

Patient Management

Patient management is one of the most important subjects tested on the INBDE. Comprising a significant portion of the overall test, the contents of this chapter cover a variety of levels of patient management practiced by a dentist. We'll help you drill the most **high-yield** concepts for the INBDE, and provide helpful tips and tricks for answering the patient management questions on the exam.



1 Interpersonal Communication

A unique aspect of being a dentist is the number of hats you'll wear in a professional setting. Not only will you be serving as the leading healthcare provider, you will be responsible for maintaining an environment that is welcoming for anyone who walks through the doors of your practice — whether they be your patients or staff members. It is widely held that it takes as little as 7 seconds to make a first impression, so exhibiting the highest level of interpersonal skills and qualities is of supreme importance. The skills outlined throughout this section, and following sections should not be compromised under any situation.

- **Active Listening** - opposed to passive listening, active listening requires conscious effort to hear, understand, and retain information that is being conveyed to you
 - Dentist qualities: ensure you are paying sustained attention to your patient by waiting to speak, practicing non-verbal listening cues like mirroring.
 - Active listening is also a crucial component of building **rappor** with the patient. By encouraging the patient to share further details and responding in a reassuring manner, you are actively working towards a more trustworthy dentist-patient relationship



- **Empathy** - going to the dentist is a highly vulnerable experience for many patients. Being a dentist who understands how the patient feels, and also provides emotional support can make a world of a difference in the patient's **receptivity** to your advice and treatment
 - Dentist qualities: a 'person focused' dentist is one who both **validates** how a patient feels, and then fosters a sense of togetherness between themselves and the patient
 - Dr. Brené Brown emphasizes the importance of empathy in human connection in this [video](#)

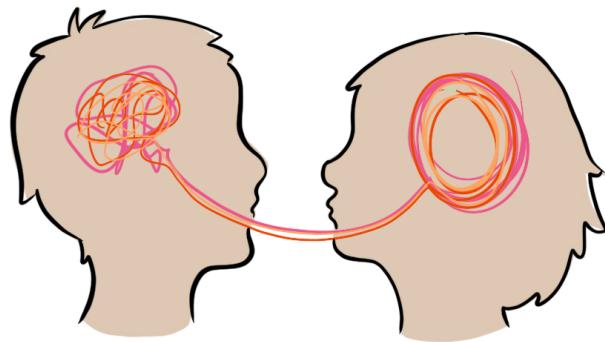
I feel so unconfident speaking to friends and coworkers because I can always see them judging my crooked teeth and uneven smile

I understand how you feel, and why this has been weighing on you. Let's work together to plan a course of treatment that will suit you and your needs best.

- **Nonverbal Communication** - also called manual language, this is the transmission and retrieval of messages without using words, either spoken or written
 - Dentist qualities: Incorporating strong nonverbal communication skills including making good eye-contact with the patient, using **facial expressions** to demonstrate listening, and using appropriate touch/gestures can enhance a patient's experience.
 - Patient qualities: Observe for changes in posture, such as tensing or clenching of hands, uncomfortable movements, or changes in facial expressions during appointments.

- **Verbal Communication** - the transfer of information using speech, verbal communication is essential to a successful dentist-patient relationship
 - Dentist qualities: Use the mnemonic "EQuaL CRaiG" to remember the 6 most important areas of verbal communication to practice:
 1. Explain terms clearly and concisely without using excessively complicated dental jargon
 2. Question your patient to assess their understanding of your advice or treatment plan
 3. Listen to any questions or concerns the patient or patient's family has
 4. Clarify and paraphrase patient misunderstandings
 5. Repeat your thoughts appropriately
 6. Goal setting for future appointments and sharing an estimated treatment timeline will provide important perspective for the patient

Let's delve into more targeted communication that takes place in the dental setting!

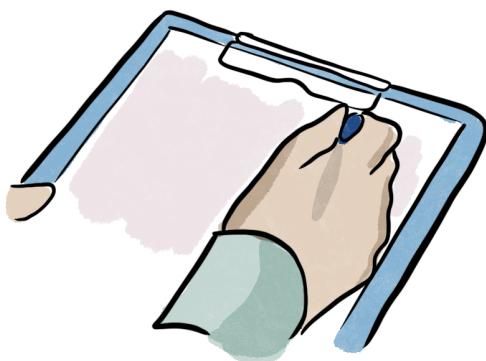


2 Healthcare-Specific Communication

Establishing strong and clear communication when conveying information related to treatment, insurance, or healthcare systems is vital. In doing this, you are minimizing chances for confusion, and are building transparency with all parties involved.

- **Clinical Interviewing** - asking the right questions in an appropriate manner can assist your overall diagnosis greatly
 - A mnemonic to keep in mind is the 4 P's:
 1. **Probing questions** help you uncover background information, and also encourage the patient to think more deeply about their oral health. **Do not** use leading questions that prompt a patient to respond a certain way
 - ♦ "Are you happy with the quality of your smile?"
 - ♦ "How often do you see the dentist?"
 2. **Problem discovery questions** can be both open and close-ended, however open-ended questions are preferred as these lead to greater conversation and identification of potential issues
 - ♦ "Do your gums bleed when you brush or floss?"
 - ♦ "If you could change one thing about your smile what would it be?"

