

An Introduction to EMS Data

Emergency Medical Services Registry
Known As

VPHIB (the Virginia Pre Hospital Information Bridge)

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Brief History of Virginia EMS Data

- COV § 32-116.2 created the patient care information systems which included the EMS registry and the trauma registry (1987)

VDH/OEMS began
“collecting EMS data”
in 1991

The image shows a scan of a medical form titled "EMERGENCY MEDICAL CARE REPORT". The form is divided into several sections. At the top, there are fields for "PATIENT INFORMATION" including name, address, and phone number. Below this is a section for "MEDICAL HISTORY" with checkboxes for various conditions like "Allergies", "Current Medications", and "Past Medical History". There is also a section for "VITAL SIGNS" with fields for "Temp", "Pulse", "Respiration", "BP", and "SpO2". The bottom section is a large table for "PHYSICAL EXAMINATION" with columns for "System", "Findings", and "Vital Signs". The form is filled with handwritten and printed text, including a patient name "JAMES, JOHN" and a date "01/18/2019".

Brief History of Virginia EMS Data

- EMS data collection was soon suspended due to not having a means to collect and store copies of each paper Pre-hospital Patient Care Record (PPCR).

Brief History of Virginia EMS Data

PRE-HOSPITAL PATIENT DATA REPORT

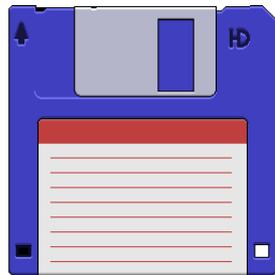
LOCATION	TYPE OF SERVICE	INCIDENT DESCRIPTION	ATTENDANT	UNIT	TIME
...



Pre-Hospital Patient Data Report - Form Number: Test

Jurisdiction Incident #: 12345678
Incident Locality: HENRICO
Agency #: 05254
Incident Reported: 05/18/2001
Location Type: 10 - Other specified location
Type of Service: 1 - Scene
Incident Disposition: 1 - Treated, transported by EMS
Attendant in Charge Level: 2 - EMT
Attendant 1 Level: 2 - EMT
Attendant 2 Level: NA - Not Applicable
Operator: OTH - Other
Number of Units: 1

TIMES (24 HOUR FORMAT)
Time of Call: 0504
Dispatched: 0505
Responding: 0505
Arrive at Scene: 0508
Arrive at Patient: 0510
Leave Scene: 0540
Arrive at Destination: 0555
Leave Destination: 0620
Return to Service: 0620



PPDR Program Continues

The PPDR program and never matured to providing valuable data output for EMS system development.

In 2004 the PPDR program was transferred to the Division of Trauma/Critical and renewed effort began to established an EMS database.

At that time less than 50 percent of EMS agencies were submitting data, the quality was poor, and only a single person had the ability to develop output.

In 2004 a New National EMS Dataset was Born

The National Highway Traffic Safety Administration's (NHTSA) Office of Emergency Medical Services support the creation of the National EMS Information System (NEMSIS)

In 2005 NHTSA fund the NEMSIS Technical Assistance Center (TAC) The TAC was put in place to help guide states to move to a new EMS data standard.

NEMESIS TAC

The NEMESIS TAC

- Pulled stakeholders together to develop the version 2 data dictionary.
- Convinced all states to sign an MOU to work towards collecting the national data set and submitting it to the national EMS database.
- Assisted states with implementing the version 2 standard in their state.

Virginia and NEMSIS v2

In 2004 the VDH/OEMS began exploring the possibility of moving to the NEMSIS v2 dataset.

A SWOT analysis with the National EMSC Data Analysis Rescore Center (NEDARC) was performed with a large group of stakeholders.

Once the SWOT analysis was performed consideration was given to internal development of an application to collect the version 2 dataset versus a COTS package.

Scalable COTS Product Chosen

Joint Application and Design Sessions were held throughout the Commonwealth and internally.

