Overview of Pre-Hospital PCR and Integration Challenges
THE ESO MISSION

Make a Difference

Improve Community Health and Safety Through the Power of Data
Data Landscape

Two different systems with data about the same patient encounter..
Field EMS Data Collection

- Integrated Computer Aided Dispatch
- Patient Side Documentation
- Integrated Cardiac Monitors
- Web and Mobile Clients
- EMS Medical Billing Integration
National EMS Data Standard
NEMSIS 3.5

• Incident Details
• Patient Demographics
• Pre-Hospital Assessments
• Pre-Hospital Patient Care
Compliance Requirements

NEMSIS

• State Legislative Requirements
  • Agency must produce conformant data.
  • Agency must do so on a timely basis.
The Continuum of Care
EMS Industry Perspective

- EMD (911) Triage
- First Responder
- Transport EMS
- Emergency Department
- In Patient Hospital
# State of the Industry – EMS Sharing with Hospital

## Format Options
- Native NEMSIS XML
- Printed Report Document
- Clinical Data Architecture – EMS
  - Template
- IHE Profiles
  - Paramedic Care Summary

## Integration Options
- Web Services (Custom)
- HL7 Version 2 - MLLP
- Direct Messaging XDR + XDM
- Fast Health Interoperability Resources
Format Complications

Native NEMSIS XML
Complicated structure requiring custom development on receiving side to utilize the discrete data provided.

Printed EMS Record
No Discrete Data Elements available for reporting or analysis to the hospital.

CDA – EMS Template
Minimal to no custom template adoption by Hospital EMR systems outside of meaningful use profiles.

IHE – Paramedic Care Summary
Incomplete Data Set from Pre-Hospital Record.
Integration Complications

Custom Web Services
Most Expensive to implement from a software and records management integration perspective.

HL7 Version 2 - MLLP
Expensive to implement from an infrastructure perspective but very well-known software implementation process on the hospital receiving side.

Direct Messaging
Messaging clearinghouses called HISPS can make this profile prohibitively expensive for the use case.

FHIR
Inconsistent versioning across EMR vendor software providers which requires customization by the sender.
Hot Trends in EMS Interoperability

• Health Information Exchange Integration
  • Field provider access to pull patient care record in field.
  • EMS Record added to Continuity of Care Documentation.

• Standardization of "Outcome" Information from Hospital to EMS
  • NEMSIS Proposed Standard from Vendor Workgroup.
  • Based on Existing Interoperability Standards

• Integration of EMS Data into Specialty Patient Registries
  • Reduction of Data Entry Errors in Quality Management Systems.
Reciprocal Quality Improvement “Outcome” Data

“An outcome is data provided to EMS by other clinical providers within the continuum of care used for clinical and process performance improvement.”

- What happened with my patient after I transferred care?
- How can I improve my care of like patients?
- Is everything I am doing prior to arrival medically necessary or even in the patient’s best interest?
Immediate Provider Feedback

• Loop Closure
• Comparative Assessment Analysis
• Field Impression Confirmation
• Quality Management
Aggregate Outcome Analysis

- Protocol Improvement
- Provider Education
- Quality Management
- Assessment Qualitative Analysis
- Research
**Current Barriers**

- No stand-alone standardized data element sets.
- No standard protocol for communication of outcome information.
- Misconception under HIPAA of access rights related to the continuum of care and performance improvement.
- Complications around business to business data sharing and covered entity agreements.
Call to Action

1. Provide referenceable federal clarification to remove interoperability barriers directly related to the misconception of HIPAA requirements as it pertains to quality improvement programs and the continuum of care.

2. Provide incentives for implementation of standards-based Integrating the Health Care Enterprise (IHE) and National EMS Information System (NEMSIS) interoperability profiles. Require a complete meaningful exchange of discrete EMS data into the hospital. Additionally, the incentive must require the reciprocal delivery of standards-based outcome information back to EMS.
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