Medical Emergencies in the Dental Office

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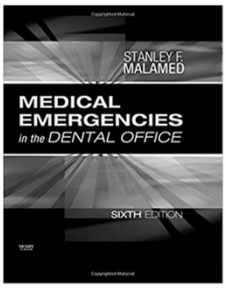
Are we ready?



Medical Emergencies in the Dental Office

✓ Understand the potential for medical emergencies in the dental office

✓ Understand the key components of an emergency kit

✓ Understand management strategies for the most common emergencies in the dental office

Are we ready?

*Dentists, Dental Hygienists and EFDA's are required to complete Basic Life Support ("CPR Recertification") for license renewal…what about the non-licensed staff?

What about non-cardiac scenarios?

Are we ready?

What has been learned from past emergencies?
- Didn't understand/take into account patient status and drug action
- Didn't recognize the problem
- Didn't treat soon enough…staff not helpful

The Checklist Manifesto: How To Get Things Right
- Atul Gawande 2009 Investigation of human fallibility

* Errors of ignorance…we don't know enough
* Errors of ineptitude…we don't make proper use of what we know

Medical Emergencies in the Dental Office

Emergencies may arise due to:
- Dental anxiety
- Local anesthesia injections
- Adverse drug interactions
- Acute exacerbation of a preexisting medical condition
  - ✓Atopy (Allergies)
  - ✓Angina Pectoris/Coronary Artery Disease
  - ✓Hypertension
  - ✓Bronchospastic disease
  - ✓Seizure disorder
  - ✓Diabetes

Medical Emergencies in the Dental Office

Malamed – CDA Journal…survey of 4000 dentists over a 10-year period

Time of Occurrence of Reported Systemic Complications:

1.5% Just before treatment
54.9% During/after local anesthesia
22% During treatment
15.2% After treatment
5.5% After leaving office

"How many times have I told you not to snap your fingers while I'm extracting teeth under hypnosis?"

Are we ready?

✓You dial 911…how long will it take before help arrives and what do you do in the interim?
✓How will you administer emergency drugs?
✓Can you achieve IV access?
✓Is staff permitted to draw up drugs?
*Can staff draw up drugs?
✓Is staff permitted administer drugs?
*Can staff administer drugs?

Medical Emergencies in the Dental Office

Of the 22% during dental treatment occurrence of complications:

38.9% Tooth extraction
26.9% Pulp extirpation
12.3% Unspecified
9.0% During other treatment

"I'll have to charge extra for that one."

Factors Affecting Risk

- Patient's (and family's) understanding of condition, goals and acceptance of dental treatment
- Coexisting systemic disease
- Age
- Use of prescribed or OTC medications, herbal supplements
- Illicit drugs, alcohol
- Tobacco use

Medical Emergencies in the Dental Office

Malamed – CDA Journal…survey of 4000 dentists over a 10-year period

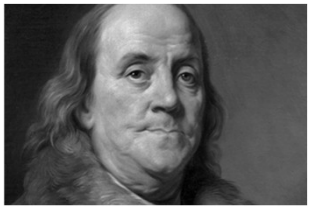
Reported Systemic Complications:

Syncope
Mild allergic reaction
Angina pectoris
Postural hypotension
Seizures
Bronchospasm/Asthma attack
Hyperventilation
Epinephrine reaction
Hypoglycemia & Insulin shock
Cardiac arrest
Anaphylactic reaction
Myocardial infarction
Local anesthesia overdose
Acute Pulmonary Edema
Diabetic coma
Cerebrovascular Accident
Adrenal Insufficiency
Thyroid Storm

"Why did your nurse want to know my 'next-of-kin'?"

Medical Emergencies in the Dental Office

An ounce of prevention is worth a pound of cure



Medical Emergencies in the Dental Office

Together
Everyone
Accomplishes
More

Pretreatment Assessment

- ✓Health History
  - -Consultation?
- ✓Dental History
- ✓Examination
  - – Vital Signs
  - – Clinical
  - – Imaging

"I can't even pronounce what you've got!"

Medical Emergencies in the Dental Office

Tell me, and I will forget.
Show me, and I may remember.
Involve me, and I will understand.
– Xun Zkuang (Xunzi) c.310–c.235 BC

Medical History

What answers on the Health Questionnaire will require special consideration?

- – HEENT
- – Cardiovascular
- – Pulmonary
- – GI/GU
- – Endocrine
- – Musculoskeletal
- – Neurological
- – Behavioral/Psychiatric
- – Hematologic/Immunologic

Medical Emergencies in the Dental Office

PREVENT
PREPARE
RECOGNIZE
MANAGE

CONFIDENTIAL HEALTH HISTORY

Health History

CONFIDENTIAL HEALTH HISTORY

NAME: (Last, First, M.I.)_____ AGE_____ HEIGHT_____ WEIGHT _____

PLEASE DRAW A CIRCLE AROUND ANY OF THE FOLLOWING WHICH YOU HAVE HAD OR HAVE AT PRESENT:

Frequent Headaches	Asthma	Artificial Heart Valve	Sexually Transmitted Disease	Artificial/Prosthetic Joint
Sinusitis/Hay Fever/Allergies	Pneumonia	Congenital Heart Disease	Genital Herpes	Organ Transplant
Double Vision	Chronic Cough/Bronchitis	Rheumatic Fever	Anemia	Psychiatric Treatment
Glaucoma	Tuberculosis (TB)	Heartburn / Esophageal Reflux	Prolonged Bleeding	Anxiety/Depression
Ringing Ears/Hearing Loss	Sleep Apnea	Hiatal Hernia	Blood Transfusion	Stroke
Frequent Nosebleeds	Shortness of Breath	Stomach Ulcers/Colitis	Hemophilia	Dizziness/Fainting Spells
Frequent Sore Throat	Chest Pains/Angina	Liver Disease/Hepatitis	Sickle Cell Disease/Trait	Epilepsy/Seizures
Bleeding Gums/Mouth Sores	Heart Pacemaker	Jaundice (other than at birth)	Arthritis	Drug/Alcohol Problems
Thyroid Disease/Goiter	Heart Disease or Condition	Kidney Problems	Muscle Weakness/Paralysis	Cancer
Unexplained Weight Loss	High Blood Pressure	Voiding Difficulty	Neck Pain or Injury	Radiation Therapy
Diabetes/High Blood Sugar	Heart Murmur	Immune Disorder/Disease	Back Pain or Injury	Chemotherapy

Health History

I certify that I have read and understand the questions above. I understand the importance of a truthful health history to assist the doctor in providing the best care possible. I will not hold my doctor, or any other member of his staff, responsible for any errors or omissions that I have made in the completion of this form.

Signature of Patient, Parent or Legal Guardian: _____ Date:_____

Reviewed by: _____ Date:_____

Health History

CIRCLE YES IF YOU ARE TAKING OR HAVE RECENTLY TAKEN ANY OF THE FOLLOWING MEDICATIONS: (If YES, please list)

Antibiotics?	Yes	
Birth Control Pills?	Yes	
Blood Pressure?	Yes	
Diuretics (water pills)?	Yes	
Other Heart medication?	Yes	
Antidepressants?	Yes	
Tranquilizers, Sedatives?	Yes	
Aspirin/Ibuprofen/Blood thinners?	Yes	Coumadin (Warfarin/Jantoven) Plavix Pradaxa Aggrenox Effient Xarelto Eliquis
Steroids (Cortisone)?	Yes	
Insulin? Other Diabetic medication?	Yes	
Osteoporosis medication?	Yes	Fosamax Didronel Skelid Actonel Boniva Aredia Zometa Reclast Prolia
Seizure medication?	Yes	
Eye Drops for Glaucoma?	Yes	
Synthroid (Thyroid medication)?	Yes	
Hormone Replacements?	Yes	
Antacids (Tagamet)?	Yes	
Diet Pills?	Yes	
Viagra, Cialis, Levitra?	Yes	
Other medications or drugs?	Yes	

Special Concerns

Medical comorbidities

- Obstructive Sleep Apnea
- Obesity
- Hypertension
- Cardiac
- Pulmonary
- Endocrine
- Orthopedic
- Pregnancy
- Age

"The first number ... is ... five."

Health History

CIRCLE YES FOR THE FOLLOWING QUESTIONS. (If YES, please give details).

