

**Years in the ambulance industry:**  
21 years

**Brief history of career in EMS:**

I have been involved in EMS for over twenty years and still work as a Call Fire Fighter/EMT with my town fire department. I began my career as a street EMT in a busy 911 system in 1990. In the years that followed, I was promoted through several operational positions and reached the level of Director of Operations for Life Line Ambulance of Massachusetts. I maintained that position through two acquisitions during the first major ambulance service consolidations by Careline and MedTrans.

Recognizing the need to further my education, I attended full-time undergraduate studies to earn my Bachelor's degree while working full-time as a street EMT. I later attended law school focusing my legal studies on employment and labor law and became a licensed attorney in 2003. Because of my love for and commitment to the important work of the EMS professions, I returned to the ambulance industry to apply my EMS background and legal training to help local ambulance services advance their goals in compliance, human resources, and reimbursement. Today, I am the Chief Executive Officer of Armstrong Ambulance Service, Inc. based in Arlington, Massachusetts, which conducts roughly 70,000 transports a year, and continue to advocate for our industry at every opportunity.

**What would you identify as the top three issues in emergency health care?**

- » Adequate Reimbursement for Services
- » Direct Payment by Insurers to patients
- » Safety for Patients and Employees

**What do you believe are the three priorities for the AAA?**

- » Reimbursement for Services
- » Stronger Professional Presence for EMS
- » EMS Field & Management Training

# The Profound (As-Yet-Unrealized) Potential of EMS-Facing Technologies

By Jonathon S. Feit, MBA, MA Co-Founder & Chief Executive Officer Beyond Lucid Technologies, Inc.

Here's a statement ripe for controversy: Medics, doctors, nurses...all are gods. Life and death and joy and tragedy—these lay daily in their skillful hands. Yet there's one divine attribute often assigned to those among us with the power to heal, but which is actually sorely misplaced. That is, the notion that—like gods—medics, doctors, and nurses are constantly equipped for every challenge they face. They are omniscient.

Unfortunately the latter point could not be further from the truth: various academic studies have shown that at the moment of handoff between EMS and hospital, some 46% of critical patient data is lost. (Indeed, some medics, when told about this statistic, laughed sardonically and asked, "46%...is that all? We thought it was higher.") After all, with an average EMS transport time of 27 minutes—almost equally divided between first aid and stabilization, and racing through traffic—but a typical hospital handoff range between 45 and 60 seconds, how could data not disintegrate in the corridor between the ambulance and the emergency department?

Dr. Paul Paris, MD, professor of Emergency Medicine at the University of Pittsburgh Medical Center, and Medical Director of the City of Pittsburgh Bureau of Emergency Medical Services, has referred to the public's expectation of EMS systems' technical sophistication as a "perception-reality gap." The public believes that when they dial 9-1-1 for an ambulance pickup, medics arriving on-scene will know the patient's identity, his or her chief complaint, be alerted to any allergies or concurrent medical conditions, and much

other detail conducive to refined decisions of triage and transport.

To date, however, the data chasm has not meaningfully been crossed; this is my own firm's mission and motivation (but this is not the place for an advertisement). The reasons for this lag are several, including the costs—real or perceived—of integrating new systems; the willingness of healthcare facilities to share data among the various parts of their ecosystems (including the medics delivering their emergency patients); hospitals' fear of liability and consequent distrust of any data collected outside their own walls; and to a lesser but not inconsequential extent, inertia among practitioners.

Times they are a-changing, however.

It's not just technology catching up to the needs of the EMS marketplace, though software solutions in particular are faster, more cost-effective, and more portable than ever before. A white paper collaboratively published by Microsoft and Beyond Lucid Technologies—a healthcare IT startup focused on the First Response arena (of which I am proud to serve as CEO)—capped a survey of EMS, fire, military medical, and other First Response agencies across the country, with respect to (1) the current state of their technology, (2) the way they purchase tools designed to make their lives easier and their data both complete and seamless, and (3) the specific features that will be most and least useful to medics in the field. (Download the white paper for free at <http://beyondlucid.com/ThoughtLeadership/WhitePapers.aspx>)

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Beyond technology, it's the mindset underpinning the practice of emergency medicine that's shifting, hopefully for the irrevocable better. In May 2011, at the Emergency Department Practice Management Association's Solutions Summit, several sessions were dedicated to the topic of "regionalization of care." This simple idea—that patients and treatment facilities should be matched in-transit, and the patient delivered to the location where he or she will be best served—seems so simple that the most common response we get when discussing it with industry outsiders is, "Doesn't that already happen?" Nope.

Yet in a recent conversation about replacing still-manual processes with automated ones in prehospital and emergency hospital care (for example, ambulance routing and post-run documentation), the EMS chief of a major American city responded, "It doesn't matter whether it's comfortable; it has to happen. That's progress." Whoa.

At Beyond Lucid Technologies, we learned that what is terrifying from a citizen's perspective—for example, that EMS personnel in some jurisdictions are so starved for technology that they resort to writing on their gloves, their legs, or even scraps of paper to collect patient data—is golden from an entrepreneur's vantage. We found so many ways to bring innovation to First Responders that the initial question "How can we help?" quickly morphed into "Which features to roll out first?"

Now that the initial version of our software is complete—and we've incorporated features available nowhere else in the industry, such as speech-to-text and logistical decision support (to facilitate the aforementioned regionalization of care)—the question will be whether the many First Responders that comprise the American Ambulance Association will be willing to "read the writing on the wall" with respect to healthcare's future. That doesn't have to mean using my firm's innovations (though I of course hope it will); rather, by 2014, technology that enables safety, efficiency, and transparency will be de rigueur, the "name of the game," so to speak. We're already seeing integrating health centers that run their own ambulances start asking for field-deployable systems that can integrate with their hospitals.

As an industry, we face an opportunity that is arguably greater than any since the invention of the defibrillator, which was one of the last disruptive EMS-facing innovations. Notions that have never before been introduced into the ambulance are popping up—words like cloud computing, machine learning, situational awareness, and machine-to-machine communication. The recognition that certain components of the prehospital value chain (such as electronic patient care records) have become commoditized in recent years has brought with it a flood of opportunities.

At the same time, the antidote to a price war for reporting tools is a laser-focus on customer feedback and product improvement—but these

require "early adopter" firms who live on the cutting edge in addition to those that play it safe. Absent the former, large providers of incumbent systems won't feel the need to improve; the status quo "one-size-fits-most" approach can run on autopilot. But the buzz from the field across America is that EMS is starting to hunger for attention; executives from governments and major corporate vendors alike have started realizing that if you neglect EMS providers to focus on hospitals, you end up with snazzy builds and underserved critical care patients. Mobile, cloud, and other future-focused platforms are revolutionizing hospital- and office-based care; we believe it's time for entrepreneurs to step up and help EMS go high-tech.

Jonathon S. Feit, MBA, MA is Co-Founder & CEO of Beyond Lucid Technologies, Inc. Beyond Lucid Technologies, the recipient of a 2010 "Therapeutic Discovery" grant from the National Institutes of Health, is a healthcare IT startup founded in 2009 that goes beyond the digitization of prehospital care records, to offer First Responders situational awareness, robust decision support functions and real-time data for regional resource planning. BLT's MEDIVIEW platform software is packed with innovative features designed to make First Response safer, more efficient, and more cost-effective for medics, hospitals, and patients alike—with zero integration engineering required. Online at [www.beyondlucid.com](http://www.beyondlucid.com).

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