

*ARIZONA HEALTH FUTURES  
Policy Primers: a nonpartisan  
guide to a better understanding  
of key terms and issues in the  
Arizona health policy landscape.*

## Fired Up: Community Paramedicine Models Blaze a Trail for Healthcare Delivery Reform

*“911, what is your emergency?”*

That is a loaded question for Arizona’s healthcare system. The complete answer unveils complex layers of truth about challenges and opportunities for improving the health of individuals and communities. In recent years, it has led to compelling questions about how to best serve people within an effective continuum of care in the home, hospital or anywhere in between.

Too often on the medical front, the iconic “911, what is your emergency” is the wrong question asked of the wrong person at the wrong time. The answers often prompt a standard response that provides expensive, quick fixes but no long-term benefits for the patient or our healthcare system. And frequently the honest answer to the question – the truth of the matter – is, “There isn’t really an emergency.”

In an emergency response system that includes community integrated paramedicine, the local fire department still may be the best responder. Community integrated paramedicine is an evolving practice that inspires hope for reducing trips to hospitals, improving the quality of life for patients, and cutting costs.



# “911, what is your emergency?”

*“I can’t breathe.”*

**(Because my metered-dose inhaler is old or empty, and I can’t get to the pharmacy.)**

*“I’m dizzy and I have fallen again.”*

**(Because I may not have a handle on managing the 15 medications I take for congestive heart failure and other conditions. I also have throw rugs throughout my home that I trip over daily.)**

*“He’s in pain.”*

**(Because he’s fighting a battle with substance abuse and mental illness. It’s not going well today.)**

*“I was recently released from the hospital. I think I need to see a doctor.”*

**(Because my discharge papers say I should see my primary care physician within 72 hours, but I can’t get an appointment for a month. I know I’ll see a doctor if I go to the emergency room.)**

All of these typical 911 calls need attention, but not all of them are medical emergencies that require the typical 911-crisis response of rolling a four-member crew on a fire engine and providing an ambulance ride to a hospital. Some of these cries for emergency medical service help may not even be urgent.

But there are reasons for the calls. Some are simple; some are complex. Responses are necessary. Some are medical; some are not.

High demand for medical attention, gaps in community resources that create barriers to care management, and a long history of non-collaboration among health and social services are barriers to establishing an integrated system of beneficial behavioral and physical healthcare.

## A National Movement in Community Paramedicine

In 2012, the Institute of Medicine estimated that \$750 billion – about 30 percent of the annual healthcare costs in the United States – is wasted on unnecessary healthcare service, inefficiencies in healthcare delivery, excessive administrative costs, and failures in healthcare prevention efforts.<sup>1</sup> There is plenty of room for improvement in keeping citizens healthy at a lower cost.

At the national level, the Patient Protection and Affordable Care Act (ACA) established penalties for excessive hospital readmission rates. In fiscal year 2015, hospitals paid \$428 million in penalties under a value-based pricing program,<sup>2</sup> further encouraging hospitals to deliver services of higher quality and higher value.<sup>3</sup> The hospital industry now pays special attention at discharge time to patients who have a diagnosis and/or procedure(s) code that

*There are reasons for the calls. Some are simple; some are complex.*

could generate a readmission penalty, including acute myocardial infarction (heart attack), congestive heart failure, pneumonia, chronic obstructive pulmonary disease (COPD), and total hip and/or knee replacement.

Necessity inspires innovation. Some of the changes to emergency medical services (EMS) that were first discussed in a 1996 federal strategic plan, “Emergency Medical Services Agenda for the Future”<sup>\*</sup> are emerging now because of an urgent need to serve communities differently. Call volume increases annually for fire departments and districts. The vast majority of those calls are for medical services, not fires. This is certainly a testament to improved fire safety and prevention campaigns, but it is also an urgent call to transform how fire departments and districts serve their communities.

Community integrated paramedicine – or “community paramedicine,” in short – is the use of paramedics and other healthcare providers outside their customary emergency response and transport roles in ways that facilitate more appropriate use of emergency care resources. Successful community paramedicine programs focus on efficiency and effectiveness in connecting people with timely and appropriate levels of care. While there are other emerging models, the focus of this primer is on fire service-based community paramedicine.

*The vast majority of calls to fire departments and districts are for medical services, not fires.*

\* [www.nremt.org/nremt/downloads/EMS%20Agenda%20for%20the%20Future.pdf](http://www.nremt.org/nremt/downloads/EMS%20Agenda%20for%20the%20Future.pdf)

### Call Volume in Select Arizona Cities 2014

DEPARTMENT	TOTAL CALLS**	EMS CALLS	FIRE CALLS	PERCENT FIRES
Phoenix	178,872	157,362	14,318	8.0%
Tucson	82,303	74,135	6,898	8.4%
Mesa	57,519	45,836	1,083	1.9%
Glendale	36,852	31,006	3,880	10.5%
Scottsdale	30,585	21,226	521	1.7%
Tempe	22,720	18,806	2,043	9.0%
Chandler	21,442	15,724	367	1.7%
Surprise	14,827	11,013	222	1.5%
Yuma	13,100	10,717	265	2.0%
Sierra Vista	8,360	6,155	215	2.6%
Lake Havasu City	8,061	5,412	132	1.6%
Goodyear	7,249	5,112	219	3.0%
Prescott	6,818	6,235	63	0.9%
Buckeye	5,442	4,221	259	4.8%
Rio Rico	2,370	1,920	51	2.2%

\*\* Total calls include fire, EMS, false alarms, hazardous conditions, service calls and good intent calls (dispatched and then cancelled).

## What is Mobile Integrated Healthcare?

*National Association of Emergency Medical Technicians (NAEMT.org/MIH-CP.aspx) definitions:*

Mobile integrated healthcare (MIH) is a multidisciplinary, collaborative system of care and services that includes community paramedicine. MIH programs are designed to help meet the Institute of Healthcare Improvement's "Triple Aim": improve patient outcomes including their experience of care, boost population health, and reduce costs. Community paramedicine is one model of MIH programs. MIH is born of experience and knowledge that an ambulance ride to the emergency department may not be the best route to achieve the best outcome for patients.