Are you allergic to any drugs, medications, materials or substances? LATEX PENICILLIN/AMOXICILLIN KEFLEX/CECLOR SULFA OTHER:	Yes
Have you or anyone in your family had an unusual reaction to anesthesia?	Yes
Do you consume beverages with caffeine? Coffee HOW MUCH: Tea HOW MUCH: Soda/Pop/Energy Drinks HOW MUCH:	Yes
Do you drink alcohol? HOW MUCH: HOW OFTEN:	Yes
Do you or have you ever used tobacco? (If YES, please circle type below) SMOKE: Cigarettes Cigars Pipe HOW MUCH: HOW MANY YEARS: SMOKELESS: Chew Snuff HOW MUCH: HOW MANY YEARS:	Yes
Have you ever had surgery? (Please circle below) BRAIN NECK JAWS HEART LUNGS ABDOMEN JOINT OTHER:	Yes
Have you had or do you have jaw popping or clicking?	Yes
Have you had or do you have limitation in opening or closing your jaws?	Yes
Have you had or do you have jaw joint pain?	Yes
Do you have growths (moles, skin tags) or excessive wrinkles on skin of face and/or neck? Dissatisfied with your smile?	Yes
Do you have any questions or problems you wish to discuss privately with the doctor?	Yes

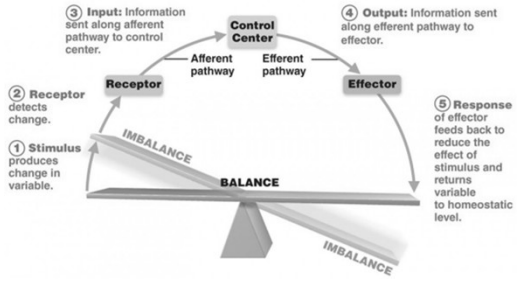
WOMEN ONLY:

Is there a possibility that you may be pregnant? Yes Estimated Delivery Date: _____

Are you nursing? Yes

If you are taking oral contraceptives/birth control pills, please read the following: *Antibiotics and other medications may interfere with the effectiveness of oral contraceptives, therefore, understand that you will need to use some additional form of birth control, for one complete cycle of birth control pills, after the course of antibiotics or other medication is completed.*

Homeostasis



Medical Concerns

Cardiovascular
- CVA/TIA
- Mechanical Valve
- Atrial Fibrillation
- DVT
- CHF
- CAD - stents
- MI
- Murmurs

"They let him come home, but he has to watch his blood pressure."

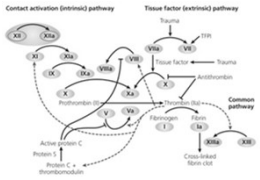
Aging

A universal biological process that manifests as a decline in functional capacity, reduced physiologic reserve, and increased risk for morbidity and mortality over time.

Medical Concerns

Anticoagulation

* Coumadin – interferes with hepatic synthesis of Vitamin K- dependent clotting factors (II,VII,IX,X)
* Plavix – prevents binding of fibrinogen by blocking receptors…effects minimum 7-10 days
* Aspirin – inhibition of platelet-dependent thromboxane formation
* Pradaxa – direct thrombin inhibitor
* Xarelto – inhibits Factor Xa
* Eliquis – inhibits Factor Xa
* Brilinta – inhibits Factor Xa



How is Aging Measured?

- Chronologic age
  - Young-old: 65-74, Mid-old: 74-84, Oldest-old 85+
- Physiologic age
  - Common clinical signs: ↓vision, ↓mobility, ↓coordination, ↓height, gray hair, no hair
- Clinical age
  - Recognizes differences between aging and disease
  - Effects of biologic age, age-related diseases and decreased physiologic reserve

Diagnostic Studies

International Normalized Ratio (INR)

✓1.0 is baseline

Care Management Institute - Cardiovascular Disease Advisory Group (2005)

*Peri-procedural Anticoagulation Management

- *"Published literature suggests that the risk of thromboembolic events outweighs the risk for bleeding for most dental procedures, and most patients should continue with full therapeutic anti-coagulation* ***(INR 2-3.5).***
  Local hemostatic measures are advocated."

- Local hemostatic measures
  - Application of pressure…Use of gelatin sponges …Additional sutures
  - Use of topical antifibrinolytic agents (aminocaproic acid or tranexamic acid) mouthwash or pill

The "Graying" of our population

Implications for Dentistry
- 70 million seniors by 2030
- Number and percentage of individuals requiring surgery is expected to rise as life expectancy rises
- Advances in dentistry have resulted in more dentate senior citizens likely to seek care
- More than 20% of homebound or institutionalized elderly require emergency dental care annually

Aging

*Alters the pharmacokinetics of many drugs, especially central nervous system depressants

Are we ready?

✓Syncope/Loss of consciousness
✓Allergic reaction
✓Cerebrovascular accident
✓Cardiac issues
✓Airway obstruction or Asthma Attack

Are we ready?

Just another day at the office…

…the Doctor(s), the assistants, the hygienists and the business staff are at peak efficiency performing the various tasks within their job descriptions…

Are we ready?

What should we have?
A – Aspirin
B – Bronchodilator
C – Coronary artery dilator
D – Diphenhydramine (antihistamine)
E – Epinephrine
F – Fainting (Ammonia inhalant)
G - Glucose

Are we ready?

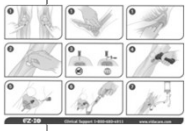
✓Does every staff member know what to do?
✓Does every staff member know what to do if someone is not present at that time or on that day?

"The other scraper!"

Are we ready?

✓How will you administer emergency drugs?
✓Can you achieve IV access?
✓Can staff draw up drugs?
✓Can staff administer drugs?

*Intranasal Mucosal Atomization Device



Are we ready?

Loss of consciousness
- Stress, hypoglycemia, orthostatic hypotension, hypoxia, hypovolemia, seizure, stroke, pregnancy and cardiac abnormalities



Are we ready?

Allergies
- Latex
- Penicillin
- Epinephrine
- "Novocain"
- Nitrous Oxide
- Environmental


"Now, why on earth wouldn't you tell me you're allergic to penicillin?"

Medical Emergencies

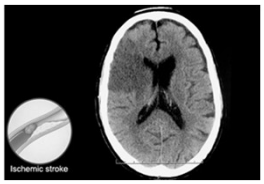
Vasodepressor Syncope

*Brain continuously requires oxygen and glucose but cannot store them so when vasodepression occurs there is vasodilatation and blood pools in the extremities.


"Dr. Burns says you need two more appointments."

Are we ready?

Cerebrovascular Accident – CVA (stroke)
- Sudden disruption of blood flow to an area of the brain
- Results in damage or death of brain cells
- 30% mortality

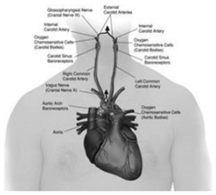
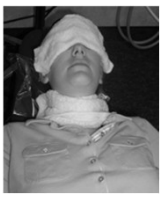



"They let him come home, but he has to watch his blood pressure."

Medical Emergencies

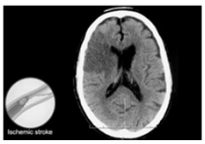
Vasodepressor Syncope

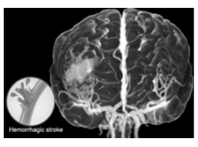
*Best treatment is to tilt body with the head down and place a cold compress to initiate vasoconstriction.

Stroke (CVA)

Face…smile/droop?
Arms…raise…drift?
Speech…sentence…slur?
Time…911



Are we ready?

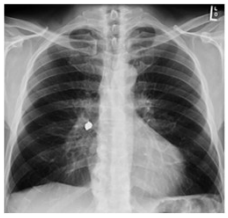
Cardiac issues

- A patient with a history of coronary disease is at increased risk for angina pectoris, myocardial infarction, congestive heart failure, or death
- Myocardial Ischemia is a result of an imbalance between the heart's oxygen demand and the amount of oxygen delivered to the heart
- Angina
  - ✓Stable – chest pain with exertion or anxiety
  - ✓Unstable – sporadic, unpredictable, or sudden onset

Are we ready?

Airway obstruction

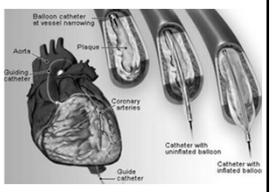
- Foreign body
- Laryngospasm
- Bronchospasm



Are we ready?

Cardiac issues

- Risk factors
  - ✓History of coronary artery disease
  - ✓Diabetes
  - ✓Congestive heart failure
  - ✓Age
  - ✓Limited exercise tolerance
  - ✓Chronic renal failure
  - ✓Uncontrolled hypertension



Are we ready?

