service providers
Community Paramedicine

Examples of Expanded Role

• Transporting patients with non-emergent low acuity illnesses away from hospital EDs and to more appropriate destinations.

• Assist needs of frequent 911 callers and ED users.

• Follow-up home visits for recently discharged patients.

• Support services for patients with chronic diseases (e.g., diabetes, COPD).

• Provide preventative care (BP checks, diabetes screening, patient education).
Community Paramedicine

Examples of Preventative Services and Support

• Assisting patients with serious chronic disease in managing their care.

• Providing preventative services in rural and medically underserved communities

• Improve access to care and reduce emergent hospital admissions.
Community Paramedicine

Examples of Preventative Services and Support

Providing at-home services:

- Vaccinations
- Blood pressure
- Blood sugar
- Pulmonary monitoring
- Breathing treatments
- Patient and family health education.
Community Paramedicine

“Six C’s of Community Paramedicine”

Effective integration with other providers requires Community Paramedicine to address:

- **Community:** Addressing a current unfilled need.
- **Complementary:** Enhancement without duplication.
- **Collaborative:** Interdisciplinary practice.
- **Competence:** Qualified practitioners.
- **Compassion:** Respect for individuals.
- **Credentialed:** Legal authorization to function.
Community-Based EMS

Catalyst for Starting a Community Paramedicine Program

- **Gap analysis of health needs**: 68%
- **Community assessment**: 66%
- **Other CP programs**: 30%
- **Other healthcare stakeholders**: 20%
- **Other**: 7%
- **Combat repeat users**: 1%

N = 46 States & Territories

Respondents were able to select more than one response, resulting in a percentage total greater than 100%.
Community Paramedicine: Arizona Case Studies
Community Paramedicine
Arizona’s Progress

Case Studies

1. **Rio Rico** - Rural Fire District
2. **Guardian Medical Transport** – Hospital-based
3. **Mesa Fire & Medical** – Urban Fire & Medical Department
4. **Life Line Ambulance** - Private EMS
Case Study 1

Rural Fire District - Rio Rico

Bridge the Gap in Community Health and Healthcare Education

Instead of responding to a costly 911 call, PROACTIVELY going to a patient’s home before they have an emergency
Case Study 1

Rio Rico Fire District

Partnerships
CP Project is a collaboration between:

- Rio Rico Fire Department
- South East Arizona Area Health Center
- Holy Cross Hospital
- Mariposa Community Health Center
- Banner-University Medical Center Tucson
Case Study 1

Chronic Disease Management
Reduce tertiary care used by residents with:
- Diabetes
- Asthma
- Congestive Heart Failure
- COPD
- Environmental Scans
- Other

Rio Rico Fire District
Case Study 2

Hospital-Based - Guardian Medical Transport

Guardian Medical Transport’s Vision of Community Paramedicine:

Avoid Costly Hospital Admissions by At-Home Healthcare & Community Education
Case Study 2

Guardian Medical Transport

Paramedics work with discharge planners & telemedicine specialist providing at-home patient follow-ups, performing assessments and patient education.
Case Study 2

Guardian Medical Transport

At-Home Patient Care and Follow-Up

• Patients at high risk for readmission.
• Assist patients with medications.
• Monitor, record, and report vitals signs.
• Perform tests, assessments, and treatments.
• Screenings to reduce ED or doctor visits.
• Follow-up on non-transported EMS patients.
Case Study 2

Guardian Medical Transport

Community Health and Education
• Vaccination clinics
• School health and safety
• Community first aid and CPR training
• Health and safety fairs
Case Study 3
Mesa Fire & Medical

• A multi-faceted Community Integrated Paramedicine Program
• Includes Transitional Response Vehicle to improve peak-time efficiency
• Community Care Response Unit with a host of functions
• Behavioral Health Specialist Unit
• Collaborates with Mountain Vista Medical Center for Recently Discharged Patients
Case Study 3
Mesa Fire & Medical

Transitional Response Vehicle (TRV)

• Reduce the cost of response to BLS calls
• Keep ALS Units available for emergencies
• Peak Time Deployment
• Priority Dispatch Triage
• Staffed with a Captain Paramedic & Firefighter
Case Study 3
Mesa Fire & Medical

Community Care Response Unit

- Captain Paramedic & Advanced Practiced Providers or Behavioral Health Specialist
- Treat & Refer to PCP & appropriate care providers
- Provide alternative destination
- 24 hour patient follow-up
- CLIA waived laboratory tests
- Improved Service Levels
- Sustainability - Cost Recovery
- Provide Support to Law Enforcement
Case Study 3
Mesa Fire & Medical

Behavioral Health Specialist Unit

- Captain Paramedic & Licensed Crisis Counselor
- Provide Support to Law Enforcement
- Medical and Mental Health Evaluation in the Field
- Transport to Most Appropriate Behavioral Health Facility
- Connecting Patient to Community Resources
- Counselor Assessment May Allow Patient to Remain Home With Safety and Follow-Up Plan
Case Study 3
Mesa Fire & Medical

Community Care Initiative: Aims and Drivers

Reduce or Refer 40% High Risk Returns and Low Acuity Patients ER Visits In 3 Years

Cost savings come from reductions in ambulance transports and ED visits

High risk patients: CHF, Diabetes, COPD, Asthma, and Pneumonia

- Medical clearance for behavior health transport
- Home evaluation from a Physician Extender within 72-hours
- Physician Extender low acuity treatment or referral
- Immunization/health education
- Dispatch and Deployment
- 911 Centralized medical direction
- 911 RN triage
- Counselor directed psychiatric admit to appropriate facility
- Home Safety Inspection
- Social service follow-Up

Behavioral Health Services
Case Study 4

Private EMS - Life Line Ambulance
Case Study 4

Life Line Ambulance

Life Line Ambulance views a community based paramedic program as a system that improves a patient's wellbeing, while using a model that supplements traditional EMS responses.
Case Study 4

*Life Line Ambulance*

The primary goal is to bridge the gap between community health service and the traditional EMS system.
Although many community paramedicine programs are yet to be designed, the picture will come clear through collaboration and data analysis.
Community Paramedicine In Other States

- Frequent EMS User: 66%
- Readmission avoidance: 46%
- Primary care/physician extender model: 28%
- See and refer to alternate destination after assessment: 24%
- 911 Nurse Triage: 8%

Respondents were able to select more than one response, resulting in a percentage total greater than 100%.
Get More Information

• Resources and additional info:

