



# Colorado Prehospital Pediatric Quality Council

## Best Practice Guideline

**Topic:** Pediatric Data Collection and Performance Measures

**Date Issued / Revised:** April 8, 2015

**Background:**

Colorado regulations require all ambulance service agencies licensed in Colorado collect and submit patient care data based on the National Emergency Medical Services Information System (NEMSIS) data elements.<sup>1,2</sup> The purpose of EMS data collection is to improve patient care, EMS education and define a standard by which care can be measured.<sup>3</sup> Additional efforts are also currently underway by national EMS organizations to better define EMS performance measurement.<sup>4</sup> The purpose of this guideline is to list data elements that should be collected on all pediatric patients and suggest appropriate performance measures for EMS services and EMS Medical Directors regarding pediatric care.

**Guideline:**

**General**

All licensed ground and air ambulance services in Colorado and all non-transporting EMS services providing care with certified Emergency Medical Technicians (EMTs) should collect as much encounter data as possible based on the most current NEMSIS data standard in order to effectively measure performance.

**Minimum Pediatric Data Elements**

In addition to Colorado Minimum requirements (see attached), the following data should be collected on all patients 18 years of age and younger (Based on NEMSIS 2.2.1 Data Dictionary):

Section ID	Section Name	Element Code	Data Element
E06	Patient	E06_16	Date of Birth
E14	Assessment/ Vital Signs	E14_01	Date/Time Vital Signs Taken
E14	Assessment/ Vital Signs	E14_04	SBP (Systolic Blood Pressure)
E14	Assessment/ Vital Signs	E14_05	DBP (Diastolic Blood Pressure)
E14	Assessment/ Vital Signs	E14_06	Method of Blood Pressure Measurement
E14	Assessment/ Vital Signs	E14_07	Pulse Rate
E14	Assessment/ Vital Signs	E14_09	Pulse Oximetry
E14	Assessment/ Vital Signs	E14_10	Pulse Rhythm
E14	Assessment/ Vital Signs	E14_11	Respiratory Rate
E14	Assessment/ Vital Signs	E14_12	Respiratory Effort
E14	Assessment/ Vital Signs	E14_15	Glasgow Coma Score-Eye

E14	Assessment/ Vital Signs	E14_16	Glasgow Coma Score-Verbal
E14	Assessment/ Vital Signs	E14_17	Glasgow Coma Score-Motor
E14	Assessment/ Vital Signs	E14_18	Glasgow Coma Score-Qualifier
E14	Assessment/ Vital Signs	E14_19	Total Glasgow Coma Score
E14	Assessment/ Vital Signs	E14_22	Level of Responsiveness
E14	Assessment/ Vital Signs	E14_23	Pain Scale
E16	Assessment/ Exam	E16_01	Estimated Body Weight (in Kilograms)
E17	Intervention	E17_01	Protocols Used

### Recommended Data Elements

In addition to the the minimum elements listed above, the following measures are recommended for collection on pediatric patients if applicable:

Section ID	Section Name	Element Code	Data Element
E14	Assessment/ Vital Signs	E14_14	Blood Glucose Level
E14	Assessment/ Vital Signs	E14_20	Temperature
E14	Assessment/ Vital Signs	E14_21	Temperature Method
E14	Assessment/ Vital Signs	E14_26	APGAR
E14	Assessment/ Vital Signs	E14_28	Pediatric Trauma Score
E16	Assessment/ Exam	E16_02	Broselow/Luten Color
E18	Intervention/ Medication	E18_01	Date/Time Medication Administered
E18	Intervention/ Medication	E18_03	Medication Given
E18	Intervention/ Medication	E18_04	Medication Administered Route
E18	Intervention/ Medication	E18_05	Medication Dosage
E18	Intervention/ Medication	E18_06	Medication Dosage Units
E18	Intervention/ Medication	E18_09	Medication Crew Member ID
E19	Intervention/ Procedure	E19_01	Date/Time Procedure Performed Successfully
E19	Intervention/ Procedure	E19_03	Procedure
E19	Intervention/ Procedure	E19_04	Size of Procedure Equipment
E19	Intervention/ Procedure	E19_05	Number of Procedure Attempts
E19	Intervention/ Procedure	E19_06	Procedure Successful
E19	Intervention/ Procedure	E19_07	Procedure Complication
E19	Intervention/ Procedure	E19_08	Response to Procedure
E19	Intervention/ Procedure	E19_09	Procedure Crew Members ID
E19	Intervention/ Procedure	E19_12	Successful IV Site
E19	Intervention/ Procedure	E19_13	Tube Confirmation
E20	Disposition	E20_14	Transport Mode from Scene
E20	Disposition	E20_15	Condition of Patient at Destination
E20	Disposition	E20_16	Reason for Choosing Destination
E20	Disposition	E20_17	Type of Destination

### Recommended Performance Measures

Understanding that there is likely to be significant advancement in the development of standardized EMS performance measures in the near and mid-term future, the CPPQC recommends EMS services and EMS Medical Directors measure the following items to evaluate the effectiveness of pediatric EMS care:

- Documentation Percentage of patient age for patients up to 18 years of age.
  - In years for patients greater than 1 year of age
  - In months for patients less than 1 year of age
  - In days for patients less than 1 month of age
- Documentation of patient weight in kilograms
  - Documentation of Broselow/Luten color for patients up to 12 years of age.
- Percentage of complete vital sign acquisition rate including:
  - Pulse rate
  - Respiratory rate
  - Respiratory effort
  - Systolic blood pressure
  - Diastolic blood pressure
  - Pulse oximetry
  - Glasgow comma scale
- Pain scale measurement rate for patients with pain or trauma complaints
- Pain reduction rate for patients with pain or trauma complaints
- Blood glucose measurement rate for patients with GCS less than 15
- Medication dosage compliance rate based on protocols and documented weight.

## References:

---

<sup>1</sup> Colorado Department of Public Health and Environment. "Rules Pertaining to Emergency Medical Services Data and Information Collection and Record Keeping." *6 CCR 1015-3, Chapter 4*. June 30, 2011. Section 3.1.

<sup>2</sup> NEMSIS Technical Assistance Center. *National EMS Information System (NEMSIS)*. n.d. <http://www.nemsis.org> (accessed October 21, 2014).

<sup>3</sup> Ibid.

<sup>4</sup> National Association of EMS Physicians. *EMS Performance Measure Project: Background and Outline*. Draft - Under Review, September 29, 2014.