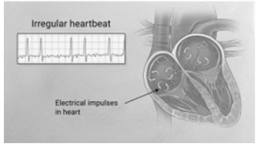
DU-O-VAC PLUS Adult Model

- Regulator
- Flowmeter
- E cylinder cart
- Demand valve resuscitator
- 6-foot hose
- Resuscitation mask
- Cylinder wrench

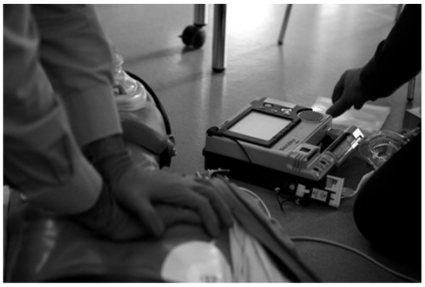
wtfarley.com

Atrial Fibrillation

✓Atrial fibrillation (also called AFib or AF) is a quivering or irregular heartbeat (arrhythmia/dysrhythmia) that can lead to blood clots, stroke, heart failure and other heart-related complications.



Are we ready?



Activate EMS

911 CALL Date:_____ Time:_____

Patient:_____ Age:_____ M____ F____

Treatment:_____

Anesthesia:_____

Type of medical emergency:_____

Pertinent medical history and medications:_____

Emergency treatment currently underway:_____

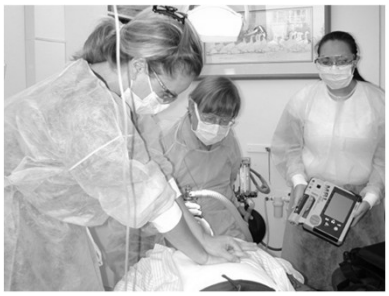
Confirm office location and brief directions:_____

Any other questions?:_____

Come to back door of office building - someone will be waiting to let you in.

Person making call:_____

Are we ready?



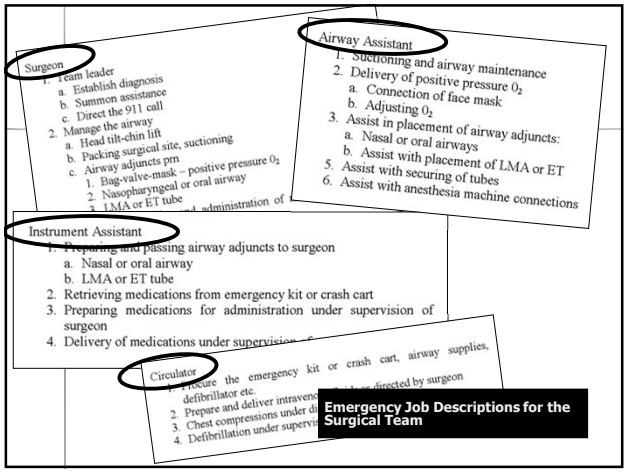
Are we ready?

1. Do you know how long it will take for help to arrive?
2. Do you know the level of training of the help?

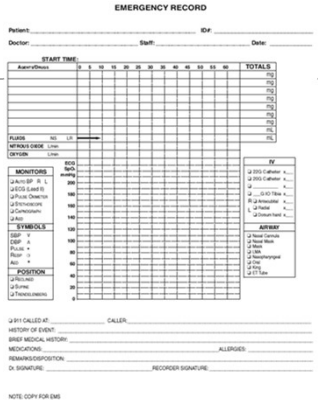
Are we ready?

Are we ready?

Doctor you are needed in Room 2 NOW!



www.adsahome.org


EMERGENCY RECORD

Patient: _____ ID#: _____

Doctor: _____ Staff: _____ Date: _____

START TIME:

Agent/Dose | 0 5 10 15 20 25 30 35 40 45 50 55 60 | TOTALS

FLUIDS NS LR

NITROUS OXIDE Lmin

OXYGEN Lmin

MONITORS: Auto BP R L; ECG Lead II; Pulse Oximeter; Stethoscope; Capnography; Aux