MIH deploys teams to meet community needs and give patients what is essential to manage their conditions without a trip to an emergency department or a hospital stay. In practice, that could mean non-emergency medical services, such as conducting in-home health assessments, and it most likely includes patient education, navigation and advocacy, as well as behavioral and social supports. MIH tools and practices include post-hospital discharge follow-up, telemedicine, prevention campaigns, and nurse triage.

Medstar Mobile Healthcare in Fort Worth, Texas, is a national leader in MIH practices.\* Medstar's development has evolved from creating individual care plans for frequent users of the 911 system to a tightly woven network of programs and services that creates a patient-centered health infrastructure. EMS providers from across the United States, including fire-services, are learning from Medstar and modeling their MIH practices after it.\*\*

Strong coordinated effort in successful MIH systems ensure patient care is optimally delivered when and where needed and by the right personnel, including EMS, registered nurses, nurse practitioners, primary care physicians, pharmacists, community health workers, social workers, behavioral health counselors, physical therapists, and home health agencies.

Examples of MIH programs in Arizona in addition to community paramedicine include:

- Crews'n Healthmobile (Phoenix Children's Hospital)  
[www.phoenixchildrens.org/community/healthcare-outreach/crewsnhealthmobile](http://www.phoenixchildrens.org/community/healthcare-outreach/crewsnhealthmobile)
- Dental Outreach for Rural Arizona (AT Still University)  
[www.atsu.edu/asdoh/community/dentistry-in-the-community.htm](http://www.atsu.edu/asdoh/community/dentistry-in-the-community.htm)
- Mobile Dental Program (Sun Life Family Health Center)  
[www.sunlifehealth.org/blog/post/post/31](http://www.sunlifehealth.org/blog/post/post/31)
- Mobile Health Program (University of Arizona)  
[www.fcm.arizona.edu/mobile-health](http://www.fcm.arizona.edu/mobile-health)
- Mobile Medical Unit (Circle the City)  
[www.circlethecity.org/mobile-medical-unit/](http://www.circlethecity.org/mobile-medical-unit/)
- Mobile Medical Unit (Mission of Mercy)  
[www.amissionofmercy.org/arizona/](http://www.amissionofmercy.org/arizona/)
- MOMobile (St. Joseph's Hospital & Medical Center)  
[www.dignityhealth.org/stjosephs/services/womens-health/obstetrics-and-gynecology/momobile](http://www.dignityhealth.org/stjosephs/services/womens-health/obstetrics-and-gynecology/momobile)

\* Medstar Mobile Healthcare, program overview. [www.medstar911.org/mobile-healthcare-programs](http://www.medstar911.org/mobile-healthcare-programs)

\*\* U.S. Department of Health and Human Services, Agency on Healthcare Research and Quality, "Innovations Exchange." [innovations.ahrq.gov/profiles/trained-paramedics-provide-ongoing-support-frequent-911-callers-reducing-use-ambulance-and](http://innovations.ahrq.gov/profiles/trained-paramedics-provide-ongoing-support-frequent-911-callers-reducing-use-ambulance-and)

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## Answering the Call in Your Neighborhood

At the local level, public finance realities and concerns about unmet community health needs motivate fire services to do more without additional resources.

Throughout Arizona, fire departments and districts, in collaboration with healthcare and community organizations, are experimenting with expanded roles for paramedics to provide the right level of patient care at the right time and in the right place.

Will Humble, former Director of the Arizona Department of Health Services, said paramedics and emergency medical technicians (EMTs) are an underutilized healthcare resource. Assigning them expanded roles early in the continuum of care could reap benefits throughout the system.

“One of the best ways to save money is to make better decisions,” said Humble, who is now Division Director for Health Policy and Evaluation at the Center for Population Science and Discovery at The University of Arizona’s Health Sciences Center. “There are all kinds of protocols about how to make clinical decisions in hospital settings. There are policies and procedures and those kinds of things in terms of transferring and discharging patients, and interfacility transports. But there are some really profound decisions being made in the pre-hospital world that have a big impact on costs. Community paramedicine is an opportunity to make different kinds of decisions before the hospital.”

Community paramedicine pilot programs in Arizona provide strong indications that optimal care often can be delivered in homes rather than in the emergency room after a call to 911. There are real opportunities for multidisciplinary partnerships and collaborations that add value and encourage efficiency in public and private services. Community paramedicine is a promising practice designed to educate individuals, reduce the 911 calls requiring lights and sirens, and avoid repetitive, costly encounters with hospitals for non-emergencies.

In some pilot programs, community paramedicine teams become mobile urgent care units. In other projects, their roles touch on some aspects of social services and patient advocacy. In all cases, their work is similar to other fire service-based initiatives that encourage prevention and education in the interest of safety and health. They add another dimension to the “patient protection” component of the ACA by focusing on those things – medical, social, and behavioral – that improve access to the appropriate and best levels of care and ensure competence in managing conditions. Management of chronic diseases is an essential component for relieving stress in the healthcare system and for improving population health. In community paramedicine models, fire services-based medical personnel work with partners to find long-term solutions that empower community members to better manage their own care – a key goal of the ACA.

Phoenix Deputy Fire Chief Larry Contreras said, “I’ve seen evidence of community paramedicine for 20 years in various formats... There are anecdotal examples where (fire crews) have identified people who are not having their needs met and they’ve actually taken it upon themselves, uncalled, unrequested through the formal system, to show up to their houses. It’s that human element of what’s behind the whole thing. We really should be doing this formally.”

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*Patients released from hospitals who are at high risk of being readmitted within 30 days may be flagged for enrollment in a program that sends the fire department to their homes for a welfare check.*

Like elsewhere in the nation, community paramedicine programs in Arizona pursue the “Triple Aim” of healthcare reform: improve patient satisfaction with the quality of care, improve population health, and cut per capita costs of healthcare. They address fundamental obstacles to achieving those goals before a call to 911 triggers the traditional EMS response.

In community paramedicine, fire services medical personnel switch from quick-acting emergency responders addressing an immediate need to clinical workers who spend time determining root causes of issues. Paramedics take on non-emergency and oftentimes non-healthcare duties in the interest of helping people, finding efficiencies in fire services operations, and filling gaps in community resources.