- 3. **Pain** amplification questions reveal information about emotional and physical pain
 - ◆ "How long have you experienced cold sensitivity in this area?"
 - ◆ "Is this tooth sensitive if I blow air on it?"
 - ◆ "Are you concerned that pain will worsen if we don't do anything right now?"
- 4. **Pleasure** discovery questions can help you best understand how to provide the best overall treatment for the patient
 - ◆ "What's most important to you about the dental treatment you receive?"
 - ◆ "Is there something you really liked about the dentist/dental office you used to go to?"
- At the end of the day, it is essential that you are giving the patient ample opportunity to explain what is important to them.



- **Treatment Planning** - once you have a strong grasp of the patient's condition, it is time to communicate a treatment plan, including recommended dental services, the timeline, and associated costs before and after insurance, if applicable

- In-office conversations and demonstrations can have the greatest impact on a patient's receptivity to your proposed treatment plan. Provide a ranked list of treatments in **order of decreasing desirability**, and listen to the patient's concerns
- Make use of easy analogies and short stories to drive understanding. Have the patient teach back to you what they understand



- **Insurance terms** - dental insurance, and health insurance in general, has its own comprehensive vocabulary of terms that are important to know. Here are some high-yield terms to devote to memory:
 1. **Allowed charge:** the highest amount insurers will pay for covered services, and includes any amount the patient will pay
 2. **Annual maximum:** the maximum amount dental plan or policy will pay towards the cost of a patient's dental services
 3. **Appeal:** a formal request for review of denied or unpaid claims; an attempt to receive 3rd party payment
 4. **Beneficiary:** the person(s) covered on a dental insurance plan

5. **Closed network/panel plan:** dental plans that require patients to use a network dentist in order to receive benefits (ex: DHMO)
6. **Co-insurance:** some patients may share the costs of dental services, which are calculated as percentages of the charged amount
7. **Co-pay:** a pre-set fee a patient must pay for each dentist visit or for a specific treatment
8. **Deductible:** amount the patient pays before the insurance plan begins to pay
 - ◆ Many patients will have family deductibles, or the max amount a family needs to meet for co-insurance to kick in for everyone in the family
9. **Flexible Spending Account (FSA):** a special account patients put money into that they can use to pay for certain out-of-pocket healthcare costs
 - ◆ Patients do not pay taxes on this money
10. **Health Savings Account (HSA):** a tax-advantaged savings account that members can withdraw funds tax-free to use for dental care expenses
11. **Open panel plan:** permits member to seek covered health care exclusively from out-of-network providers
12. **Premium:** the amount a patient pays to a dental insurance company for dental coverage, and is usually paid in monthly installments



- **Dental insurance plans** - Below is a summary of plans relevant to the INBDE
1. **Dental Exclusive Provider Organization (DEPO):** members must use an in-network dentist, and members can see specialists without referral. Specialist visits are covered as long as dentist is in-network
 2. **Dental Health Maintenance Organization (DHMO):** dentists in this network are paid a monthly fee for each patient that signs up for the plan and selects that dentist (**capitation plan**)
 - ◆ Pros: generally cost the patient less money; dentist within HMO network cannot refuse to treat that patient
 - ◆ Cons: patient will need primary dentist to receive referrals to a specialist; patients will need to pay full treatment costs for out-of-network dentists
 3. **Dental Preferred Provider Organization (DPPO):** these insurance plans contract with dentists for a discount from usual fees. Patients typically **pay less for treatments** when done by dentists in DPPO network, and dentists are paid on fee-for-service basis after service is done (**high volume of patients**)
 - ◆ Pros: plans are more lenient for allowing patients to choose a dentist
 - ◆ Cons: higher out-of-pocket costs; PPO plan may limit amount of coverage per year
 4. **Discount Dental Plan / Dental Saving Plan:** a dental plan that is not insurance, and consists of a network of dentists who agree to perform service at discounted prices. The patient pays the full discounted fee directly to the dentist, rather than the dental plan paying the dentist on your behalf.