SYMBOLS: SBP V; DBP A; Pulse +; Resp ◇; Aux

POSITION: Reclined; Supine; Trendelenburg

ECG / SpO2 / pulse / BP

IV: 22G Catheter x__; 20G Catheter x__; ____ x__; G IO Tibia x__; R/L Antecubital x__; R/L Radial x__; R/L Dorsum hand x__

AIRWAY: Nasal Cannula; Nasal Mask; OPA; NPA; Nasopharyngeal; Oral; ETT; ETT Size

911 CALLED AT: _____ CALLER: _____

HISTORY OF EVENT: _____

BRIEF MEDICAL HISTORY: _____

MEDICATIONS: _____ ALLERGIES: _____

REMARKS/DISPOSITION: _____

Dr. SIGNATURE: _____ RECORDER SIGNATURE: _____

NOTE: COPY FOR EMS

Anxiety & Pain Control

Local Anesthesia

"Conscious" Sedation

- *Nitrous Oxide
- *Oral
- *Intravenous

"Will you RELAX! ... it's a mirror!"

OPTIMIZING PATIENT CARE

✓Preoperative
✓Intraoperative
✓Postoperative

"I just spent $8,000 having this room soundproofed."

Local Anesthesia

"There is no substitute for profound local anesthesia"

"Nurse, run outside and get his shoe."

Optimizing Patient Care

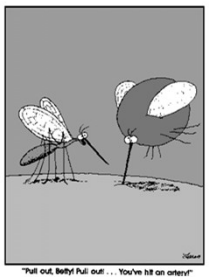
*Anxiety and Pain Control
*Patient-focused care with effective completion of treatment
*Sedation in the office is always elective
*Maximize safety and minimize risk

"How many times have I told you not to snap your fingers while I'm extracting teeth under hypnosis?"

Local Anesthesia

Armamentarium

- 30 gauge short
- 27 gauge long
- 25 gauge long


"Pull out, Betty! Pull out! . . . You've hit an artery!"

Anxiety & Pain Control

Nitrous Oxide

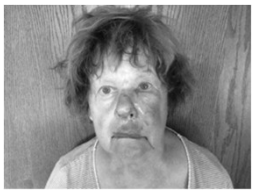
*Not much dissolves in blood however rapidly diffusible, therefore saturates the blood resulting in rapid onset and rapid recovery

"Dentistry's come a long way in the last few years."

Are we ready?

*Maximize safety and minimize risk

✓✓Fire Safety



Anxiety & Pain Control

Nitrous Oxide Indications

* hyperactive gag reflex
* anxiety/phobia
* painful stimuli

"You'll have to sit up."

Anxiety & Pain Control

Oral "Conscious" Sedation

*Benzodiazepines

-facilitate inhibitory GABA neurotransmission by binding to (benzodiazepine) receptors

- Diazepam (Valium®)
- Lorazepam (Ativan®)
- Triazolam (Halcion®)
- Alprazolam (Xanax®)
- Midazolam (Versed®)

"WILL YOU PLEASE KEEP YOUR ARMS DOWN!"

Anxiety & Pain Control

Nitrous Oxide Contraindications

*Sinusitis/Eustachian tube problems

*COPD (hypoxic drive)

*Pregnancy

"Will you quit whimpering? I'm cleaning my glasses!"

Oral Sedation

Triazolam 0.125-0.25mg

*rapid onset

*peak ~ 1-2 hours

*t ½ ~ 1.5-5.5 hours

*No active metabolites

*anterograde amnesia…CONSENT

occasional paradoxical disinihibition reaction (0.5mg dose)

*Sublingual administration increases bioavailability/anxiolysis by 28% (OOO-1997 NIH)

Medical Emergencies

Recognition
- ABC
- Level of Consciousness
  - *AVPU
    - -Alert
    - -Verbal
    - -Pain
    - -Unresponsive
- Cause
  - - Respiratory
  - - Circulatory
  - - Neurologic
  - - Metabolic

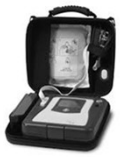
Are we ready?

✓Does every staff member know what to do?

Medical Emergencies

Communication

*Basic Equipment
1. Oxygen
2. Suction
3. Lighting
4. Monitoring
5. AED
6. Emergency Kit



Are we ready?

✓Does every staff member know what to do if someone is not present at that time or on that day OR…
if the Doctor is the emergency?

