

EMS BEST PRACTICES



Pediatric Medication Administration

Creating a Safety Culture in EMS

By Joe Barger, M.D.



Quality Corner

In EMS, safety is one of the cornerstones of our practice. Patient safety has become an overriding concern in the medical world, rightfully so because more than one million patients are harmed by medical errors in the United States each year. While EMS contributes a small fraction of these cases, we administer potent medications and the potential for error exists. One area of intense interest is pediatric medication safety, and the creation of a “safety culture” surrounding all drug administration. While pediatric patients are encountered every day in EMS, the number of these patients we treat with parenteral medications is quite small. In a recent study, medications given via IV, IM, IO or subcutaneous routes were administered to 254 pediatric patients in Contra Costa over 18 months, meaning around 14 cases per month or less than one case every other day.

Out of all patient contacts, less than three (3) out of every 1,000 are pediatric patients who receive a parenteral medication. Few items in the spectrum of EMS care are done less frequently. Given the several hundred paramedics in our system, chances are slim that a paramedic will be faced with administering a parenteral drug to a child more than perhaps once or twice a year, and some providers may not give a drug for several years.

PEDIATRIC MED INACCURACIES

254 total pediatric patients cases were evaluated

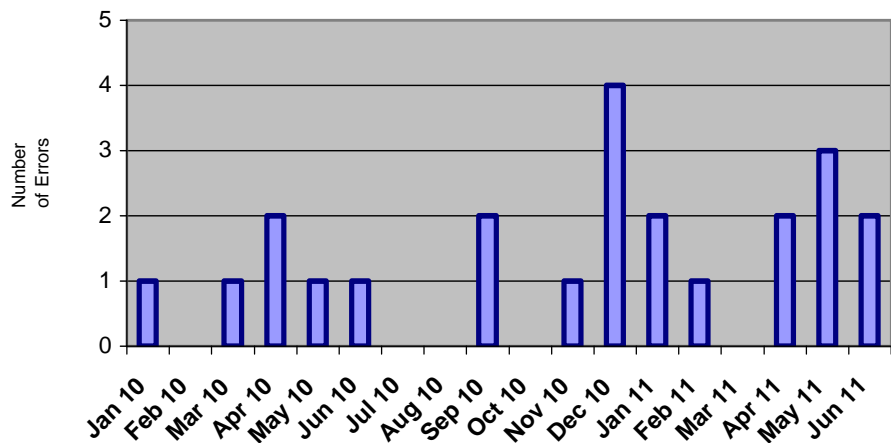
3.5% (9) of these patients received doses at least 25% above the recommended

7.9% (20) of these patients received doses at least 25% below the recommended

Almost 50% of the errors were Children under three (3) years

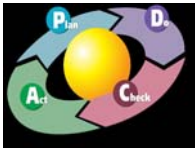
90% of the errors occurred with use of midazolam, morphine and epinephrine

Frequency of Pediatric Medication Inaccuracies
Contra Costa County
N=254



While excessive drug administration has the most serious potential for harm, low dosing can result in less effectiveness of pain and seizure control, and may also lead to less than optimal treatment of serious allergic reactions. Accurate dosing is crucial, and our practice clearly has room for improvement.

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Creating a Safety Culture in EMS

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Creating a culture of safety means that our procedures to provide pediatric medications need to be straightforward and that each time a medication is given, safe practices are followed. These safe practices include:

- ⇒ Careful assessment of every patient to determine if a medication is indicated;
- ⇒ Assessment of patient weight, either by length-based tape, patient or family history when available;
- ⇒ Documentation of that patient’s weight in kilograms in the patient care record;
- ⇒ Using reference materials in all cases to confirm dosing, both with respect to amount of drug, drug concentration, and route of administration. All pediatric drug doses in prehospital field care manual are based on kg weight;
- ⇒ Double-checking the dose of medication (especially narcotics) with another person on scene or the base hospital;
- ⇒ Documentation of the medication dose in specific weight units (total milligrams or grams) and not by volume units.

These practices are intended to mirror evidence-based standards and measures taken to improve safety. While some of our cases are urgent, a small period of time spent to verify dosage can be undertaken in the overwhelming majority of cases. Relying on memory for dosage or feeling the urgency to act without double-checking are behaviors that need to be extinguished. Part of the approach to promoting pediatric medication safety is development of training and ongoing regular review of procedures necessary in all cases. Pediatric drug administration is an infrequent skill and it requires an approach that recognizes that paramedics encounter these situations rarely and therefore practice is necessary to maintain the skill and adherence to safety procedures. We are in the process of developing a training curriculum and will be reaching out to field providers to engineer an even better process to assure safety.

Contra Costa EMS Agency Hosts Major Quality Conference Davis Balestracci presents “Data Sanity” July 22, 2011

On July 22, 2011 Contra Costa EMS will play host to a nationally-recognized program which focuses on helping EMS Quality Mangers get a handle on understanding and interpreting EMS information as it relates to quality improvement. The conference is designed to create proper awareness of statistical concepts and enable Quality Managers to ask better questions in response to everyday data issues. **Davis Balestracci**, has a uniquely synthesized left-brain (analytical) and right-brain (psychological) approach to quality. While working for 3M, he received several corporate awards for his innovative teaching and uses of statistical methods. For the past seven years, he has functioned as a Deming statistical consultant for a major multi-specialty health care clinic with 500 physicians and 20 locations. Davis is a presenter at the prestigious annual Institute for Healthcare Improvement United States and European forums and is well known world wide for his provocative, challenging, yet humorous and down-to-earth public-speaking style. The goal of the program which will be attended by all the major EMS stakeholders in Contra Costa County is bring all to a basic level and on the same page when it comes to looking and dealing with quality performance in our EMS System.

Congratulations to EMS Scholarship Recipients

Contra Costa EMS is pleased to announce the recipients of the new EMS Scholarship program designed to engage EMS System providers in building skills in leadership and supporting patient safety. The on-line, self-paced program is offered from the nationally-renowned **Institute of Healthcare Improvement**. The scholarship provides a one-year subscription to the IHI Open School online leadership and quality improvement program. To obtain the basic certificate, you must complete the coursework within the year. Contra Costa EMS has tuition support for up to 50 EMS System providers. Upon completion of the program and receipt of basic certification, participants will be recognized at a Contra Costa County Board of Supervisors meeting in the Fall. The deadline to submit applications was June 30, 2011. However, anyone still interested in more information and details on the process for this project may contact Craig Stroup or Pat Frost at 925 649-4690. Congratulations to all recipients.

Scholarship Recipients

Lori Altabet	Sam Bradley	Mia Fairbanks	Brian Henricksen	Leslie Mueller	Andrew Swartzel
Neil Altimari	Kelly Coleman	Paul Freitas	Bruce Kenagy	Willow Padilla	Monica Teves
Daniel Batz	Pam Dodson	Dave Gibson	Greg Kennedy	Jason Sampson	Karen Wright
Marshall Bennett	Chris Eberle	Sean Grayson	Landee Linn	Judith Smith	
Peter Benson	Evan Edminister	Karen Hamilton	Jeanne Mills	Craig Stroup	