For example, people with COPD and congestive heart failure may find help in a fire service-based “treat and refer” program, where patients who call 911 may be treated, evaluated, and then referred to a primary care physician instead of making a trip to the emergency department.

Likewise, patients released from the hospital who are at high risk of being readmitted within 30 days may be flagged for enrollment in a program that sends the fire department to their homes for a welfare check. Those checks include assessing the home environment, monitoring the patient’s condition, making sure discharge orders are followed, and helping to navigate the primary healthcare system. These visits often serve as a bridge between the hospital discharge and the start of home health care services that are part of a patient’s long-term care plan.

Furthermore, partnerships with behavioral health facilities enable community paramedicine programs to refer or transport patients directly to behavioral health facilities rather than

Chandler Fire, Health & Medical’s CP281 Community Paramedic two-person vehicle responds to the complex patient management needs rather than a full four-person fire truck.



transporting a patient to a hospital where it might take days to receive the appropriate care. The “alternate destination” component of community paramedicine adds efficiency and effectiveness to the healthcare system by getting patients the right care when they need it.

Snapshots of community paramedicine programs in Buckeye, Scottsdale, Tempe, Rio Rico, Chandler, and Mesa show tailored responses to a community’s specific needs, but they share origins and traits.

- They recognize looming changes in the healthcare delivery system prompted by the Affordable Care Act; they operate with existing resources.
- They stay within the scope of practice of EMS personnel.
- They have workforce buy-in of expanded roles to help the people they serve.
- They rely on partnerships and collaborations.
- They have innovative leadership focused on fiscal reality and service to the community.
- They all maintain strict protocols and practices with the oversight of their medical directors.

## Home Health Care

Home health care is a wide range of services that can be given in home for an illness or injury. Home health care is usually less expensive, more convenient, and as effective as care received in a hospital or skilled nursing facility. Examples of home health services include:

- Wound care for pressure sores or a surgical wound
- Patient and caregiver education
- Intravenous or nutrition therapy
- Injections
- Monitoring serious illness and unstable health status

Doctor’s orders and health insurance coverage are needed to start home health services.

Source: [www.medicare.gov/what-medicare-covers/home-health-care/home-health-care-what-is-it-what-to-expect.html](http://www.medicare.gov/what-medicare-covers/home-health-care/home-health-care-what-is-it-what-to-expect.html)

A National Association of Emergency Medical Technicians report released in July 2015 indicated that 69 percent of community paramedicine programs receive referrals from hospitals and 66 percent of community paramedicine programs refer their patients to home health care.

Source: [www.naemt.org/docs/default-source/MIH-CP/naemt-mih-cp-report.pdf?sfvrsn=2](http://www.naemt.org/docs/default-source/MIH-CP/naemt-mih-cp-report.pdf?sfvrsn=2)



## Buckeye

Patient Number One in the Buckeye pilot community paramedicine program validated everything medical and fire service leaders suspected about using existing resources to do what's best for the people they serve.

In May 2015, the Buckeye Fire, Medical & Rescue Department sent a two-person crew to the home of an elderly patient that Banner Estrella Medical Center had flagged as a high-risk for readmission within 30 days. Capt. Stuart Esh said the patient, a proud former Marine, was recovering from a serious illness. He was well enough to go home if he followed his discharge orders and treatment plan.

The crew spent time getting to know the Buckeye retiree who was home alone and had no support system. The firefighters in uniform had his respect as soon as they knocked on his door. During that first visit where they checked his vitals and discussed his medications, they would also gain his confidence.

At the end of the visit, they asked if there was anything they could do before they left. Grudgingly, he said he needed to have his prescriptions filled, but he knew he was too weak to drive himself to the pharmacy. The paramedics loaded him into the unmarked truck (neighbors didn't need to know his business), drove to the drug store to get his medications, and then returned him to his home.

The Buckeye community paramedicine program was the all-important bridge from the hospital to primary care service this patient needed to stay on the path to recovery. The intervention likely helped him avoid a return trip to the emergency department and another stay in the hospital. The program worked exactly as intended.

Buckeye's one community paramedicine crew works in concert with the medical director to provide clinical care in the field.

"It's basically taking your ED (Emergency Department) and moving it to your home," Esh said. "It's running a mini-ED in their house. It's a convenience for them. They don't have to leave, they don't have to call 911. They don't have the embarrassment of riding in an ambulance when they don't need it."



Left: Buckeye Firefighter/paramedic Jim Helms stands in front of the gear that's loaded into the SUV for home visits. Right: Helms monitors a patient's vital signs in his home in Buckeye. (Photos by Casey Kuhn, KJZZ)

In four months, nearly 60 more patients discharged from Banner Estrella would follow Patient Number One. The hospital readmission rate for program participants is 5.3 percent compared to about 17 percent regionally.

“I think probably the biggest thing that we’ve seen is that people are a little bit more accountable for their own health,” Esh said.

That personal accountability, a key goal of the ACA, plays well everywhere, but uniquely so in a community like Buckeye. Geography and city growth patterns compound healthcare delivery challenges in Buckeye. Unlike most communities that grow outward from central cores, Buckeye’s 51,000 residents, a mix of retirees and young families, are spread out over a large area. The West Valley city has a 600-mile planning area. That’s about the size of Phoenix.

Buckeye first looked at developing a community paramedicine program that focused on low-acuity, (which is a non-emergency), frequent users of 911. But a community needs assessment, a resource gap analysis, and a desire to build a long-term sustainable program led instead to the partnership with Banner Estrella Medical Center. This is what Buckeye needs at this time. This is what can be done with available resources.

“Really what we’ve found out about this program is that it’s a social effort,” Esh said. “It’s not necessarily a healthcare effort. It’s helping people get through the medical system, like with the follow-up with your PCP, getting a ride to and from, scheduling your appointments, and medication review.”

The Buckeye pilot initially was to only be six months. Now it will continue for at least a year with the goal of creating a permanent, sustainable program.

