



Ambulance TODAY

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EHS: Investing in tomorrow's technology for improved clinical and financial performance today

By Tanya Sanderson, RN, MBA, MHA

Clinical innovations in healthcare delivery are often reserved for diagnosing or delivering cutting edge clinical care in the hospital or ambulatory care settings. In EMS, clinical innovations are typically reserved for the ABCs of emergency situations, Airway, Breathing and Circulation or revolve around transport methodologies or equipment. In today's complex healthcare environment; however, healthcare delivery must include a holistic approach that provides solutions that not only take into consideration the clinical delivery of care but the business aspect as well. New technologies, medications and delivery models are created each year, but many are so cost prohibitive that they rarely make viable solutions for services or providers today.

EMS Healthcare Solutions, or EHS, is an industry leader in healthcare solutions that provides specialty focus for the unique environment in which emergency medical professionals deliver care with a keen understanding of their reimbursement limitations and regulatory requirements. Their focus on solutions that not only improve patient safety and clinical outcomes but also ensure proper reimbursement and risk mitigation are quickly elevating EHS as a trusted partner for EMS providers as well as the health systems they support. By identifying and partnering with new solutions and product developers, EHS is consistently providing affordable, evidence-based solutions to aid EMS professionals in their day to day operations.

"Our passion is to provide proven clinical products and solutions to EMS Services and Healthcare Organizations; equipping their clinical teams with the most advanced evidence-based tools, technology and processes."



EHS's customer base includes single providers, small rural services with single ambulances to state agencies with thousands of EMS professionals utilizing their tools. With this diverse client base, EHS provides unique and affordable pricing structures to make their tools accessible and affordable to every service and every provider regardless of budget. Placing tools in the hands of those providing life-saving care while creating sustainable reimbursement and fiscal accountability for the agencies they represent sets EHS apart as a clinical innovator in healthcare delivery today.

While always on the lookout for new evidence-based offerings to add to its portfolio, EHS prides itself in some of its unique core proprietary solutions such as RightDose and NarrativePRO.

RightDose

With increased awareness of quality issues following the publication of the Institute of Medicine's infamous "To Err is Human" report, more and more research has been done to focus on improving the clinical outcomes and safety of patient care. This landmark publication reported that preventable

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Focus on EMS Healthcare Solutions

medical errors was one of the top ten leading causes of death in the United States and that medication errors accounted for almost 7,000 of the nearly 98,000 fatal medical mistakes each year (Kohn, Corrigan, & Donaldson, 1999). Since its release, countless other research studies have been conducted on improving patient safety and reducing the number of medical mistakes as well as medication errors. Most studies and safety solutions are tailored to the controlled environments of hospitals, physician practices and long-term care facilities with limited research or solutions available to those on the frontlines of emergent prehospital care (Bigham, et al., 2012).



Given the unique and complex situations in which life-saving decisions are made in EMS, solutions need to be presented in such a way that human judgement and potential error can be mitigated or eliminated altogether. When decisions and calculations need to be made on a bathroom floor at 2am with distraught parents crying in the background, in a mass casualty situation where chaos and distractions can cloud response time and judgement or at a roadside accident where conditions are unsafe and every second counts, removing any room for human error is critical for positive outcomes. One study found that the medication calculation accuracy rate among paramedics was 51.4% and fell below 34% with weight-based medication and infusion calculations and accuracy fell below 5% for percentage-based infusion calculations (O'Connor, Slovis, Hunt, Pirrallo, & Sayre, 2002). Even in controlled environments with the aid of the most recognized tool available, the Broselow Tape, the overall accuracy for medication administration by paramedics was only improved to 52%. As pointed out by Phillip Sanderson, Vice President of Sales for EHS: "In the heat of the moment, even the most experienced paramedic can make a mistake."

While calculators, flip charts and mobile applications have evolved and systems like the Broselow Tape have been enhanced with computerized calculations, none provide the exact specifications necessary in EMS care. RightDose is a unique solution that takes the guesswork and calculation out of medication administration and improves accuracy beyond that of even the Broselow Tape and other solutions with its

unique drug-centric approach. While similar solutions provide weight-age based calculations, the presentation and variances associated with drug supplier concentrations still leaves considerable room for catastrophic over-dosage or ineffective under-dosing.

By providing precalculated dosages based on concentration, weight and state or organizational protocol, the risk of human error is greatly reduced with RightDose's unique drug-centric method. The reduction of medication errors is so profound that one peer-reviewed study found errors were reduced from 65% to 4% when utilizing the RightDose solution and overall accuracy for all measured parameters was improved to 94% (Wallace, Tidwell, & Powell, 2016). RightDose is available in print format or through mobile applications and utilizes customized databases that use a service or provider's concentration to calculate down to the exact dosage in milliliter eliminating all guesswork or math. RightDose provides all weight-based dosages and drips in precalculated formats for quicker decision making and more precise dosages.

