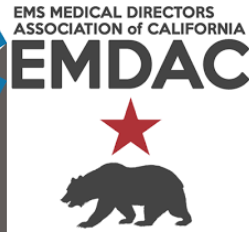


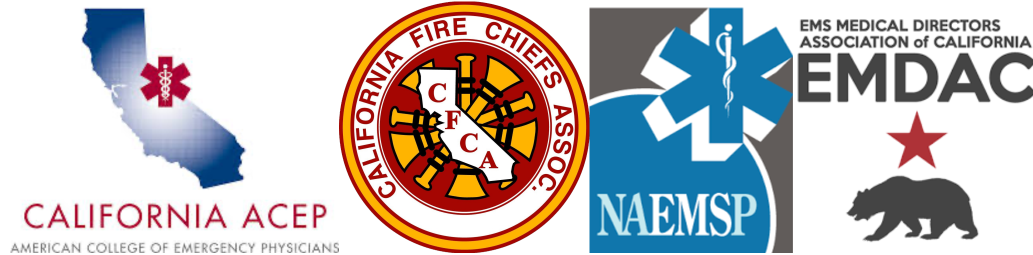
This is a joint statement from The Emergency Medical Services Directors' Association of California (EMDAC), The California Fire Chiefs Association (CAL Chiefs), The California Chapter of the National Association of EMS Physicians (CAL NAEMSP) and The California Chapter of the American College of Emergency Physicians (CAL ACEP).

Authors: Dustin W Ballard MD, MBE, Chris Tubbs, Kristin Thompson, Carl Schultz MD, Clayton Kazan MD, Elena Lopez-Gusman, Peter D'Souza MD, Zita Konik MD

Date of Statement: October 8th, 2024

We firmly advocate for the widespread adoption of bi-directional health information exchange between Emergency Medical Services (EMS) systems and hospital electronic health records (EHRs) across the state of California. This integration is vital for enhancing patient safety by ensuring accurate matching of patient records between EMS and hospitals, thereby reducing the risk of medical errors and improving patient safety and outcomes.

EMS systems also almost universally use electronic records for documentation of prehospital encounters. These electronic patient care reports (ePCRs) have numerous structured fields, a narrative section and often room for images and diagnostics, such as pre-hospital EKGs. In most EDs, though, a summary of this data is provided in a verbal hand-off while the full ePCR is rarely, if ever, available in an actionable time frame to ED providers. It is well-documented that EMS-to-ED handoffs are rife with challenges, including potential miscommunication, omission of vital information, and the absence of an automatic outcome/feedback loop to EMS for iterative improvements. A systematic review of 78 studies on this topic identified a litany of handoff challenges including "disrespect & disinterest, environmental factors, redundancy, poor recall, conflicting goals and perspectives, technological issues, information degradation, information loss, lack of standardization, lack of training, delays, and lack of feedback." [Troyer]

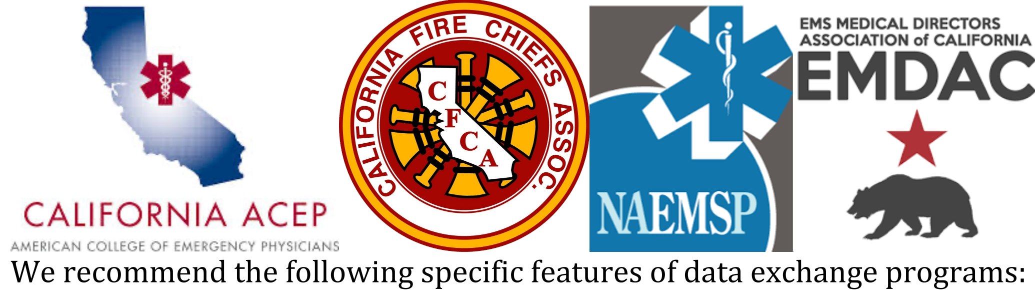


LEMSA's and EMS providers collaborated with ePCR Vendors to develop conduits to hospital EHRs that enable bi-directional information exchange between EMS and hospitals via secure HL7 cloud-based technology. Such systems have been successfully deployed in a number of locations, including in the state of Maine and California's Orange and Alameda counties. With seamless data exchange, relevant EMS information becomes instantly available at the point of handoff, enabling healthcare providers to make more informed decisions and deliver higher quality care to patients

upon arrival at the hospital. Such automated hand-off of information has the potential to improve ambulance patient offload times (APOT) by providing patient-level risk stratification data to receiving EDs prior to or upon arrival that may assist in patient sorting and flow. Additionally, timely bi-directional exchange of information from the hospital directly back to EMS personnel involved in the care of a patient allows field providers to learn valuable follow up information from each patient encounter. Bi-directional exchange of information with field EMS personnel also has the potential to lessen the time spent on-scene documenting information that is already in the data exchange system (i.e. allergies, medications, medical history, etc) and could be quickly downloaded into the EMS record.

Moreover, successful implementations of bi-directional information exchange systems in counties like Orange and Alameda have demonstrated tangible benefits beyond improved patient safety. Real-time availability of outcomes from the emergency department and hospital allows for better oversight of the EMS system, facilitating the creation and maintenance of system dashboards to monitor key clinical conditions of concern. This enhanced oversight facilitates improvement of emergency response protocols and patient outcomes.

Furthermore, the adoption of bi-directional health information exchange aligns with state and federal regulations, promoting improved compliance and accuracy in record-keeping. By automating processes such as the incorporation of EMS patient care records into hospital records, healthcare facilities can achieve cost efficiencies and allocate manpower more effectively. EMDAC urges stakeholders across California to prioritize the implementation of bi-directional information exchange systems to realize these benefits, ensuring safer, higher quality care delivery while enhancing regulatory compliance and cost-effectiveness statewide.



We recommend the following specific features of data exchange programs:

- Rapid initiation of data transfer upon EMS arrival to the ED
- Complete integration of EMS records into hospital health records and robust outcome data from the hospitals made available to EMS Provider agencies and personnel on the incidents in a timely manner. Outcome data would include, but is not limited to: diagnoses, procedures, new medications, and ED or hospital discharge summaries
- As much data of public interest as possible should be openly shared to inform performance metrics and collaborative operations; such data could include EMS and hospital capacity measures such as hospitalization rates and specialty care patient proportions
- Identified and/or de-identified and/or aggregate data should be shared in accordance with the law and California Evidence Code §1157 protections, for purposes of Quality Improvement/Quality Assurance as widely and freely as possible across health care entities including EMS Provider agencies, hospitals, and healthcare partners to ensure enhanced and collaborative EMS system performance

References:

Troyer, L., & Brady, W. (2020). Barriers to effective EMS to emergency department information transfer at patient handover: a systematic review. *The American Journal of Emergency Medicine*, *38*(7), 1494-1503. https://www.sciencedirect.com/science/article/abs/pii/S0735675720302655