*“Really what we’ve found out about this program is that it’s a social effort... follow-up with your PCP, getting a ride to and from, scheduling your appointments, and medication review.”*

Capt. Stuart Esh

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## Scottsdale

HonorHealth and the Scottsdale Fire Department looked into the future of healthcare and the needs of the community and did what they have done several times during a nearly 50-year relationship. They talked to each other, linked arms, and moved toward new goals.

In the last decade, HonorHealth and the fire department established the “2 Fit to Fall” program to reduce falls among elderly residents, and they implemented a cost-sharing agreement that put 27 high-tech cardiac monitors on all paramedic trucks to improve care of heart attack and cardiac arrest patients. Now, the partners have launched the Mobile Integrated Healthcare Program with the expectation of improving patient health and lowering the costs of doing business.

“We’ve always said we’re kind of the perfect petri dish to try something like this because you have two partners who are committed,” said Michelle Pabis, Vice President of Government and Community Affairs for HonorHealth.

Scottsdale’s version of community paramedicine consists of a nurse practitioner and captain paramedic who help patients understand their conditions and navigate a complex healthcare system. Success will reduce overuse of the 911 system and the ED and the need for hospitalizations.

“In the future, providers are going to be paid for taking care of you and keeping you out of the hospital versus the number of clicks and tricks they do to you while you’re inside,” Pabis said.





Scottsdale Fire Department paramedic assists a resident with a home safety concern. During the first five months, the program has reduced hospital readmissions by 17% and ED visits by 42% in a cohort of enrolled patients.

With the Mobile Integrated Healthcare Program, HonorHealth hopes to reduce hospital readmissions during the critical 30-day window by 7.5 percent. More than 90 percent of Scottsdale Fire Department's patient transports go to the three HonorHealth hospitals in Scottsdale.

During an 18-month trial period through the end of 2016, HonorHealth pays for a nurse practitioner and reimburses the fire department for a captain paramedic. It also pays for a half-time medical director, who also happens to be the medical director for the Scottsdale Fire Department and for HonorHealth. Scottsdale Fire Department supplies the vehicle.<sup>4</sup>

Joseph Early, Scottsdale Fire Department's Division Chief of Emergency Medical Services, said the unit visits patients in their homes to do whatever is necessary to help them succeed in managing their care. It could be patient education; it could be facilitating conversations with pharmacists and physicians; it could be connecting the patients with support services.

"The lack of communication, the lack of integration is just astounding," Early said. "That's probably one of the biggest things I've learned is just how big a lack of communication there is between hospitals and primary care physicians, between specialists and primary care physicians, as an example. It's just ridiculous."

The HonorHealth/Scottsdale Fire medical unit is slowly building to an enrollment goal of 200 patients. Hundreds of patients known to HonorHealth and the fire department to be frequent users of the emergency department and the 911 system are prime candidates for participation. Case managers at HonorHealth, field crews who make contact with patients after a 911 call, social services, and health professionals who are part of a Care Coordination Council also may refer people to the program. This Council also meets monthly to collaborate on how to best provide coordinated navigation and services to MIHP program participants.

The modest move into community paramedicine allows HonorHealth and the Scottsdale Fire Department to learn quickly and then develop a strategy for the future to be sustainable, Pabis said. The Scottsdale program has committed to use a program performance benchmarking tool that was designed by mobile integrated health and other healthcare quality experts from around the nation to judge the success of its pilot. This tool was specifically designed to promote consistent quality measurement across all programs. The tool can be found at <http://www.naemt.org/docs/default-source/community-paramedicine/mih-cp-toolkit/mih-metrics-for-community-health-interventions-top-17-isolated-4-7-15.pdf?sfvrsn=2>. HonorHealth will further evaluate the program's financial sustainability and potential growth, including integrating more closely with other population health initiatives currently being explored by the hospital network.

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## Tempe

Tempe is beyond the pilot phase of its community paramedicine program. For two years, the Tempe Fire, Medical and Rescue Department has collaborated with Tempe St. Luke's Hospital and CARE 7 to implement Patient Advocate Services (PAS). The two-person unit helps resolve patient issues efficiently and effectively with results Deputy Chief Darrell Duty calls "staggering."

A sample study of 27 patients found PAS intervention reduced ED visits by 108 over the previous year. During the same period, PAS reduced Tempe Fire, Medical and Rescue's cost of responding to, treating and transporting the sample group by \$193,000. There also was a 72 percent reduction in the sample group's annual 911 usage.

No part of Tempe is medically underserved, Duty said. There are no gaps in resources or major barriers to medical care that inspire some versions of community paramedicine programs that essentially bring urgent care or emergency room services to homes.

"We feel like there's a very good healthcare structure in place in the City of Tempe," Duty said. "There are lots and lots of resources that already exist. We don't see a need to invent another wheel for people to utilize."

But there are social needs in the community, and there are behaviors among residents that lead to frequent, costly use of the 911 system. These circumstances and situations impact the ability of the hospital and medical services to optimally deliver care. This is where PAS, which is supported through a grant from the Salt River Pima Maricopa Indian Community, comes in.

Tempe Fire, Medical and Rescue provides a truck for the PAS team, which consists of a paramedic and a community health coordinator who is a registered nurse from Tempe St. Luke's Hospital. They make house calls to patients enrolled in the program.

Tempe St. Luke's Hospital patients are identified for enrollment in PAS if they meet certain criteria at the time of discharge that could make them a likely candidate for readmission within 30 days. Emergency department nurses can also refer patients who may be good candidates for the program. The average monthly enrollment in PAS is about 40 patients.

At the fire department, the community health coordinator reviews the previous day's 911 EMS calls to track users. If someone calls 911 more than three times in a quarter, more than 12 times in six months or more than 15 times a year, he or she is considered a "loyalty customer" and is contacted by the coordinator and enrolled in the program. A third way patients are referred to PAS is on a 911 call where the responding crew sees things at the home that suggests additional services are needed.

Initial visits by the PAS unit may reveal situations that call for CARE 7, a crisis response and social service response team.<sup>5</sup> The PAS team creates a care plan for the patient, which could include counseling, help with managing medications, and connecting with a primary care provider.