- paying the dentist on the patient's behalf.
 - ◆ Pros: help patients save money
 - ◆ Cons: discount doesn't necessarily mean free. Patients still pay annual membership fees to join the program
5. **Point of Service (POS) Plan:** a dental plan that allows a patient to choose, at the time of dental service, whether they will go to a provider within network or outside the network
- ◆ Pros: help patients save money
 - ◆ Cons: limited set of providers



- **Payment plans** - because there is variation in how dentists run their practices, there is understandably, variation in how they charge patients and receive compensation. Here is a summary of popular plans
1. **Balance billing:** you charge your patient the difference between the total fee and amount covered by the insurance company
 2. **Capitation plan:** a healthcare plan that pays you a flat fee for each patient it covers
 - ◆ Usually, you are paid a fixed monthly rate. **If the value of service is less than the payment, you lose money.**
 3. **Prospective payment system (PPS):** federally qualified health centers (FQHC's)

- (FQHC's) have shifted towards the PPS plan in which you are paid a single, bundled rate for each qualifying patient visit.
 - ◆ Unfortunately, PPS rates have not kept up with inflation
4. **Sliding scale fee:** a mechanism for adjusting fees in accordance with a patient's ability to pay for care
- ◆ The patient's financial need is typically determined using the federal poverty level, that considers income, family size, and other demographics



- **Dental fraud** - defined as wrongful or criminal deception for personal or financial gain, the 3 key features of dental fraud include **intent, deception, and unlawful gain**.
1. **Billing for services not rendered:** (example) billing a patient for a full check-up when they were only seen for 5 minutes
 2. **Over billing:** over charging insurance company for actual service provided
 3. **Altering dates of service:** changing dates to take advantage of early deductible requirements
 4. **Waiving deductibles and/or co-payments:** failing to reduce fees to the insurance company when you aren't collecting deductibles or co-payments illegal.

- ◆ While this may lower costs for patients, insurance companies are still paying expenses they wouldn't otherwise pay, ultimately increasing overall costs for policyholders
- 5. **Misrepresenting services:** incorrectly diagnosing or incorrectly billing procedures is fraud
- 6. **Bundling services:** combining of dental procedures by 3rd-party payers resulting in one charge for treatments like tooth extractions
- 7. **Unbundling services:** separating services into component parts and charging separately for them
 - ◆ For example, charging for each of the line items of a tooth extraction (making an incision, elevating the flap, extracting the tooth, etc) are fraudulent charges



- 6. **Upcoding for routine services:** if your office reports a more complex or **higher-cost** procedure than what was actually performed in order to increase practice income, you have committed fraud.
 - ◆ Ensure your staff is never incentivized for using certain procedure codes to uphold integrity at all levels of your practice.

- 8. **Downcoding:** if your office reports less complex or lower-cost procedure than what was actually performed

- **US healthcare efforts** - we've discussed consumer driven and managed care programs throughout this section, which leaves government health programs.

1. **US Department of Health and Human Services (HHS):** enhances the health and well-being of all Americans. The HHS contains 11 operating division, consisting of 8 agencies in the US Public Health Service, and 3 human services agencies

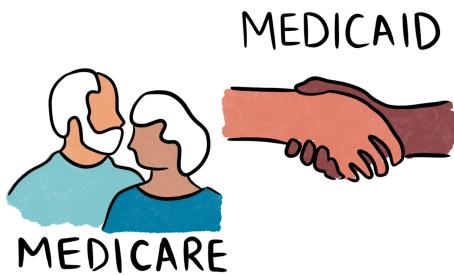
- ◆ **Suspected elder abuse** reported to this agency



2. **Administration for Children and Families (ACF):** promotes the economic and social well-being of families, children, individuals and communities
 - ◆ “**Head Start**” is a program established in 1965 with the mission of improving school readiness of children aged 3-5 in low income families. Because good oral health is essential to a child’s behavioral, speech, and language development, dentists play an important role in this program.
 - ◆ As a dentist, you can make a difference by accepting referrals of children enrolled in Head Start or volunteer with efforts like Give Kids a Smile Day



3. **Centers for Medicare and Medicaid Services (CMS):** administers major US healthcare programs medicare, medicaid, and CHIP
 - ◆ **Medicare:** government assistance for people aged 65+ that provides coverage in a few parts with different plan options
 - Medicare Parts A and B cover hospital and medical services, respectively, but **do not cover dental care** and thus require coverage under a supplemental health plan
 - ◆ **Medicaid:** a welfare program that provides assistance **based on personal or family income**
 - Most states **provide at least emergency dental services for adults**, and less than half of the states provide comprehensive dental care



◆ **Children's Health Insurance Program (CHIP):** provision of low-cost health coverage to children in families who earn too much money to qualify for Medicaid

- Routine "well child" doctor and **dental visits are free** under CHIP. In the US, CHIP programs must include coverage necessary to prevent disease, promote oral health, treat emergency conditions, and restore oral structures to health and function

4. **Health Resources and Services Administration (HRSA):** provides health care to people who are geographically isolated, economically, or medically vulnerable
 - ◆ In addition, this includes people living with HIV/AIDs, pregnant women, mothers, and families
 - ◆ There are a number of oral health specific efforts by the HRSA
5. **Centers for Disease Control and Prevention (CDC):** the Division of Oral Health (DOH) provides leadership and promotes interventions to improve oral health at community levels.
 - ◆ Efforts include community water fluoridation, dental sealants, and supporting integration of medical and dental.
6. **Indian Health System:** an operating division (OPDIV) responsible for providing direct medical, dental, and public health services to members of federally-recognized Native American Tribes and Alaska Native people
7. **Veterans Health Administration:** a component of the US Department of Veteran Affairs that implements the healthcare program of the veteran affairs.

