Some Opening Words

- Sedation is FUN!
  - If you offer it as part of your practice, great!

- Sedation is safe, but not without risk
  - Several deaths have happened nationwide

- It carries great responsibility
  - Either do it right, or not at all

Today’s Course

- Not a sedation provider?
  - This course is meant to either excite you to start, or turn you off!

- Already a sedation provider?
  - I hope to refresh and improve your knowledge base

My Opinion

- No matter what, provide sedation because you enjoy it
  - These patients are sometimes difficult
  - The responsibility is great
  - If you are doing it for the income, you are doing it for the wrong reason

Definitions
**DEFINITIONS**

- **Anxiolysis:**
  - Using medications to reduce anxiety without altering consciousness.

- **Conscious Sedation:**
  - A minimally depressed level of consciousness that retains the patient’s ability to independently and continuously maintain an airway and respond appropriately to physical stimulation and verbal command, produced by a pharmacologic or nonpharmacologic method, or a combination thereof.

- **Deep Sedation:**
  - A controlled state of depressed consciousness, accompanied by partial loss of protective reflexes, including inability to respond purposefully to verbal command, produced by a pharmacologic or nonpharmacologic method, or combination thereof.

- **General Anesthesia:**
  - A controlled state of unconsciousness accompanied by partial or complete loss of protective reflexes, including inability to independently maintain an airway and respond purposefully to physical stimulation or verbal command, produced by a pharmacologic or nonpharmacologic method, or a combination thereof.

**What does all this mean?**

- If you have to maintain an airway or overly stimulate your patient to respond, they are too deep and you are “off the trail”!

**Why Sedate?**

- [Image of a relaxed cat]
**Goals**
- Fear and anxiety relief
- Stress reduction, increased patient safety
- Improved pain control
- Enhanced patient cooperation
- Because dentistry is *sometimes* barbaric?

**Indications**
- Medical sedations
- Procedural sedations
- “I can't get numb” or “I gag”
- Local anesthetic allergies
- Phobics
- Pharmacologic restraint
- “I want a sedation”

**Medical Sedations**
- **Goals:**
  - Stress reduction
  - Safely and efficiently provide dentistry while managing medical condition

**Medical Sedations**
- **Examples:**
  - Cardiac patients – CHF, Angina, MI, DCM
  - Hemophiliacs
    - Factor is expensive, get all tx done at once
  - Hypertensive patients
  - Asthma patients
  - Movement disorders
  - Seizure disorders

**Medical Sedations**
- **Advantages:**
  - Safer for patient from stress point of view; usually can be safely rendered
  - Can fully monitor during the sedation
  - Can be employed at Doctor's discretion as part of good medical practice

**Medical Sedations**
- **Disadvantages:**
  - Not always appropriate for in-office settings. Often best done in a hospital
  - Adds some cost to the patient
**Medical Sedations**

- Notes:
  - Often the very patients you cannot give a deep sedation or GA to will be best treated with conscious sedation

**Procedural Sedations**

- Goals:
  - Allow patient to have a more enjoyable visit during difficult procedures
  - Enhance patient cooperation

**Procedural Sedations**

- Examples:
  - Extractions
  - Periodontal surgeries
  - Endo
  - Multiple-tooth restorative
  - Crown and bridge
  - Long appointments

**Procedural Sedations**

- Advantages:
  - Safer for patient from stress point of view
  - Use as a practice builder
  - Usually gains better patient cooperation = more efficiency

**Procedural Sedations**

- Disadvantages:
  - Adds some cost to the patient
  - Usually not appropriate for short appointments or simple procedures

**Procedural Sedations**

- Question to consider:
  - Is conscious sedation under-utilized in modern dentistry, given the stressful nature of what we do and the safety of these agents?
**“I CAN’T GET NUMB” / “I GAG”**

- **Goals:**
  - Enhance the effect of local anesthesia
  - Enhance patient cooperation and acceptance of treatment

- **Examples:**
  - Active gag reflex
  - Pulpal inflammation
  - “Hot spots” on teeth
  - Indicative of a “closet phobic”?
  - Indicative of someone “tuckered out” from the previous attempts?

