Ambulance services are reimbursed as a transportation benefit based on Section 18/19 of the Social Security Act. Therefore, if the ambulance service does not transport, there is no reimbursement. Other components of the local Emergency Medical Services (EMS) system (such as medical direction and non-transporting first response) are also not reimbursed, and therefore, rely on other sources of funding. In light of recent payment redesign efforts in our country, this somewhat misaligned EMS incentive should be re-examined. EMS is in a unique position to be able to provide assessment and care at the beginning of an acute health care episode and identify paths for better outcomes and reduced costs. Alignment of incentives to include assessment, care, and navigation beyond the traditional transportation benefit would be a strong catalyst to the entire health care system.

The Health Care Innovation Awards (HCIA) (supported by grants from the Department of Health and Human Services, Centers for Medicare and Medicaid Services) funded up to $1 billion in (Round One & Round Two) awards to applicants across the country that test new payment and health care service delivery models. The CMS Innovation Center (CMMI) announced the first batch of awardees for the HCIA May 8, 2012, and the second (final) batch June 15, 2012. The awarded organizations implemented projects in communities across the nation that aimed to deliver better health, improved care and lower costs to people enrolled in Medicare, Medicaid and the Children’s Health Insurance Program (CHIP), particularly those with the highest health care needs. Funding for over 100 projects was for three years. CMS contracted independent evaluations of the HCIA awardees were published on the CMMI website and assessed each projects’ impact on the three overarching goals of the Affordable Care Act of 2010: smarter spending, better care and healthier people. An EMS Learning Collaborative was hosted by the CMMI and facilitated by CMS contractors the Lewin Group and HealthInsight.
The following pages provide a summary of three EMS pilot projects. Below are major themes faced by the EMS pilots, followed by a structured summary of the individual projects.

**MAJOR THEMES/RECOMMENDED NEXT STEPS/CROSS-SITE LESSONS LEARNED**

- **Redesign of EMS services will achieve major downstream cost savings via reduced admissions, readmissions, ED visits and ambulance transports.**

- **Reform of federal payment policy and state EMS statutes/regulations are needed to expand EMS roles at scale.**

- **Full engagement of commercial payers and state Medicaid programs in EMS transformation projects is critical to program sustainability.**

- **Upstreaming patient assessment and navigation influences cost and quality of care (e.g., transport to alternative destination, nurse triage, community paramedicine, in-home assessments and referral, and telemedicine-enhanced paramedicine).**

The contents of this report are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services or any of its agencies. The results presented may or may not be confirmed by independent evaluations.
**Regional Emergency Medical Services Authority (REMSA)** is a high-performance, private, locally-governed, nonprofit health care organization and emergency medical services agency serving northern Nevada since 1986 (www.remsahealth.com).

---

### Project Goals

Improve access to appropriate levels of quality care and reduce per-patient cost by establishing new care and referral pathways for nonurgent 9-1-1 callers, frequent ED users and at-risk patients in Washoe County (Reno), Nevada; savings will be achieved by reducing utilization as follows:

- Reduce ambulance transports
- Reduce emergency department visits
- Reduce hospital admissions and readmissions

### Project Design

REMSA implemented three interventions designed to work synergistically:

- **Alternative Destination Transport (ADT):** Ambulance-based payments for transport to destinations other than emergency departments, specifically, transport of low-acuity patients to urgent care centers, mental health facilities and detoxification centers (Launched December 2012)
- **Community Paramedicine (CP):** Specially trained community paramedics provide in-home services under approved protocols in collaboration with referring care coordination teams (Launched June 2013)
- **Nurse Health Line (NHL):** Registered nurse navigators provide 24/7 access to assessment and triage to the appropriate health care or community service (Launched October 2013)