- benefits to certain qualifying veterans



8. **Food and Drug Administration (FDA):** protects public health by ensuring safety, efficacy, and security of food, drugs, medical devices, vaccines, and other ingestible products.
9. **National Institute of Health (NIH):** the US medical research agency
10. **Agency for Healthcare Research and Quality (AHRQ):** main mission is to make healthcare safer, higher quality, more accessible, equitable, and affordable

3 Epidemiology and Public Health

We've just expanded our understanding of the different aspects of the US healthcare system that will impact your role as a dentist. We now lean further into your role within your community, and what you can do to increase levels of oral care for those around you.

Epidemiology is a branch of medicine that studies the incidence, distribution, and potential control of diseases and other factors impacting health. **Public health**, while similar, is a branch of medicine focused on the health of the population as a whole, often as the subject of government regulation and support. This section outlines the qualities of both fields that are both important for the INBDE, and are present in your day-to-day role as a dentist.

- **Measuring dental diseases** - a typical routine check-up, incidence or prevalence of dental disease is assessed using a few epidemiological measures
 1. **Gingival index:** scores each site on a scale of 0-3, with 0 being normal, and 3 being severe inflammation characterized by severe redness, edema, ulceration, and bleeding
 - ◆ Can be adapted for pediatric use
 2. **DMFT index:** quantifies dental health based on number of decayed, missing, and filled permanent teeth as a result of caries (**irreversible**)
 - ◆ The **DMFS** index quantifies decayed, missing, and filled surfaces
 - ◆ The **DEFT** index quantifies decayed, extracted, and filled teeth
 - ◆ The **dmft** (all lowercase) index quantifies decayed, missing, and filled primary teeth
 - Early childhood caries (ECC) is a major oral health problem that is defined as 1 or more dmft/dmfs in children aged **5 years or younger**
 3. **Periodontitis index:** classifies a patient as having mild, moderate, advanced, or no periodontitis as measured by pocket depth. The PDI, periodontal disease index, is the total of the scores for each tooth divided by the number of teeth examined (higher score = more severe disease)
 4. **Simplified oral hygiene index (OHI-S):** quantifies patient's oral hygiene and presence of plaque on tooth surface.
 - ◆ The OHI-S consists of the combined debris index and calculus index, each measured on a scale of 0-3 with 0 being no debris or calculus present, and 3 being debris or calculus covering more than 2/3 of the exposed tooth surface



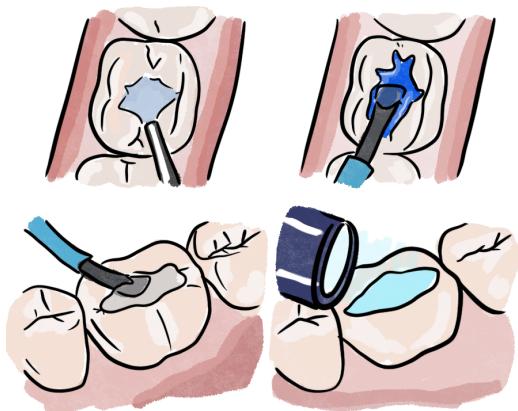
5. **Oral cancer:** perform oral cancer screenings during dental exams to check for red or white patches, mouth sores, tissues of throats and neck for any lumps or abnormalities. The **tongue** is the most common site for cancers in oral cavity
- **Preventing dental diseases (community level)** - you and other dentists at the federal and state level are working to prevent large scale dental disease:
 1. Community water fluoridation: **most efficient and cost effective way** to deliver fluoride to all community members
 - ◆ Water fluoridation provides frequent and consistent contact with low levels of fluoride, and benefits more than 73% of the US population
 - ◆ **1 ppm is optimal amount;** fluoride is odorless, colorless, and tasteless
 2. School water fluoridation: in areas with limited public water supplies or fluoride is not naturally present in well water, higher levels of fluoride (almost 5x the community level) in water supplying schools can greatly reduce incidence of dental decay
 3. **Salt fluoridation:** for communities with low water fluoride concentration; combination of water & salt fluoridation not recommended

4. **Health education:** oral health education efforts include school-based initiatives and dental public health programs that involve dentists or dentist-adjacent professions educating the public on the importance of oral health

