Veterinary dental services have become an essential component of preventative healthcare in small animal practice. Veterinarians who provide comprehensive dental services that restore oral health routinely receive client feedback on their patients’ improved comfort and overall health.

Providing a high level of dental services calls for proper room design, lighting, anesthesia, monitoring and patient support, and the necessary equipment – intraoral dental radiography, air-driven dental delivery system, ultrasonic scaler, polisher, hand instruments and dental materials/supplies.

**Dedicated space**

Dentistry requires a dedicated space ranging from 8 x 10 ft. to (ideally) 12 x 15 ft. The dental operatory should be separate from the general surgery room, because of the aerosolized bacteria released during dental procedures. It should also be separate from the general treatment room, whose high traffic makes it less than ideal, especially when taking radiographs. Many new hospitals dedicate the same square footage to their dental operatory as their surgery operatory.

The following items should be incorporated in the dental operatory:

- Peninsula table(s) with a knee space, adjustable seating and grate for drainage.
- Ceiling or floor-mounted lighting designed to illuminate the oral cavity with minimal shadowing.
- Headlamp lighting and/or fiber optics.
- Magnification dependent on the clinician.
- Cabinetry for convenient storage of instruments and materials.
- Instrument table within 3 feet of the procedural table to organize and access specific packs/instruments.
- Dental delivery system, dental radiography and anesthesia delivery system.
- Multiple grounded 110-volt receptacles (3 four-plug grounded outlets) to power the dental delivery system, monitoring equipment, thermal support system, radiography, ultrasonic scaler, and other equipment.

Anesthesia with intubation is necessary to properly assess and treat the companion animal dental patient. Hospitals should set procedure-specific anesthetic protocols, and use regional nerve blocks, intravenous fluid therapy, thermal support and patient monitoring to provide patient safety and rapid recovery. Moreover, patients should be observed during recovery as well as an additional 60 minutes in a central area of the hospital.

**Equipment**

Equipment for performing dental procedures includes:

- Anesthetic delivery system, active scavenger, patient monitoring, thermal support systems and intravenous fluid infusion system.
• Equipment to expose and process intraoral dental radiographic system or intraoral films.
• A high- and low-speed dental delivery system for air and water.
• Equipment for sterilizing instruments.
• Low- and high-speed handpieces.
• Various sizes of burs.
• Powered scaler (ultrasonic, subsonic or piezoelectric).
• Suction (recommended).
• Fiber optic light source (recommended).

**Instruments**

Instruments required for a dental prophylaxis or minor periodontal therapy include:
- Dental chart to record oral pathology, treatment and follow-up.
- Periodontal probe and dental explorer.
- Retraction aids (mouth speculum, or Minnesota retractor).
- Tartar forceps.
- Ultrasonic scaler and polishing unit(s).
- Hand scaler(s), to be used supragingivally.
- Hand curette(s), to be used subgingivally.
- Sharpening supplies (India stone, mechanical or manufacturer).

Instruments used for extraction therapy or periodontal surgery include:
- Local anesthetic drug(s) – Bupivacaine or Lidocaine.
- Scalpel handle and blades (#11, 15 or 15 C).
- Periosteal elevator(s) for efficient and precise flap creation.
- Luxators (a knife-like instrument used between the tooth and alveolar socket to cut the periodontal ligament or elevate an individual root segment). Size #2, 3, 4, & 5.
- Elevators (more blunt instrument used between tooth segments to elevate tooth and roots).
- Wing tipped elevators (sharp, knife-like instruments that conform to the conical shape of the tooth root to aid in extraction therapy).
- Spoon or Miller Curette, used to debride the alveolus.
- Root pick, in the event of a root fracture.
- Extraction forceps.
- Thumb forceps (1 x 2 teeth).
- Iris, LaGrange or Metzenbaum scissors and mosquito hemostats.
- Needle holder of preference.
- Suture material – Vicryl Rapide or Monocryl in a 4-0 and 5-0 size on a reverse cutting needle.
- Other materials include: Gauze, local or topical antimicrobial agent, hemostatic agent, sealant, and bone augmentation material.

**Materials**

Prior to beginning any oral procedure, the patient’s oral cavity should be irrigated with a 0.12% Chlorhexidine solution to reduce aerosolized bacteria and bacteremia. The technician and veterinarian should use protective aids/devices (dosimeter, mask, eye protection, gloves and smock).

Other materials needed include:
- Antiseptic rinse.
- Prophy paste/pumice.
- Prophy angle and cups. (disposable)
- Sealant.
- Needles and syringes.
- Intraoral digital system or radiographic film.
- Measures to prevent hypothermia (e.g., circulating water blanket, hot air blanket, conductive blanket, towels, blankets).
- Gauze and sponges.
- Antimicrobial agent for local application.
- Suture material (4-0 and smaller)
- Bone augmentation material.
- Hemostatic agents.
- Local anesthetic drugs.

Minimum protective devices to be used during dental procedures include:
- Cap.
- Hair bonnet.
- Mask.
- Goggles, surgical spectacles or face shield.
- Smock.
- Gloves.
- Earplugs.
- Dosimeter.
- Protection from radiation (e.g., lead shield).
Dental

Undisturbed plaque will mineralize and result in calculus, which is a hard substance that appears yellow or brown on the tooth surface. If untreated, plaque and calculus commonly will lead to bad breath, red gums (gingivitis), oral pain, infection, and loss of teeth.

Mouth gags should be used with caution. Studies have shown that mouth gags can produce excessive forces, and if used for extended time can result in a masticatory myositis or reduction of blood flow in the maxillary artery, which could result in cerebral ischemia, deafness and blindness.

Client education and home oral hygiene
A post-anesthetic/dental release form is helpful to direct the pet’s immediate and long-term care. This document should discuss the procedure, recovery from anesthesia, feeding recommendations, limitations in activity, and expectations regarding pain or healing over the next several days to weeks. Medications should be listed on the document as well as the patient’s re-examination appointments.

Digital photographs and radiographic images are an important part of this dental release or discharge document, and should be presented at dismissal by the veterinarian or dental technician involved in the procedure. This document should illustrate the degree of periodontal disease (calculus, tartar or oral pathology), treatment(s) performed, and direct the home oral hygiene therapy needed to maintain oral health.

The dental practice should consider taking before-and-after photographs of all procedures performed:

- Use a lip retractor so both arcades are visible and parallel to the axis of the photograph.
- The camera should be set on Macro, without flash and dental light directed away. Use an SD card per patient (labeled A, B, C…).
- Radiographic images are exported from the digital radiographic system to the SD card and inserted into a Microsoft Word document to illustrate the procedure and/or treatment(s) performed on each patient.

Ideally, a pet’s teeth should receive some form of daily mechanical cleansing (brushing or dietary texture). Brushing or tartar-specific diets have been shown to remove the daily accumulation of plaque from the teeth when it is still soft. Undisturbed plaque will mineralize and result in calculus, which is a hard substance that appears yellow or brown on the tooth surface. If untreated, plaque and calculus commonly will lead to bad breath, red gums (gingivitis), oral pain, infection, and loss of teeth. Chemical plaque control can be offered only in conjunction with a mechanical plaque control. I recommend that veterinarians become familiar with the approved products from the Veterinary Oral Health Council at www.vohc.org.

Resource List:

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