### Project Implementation

- **Patient-centered system redesign:** All patient encounters require consent, and all contracts with payers are guided by the prudent layperson definition of emergency
- **Real-time data exchange:** Technology tools are maximized, including, electronic medical record, protocol-driven care algorithms, health information exchange and data integration for measurement
- **Stakeholder engagement:** Stakeholders are converted into partners by identifying and engaging all impacted participants, creating tailored strategies, educating the public to accept new pathways and assuring referral to in-network care when possible
- **Aligned financial incentives:** Care delivery systems are redesigned to align the financial incentives of the health care provider and the payer in a clinically appropriate and patient-centered manner

### Organizational Key Partners/Subcontractors

- **Health care:** Northern Nevada Medical Center, Renown Health, Saint Mary’s Medical Center, two federally qualified health centers (Northern Nevada HOPES & Community Health Alliance), 15 urgent care centers, clinics, medical groups, WestCare Community Triage Center, Northern Nevada Adult Mental Health Services, WestHills Mental Health Hospital and Sierra Pharmacy
- **Community:** Nevada state EMS office and state health officer, Washoe County Health District, senior and community groups, Reno Fire Department, Sparks Fire Department, Truckee Meadows Fire Protection District
- **Data/evaluation:** University of Nevada, Reno – School of Community Health Sciences, Nevada Center for Health Statistics & Informatics, HealthInsight (Nevada) and RTI International
- **Implementation:** First Watch (data mining), KPS3 (community outreach/marketing), Priority Solutions (emergency communication nurse system), ZOLL (community paramedic electronic medical record), True Simple (performance improvement processes)

### Target Population Size & Demographics

- **ADT:** Washoe County 911 acute and non-acute patients (est. 48,500 9-1-1 responses annually)
- **CP:** Post-acute and pre-acute patients with congestive heart failure, chronic obstructive pulmonary disease, post cardiac surgery, post myocardial infarction and frequent ED and 9-1-1 users
- **NHL:** All residents of Northern Nevada and Northeastern California (est. 750,000)

---

**REMSA’s Community Health Programs achieved $9.66 million in community-wide health care savings over four years.**
### Self-Monitoring Methods

REMSA’s encounter-based interventions were intended to achieve significant improvements in the population-wide navigation of patients to the right level of care versus the over-triage of patients characterized by the current emergency services system. An additional goal is to improve the health of the population by changing health interventions and health policies to address social determinants of health; self-monitoring included the following:

- **Operations Data** regarding utilization, quality, satisfaction, avoided events and patient safety was reported and monitored quarterly
- **Patients** represented all payer sources, including Medicare, Medicaid, commercial insurance and uninsured patients
- **Savings** were measured by a count of avoided events (e.g., avoided ED visits, avoided ambulance transports, avoided hospital admissions or readmissions) multiplied by the average payments avoided per event using Washoe County-specific data; the average payment for an urgent care visit was deducted from the savings calculation for both the ADT and NHL interventions

### Results

Below are self-monitoring results from July 1, 2012, through June 30, 2016

**Smarter Spending:** Achieved $9.66 million in community-wide health care savings over four years from the following reduction in utilization:
- 6,202 ED visits avoided
- 1,024 ambulance transports avoided
- 104 hospital readmissions avoided

Achieved per event savings as follows:
- $1,220 savings per ADT
- $1,271 savings per 30-day CP enrollment
- $226 savings per completed NHL protocol

Medicaid comprises the single largest share of overall program savings across all three interventions as Medicaid patients represent a significant share of intervention participants: 42.4 percent of ADT patients, 6.5 percent of CP patients, and 31 percent of NHL callers

**Healthier People:** Reduced the CHF readmission rate of enrolled patients by 37 percent from a baseline of 20.4 percent to monthly median of 12.9 percent; and likely contributed to a reduction in the Washoe County CHF readmission rate which fell by 3 percent from July 1, 2013, through June 30, 2014

**Better Care:** Achieved increase in utilization of the NHL and ADT interventions in health disparities ZIP codes; the three ZIP codes had the highest per-capita NHL use (>32 calls/1,000) were the same three ZIP codes that had the highest rates of per-capita ED use (>455 visits/1,000) before program launch