*CARE 7 –  
Tempe's crisis  
response team  
– provides  
immediate crisis  
intervention,  
support, and  
referral for  
domestic vio-  
lence, assaults,  
suicides,  
homicides,  
and other  
unexpected  
deaths.*

<http://www.tempe.gov/city-hall/community-services/volunteer/list-of-programs/care7-crisis-response-team>



RNs Kellie Sullivan (left) and Monique Lind (right) run the PAS program.

A records review conducted by Tempe Fire, Medical and Rescue shows a dramatic reduction in 911 calls by frequent users and cost savings to the city and department by more efficient use of resources with the advent of PAS. “We have several examples of real success stories where somebody called 911, say 120 times in a calendar year,” Duty said. “The next year they would call 20 times and now they may call once a month if that.

“And the really great thing is that those patients, once they graduate from the PAS program, they’re really showing resiliency...We’re pretty proud of that.”



## Rio Rico

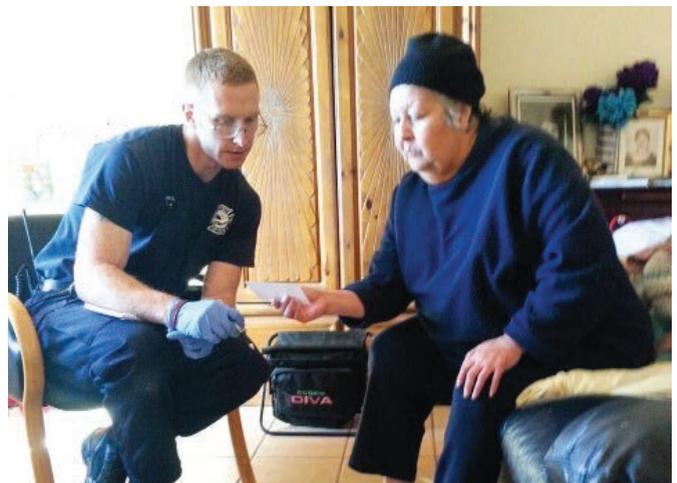
Interest in community paramedicine programs in the United States took hold in rural areas with remote access to hospitals. Les Caid, Chief of the Rio Rico Medical & Fire District in Santa Cruz County, sees community paramedicine as a tool that works everywhere there is interest in achieving health reform’s “Triple Aim”.

“I heard someone once say we are good at pulling people out of the water,” Chief Caid said. “But rather than pull people out of the water, let’s go upstream and keep them from falling in.”

The community paramedicine program in Rio Rico began January 3, 2014 and was bolstered by a three-year, \$553,000 grant from the Health Resources and Services Administration (HRSA), strategically positioning Rio Rico Medical & Fire to help prevent medical emergencies.<sup>6</sup> The Community Healthcare Integrated Paramedicine Program (CHIPP) identifies frequent users of the 911 system who have chronic conditions, such as COPD, congestive heart failure, and diabetes. During scheduled visits to homes, two-member crews do environmental assessments, conduct medication reviews, provide education on the patient’s condition, and coordinate care. The goal is to improve the health and quality of life of participants, reduce the use of EMS and ED, and lower hospital readmission rates.



Rio Rico Medical & Fire’s CHIPP team following a Medication Class with Dr. Kelly Boesen, PharmD from the Arizona Poison and Drug Information Center.



Corey Pangrac, Rio Rico CHIPP team member discusses a medication list with a program participant.

CHIPP changes the focus of fire service-based EMS from a 30-minute encounter with a patient to a relationship lasting days, even weeks – the time it takes to get to know people, identify their needs and help fix long-term problems.

“Healthcare is really where this is going,” Chief Caid said of the program. “It’s not an emergency. It’s healthcare. I really feel like we align with public health much more so than with anything else.”

Although there are obvious differences between experiences in rural and urban areas, Rio Rico’s path to community paramedicine and its demonstration of effectiveness is similar to urban-based pilot programs. All communities have populations with chronic diseases, people at risk of suffering serious health consequences from a fall, and healthcare systems impacted by the Affordable Care Act.

Like urban fire departments, community need and fiscal challenges propelled Rio Rico to change business practices. Rio Rico’s community health needs assessment led to the discovery of community resources even the fire district did not know existed. These discoveries have led to partnerships and collaborations with healthcare agencies, primary care physicians, health education resources, and the Arizona Poison and Drug Information Center.

Rio Rico’s HRSA grant includes provisions for data collection and evaluation that are critical to building a sustainable community paramedicine model. Caid said fire departments and districts have plenty of anecdotal evidence that community paramedicine has an impact on individual and population health. Data will provide proof of health and financial benefits and help fine-tune programs.

Community paramedicine continues a fire service history of positive prevention efforts, Caid said. “We’ve done fire prevention. We know that works. We’re not going on many fires anymore,” he said. “Statistics are already there. Better fire prevention, better building materials, better education. So then we got into drowning prevention. We saw too many kids drowning. Bike safety, seatbelts. All these preventative things.”

“So this is a natural evolution. It really is. We’re seeing these folks. We’re doing EMS. Let’s do the prevention.”

## Community Health Needs Assessments (CHNAs)

A community health needs assessment (CHNA) is vital to developing strategies that address a community’s health needs. A CHNA is a systematic collection of data and analysis. According to the National Association of County & City Health Officials, “An ideal assessment includes information on risk factors, quality of life, mortality, morbidity, community assets, forces of change, social determinants of health and health inequity, and information on how well the public health system provides essential services.”

A variety of tools and processes may be used to conduct a CHNA, but the essential ingredients are community engagement and collaborative participation.

The Affordable Care Act requires nonprofit hospitals to conduct a CHNA for their service areas and adopt an implementation strategy at least once every three years. Local health departments seeking public health accreditation must also conduct a CHNA. Nonprofit hospitals and local health departments often collaborate to conduct the CHNA with each publishing their assessment and improvement plans.