Medical Emergencies

- DU-O-VAC PLUS CODE 2
  - 50 psi Regulator
  - Suction
  - Flowmeter
    - Nasal cannula
  - Demand valve
    - Resuscitator hose & mask
  - E size cylinder cart with wrench
    - No E cylinder
  - www.wtfarley.com

Orthostatic Hypotension

A form of low blood pressure that happens when standing up from sitting or lying down.

- Causes
  - Sitting or standing up too quickly
  - Aging
  - Medication side effects
  - Dehydration

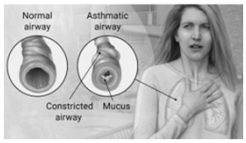
Hyperventilation

- Causes
  - Stress/Anxiety
  - Hypoxia

- Symptoms
  - Tingling
  - Rapid Breathing
  - Hot/Cold Flashes
  - Visual Impairment
  - Dizziness
  - Muscle Spasms

Asthmatic Attack

- Shortness of breath
- Wheezing
- Coughing
- Gasping
- Diaphoresis
- Anxiety
- Tachycardia
- Hypoxia



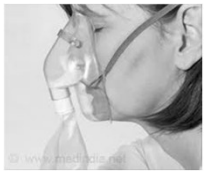
Hyperventilation

✓Treat the underlying disorder

✓Have the patient use re-breather mask

✓Calm the patient's hysteria and prevent further hyperventilation

✓✓Consider administration of sedatives



Allergic Reactions

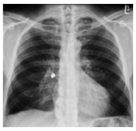
- Symptoms
  - Red eruptions on face, neck and extremities
  - Itching
- Treatment
  - Semi-reclined position
  - Vital signs
  - Epinephrine
  - Diphenhydramine

"Now, why on earth wouldn't you tell me you're allergic to penicillin?"

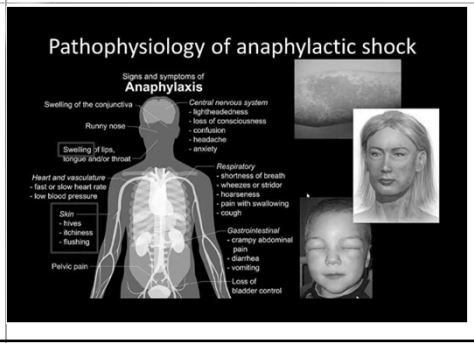
Aspiration

Symptoms
- Choking
- Gagging
- Violent expiratory effort
- Cyanosis
- Labored breathing
- Tachycardia→Bradycardia
- Respiratory Arrest → → Cardiac Arrest

Treatment
- Seat patient upright
- Heimlich maneuver
- Suction airway
- If Unconsciousness call EMS and initiate BLS



Anaphylaxis

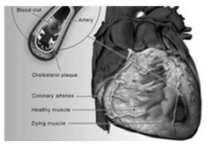


Hypoglycemia and Insulin Shock

- Symptoms
  - Confusion
  - Nervousness
  - Diaphoresis
  - Full bounding pulse
  - Pallor
  - Nausea
  - Altered mood
  - Loss of Consciousness
- Treatment
  - Semi-reclined position
  - Vital signs
  - Airway/Breathing
  - Glucose

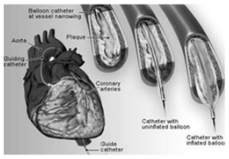
Cardiac Arrest

✓911
✓Circulation
✓Airway
✓Breathing
✓Defibrillation



Angina Pectoris

- Chest pain or discomfort due to coronary artery disease…decreased O_2 to meet myocardial demand.
- Rate Pressure Product (SBP x HR)…>13,000 ↑ demand



✓O_2
✓Nitroglycerin
✓911
✓Angiography

Seizures and Epilepsy

- Symptoms
  - Excitement
  - Tremor
  - Trance-like stare
  - Contractions
    - Tonic-Clonic
- Treatment
  - Supine position
  - Airway/breathing
  - Suction prn
  - Status Epilepticus…BLS and 911
  - Midazolam?