- **Preventing dental diseases (practice level)** - these are preventative measures that can be provided by you directly to the patient
 1. **Topical fluoride:** topical application of highly concentrated (5% w/v) fluoride varnishes; best for **smooth surfaces**
 - ◆ Topical fluoride can also be applied as a gel, like acidulated phosphate fluoride, which contains 1.23% fluoride w/v
 - ◆ Toxicity: risk remains the highest in children aged 6 and younger, which can result in dental fluorosis
 - **Rule of 5's:** toxic dose is 5 mg/kg and lethal dose is 5 g for adult
 2. **Stannous fluoride:** a topical fluoride application that also strengthens tooth enamel and fights dental caries, but also has antimicrobial and anti-hypersensitivity properties
 3. **Fluoride supplements:** available by prescription only as liquids or tablets, for at risk children in non fluoridated areas (<3 y/o = fluoride drops; >3 y/o = fluoride tablets; >6 y/o = fluoride rinse)
 - **Rule of 6's:** no supplemental systemic fluoride if water fluoride level >0.6 ppm, patient <6 months old, OR patient >16 y/o



4. **Sealants:** best for the **occlusal surface of molars**, sealants reduce the risk of decay by nearly 80%, and can be placed over areas of early decay to prevent further damage
5. **Mouth guards:** most commonly made for patients to protect teeth from injury from teeth grinding or sports
6. **Health education:** ensure you are instructing your patients on regular flossing and healthy diet practices to impart the most comprehensive preventative treatment



4 Safety and Infection Control

If the COVID-19 pandemic has revealed anything in dentistry, it's that materials and equipment must be regularly and thoroughly sanitized in order to minimize the spread of infection. This section outlines the most important elements of office safety and infection control measures that you'll be practicing every day.

- **Airborne contamination** - there are at least 3 potential sources of airborne contamination in a typical dental office setting: dental instrumentation, saliva and respiratory sources, and the operative site.
1. Aerosols in the dental environment are

defined as particles less than 50 micrometers in diameter. These small size particles stay airborne for an extended period of time before they settle on surfaces or enter the respiratory tract, and thus have the greatest potential for transmitting infections

- ◆ Pneumonia, tuberculosis, influenza, Legionnaires' Disease, and SARS are all diseases known to be spread by droplets or aerosols

2. Splatter is defined as airborne particles larger than 50 micrometers in diameter that behave in a ballistic manner. They are too large to remain suspended in the air like aerosol particles, and fall within 3 feet of patient's mouth
3. Routine cleaning and sterilization procedures should be stringently followed



- **Awareness of routes of transmission:** there are 5 main routes of transmission to know

1. **Direct contact:** includes direct body contact with tissues or fluids of infected individual, physical transfer and entry of microorganisms through mucous membranes, open wounds, or abraded skin.
 - ◆ Direct inoculation from bites or scratches is also possible

- ◆ Examples include rabies, *Microsporum*, *Leptospira* spp. and *staphylococci*
- 2. **Fomite:** form of indirect contact; transmission involving inanimate objects contaminated by an infected individual and can include a wide variety of objects such as exam tables, medical equipment, environmental surfaces, and clothing
 - ◆ Ex: adenovirus, cold sores, hand-foot-mouth disease, and diarrhea
- 3. **Aerosol (Airborne):** can occur from breathing, coughing, sneezing, or as a result of dental instruments (see page 10)
- 4. **Oral:** can occur from ingesting contaminated food, but more likely in the dental setting, as a result of licking or chewing contaminated surfaces
 - ◆ Ex: *Campylobacter*, *Salmonella*, *Escherichia coli*, and *Leptospira*
- 5. **Vector-borne:** an important route of transmission where pests like mosquitos, fleas, ticks, or rodents persist, and may be brought into the practice
 - ◆ Ex: Lyme disease and *Bartonella* infection
- 6. **Zoonotic:** this mode of transmission may be most prevalent in dental offices that use therapy animals to reduce patient anxiety
 - ◆ Ex: *Microsporum*, *Leptospira*, *Campylobacter*, and *Bartonella*
 - Use the mnemonic Da FAVOZ (pronounced: "the favors") to remember Direct, Fomite, Aerosol, Vector-borne, Oral, and Zoonotic
 - **Workplace safety** - all dental offices and clinics are required to comply with the

Occupational Safety and Health Administration (OSHA) Hazard Communication Standard.

1. Material Safety Data Sheets (MSDSs) made by manufacturer to inform of the handling procedures of common hazardous substances; must be prominently displayed in areas where hazardous substances are stored, used, and disposed
2. The hazardous substances are classified via Category, which is usually a number (1-4) or letter (A, B, C). The higher the number or letter, the greater the hazard the substance is.
 - ◆ The National Fire Prevention Association (NFPA) symbol is a common identifier with blue representing health hazards, red representing flammability hazards, yellow representing instability hazards, and white representing specific hazards



3. Maintain general safety of walking/working surfaces
4. Available PPE with proper instruction for use and disposal
 - ◆ The EPA is responsible for the management and disposal of dental waste
5. Hazardous communications