- **Advantages:**
  - Almost always works sufficiently for hot spots and extirpations
  - Gagging is usually completely stopped
  - Often uncovers phobic patients
  - When successful, great practice builder

- **Disadvantages:**
  - Adds some cost to the patient

- **Notes:**
  - Even if patient is not fully numb, their sensation is usually clouded enough to allow the procedure to be completed
  - Use of amnestic medications is particularly important

**Local Anesthetic “Allergies”**

- **Goal:**
  - To allow dental treatment of patients with alleged local anesthetic allergies

- **Examples:**
  - “I’m allergic to anything with ‘-caine in it”
  - Usually indicative of a “closet phobic” or hypochondriac
LOCAL ANESTHETIC “ALLERGIES”

- **Advantages:**
  - Almost always works
  - When successful, great practice builder

- **Disadvantages:**
  - Adds some cost to the patient
  - Explaining why it works must be done carefully
  - Weaning off sedation is sometimes difficult

- **Notes:**
  - True allergy to the amide-type anesthetics essentially does not exist
  - Only a handful in the literature
  - I have one truly impressive case in my practice
  - Most patients with alleged LA allergies are phobic, overly-centered upon their health, or mistake an ADR for an allergy

PHOBICS

- **Goal:**
  - To successfully treat patients with incapacitating dental phobias

- **Examples:**
  - Needle phobics
  - Acoustic, Olfactory, Vibration phobics
  - All-around “I hate the dentist” phobic
  - “Closet” phobics

- **Advantages:**
  - Almost always works, especially if no expectations are placed for success.
  - When successful, great practice builder

- **Disadvantages:**
  - Adds cost
  - Weaning off sedation can be difficult, especially pts who do not want to improve
  - Addressing the underlying fear is important, but does not lie within our area of expertise
  - A team approach is helpful
  - Closet phobics do not admit their phobia
  - Implication of fear can cause defensive reactions
Phobics

- Notes:
  - This can be a very rewarding but demanding patient population
  - A lot of time is spent
  - The goal is to wean the patient off “heavier” kinds of sedation and get them to be a “functional” dental patient
  - Amnestic-type medications are particularly useful for the first one or two visits

- Notes:
  - Their baggage is not your baggage
  - Use clinical psychologists to help with the underlying reasons for the phobia
  - Ultimately, the key ingredients to success are honesty from the dentist and trust from the patient

Pharmacologic Restraint

- Goal:
  - To successfully treat patients with the inability to cooperate

- Examples:
  - Children
  - Mentally disabled
    - ND/ID
    - Alzheimer’s, brain injury/tumors, stroke
  - Physically disabled

- Advantages:
  - May render a difficult patient sufficiently cooperative to complete their dental care
  - Much less expensive and time-intensive than GA and/or the OR
  - Very rewarding when successful, and heavily needed in the community

- Disadvantages:
  - Most difficult form of conscious sedation
  - Communication and assessment of depth problems occur
  - Patient cooperation can vary widely from appointment to appointment.
  - If done wisely, failure rate is high (20%+)
  - Often inappropriate for difficult or exacting procedures
Pharmacologic Restraint

- Notes:
  - Patient selection is paramount to success
  - It is a difficult skill to acquire
  - Until some experience is gained, if the pt is not exceedingly easy, do not try it!
  - True or false regarding children? “If you can start an IV, they do not need sedation”

“I Want a Sedation”

- Is it ethical to provide a sedation to someone who wants it for the sake of the experience?

Safety Considerations

Precautions /Contraindications

- Who should I not sedate?
  - Relatively few people cannot have a conscious sedation...as long as it remains conscious!
  - Think of the “Emergency What-if?”

Precautions /Contraindications

- Considerations:
  - Pregnancy
  - Known poor reaction to conscious sedation in the past
  - Too much work to do
  - History of, or current substance abuse

Precautions /Contraindications

- Considerations:
  - Known difficult airway
  - Morbid obesity
  - Extreme difficulty with veins
  - Age (very young/very old)
  - Emaciation
Precautions /Contraindications

- Considerations:
  - Tx medically complex patients only in offices with experienced providers and appropriate facilities/equipment for emergencies
  - If not, tx in the hospital with anesthesiologists
    - End-stage liver disease
    - End-stage kidney disease
    - Severe cardiac compromise
    - Severe pulmonary compromise

Varieties of Sedation

Sedation Options

- Iatrosedation
  - Comfort / bonding is most important of all
  - If they do not like/trust you, the sedation will fail
  - Introvert? Send in your friendly staff!