To learn more about the Nonprofit Hospital Community Benefit Requirements, please visit [slhi.org/connecting-the-dots-community-benefits-july-2015/](http://slhi.org/connecting-the-dots-community-benefits-july-2015/)

\* National Association of County & City Health Officials. Community Benefit. [www.naccho.org/topics/infrastructure/mapp/chahealthreform.cfm](http://www.naccho.org/topics/infrastructure/mapp/chahealthreform.cfm)

*Rio Rico’s community health needs assessment led to the discovery of community resources even the fire district did not know existed.*



## Chandler

In emergency response circles, people who make repeated use of the 911 system are often referred to as “high system utilizers”.

In January 2015, Chandler created a program that focuses on their high system utilizers and gave the program a name that accurately describes it, the “Complex Patient Management Program.” Battalion Chief Val H. Gale Jr. of the Chandler Fire, Health & Medical Department said the complexity here is not the high-level skills necessary in some medical emergency situations; it is the myriad of health, social and personal issues that affect patients’ abilities to safely care for themselves in their homes. Sending a four-member fire crew on an engine or ladder to respond to an issue that is not be emergent is not only an inefficient use of resources, it also may not address the root causes of the 911 call. It is a very expensive Band-Aid approach to these complex patients.

Chandler learned a lot about the needs of its community in the year prior to launching the Complex Patients Management Program. In 2014, a treat and refer program for low-acuity (non-emergent) calls was initiated. Units responding to these calls treat the immediate issue, and then have the discretion to refer a patient to a primary care physician or urgent care instead of the emergency department. For calls classified as low acuity at the dispatch center, a two-person vehicle may be sent in place of the four-person engine. The two-person vehicle provides a more efficient response, saving approximately half the cost of the four-person engine while keeping the four-person engine available for emergent fire and EMS calls.<sup>7</sup>

Chandler Fire, Health & Medical’s CP281 vehicle parked in front of the Chandler Administration building.



Gale said in fire service-based EMS delivery, it is easy to run on a call, put a patient in the ambulance, and transport him or her to the hospital. It is quick, low-risk, and low liability. “But it’s not best for the system, it’s not best for the patient, and it’s not the best service delivery,” he said.

A further look at call data showed that 225 people had called 911 for medical response five or more times during a nine-month period.<sup>8</sup> The community paramedicine solutions that impact quality of life for the long-term occur during a relationship that could last months. It is an entirely different mindset for EMS personnel. In Chandler’s community paramedicine program, a two-person crew makes scheduled visits to patients prone to calling 911. The crews spend time getting to know the patient and understanding their issues. They conduct home environment safety assessments, focus on medication adherence, provide education on the patient’s condition, and help educate the patient on how to navigate the healthcare system. They collaborate with case managers, primary care physicians and home health agencies. For the 60 people in its Complex Patient Management Program, sometimes it is connecting the dots between existing community resources that proves to be the most beneficial care.

Chandler continues to learn and grow from its community paramedicine experiences. In December 2015, the Chandler City Council approved a program with the Phoenix Veterans Affairs (VA) Healthcare System to improve treatment outcomes for Chandler veterans. During the six-month Community Involvement and Intervention Project, fire department personnel will screen patients to identify those who are veterans and then help start the process to connect them to VA medical services and benefits. Telemedicine will be a key component of the new project.<sup>9</sup>

“I love the successes that we’re having,” Gale said. “It’s very beneficial to our crews because they’re not going on the same person over and over again and getting frustrated. The person is not getting frustrated because his or her needs aren’t getting met. We’re helping these people.”

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## Mesa

There are at least 12.5 million reasons all eyes in Arizona’s community paramedicine circles are on the Mesa Fire and Medical Department. In 2014, Mesa Fire and Medical received a \$12.5 million, three-year Centers for Medicare and Medicaid Services (CMS) Healthcare Innovation Award for its Community Care Response Initiative.<sup>10</sup> The grant put its community paramedicine pilot program on steroids.

Mesa operates the most expansive community paramedicine project in Arizona. In partnership with Superstition Fire and Medical District, Queen Creek Fire and Medical District, Mountain Vista Medical Center, Crisis Preparation and Recovery, AT Still University, and the University of Arizona, the program will yield needed statistics and working knowledge about many of the key questions surrounding the viability of community paramedicine programs, including dispatch protocols, billing codes, and return on investment. The grant work is focused on areas covered by Mesa Fire and Medical, including densely populated central Mesa, the more rural Superstition Mountains region, and the town of Queen Creek.



*Mesa operates the most expansive community paramedicine project in Arizona.*

*“We’re not in it to play in someone else’s sandbox. We want to bring the sandboxes closer together so we can all play and have a continuum of care.”*

Tony Lo Giudice,  
Mesa’s CMS  
Innovation Grant  
administrator

In 2008, Mesa City Hall leadership told the department to find more cost-efficient ways to operate in a Great Recession era to meet growing community needs. Near-crisis levels of overcrowding in Mesa’s emergency departments, particularly during flu season, also spurred outside-the-box thinking. Expanded dispatch triage that sent two-person “Transitional Response Vehicle” (TRV) units instead of four-person engines for low-acuity calls during peak times helped the department better manage staffing levels and cut overtime costs.

In 2010, Mesa switched to a computer-based system for documentation of patients. The technology enabled Mesa to collect significantly more meaningful data, spot trends, assess processes, and measure outcomes. In 2013, Mesa implemented two TRV units. One unit addressed 10 percent of 911 calls dealing with substance abuse and mental illness, and the other unit addressed 40 percent of the 911 calls that were not medical emergencies but urgencies. Now known as Community Care Units, they are staffed by a captain paramedic and a nurse practitioner or behavioral health specialist who have authority to treat and refer patients to a primary care physician or other appropriate provider.

“They’re getting the same assessment, same organization, (and) same people that they would get in an ED, but they’re just getting it at a point of contact,” said Deputy Fire Chief Steve Ward. “It’s much more efficient and healthier for the patient.”

Community Care Units that were operating 40-hours a week before the CMS grant, now run 24 hours a day, 7 days a week. In October 2015, Mesa expanded its community paramedicine project to include scheduled post-discharge follow-up visits through a partnership with Mountain Vista Medical Center designed to reduce readmission rates. They are expecting to make about 10 visits per day.

