

# County of Santa Clara Public Health Department



**Emergency Medical Services Agency**  
976 Lenzen Avenue, Suite 1200  
San José, CA 95126  
408.885.4250 voice 408.885.3538 fax  
www.sccemsagency.org

July 19, 2010

To: All Prehospital Providers

From: Eric Rudnick, MD, FACEP  
EMS Medical Director

A handwritten signature in blue ink, appearing to read "Eric Rudnick", is placed next to the printed name and title.

Subject: Best Practice – Intraosseous Access in Pediatric Patients

The following information is related to EMS Agency review of prehospital care. Best practices learned from these reviews are applicable to all paramedic providers. Please review this important information and incorporate it into your practice.

Pediatric resuscitation is among the most stressful situations that a prehospital provider experiences. Access for administration of fluids and medications can be problematic.

A recent case involving a preterm child who was by dates 4 months of age will illustrate several key take home points. The child was born several months premature and spent months in the neonatal intensive care unit before being discharged home. The infant had almost reached a full term newborn's size, both in length and weight. During this resuscitation the Breslow Tape was used. The child did not quite reach the "Grey" color meaning it might have weighed between three (3) and five (5) kilograms. The Vidacare EZ IO device smallest needle is recommended for 3 kilograms and above per the manufacturer's recommendations. The providers were concerned that they could not utilize the EZ IO. What options were available to gain vascular access in this critically ill newborn in cardiopulmonary arrest?

Prehospital providers can utilize the Vidacare EZ IO device below the 3 kilogram recommendation with my authorization. There have been case reports utilizing the device down to 1.5 kilograms. Look for the training video demonstrating the EZ IO drilling multiple holes in an egg without cracking it. This demonstrates the ease of use and control with the driver. In addition, you may utilize any size needle without the driver. The instructions from the manufacturer clearly state that in the event of driver failure, to disconnect the driver and complete the insertion manually. With a child this size, it is appropriate to utilize the 15mm needle manually if needed. A gently twisting motion with firm pressure will accomplish the insertion. The sudden release or "pop" can be readily felt.

If the provider can't place an intraosseous needle, then it is appropriate to attempt peripheral intravenous access.

In summary, for critically ill newborns and premature infants that are "extremely small", you have the option of placing the needle manually or attempting placement with the EZ IO driver.

*Board of Supervisors: Donald F. Gage, George Shirakawa, Dave Cortese, Ken Yeager, Liz Kniss  
County Executive: Jeffrey V. Smith*