- Inhalation
  - N₂O/O₂ safest for non-pulmonary patients
  - Highly variable outcomes, however
  - More on this in the Nitrous lecture

- Oral
  - Safe, but variable rates of gastric emptying
  - Generally cannot / do not re-dose

- Transmucosal
  - Sublingual approach is good for Triazolam
  - Will discuss re-dosing approaches later
  - Can give intranasal
  - Rarely rectal

- Intramuscular
  - Usually only used for pharmacologic restraint

- Intravenous (includes intraosseous)
  - Preferred when possible
  - Gives the most control
  - Can titrate along dose-response curve
  - Gives a “lifeline”

  Combinations
  - Oral + Nitrous can approach IV sedation
  - Nitrous + IV is usual for many reasons

Considerations

- Patient’s inherent and/or acquired responsiveness differs
  - Between different patients
  - May change between visits on same patient
  - Some pts cannot tolerate dental care, even with sedation

  Cannot rely on standard doses
  - Titration is best when possible
Legalities

Licensure for Sedation
- See NC Chapter 21NCAC 16Q and following

Legal Issues
- Prof. Liability Insurance Coverage
  - Be sure to tell your insurance carrier exactly what you are doing!
  - Additional premiums may be minimal or quite surprisingly large

Legal Issues
- Rx vs. Office Supply
  - If you dispense, drugs must be safely locked up
  - Designate which people can access them
  - Double-lock is suggested

Legal Issues: Drug Log
- If you dispense, drugs must be monitored from the moment they arrive to the moment they are used
- Can you buy them from the pharmacy and then give to the patient?
- DEA requirements
**Legal Issues**

- Escort?

**Legal Issues**

- Escort / Supervision
  - Someone has to keep an eye on them!
  - Not only a ride home
  - Need to have at least 6 hours and preferably 24 hours of supervision
    - Especially with amnestic medications

**Legal Issues**

- Home vs. office administration of oral agents

**Legal Issues**

- 520 Bridge Story

  - Joey's Story

**Anxiolysis**

- The NC Dental Board's policy is that "administration of a single dose of a minor psychosedative, possibly in combination with nitrous oxide, to children or adults prior to the commencement of treatment on the day of the appointment..." is considered anxiolysis and **DOES NOT** require a sedation permit (21NCAC 16Q.0101(3)).
Minimal Conscious Sedation

- Rule 16Q.0101(15) defines minimal conscious sedation as the administration of a single “agent” not a single “sedative.” If a dentist intends to enhance the sedative effect of a benzodiazepine by pairing it with an antihistamine, the dentist has exceeded the scope of minimal conscious sedation.

Assistants

- Q. My dental assistant has completed the required 7 hour nitrous oxide course. Is she permitted to start the patient on oxygen before I begin administering the nitrous?
  - A. Yes, so long as you directly supervise her. That means you must direct her to start the oxygen and remain in the building at all times. The assistant may not administer the nitrous.

Interesting clarification

- Q. Can I administer oral Versed without a sedation permit?
  - A. No. A dentist can administer a minor psychosedative for the purpose of controlling anxiety without a permit. See 21 NCAC 16Q.0101(3). Versed is not a minor psychosedative.

Minimal Conscious Sedation

- Q. My practice is to give multiple doses of Triazolam as needed, especially in long appointments. Am I right that I only need a minimal conscious sedation permit?
  - A. Yes. The minimal conscious sedation permit allows you to give multiple doses of a single pharmacological agent, so long as you do not exceed the manufacturer’s maximum recommended dose. You would also be permitted to administer nitrous oxide, if indicated.

Training Notes

- Healthcare level BLS
- ACLS
  - It appears you may have to be ACLS certified for the advanced permits

Training Notes

- All training must be in
  - Sedation Technique (Venipuncture for IV)
  - Physiology
  - Pharmacology
  - Nitrous Oxide
  - Patient evaluation
  - Patient monitoring
  - Medical Emergencies
Facility Issues

- Natl Fire Protection Assn 99/101
  - Level 1 (life support critical, e.g., O.R.)
  - Level 2 (short down time acceptable)
  - Level 3 (failure will not harm patients)
    - Most dental offices are Level 3

Facility Issues

- If doing sedation, MUST consider “best room” to treat the patient
  - Easiest to bring help in
  - Easiest to evacuate patient
  - Each office must determine this ahead of time

Facility Issues

- Ambulatory Surgery Center (ASC) designation
  - Requires Joint Commission (or similar) oversight
  - Costly to set up
  - Costly to maintain
  - Allows facility fees to be charged