Tony Lo Giudice, Mesa’s CMS Innovation Grant administrator, said the department’s expanded role in Mesa’s healthcare delivery system is not pushing into the space of other healthcare professionals or competing with other community services. It addresses unmet needs. Also, the new duties are within the scope of practice for Mesa’s emergency medical services personnel and under strict medical direction, he said.

“We’re not in it to play in someone else’s sandbox,” Lo Giudice said. “We want to bring the sandboxes closer together so we can all play and have a continuum of care. Make those toys go back and forth and everyone’s happy, including the patient that we’re all serving.”



A physician assistant and captain paramedic team evaluate, treat, and write a prescription for a patient with flu like symptoms. The patient is then referred to their primary care physician for follow-up care.



A licensed counselor and captain paramedic team conduct a mental health evaluation and transport the patient to an appropriate behavioral health facility.

## Conclusion

Community integrated paramedicine is a nimble approach to providing patients with the most appropriate level of care. Communities throughout Arizona are implementing pilot programs after assessing needs and available resources. Some of those programs are now well enough along in their development that they are no longer considered pilots. But their growth and sustainability depend on establishing reimbursement models that help pay for community paramedicine services like treat and refer.

Early results of Arizona's community paramedicine programs show promise in achieving the "Triple Aim" of healthcare reform. Costs are going down, patient satisfaction is going up, and the overall health of the communities' populations is improving.

Community paramedicine programs are sparking new and better conversations about healthcare delivery and patient responsibility in managing care.

Now, reimagine the conversation:

**(Because a paramedic noticed on a scheduled visit to a frequently hospitalized patient who has chronic obstructive pulmonary disease that a metered-dose inhaler is empty.)**

*"When was the last time you used your inhaler? It may be empty. We don't want you to have breathing problems. Let's call your primary care physician and see about getting you a new prescription."*

**(Because a nurse practitioner took great field notes from a visit to a patient who is a frequent user of the 911 system and saw that 15 medications for congestive heart failure and other conditions were working against each other.)**

*"Let's consult with your specialists about the possibility of changing some of your medications so you won't feel dizzy all the time. And while we are here, my paramedic partner will do a home safety check and correct things we can to reduce your chance of falling."*

**(Because a behavioral health counselor recognized signs that a mother's son needs extra help with this particular battle with substance abuse and mental illness.)**

*"We'll take him to a crisis care center for behavior health issues. He'll get the care he needs right away instead of waiting perhaps days, at the hospital before he reaches the appropriate care."*

**(Because the hospital referred a patient at high risk of readmission for follow-up care to a community paramedicine program.)**

*"Your vital signs are good, your wound is healing nicely, and we see that you have the medications listed in your discharge papers. Let's schedule that visit with your primary care physician. We'll come check on you in a few days, but here's the number to reach us if you need anything before then."*

*Community paramedicine programs are sparking new and better conversations.*

Community paramedicine could revolutionize the healthcare delivery system by using readily available trained resources and providing the appropriate level of care at the right time. It puts patients in charge of their care, which offers the best chances for reducing the load on emergency medical services and improving population health. And it encourages richer, deeper conversations that improve the health of individuals, the community, and the healthcare system.

This primer highlighted several community paramedicine programs in Arizona, but there are also active projects in Golder Ranch Fire District; Green Valley Fire District; Salt River Fire Department; Sierra Vista Fire & Medical; Superstition Fire & Medical (in partnership with Mesa Fire & Medical); and Verde Valley Fire District. Many other fire departments and districts are actively developing or formalizing programs.

Community paramedicine projects are tailored to meet local needs, but the work performed has statewide implications for Arizona's healthcare delivery system. The Arizona Department of Health Services and the Arizona Health Care Cost Containment System are part of active discussions about reimbursement mechanisms for services, which are key to the sustainability of community paramedicine programs. These collaborations and partnerships should lead to solutions that make community paramedicine a permanent service for communities throughout Arizona.

