

Proposed curriculum in placing intravenous lines for dental assistants

Background

The participation of an anesthesia care team during sedation in the dental office is an essential ingredient of safe practice. To this end, various responsibilities are delegated to dental assistants who work with dentists who possess sedation permits. Among the desired responsibilities for assistants is the ability to safely obtain, maintain, and discontinue vascular access during anesthesia.

Goals

This course is designed to train dental assistants to: a) safely and effectively obtain intravenous access for patients who will require moderate parenteral sedation, deep sedation, or general anesthesia in the dental office; b) maintain the vascular access during the anesthetic with fluid infusions; c) safely discontinue intravenous access; and d) provide counseling to the patient regarding the possible risks and complications related to the venipuncture site.

Following consideration and approval of this course by the Kentucky Board of Dentistry, a dental assistant who completes this course should be considered appropriately trained and certified under Section 5 of 201 KAR 8:571 to start IV's in the dental office.

Objectives

At the conclusion of the course, the dental assistant will be able to:

- I. Identify all the different routes of drug administration and the advantages and disadvantages of the intravenous route
- II. Describe the general indications and contraindications for obtaining intravenous access
- III. List all the equipment associated with intravenous infusions and the appropriate selection and handling of that equipment, including needles, catheters, types of fluid, and special equipment used for children
- IV. Describe in broad terms the anatomy and physiology of the circulatory system and its components
- V. Demonstrate an in-depth knowledge of the anatomy of the upper extremity, including the location of veins, arteries, nerves, and tendons as well as vascular anomalies that might exist
- VI. Enumerate the differences that exist among patient groups that could influence the ease of obtaining vascular access
- VII. Describe situations when it would be acceptable to obtain vascular access in sites other than the upper extremity
- VIII. Discriminate generally between good and poor venipuncture sites and, specifically, make an informed decision with regards to a patient's best site for venipuncture

- IX. Enumerate different techniques that can be used to promote venous distension
- X. Effectively use aseptic technique to prepare the skin for venipuncture
- XI. Demonstrate proper use and placement of a winged infusion needle (“butterfly”) and needle-over-catheter (“angiocath”) used for venipuncture
- XII. Effectively begin a fluid infusion through the venipuncture site and identify all indicators that show the infusion is working correctly
- XIII. Safely discontinue the fluid infusion, withdraw the needle or catheter, and ensure hemostasis at the venipuncture site
- XIV. Enumerate the types of complications that could occur prior to , during, or following vascular access and describe their management

Lecture topics

1. Routes of drug administration and their advantages and disadvantages: oral, intramuscular, intravenous, intranasal, rectal, intraosseous
2. Indications and contraindications for intravenous access in dental outpatients
3. Introduction to intravenous infusion equipment and setup: needles, catheters, infusion tubing, types of fluid available and when each might be used, setup of an infusion set, use of aseptic technique and proper elimination of air in the line
4. Cardiovascular anatomy and physiology: differences between the pressure, flow, and anatomy of the arterial and venous systems, how systemic disease affects the heart and vessels
5. Upper extremity anatomy and its variability among patients
6. Other sites that can be used for vascular access
7. How to create adequate venous distension to permit selection of potential venipuncture sites; how to identify and avoid valves and scarred areas
8. Challenges in finding a suitable vein and how to work with veins that are too small, too deep , too tortuous, or too mobile
9. How to perform a venipuncture using a needle or catheter
10. How to start and maintain a fluid infusion: ways to show there is patency of the vein with no extravasation, thrombosis, or hematoma formation
11. Withdrawing the catheter or needle and assuring hemostasis
12. Complications of venipuncture and their management: hematoma, nerve damage, inadvertent arterial puncture, extravasation of fluid, postoperative pain at the venipuncture site, postoperative phlebitis