### Experience of Care

The average patient satisfaction score was over 4.9 (on a Likert scale of 1 to 5, with 5 being the highest) for community paramedics and was over 4.25 for nurse navigators. While patient satisfaction scores for alternative destination transports were aggregated in the overall ground ambulance patient satisfaction survey (and were not reported separately), these quarterly satisfaction reports consistently exceeded the 90 percent benchmark throughout the ADT pilot period

### Cost Savings

The CMS-contracted independent evaluation included a cross-site comparison of 24 programs and reported the following:

- **Reduced Ambulance Transports:** The three REMSA interventions combined reduced the percentage of low-acuity transports (9-1-1 calls with Priority 3 determinant) to the ED from 37 percent to 18 percent from Jan. 1, 2013, through June 30, 2016
- **Reduced Spending:** REMSA was one of five awardees to show significant reductions in spending
- **Reduced Utilization:** REMSA was one of seven awardees to notably reduce utilization consistent with the theory of change
- **Effective Implementation:** Highlighted REMSA’s path to implementation effectiveness
### Cost Savings (cont.)

**ADT:**
- Reduced weighted average quarterly spending per patient by $1,430
- Successfully diverted over 1,500 9-1-1 callers (who normally would have been taken to the ED) to a more appropriate facility
- Fewer ED visits occurred in the corresponding quarter of the alternative destination transport

**CP (30-day):**
- Reduced weighted average quarterly spending per patient by $1,070
- Significantly reduced inpatient admissions among Medicare beneficiaries

**NHL:**
- NHL encouraged individuals who needed care to get it


### Other Project Outcomes

The validated quality of life survey measured satisfaction with physical health, mood, work, household activities, social network, family interaction, spare time activities, ability to work in daily life, and overall life joy and happiness. The survey was administered at the initial community paramedic visit and again at the end of the 30-day enrollment with results coded for analysis by the University of Nevada Reno researchers. The initial survey (n=265) yielded an average response of 3.04 on a scale of 1 to 5 (Likert scale, with 5 being the highest score). The end-of-care survey (n=59) yielded an average response of 3.80 on a scale of 1 to 5. The 37 paired surveys resulted in a 14 percent increase (0.7) in the patients’ self-reported quality of life.

### Licensure and Scope of Practice

REMSA designed hiring, training, continuous quality improvement and medical oversight programs for clinical personnel to function within existing scopes of practice; all programs are designed to integrate the traditional EMS service model with the community-wide health care delivery system:

- **Community Paramedics** function in new expanded roles at top of license within existing scope of practice; state-approved waiver (covering training curriculum and protocols) was in place until formal legislation was passed to create provider certification and agency endorsements
- **Nurse Navigators** provide recommended level of care using medical director approved protocols and function within well-established statutory and regulatory framework for nurse call centers
- **Ambulance paramedics and EMTs** perform alternative destination transports following medical director approved protocols and function within existing scope of practice; no statutory change was required as Nevada statute enables transport to medical facilities

### Training

Each intervention had a unique training program:

- **ADP:** All ambulance paramedics and EMTs (>400 full-time and part-time personnel) received four (4) hours of additional training (which is now integrated into new hire orientation); training curriculum includes clinical eligibility protocols, performing and documenting an advanced assessment, and receiving facility operating procedures
- **Community Paramedic:** Community Paramedics (>10 full-time and part-time personnel) complete 150 hours of classroom and didactic instruction; training curriculum has been competency tested and includes: assessment, critical thinking, technical and communication skills for managing out-of-hospital care for individuals, families and populations with chronic disease; course curriculum and protocols have received endorsement from the state of Nevada office of EMS
- **NHL:** Registered Nurses (>9 full-time and part-time personnel) are certified in Emergency Medical Dispatch (EMD) and Emergency Communication Nurse System (ECNS) consisting of approximately 40-hours of additional training beyond RN licensure; ECNS is accredited by the International Academy of Emergency Dispatch (IAED)

---

The return on investment to payers (total expenditures compared to total savings) ranges from 250 percent to 350 percent.
**Sustainability and Payment Methods**

- **Return on investment (ROI) to payers from 250 percent - 350 percent:** While average ROI to payers (insurers, Medicare, Medicaid) varies by intervention, patient population and insurer and the post-grant reimbursement rates paid by payers, all interventions achieve a net ROI to payers. ROI is measured as the ratio of total payer expenditures versus total payer savings.