Facility Issues

- Physical plant
  - Zone valves
  - Scavenging
  - Fire-rated closets/vents

Facility Issues

- Monitors
  - Pulse oximeter
  - Automatic BP/R
  - Temperature
  - Glucometer
  - EKG
  - Capnography

Brands to Consider

- Philips
- Mindray
- Welch-Alyn
- Spacelabs
- Physiocontrol/Medtronix
- Critikon/Dynamap
Fiscal Issues

- There are no set fees for sedation
- High variability among providers
  - Do you charge to treat an PO sedation patient?
  - If you dispense, what do you charge?
  - Do you charge for nitrous?
  - IV sed: Flat fee vs. Time based?

Opinion: Charge fairly
- Many folks charge exorbitant prices
- Sets you up for huge problems!
- What would YOU pay for this service?
Fiscal Issues

- Insurance reimbursement
- Time spent
- Medicaid
- Patient’s personal funds

Patient Preparation

- Medical History
  - Written and dialogue
- Important points:
  - Reason for seeking sedation
  - Status of the “Big 5”: Cardiac, Pulmonary, Renal, Hepatic, Brain
  - Medications
  - Allergies

- Physical Examination
  - Observation
  - Tactile
  - Auscultation
  - Vital signs (BP, P/Rhythm, temperature, respirations, \(SaO_2\))
  - Function tests and lab tests, as indicated

- Assign to a Risk Category
  - ASA I  Normal, healthy pt
  - ASA II  Mild systemic disease
  - ASA III  Systemic disease limits activity but is not incapacitating
  - ASA IV  Severe systemic disease is a constant threat to life
  - ASA V  Moribund pt not expected to survive >24 hours
  - ASA VI  Deceased pt on perfusion support for organ harvestation
  - ASA E  Emergency patient

- Patient Preparation

  - (Not a usual sedation patient in our dental offices…!)
“Five Options”
- Nitrous
- Oral
- Oral + Nitrous
- IV
- GA

Patient Preparation
- Educate them about what to expect
  - Discuss patient’s phobias/issues
  - Discuss their goals
  - Discuss your goals
  - Discuss your abilities
  - Discuss your limitations
  - Describe what to expect with each option

Patient Preparation
- Educate them about what to expect
  - Stress that if things “are not happy”, you will stop and “make it happy”
    - More drugs?
    - Other interventions?
    - Stop, regroup, use another approach later?

Informed Consent
- Nature and Character
- Anticipated Results
- Benefits
- Risks / Possible Complications
- Alternatives
- Consequences of Non-Tx

Pre-op Instructions (IV Sed)
- Clothing
  - Loose and comfortable
  - Flat shoes

A closer look…
Pre-op Instructions

- Escort!!
- Discussion of “our drugs vs. their drugs”

Pre-op Instructions (IV Sed)

- NPO Status
  - 8 hours / 6 hours / 2 hours

Pre-op Instructions (IV Sed)

- Medications
  - Take regular meds with sip H₂O vs. skip them
- Additional meds?
  - Oral anxiolytic? (Benzos)
  - Antibiotics? (Amox / Clinda)
  - Antiemetics? (Hydroxyzine)
  - Antihistamines? (H₂ – Ranitidine)
  - Analgesics? (EMLA, Ibuprofen)

THE BOTTOM LINE...

BE SMART!!

- Do not sedate someone who is unwise or unsafe to sedate
- Keep up to date
  - Meds
  - Doses
  - Monitors
  - Emergency management
  - Etc

BE SMART!!

- Administer medications to your comfortable limit and stop
  - Good doctors accept some sedation failure
  - You will only make things worse for the patient
  - … AND you!
BE SMART!!

- Ask yourself the “Emergency ‘WHAT IF?’”
  - If you can handle the most likely emergency easily and properly, go forward
  - If you cannot, stop
  - If you are unsure, stop

BE SMART!

- Remember that there are always other ways to get the treatment done
  - “Deeper” sedation than you plan to provide
  - GA
  - Treat in another setting
    - OMFS
    - Hospital
    - Other dental offices with advanced facilities

BE SMART!

- If your sedation is not the BEST approach for the patient, refer/ move them
  - “Best practices” first!!
  - The income is not worth it
    - Other pts will fill the time and generate revenue
    - The extra work involved to prepare is usually not compensated

Questions? Thank you!

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