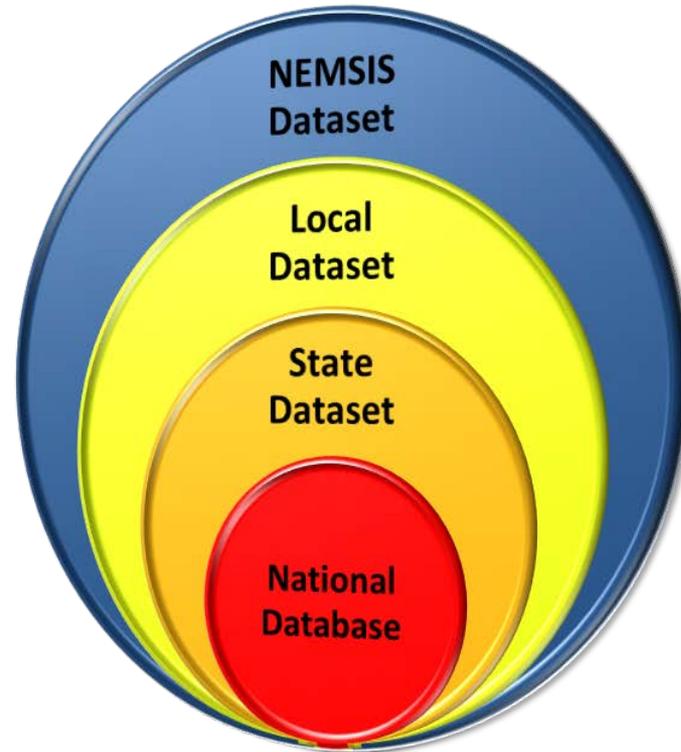
Common items stakeholders wanted:

- Access to the data they submit
- Data submission to be less burdensome
- Move to electronic reporting
- Ability to share electronic medical records

VPHIB Implemented in 2011

- Web based system
- Statewide EMR
- XML structure
- National Dataset
- Robust Reporting Tools
- Quality Assurance
- Billing integration
- Dispatch system integration
- Certification Management
- Training coordination
- Inventory Management
- Inspection Modules
- Fire service integration

VPHIB Allowed National Contribution



And Along Came Version 3

Version 3 is designed to bring the national EMS data standard to be consistent with other forms of health care data.

- ICD-10 will be used for provider impressions, symptoms, and cause of injury.
- SNOMED codes will be used for procedures.
- RXNorm will be used for medications administered by EMS, patient home medications, and patient allergies.

Previously EMS did not use standard lists for these items.

Version 3 Brings Many Other Abilities

Version 3 is technically superior using XML language to collect and store data.

Schematron is being used on the national and state level to assure the schema is followed and improve data quality.

The NEMESIS TAC is working towards having the v3 data standard HL7 certified. An initial CDA was approved and a second CDA has been rated well so far.

HL7 Certification

By achieving HL7 certification it is hoped that hospitals will take advantage of the interoperability of EMS data and hospital data to allow our information into the hospital record and provide outcome data back to EMS.

Key EMS data stakeholders have met with ASPR and the Office of the National Coordinator to have EMS data integration added to the meaningful use objectives.

Web Services

Web services has been made the standard for version 3 allowing a move to real-time data collection on the state and national levels

PPDR records were 4 months - two years old by the time they were submitted.

Version 2 varies from minutes to 30 days.

EMS Performance Measures

EMS has always functioned as a fee-for-service industry

- Transport of Patient +
- Mileage +
- Basic care versus advanced care =
- Total reimbursement

EMS Performance Measures

EMS Reimbursement will change in 2018

1. Clinical Process/Effectiveness
2. Care Coordination
3. Patient and Family Engagement
4. Patient Safety
5. EMS Workforce
6. EMS Fleet
7. Care Coordination
8. Population/Public Health
9. Efficient Use of Health Care Resources
10. EMS Data
11. EMS Finance

Clinical Process/Effectiveness

Having an national EMS data standard that was designed for interoperability will move out-of-hospital clinical care to become an evidence based form of medicine.

The ability to link EMS data to hospital data will allow for the evaluation of EMS care to patient outcomes.