Recognized for its evidence-based approach and proven efficacy in the reduction of medication errors, RightDose was chosen by the Tennessee Emergency Medical Services for Children (EMSC) to be the key solution for medication administration to improve the outcomes for its most vulnerable patients. This partnership will eventually place the RightDose solution in almost every ambulance across the state to not only protect its youngest residents but anyone facing a medical emergency in the state. According to Dr. Joe Holley, Tennessee's EMS medical director: "RightDose provides a highly reliable method to ensure the proper dosing for each patient and removes the human error potential seen in the chaotic EMS environment... We discovered during our initial program that RightDose reduced errors, provided better patient care, and ensured the best medicine to each of our patients. Those results made it easy to bring this level of care to every agency in every county to protect every resident."

NarrativePRO

With documentation at the core of continuity of care, risk management and proper reimbursement, service providers across the globe are forced to focus on their documentation systems and ability to capture and appropriately bill for services provided. Even with integrated ePCR systems that allow for efficient electronic billing, the limitations surrounding the documentation of care provided leave services at risk for legal implications as well as denials on insurance claims. For EMS providers, the cost of denied claims can cripple a service's budget if poor documentation and lack of clear narratives supporting medical necessity are commonplace. For US-based providers, adherence to CMS documentation and billing guidelines can create additional financial burden, especially, if placed on 100% prepayment review. NarrativePRO is EHS's unique documentation solution that assists the EMT and paramedic to seamlessly create a comprehensive patient narrative that supports the care provided in such a way that financial and legal risk is significantly reduced and service revenues are increased.

NarrativePRO uses industry recognized narrative formats to create the complete patient narrative. As an added benefit, the clinical picture created by a NarrativePRO-generated patient chart will help support the care provided by any receiving institution. This innovative solution improves reimbursement, reduces the risk of litigation, improves continuity of care and clinical outcomes and provides a consistent and industry recognized narrative format for every patient encounter. As pointed out by EMS Attorney, Christopher Kelly: "CMS has always reminded ambulance service suppliers to 'paint a picture' of their patients, which of course is difficult when your brush is nothing more than patient demographics, medical history, chief complaint, and medical interventions. NarrativePRO is both a broader brush that offers the opportunity to capture much more information, and a very fine-pointed brush that draws the detailed lines that most ePCR systems do not obtain. With proper use of the NarrativePRO tool, a proper picture of the patient does indeed come into focus; a picture that can support the claim and stand up to an audit."



In a recent review of the NarrativePRO solution by one of the USA's leading EMS industry law firms, Page, Wolfberg & Wirth (PWW), NarrativePRO was found to be "an excellent tool to assist EMS practitioners in the completion of the patient care report. It is easy to use and has safeguards built into the program to allow for manual editing of all menu choices as well as the narrative that is created." Their review also found that use of the solution: "Reduced the time to complete the clinical narrative in comparison to completing a narrative using straight typing from scratch." With limited solutions available and the ability to easily and compliantly utilize NarrativePRO with any documentation system on the market, this innovative solution is positioned to revolutionize the EMS industry around the world.

Emerging Innovations

While RightDose and NarrativePRO are core proprietary solutions, EHS is constantly reviewing and adding the most up-to-date technology solutions to their portfolio. Current innovative solutions also include VoluTape, a ventilator reference guide utilizing heel-to-crown measurements and setting guidelines for respiratory therapists, transport and critical care providers to aid in accurate and effective

ventilator settings. The quick reference guide provides oxygen conversion factors for common tank sizes and liquid oxygen, normal laboratory values, hemodynamics and acid-base classifications. This quick and reliable reference tape takes the guesswork out of ventilator settings and provides a reliable and effective solution to both EMS and hospital-based providers.

The latest partnership and innovative solutions to hit the market are EHS's line of advanced telemedicine setups customized for mobile use. For large events, remote emergency care, or for the advent of mobile integrated healthcare for reduction of emergency room visits and readmissions, EHS's line of high-tech Bluetooth and USB enabled solutions are at the cutting edge of EMS and clinical technology today.

About EHS

EHS is a leading provider of software and solutions for EMS providers, helping to streamline processes and improve patient



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care in the field. Its suite of products, including NarrativePRO, RightDose, and VoluTape are specifically designed to reduce the risk of human error that can affect patient outcomes. EHS proudly offers solutions created by paramedics to support EMTs and paramedics in the field. Their team includes EMS educators and trainers and innovative business leaders adept at recognizing and implementing cutting edge technology solutions to improve both clinical and financial outcomes. EMS Healthcare Solutions senior leadership team, Lew Levey, President and CEO and Ron Kramer, COO, provide an extensive background in technology sales and business development. EHS's Vice President of Sales, Phillip Sanderson brings a well-rounded background with almost 30 years in EMS. From his beginnings as an EMT and Paramedic provider to serving as an educator and multi-state operational leader and EMS C-Suite executive, his understanding of the holistic needs and challenges in EMS are fundamental to EHS's vision.

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For more information on RightDose, NarrativePRO or any of EHS's offerings, please visit: www.EMSHealthcareSolutions.com or email Phillip Sanderson, Vice President of Sales at: phillips@emshealthcaresolutions.com