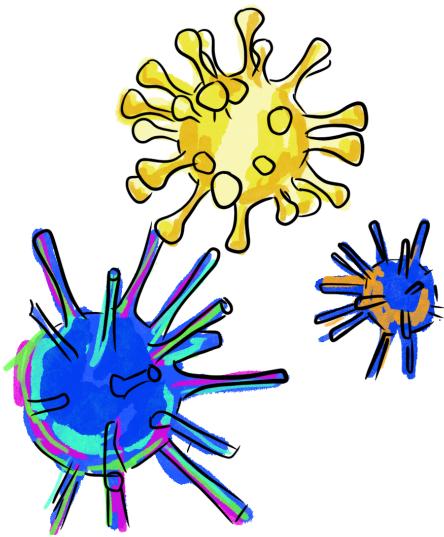
6. Radiation standard: areas that expose individuals to radiation need identifiable caution signs or written labels. Employers must ensure employees are well-versed on correct work procedures for any x-ray machines
7. Bloodborne pathogens standard: written communication of universal precautions, free hepatitis B vaccinations, safe sharp handling, proper labeling of disposal containers, and containment of regulated waste to limit exposure
8. OSHA required paperwork: every dental office must have up-to-date safety plans for general workplace safety, exposure control, chemical inventory, injury or exposure incident reports, records of employee hepatitis B vaccination, and annual employee records of OSHA training sessions
9. Employee education and training: all employees must be fully and appropriately trained for their own safety. This training must happen upon hiring, and must be updated annually to encourage safety and efficiency in the workplace



- **Safety in the operatory** - specific measures can be taken within the dental operatory to maximize safety in your practice as a whole
 1. Noise and vibration safety: the use of dental hand pieces subject dentists to very high amplitudes (**>90 dB**) and vibration frequencies that can have ill physical, mental, and psychological effects
 - ◆ Recent studies suggest used hand pieces are more hazardous compared to newer ones, and grasping styles must be ergonomic to minimize health effects
 2. Dental unit water quality: dental unit waterlines promote bacterial growth and biofilm development. As a result, all units should use systems that treat water to meet drinking water standards (**$\leq 500 \text{ CFU/mL}$** of heterotrophic water bacteria)



3. PPE ensembles: ensure any office staff in the operatory are wearing scrubs/lab coat/smock/gown, gloves, eye protection, and face masks (minimum, surgical mask, ideally, an N95)
 - ◆ Make sure you are changing gloves whenever touching anything contaminated with body fluids, and changing masks in between patients
 - ◆ Ensure in-office laundry units are available to wash any items worn in the office

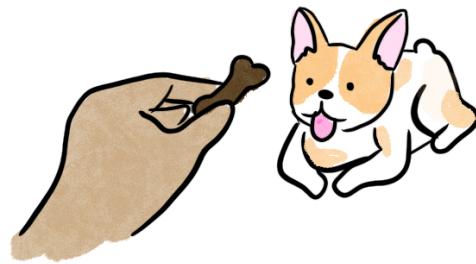


- **Sterilization** - destroys everything including **all** bacteria, viruses, and **spores**
 1. Autoclave/Pressure Sterilization: most common method of sterilization, steam at **121 degrees C at 15 psi for 20-30 minutes**
 - ◆ This process utilizes moist heat and pressure to cause **denaturation** of bacterial proteins and leads to their destruction
 - ◆ **Biological indicators** (or spore tests) are the best way to **monitor sterilization**, which work by killing highly resistant microorganisms
 2. Glutaraldehyde: sterilizes heat-sensitive items
 3. Ethylene oxide (ETO) sterilization: gas penetrates pre-packaged items
 4. Dry heat sterilization: used for only glass and metal items, these items are heated at **160 degrees C for 1 hour**.
 - ◆ This method causes the **coagulation** of bacterial proteins and leads to their destruction.
 - ◆ Best technique for minimizing corrosion of sharp items

- **Disinfection** - sprayed and left on **non-living surfaces** for 10 minutes. Disinfectants destroys all microbes **except** for spores.
 - ◆ **Mycobacterium tuberculosis** is killed by disinfection
- **Antisepsis** - reduces bacterial numbers on **living tissues**. The important antiseptics for the dental setting are:
 1. Alcohol: most commonly used; is bactericidal, tuberculocidal, fungicidal, and virucidal (does not destroy bacterial spores)
 - ◆ Works by denaturing proteins
 2. Quaternary ammonium compounds (QACs): prevent biofilm formation on dental material surfaces, have strong permeability, low toxicity, low skin irritation compared to other antimicrobial agents
 - ◆ Effects the cell membrane integrity of multiple organisms except for TB and endospores
 3. Chlorhexidine: can be prescribed or found OTC, this binds tightly to tooth, oral tissues, and dental plaque and ruptures bacterial cell membranes
 - ◆ Shows **substantivity**, or prolonged association of CHX with substrate (oral mucosa, oral proteins, dental plaque, etc) resulting in a continuous effect
- **Spaulding classification scheme:**
 - ◆ **Critical**: contacts sterile tissue or **vascular system** and requires sterilization (ex: needles)
 - ◆ **Semi-critical**: contacts mucosa and requires high level disinfection (ex: mouth mirror)
 - ◆ **Noncritical**: contacts skin and requires disinfection (BP cuffs)



- **Negative reinforcement:** desired action → remove negative stimulus
- **Negative punishment:** unwanted action → remove positive stimulus
- Classical conditioning comes into play with dental phobias when a negative response is paired with a particular stimulus, whether it be the high-pitched noise of a hand piece, or the particular smell associated with dental offices



5 Behavior and Anxiety

For many, going to the dentist is a very anxiety-inducing experience. Understanding the underlying behavioral mechanisms that contribute to this anxiety are essential for the INBDE and are outlined in this section.