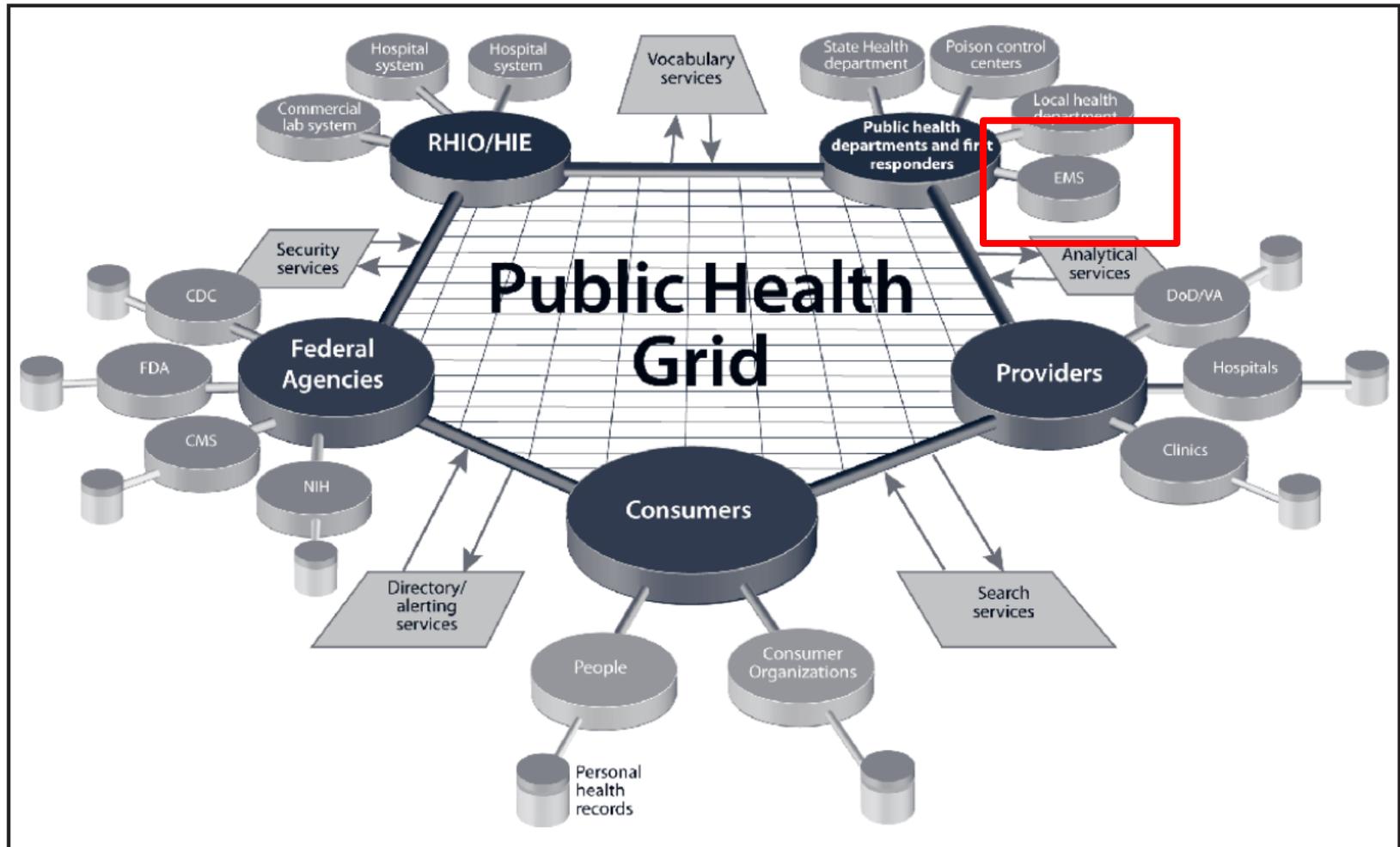
Care Coordination

EMS needs to move toward partnering with Health Information Exchanges.

Primary care givers need to know when patients are receiving frequent care by EMS.

EMS providers and patients could benefit from following the plan-of-care designed by their primary care provider.

Population/Public Health



Population/Public Health

With the normalization of EMS data to other health care data and the technical standards making real-time data submission the norm, EMS data will soon be able to contribute to population and public health situational awareness.

Need more information?

<http://oemssupport.kayako.com/>

<http://www.vdh.virginia.gov/OEMS/>

<https://vphib.vdh.virginia.gov/>

<http://nemsis.org/index.html>