Abstract:

Intraosseous (IO) vascular access refers to the placement of a specialized hollow bore needle through the cortex of a bone, into the medullary space for infusion of medical therapy and laboratory tests.[1][2] The IO route is an option when standard venous access would delay therapy or is not easily obtained, in the hospital or pre-hospital setting.[3] IO success rates are twice as high as intravenous line placement in critical trauma patients without a blood pressure and should have priority over IV placement.[4] IO needle insertion has been shown by multiple studies to have high success rates by physicians, nurses, and paramedics in adults, pediatrics patients, animals, as well as sim model studies.[5][6] Although IO access is superior in many clinical situations, it is highly underutilized.[7] Studies show that IO access can be acquired within 20 seconds, allowing rapid access in emergent patients who would otherwise be challenging to access intravenously.[8] Despite the proven value of IO access in the critical patient, barriers exist to its use. These barriers include a lack of confidence in the indications for using IO access by physicians and the belief that nursing staff is not familiar with IO access.[9] IO can be used to administer any substance that is infusible intravenously, but IO use should not be for longer than 24 hours due to an increased risk of complications. Multiple IO devices are available from manufacturers, and availability varies institutionally. IO is easier than standard venous access and central lines in many situations and acceptable for all age groups, including preterm neonates.[10][8][11]

Reference: