



Las Vegas Fire & Rescue Elevates CPR Performance with Low-Dose, High-Frequency Quality Improvement Program

RQI RESUSCITATION
QUALITY
IMPROVEMENT™

An American Heart Association®
and Laerdal Program



American
Heart
Association.



Laerdal
Helping save lives



Las Vegas Fire & Rescue (LVFR) protects a city covering more than 133 square miles (including large Clark County “islands”), nearly 640,000 residents and several million visitors annually. LVFR is an Insurance Services Office (ISO) Class One department and an internationally accredited agency by the Commission on Fire Accreditation International.

PROVIDER STORY

Las Vegas Fire & Rescue needed objective CPR measures and high-quality CPR training that would enable crew members to remain in service while they trained.

“I’ve visibly noticed our ventilation rates decrease and move into very safe zones over time—and this has occurred without prompting or specific focus. RQI has lowered our ventilation rates, and our muscle memory has shifted.”

— **David Slattery, MD, EMS Medical Director,**
City of Las Vegas, Las Vegas Fire & Rescue



CHALLENGE

Las Vegas Fire & Rescue (LVFR) is a busy urban fire department charged with caring for a buzzing city that never sleeps. They have nearly 560 paramedics and advanced emergency medical technicians (AEMTs) treating a high volume of cardiac arrests. With their innovative mindset, LVFR was the first emergency medical service in southern Nevada to deliver targeted temperature management (TTM) in the field and directs its cardiac arrest patients exclusively to facilities committed to providing excellent post-resuscitation care.

“Despite the agency’s commitment to excellence in cardiac arrest care, something was missing. We didn’t have any objective measures of how we were doing, both with chest compressions and more importantly, with ventilations,” said David Slattery, MD, EMS medical director for the City of Las Vegas, LVFR. “Surveilling ventilation management is extremely difficult to do. Hyperventilation and overventilation are harmful to patients in post-cardiac arrest scenarios, as well as traumatic brain injuries. What we know, for the most part, is that all of us (in-hospital personnel and out of hospital) tend to over-ventilate and hyperventilate people.”

LVFR was also concerned with the resources required to maintain the team members’ then-current credentials. The instructor-led basic life support (BLS) and advanced cardiovascular life support (ACLS) training classes were required every two years. With Las Vegas’ EMS call volume increasing by 7 to 8 percent annually, resources were stretching to keep up.

“It’s incredibly important to our community mission for our crew members to stay in service,” said Dr. Slattery. “Keeping our emergency resources available within their assigned area enhances our ability

CONTINUED ON BACK



RQI Cart

Resuscitation Quality Improvement:

- Provides a high-reliability platform for simulation-based mastery learning implemented through low-dose, high-frequency quality improvement sessions that measure and verify CPR competence and award a new AHA eCredential upon completion
- Supports mastery of High-Quality CPR skills through feedback-driven deliberate practice
- Skills sessions last approximately 5-10 minutes per quarter while cognitive learning activities last up to 35 minutes per quarter
- Administrators will have analytic data related to all activities performed. Tracking of performance and related continuous quality improvements initiatives related to resuscitation can be tracked and monitored.
- Simulation stations deployed at locations conveniently accessed 24/7 by students, allowing skills modules to be completed during the normal shift
- Comprehensively addresses the competence-based requirements for accreditation as established by The Joint Commission

CHALLENGE CONTINUED

to provide lifesaving service more quickly, reducing response time to medical emergencies. When emergency resources are removed for any reason, including training, someone else must travel greater distances resulting in increased response time and possibly impacting the patient's outcome. There's also wear and tear on these very large vehicles often being driven from the outskirts of town."



SOLUTION

The Resuscitation Quality Improvement® (RQI) program addressed the LVFR's concerns and more. LVFR implemented RQI with one-third of its providers in August 2014, expanding to all members of the department three months later.

From an educator's perspective, Dr. Slattery understands the value of the RQI program model. As an Associate Professor for the department of emergency medicine at the University of Nevada School of Medicine, he firmly believes in RQI's low-dose, high-frequency format.

RQI's proven success is based on the premise that brief and regular practice with a feedback device—low-dose, high-frequency learning—leads to higher-quality CPR skills. "Over time there is a decay in not only skills but knowledge—to drift is human," said Dr. Slattery. "One of RQI's most appealing aspects is the smaller doses of training more frequently."

RQI also provides the hard data Dr. Slattery sought for his team. "The manikins give excellent feedback to our crews on rates and volume, so they know when they're hitting those targets," he said. "Until you measure, you don't really know. Our measurements showed that we were doing really good CPR, but we've moved to excellent CPR."



RESULTS

"I've visibly noticed our ventilation rates decrease and move into very safe zones over time—and without prompting or specific focus," said Dr. Slattery. "RQI has lowered our ventilation rates, and our muscle memory has shifted. And while chest compressions are extremely important, we're now dialed into ventilation rates and volumes. RQI reinforces and provides objective measurements that we are in fact performing high-quality CPR, both in chest compressions and ventilation. Thanks to RQI, we have proof of that now."