- **Current reimbursement arrangements:** Active negotiations with commercial insurers and clinical partners continue with the following results to date:
  - **Commercial Insurers & ACO:** Reimbursement per visit and per bundle for select episodic evaluation and treatment CPT codes (CP); per population and per call (NHL); per transport (ADT)
  - **Nevada Medicaid:** Reimbursement per visit and per bundle for select evaluation and treatment CPT codes (CP); per transport (ADT)
  - **Health Partners:** Reimbursement per population and per call (NHL)
  - **Hospital District:** Monthly cost-plus service contract with off-setting patient billing revenue

- **Uncompensated care.** Since these EMS-based programs are implemented community-wide, REMSA continues to underwrite the service costs for NHL and ADT. The CP intervention has been scaled to only enroll patients with a payer source.

**Barriers**

- **Bridge-funding is necessary to sustain savings attributed to Medicare beneficiaries:** With evidence of smarter spending, better health and better care, bridge funding from CMS is needed for the Medicare population. The estimated one-year funding necessary to sustain all three interventions (CP, NHL and ADT) is $520,000 with associated one-year Medicare savings estimated to be $1.6 million in reduced utilization and avoided payments. This funding proposal is supported by the compelling evidence provided by the independent evaluation from RTI International (see Cost Savings section).

- **Documented a lack of primary care and behavioral health services:** The community’s limited primary care and behavioral health care services was a limiting factor constraining the scale of all three interventions to navigate low-acuity patients to appropriate lower-cost sites of care; significant additional savings could be realized as this capacity expands in the community.

**Policy Issues/ Landscape within State**

In June 2016, the Nevada governor signed legislation establishing a provider and agency endorsement (credentialing) process for a new, community paramedic-level certification. Also, in June 2016, CMS approved the Nevada Medicaid divisions’ state plan amendment establishing Medicaid reimbursement for community paramedicine services.  

*For more information, contact the Nevada Division of Healthcare Financing & Policy or go to: https://dhcfp.nv.us*

**Lessons Learned**

- All three interventions (Alternative Destination Transport, Community Paramedicine & Nurse Health Line) implemented jointly, strengthen patient navigation and optimize systemwide savings
- The pace of improvement is dependent upon the speed with which integrated systems are created and the accompanying technology and data exchange systems are designed
- Effective outreach efforts achieved: increased community awareness, strong partner engagement; clinical practitioner buy-in; patient consent and public policy official support—all critical elements of a successful program
- Care redesign occurs at a faster pace than payment policy change, especially Medicare
- Expectations of the public, patients, EMS personnel, health care partners and payers must evolve

*For more information, download the white paper about REMSA’s Community Health Programs at https://remsahealth.com/communityhealthoutcomes*

**Disclaimer**

This brief summarizes the activities, accomplishments and results of the Regional Emergency Medical Services (REMSA) Community Health Programs which were funded by a Health Care Innovation Award (supported by Grant Number 1C1CMS330971 from the Department of Health and Human Services, Centers for Medicare & Medicaid Services) for program activities over the four-year innovation period beginning July 1, 2012, through end date June 30, 2016. REMSA was one of five Round One grantees to receive a CMS-approved one-year grant extension. The contents of this brief were drawn from the comprehensive Final Performance Report submitted to CMS Sept. 28, 2016.

*The contents of this report are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services or any of its agencies.*
EMERGENCY MEDICAL SERVICES