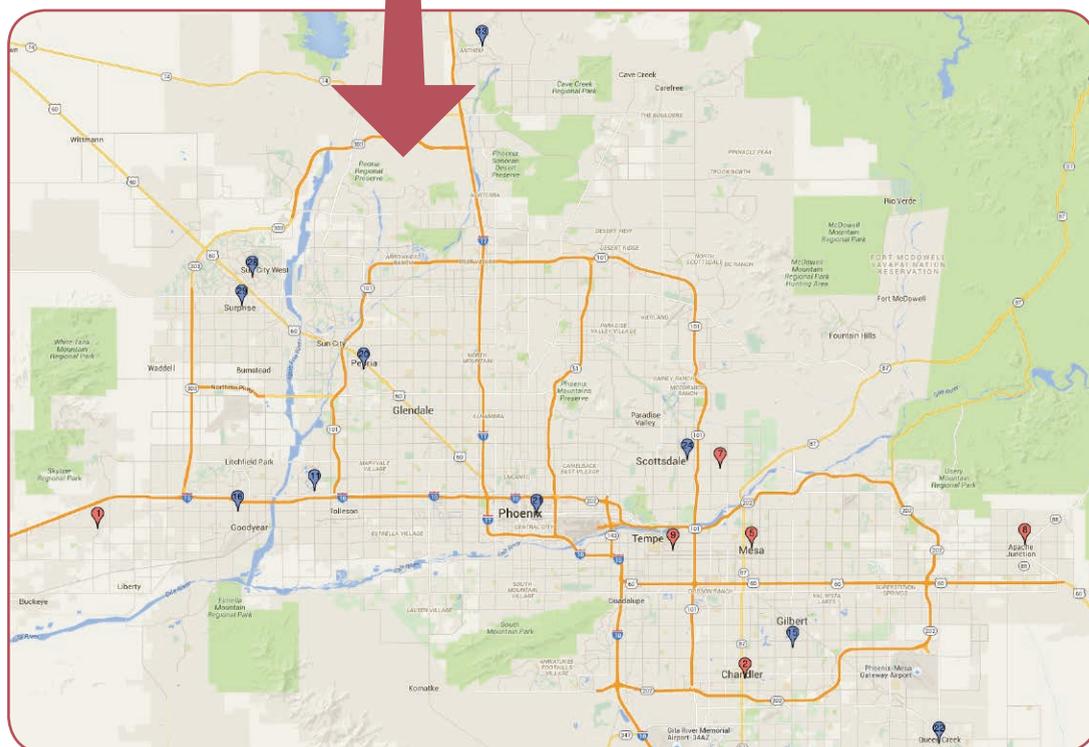
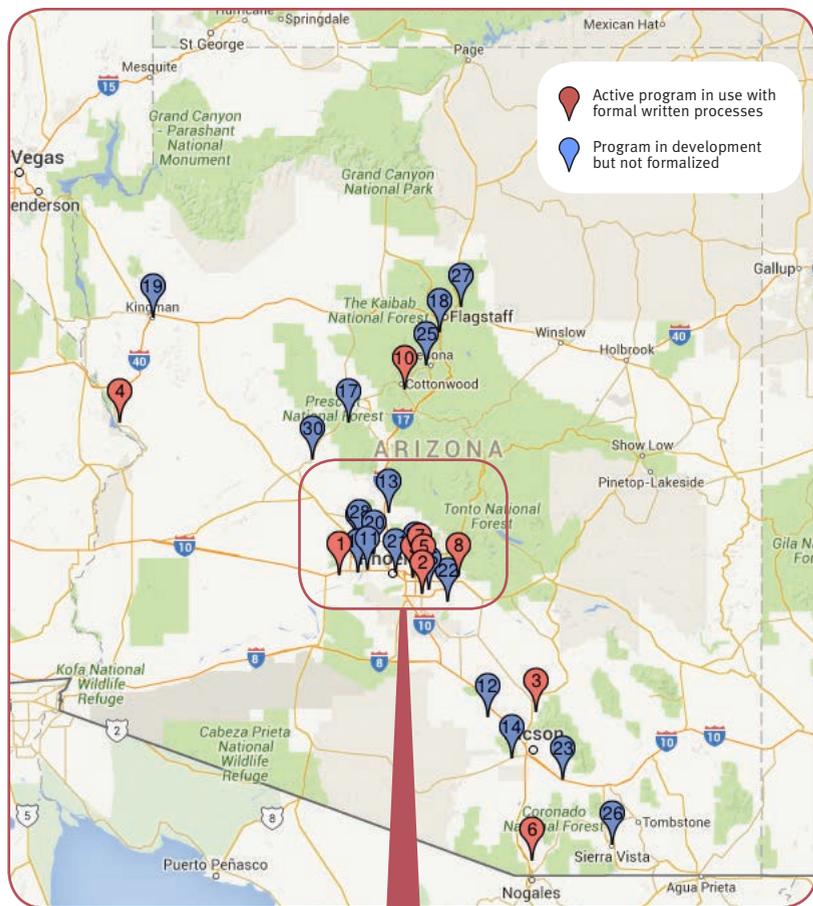
**For more information and updates on this topic, visit [www.slhi.org/community-paramedicine](http://www.slhi.org/community-paramedicine).**

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# Arizona Community Paramedicine Programs



- 1 Buckeye Fire Medical-Rescue**  
21699 W Yuma Rd  
Buckeye 85326
- 2 Chandler Fire, Health & Medical**  
151 E Boston St  
Chandler 85225
- 3 Golder Ranch Fire District**  
3885 E Golder Ranch Dr  
Tucson 85739
- 4 Lake Havasu City Fire Department**  
2330 McCulloch Blvd N  
Lake Havasu City 86403
- 5 Mesa Fire & Medical**  
13 W First St  
Mesa 85201
- 6 Rio Rico Medical & Fire District**  
822 Pendleton Dr  
Rio Rico 85648
- 7 Salt River Fire Department**  
10005 E Osborn Rd  
Scottsdale 85256
- 8 Superstition Fire & Medical District**  
565 N Idaho Rd  
Apache Junction 85119
- 9 Tempe Medical Rescue Department**  
1400 E Apache Blvd  
Tempe 85281
- 10 Verde Valley Fire District**  
2700 Godard Rd  
Cottonwood 86326
- 11 Avondale Fire Department**  
1825 N 107th Ave  
Avondale 85392
- 12 Avra Valley Fire District**  
15790 W Silverbell Rd  
Marana 85653
- 13 Daisy Mountain Fire District**  
41104 Daisy Mountain Dr  
New River 85086
- 14 Drexel Heights Fire District**  
5030 S Camino Verde  
Tucson 85735
- 15 Gilbert Fire and Rescue**  
85 E Civic Center Dr  
Gilbert 85296
- 16 Goodyear Fire Department**  
14455 W Van Buren St  
Goodyear 85338
- 17 Groom Creek Fire District**  
1110 E Friendly Pines Rd  
Prescott 86303
- 18 Highlands Fire District**  
2838 Kona Trl  
Flagstaff 86001
- 19 Kingman Fire Department**  
412 E Oak St  
Kingman 86401
- 20 Peoria Fire-Medical Department**  
8351 W Cinnabar Ave  
Peoria 85345
- 21 Phoenix Fire Department**  
150 S 12th St  
Phoenix 85034
- 22 Queen Creek Fire & Medical Department**  
22358 S Ellsworth Rd  
Queen Creek 85142
- 23 Rincon Valley Fire District**  
14550 E Sands Ranch Rd  
Vail 85641
- 24 Scottsdale Fire Department**  
8401 E Indian School Rd  
Scottsdale 85251
- 25 Sedona Fire District**  
2860 Southwest Dr  
Sedona 86336
- 26 Sierra Vista Fire & Medical Department**  
1295 E Fry Blvd  
Sierra Vista 85635
- 27 Summit Fire & Medical District**  
8905 Koch Field Rd  
Flagstaff 86004
- 28 Sun City West Fire District**  
18818 Spanish Garden Dr  
Sun City West 85375
- 29 Surprise Fire-Medical Department**  
14250 W Statler Plaza  
Surprise 85374
- 30 Yarnell Fire Department**  
22558 Looka Way  
Yarnell 85362

Note: Community paramedicine activity was self-reported by Arizona fire departments between April and June 2015. Information from case studies was gathered between September and November 2015.  
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