- **Conditioning** - classical (pavlovian) conditioning is the process by which a neutral stimulus is able to directly elicit a response by pairing this stimulus with an unconditioned stimulus that elicits the same response
 - ◆ Operant conditioning, or instrumental conditioning differs in that it is a method of learning that employs rewards and punishments for behavior
 - **Positive reinforcement:** desired action → reward
 - **Positive punishment:** unwanted action → punishment

- **Encouraging behavior change** - because of the intense phobias experienced by many individuals, you as a dentist have a unique task of championing for the behavioral changes of your patients to ultimately promote oral health. In order for behavior change to occur in the first place, the COM-B model can be used:

1. Capability: the patient must have the physical or psychological ability to adopt the desired behavior
 - ◆ If you're trying to help a patient reduce sugary drinks, it is important that you:
 - ◆ Propose a healthier alternative
 - ◆ Help them understand why its important for both oral and overall health to reduce sugar intake
 - ◆ Stay motivated to continue choosing the healthier alternative weeks and months after the appointment

2. Opportunity: the environment, including but not limited to, their income, support-system, and access to different resources can be a major barrier to behavior change
 - ◆ If you're trying to help a patient reduce cigarette smoking, take into account the following factors:
 - ◆ What stressful experience in the patient's life might be prompting nicotine use?
 - ◆ Does the patient live or work with smokers?
 - ◆ How can the patient realistically access smoking support (nicotine patches, treatments, etc)?
3. Motivation: the patient must have desire and intention to change or stop habits that might be detrimental to oral and overall health
 - ◆ To motivate a patient to brush regularly, you can help by:
 - ◆ Working with the patient to find times in their personal schedule to brush
 - ◆ Making them aware of the long term impacts of continuing the habit



- **The Transtheoretical Model** - developed by Prochaska and DiClemente, this model focuses on and illustrates the decision making process.
 - ◆ This cyclical process is important for you to understand and deliver targeted

- ◆ advice to patients to influence sustained changes in oral health, for example
- 1. **Precontemplation**: people are unaware of problematic behavior and underestimate the benefits of changing behavior
- 2. **Contemplation**: people recognize that behavior may be problematic, yet still feel apprehensive towards changing behavior
- 3. **Preparation (Determination)**: people are ready to take action within the next 30 days, and take small steps towards behavior change
- 4. **Action**: people have recently changed behavior and intend to carry forward with the behavior change
- 5. **Maintenance**: the behavior change has been sustained for more than 6 months, and people work to prevent relapse to previous stages
- 6. **Termination**: people no longer have desire to return to unhealthy behaviors
 - ◆ Albeit desirable, note that this is rarely reached, and people tend to stay in the maintenance stage
 - ◆ Most health promotion programs do not include the termination step in their goal-planning for this reason



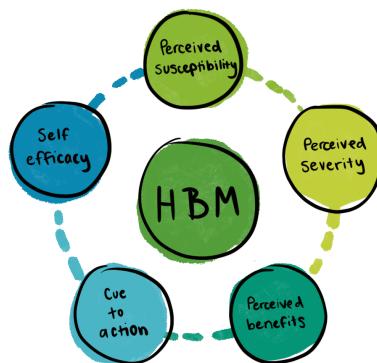
- **Behavioral strategies** - there are a number of strategies that you can adopt to help your patient feel more comfortable and receptive to your treatment
 1. Motivational interviewing: patient-centered counseling style to assist change from previous ambivalence
 - ◆ **OARS:** open questions, affirmations, reflective listening, summarizing
 - ◆ **Engage:** form the relationship
 - ◆ **Focus:** explore the patient's motivations, goals, and values
 - ◆ **Evoke:** elicit own motivations
 - ◆ **Plan:** explore how the patient can work towards sustained change
 2. Establish expectations: let patients know what to expect, give them chances to ask questions, incorporate direct observation (such as allowing children to observe cooperative siblings or parents)
 3. Ask-tell-ask:
 - ◆ Ask: about the patient's feelings towards the visit, and level of knowledge and understanding
 - ◆ Tell: the patient about procedures using easy to understand demonstrations and language
 - ◆ Ask: if the patient understands the treatment and how they feel about it



4. Reinforce behaviors: use labeled praise to encourage behaviors you want to see more of
 - ◆ "Great job maintaining the flossing habit!"
 - ◆ Use a positive voice modulation, facial expression, and appropriate physical touch to further reinforce
5. **Shaping:** reward the successive approximations of a desired behavior
 - ◆ Utilize the reinforcement behaviors to encourage behavior in a step-by-step manner
6. **Premack Principle:** the act of making a behavior that has a high probability of being performed reliant on a lower probability behavior being performed

- **Health Belief Model** - a tool used to predict health behaviors based on theory that a person's willingness to change health behaviors is primarily due to their health perceptions. There are 6 main components:
 1. Perceived severity: probability that a person will change their health behaviors to avoid a consequence
 2. **Perceived susceptibility:** people will not change their health behaviors unless they believe they are at a risk
 - ◆ Ex: someone who thinks they will not get the flu is less likely to get an annual flu shot
 3. Perceived benefits: people don't want to give up something they enjoy or their convenience if they don't get something in return
 - ◆ Ex: a person won't stop smoking unless they believe that doing so will improve their life
 4. Perceived barriers: changing health behaviors can cost money, effort, and time, and common behaviors include:

- ◆ Danger
 - ◆ Discomfort
 - ◆ Expense
 - ◆ Social consequences
 - ◆ Inconvenience
5. Cues to action: external events that prompt the desire to make a health change
6. **Self efficacy:** person's belief in their ability to make a health-related change, and is arguably one of the most important factors in the maintenance of the habit
- This model can be used for public health dentistry programs that are used in different settings. Schools may rely on educational programs to enable children to understand importance of oral health. Use of the HBM can provide education, skills training, lowered barriers, and increased self-efficacy.



- **Identifying dental anxiety** - the initial interaction with the patient can reveal the presence of anxiety
 - ◆ **Stress:** perceived threat to well-being
 - ◆ **Anxiety:** subjective experience involving behavioral, cognitive, emotional, and psychological factors
 - ◆ Anxious patients are more likely to sit still, stay quiet, and require **more interpersonal distance** to be comfortable

- Anxiety questionnaire: there are several multi-item scales for assessing anxious and phobic patients
- ◆ Corah's Dental Anxiety Scale (CDAS): brief, good psychometric properties; drawbacks include no uniformity in answer choices as well as no questions about anxiety regarding local anesthetic injections
- ◆ Modified Dental Anxiety Scale (MDAS): brief, well-validated 5-point Likert scale responses to assess associated dental fears
- ◆ Dental Fear Survey (DFS): 20 questions regarding avoidance behavior, psychological fear reactions, somatic symptoms of anxiety, and anxiety caused by dental stimuli



- **Managing dental anxiety** - there are numerous ways to manage the different levels of dental anxiety:
 1. Communication: let patient know what to **expect** beforehand
 - ◆ Hand signals for breaks, time structuring
 2. Behavior management techniques
 3. Relaxation techniques: deep breathing, muscle relaxation
 - ◆ Jacobson's relaxation technique: type of therapy that focuses on tightening and relaxing specific muscle groups in sequence

4. Guided imagery: "going to your happy place" via visualization techniques
 5. **Distraction:** incorporate music, tv's, or even therapy pets to distract patients in your practice
 6. **Systematic desensitization/graded exposure:** expose patients to increasingly feared stimuli while allowing them to pair relaxation responses with the stimuli
 7. **Habituation:** a decrease in response that occurs as a result of repeated or prolonged exposure to conditioned stimuli
 8. **Rational response/reframing:** encouraging thoughts like "I can't do this" to "I did fine last time"
 9. Pharmacological pain management: nitrous oxide, IV sedation, prescription medication
 - ◆ Nitrous oxide: slows down nervous system to reduce inhibitions. Side effects include headaches, shivering, nausea, and sleepiness
 - ◆ IV sedation: you can more accurately titrate doses of sedatives that do not affect body processes
 - Side effects include headaches, dizziness, and nausea
 - ◆ Prescription medication:
 - Diazepam (Valium) has a fast onset of action (20-40 minutes), 100% oral bioavailability, and doses range from 2-10 mg for adults
 - Anxiolytic medications such as temazepam are short-acting small single dose medications taken ~1 before appointments
 10. Cognitive appraisal of threat:
 - ◆ Controllability: how controllable the situation appears to be
 - ◆ Familiarity: how familiar the situation is
- ◆ Predictability: how predictable the situation is
- ◆ Imminence: is the situation approaching?
11. Child behavior management:
 - ◆ Counting: counting is a significant developmental stage for children, so capitalize on this by incorporating verbal counting into different procedures
 - ◆ Tell-show-do: explain a procedure, show what tools and instruments might be used, and then perform the procedure
 - ◆ Helper: ask the child to help you by sitting in on parent or sibling appointments
 - ◆ Environment: incorporate toys, books, posters in waiting areas or patient rooms
- **Dental pain** - a complex phenomenon involving emotion and cognition
 - ◆ The Wong-Baker Faces pain scale is a fast and useful assessment tool of pain experiences