Myocardial Infarction

- Symptoms
  - Pain
    - Chest (crushing)
    - Arms
    - Neck
    - Jaw
    - Non-specific (burning, aching, gas)
    - Nausea
    - Shortness of breath
    - Anxiety
- Treatment
  - Semi-reclined position
  - ABC's
  - O_2 @ 4-6 L/min NC
  - Chew four 81mg ASA
  - Nitroglycerin
  - 911 and BLS

Hypothyroidism

- Weakness
- Fatigue
- Weight gain
- Cold intolerant
- Peripheral numbness
- Dry skin
- Hair loss
- Hypersensitivity
  - CNS depressants
    - Sedative-hypnotics
    - Anti-anxiety
    - Opioids

✓Relative overdose

Hyperthyroidism

- Nervous
- Irritable
- Warm & Sweaty
- Tachycardia
- Confusion
- Unconscious

✓O_2
✓911

Long QT Interval

RISK FACTORS

- People who may have a higher risk of inherited or acquired long QT syndrome may include:
- Children, teenagers and young adults with unexplained fainting, unexplained near drownings or other accidents, unexplained seizures, or a history of cardiac arrest
- Family members of children, teenagers and young adults with unexplained fainting, unexplained near drownings or other accidents, unexplained seizures, or a history of cardiac arrest
- First-degree relatives of people with known long QT syndrome
- People taking medications known to cause prolonged QT intervals
- People with low blood levels of potassium, magnesium or calcium — such as those with anorexia nervosa

Adrenal Insufficiency

- Reduced production of cortisol
  - Fatigue
  - Nausea
  - Dizziness
  - Darkened skin
  - Hypotension
  - Addisonian/Adrenal crisis with stress
- Intravenous
  - Glucocorticoid
  - Hydration (D_5NS)
  - Mineralcorticoid

A Aspirin (acetylsalicylic acid)

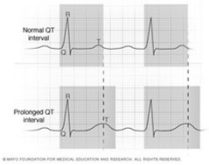
Uses
- Pain
- Fever
- Inflammation
- Angina
- Heart attack
- Ischemic Stroke

Onset - 15 minutes to prevent clots by inhibiting platelet adhesion
- Four 81mg non-coated tablets
- Mean maximum plasma concentration: 27 minutes
- Peak plasma concentration: 69 minutes
- Maximum platelet inhibition at 30 minutes

Long QT interval

- Medications that can lengthen the QT interval and alter heart rhythm include:

- Certain antibiotics (erythromycin, macrolides)
- Certain antidepressant and antipsychotic medications
- Some antihistamines
- Diuretics
- Antiarrhythmic medications
- Some anti-nausea medications



B Bronchodilator

Albuterol

*2.5 mg per dose

*Lowers intracellular calcium ions relaxing bronchial smooth muscles

✓Onset: 5-15 minutes

✓Peak: ½ - 2 hours

✓Duration: 2-6 hours

C Coronary Artery Dilator

Nitroglycerin

- Relaxation of vascular smooth muscle
- Hepatic enzyme degradation
- 0.4mg per dose (SL or Spray)…3 doses max

✓Onset: 1-5 minutes
✓Duration: 5-10 minutes

E EpiPen®

✓Vastus Lateralis
– 10 minutes onset
✓Deltoid
– 34 minutes onset

*0.3 mg >66 pounds
*0.15mg 33-66 pounds

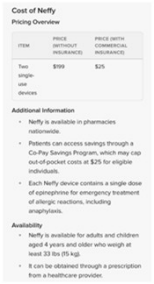
D Diphenhydramine

Benadryl - Antihistamine

- Competitive antagonist at H-1 receptor in bronchi and capillary smooth muscles to reduce the intensity of the allergic reaction.

Onset: Immediate IV and Intranasal
15-30 min PO
5-10 min IM
Peak: 1-4 hours
Duration: 6-8 hours

E neffy®


Cost of Neffy
Pricing Overview

ITEM	PRICE (WITHOUT INSURANCE)	PRICE (WITH COMMERCIAL INSURANCE)
Two single-use devices	$199	$25

Additional Information
- Neffy is available in pharmacies nationwide.
- Patients can access savings through a Co-Pay Savings Program, which may cap out-of-pocket costs at $25 for eligible individuals.
- Each Neffy device contains a single dose of epinephrine for emergency treatment of allergic reactions, including anaphylaxis.

Availability
- Neffy is available for adults and children aged 4 years and older who weigh at least 33 lbs (15 kg).
- It can be obtained through a prescription from a healthcare provider.

E Epinephrine

Indications
- Ventricular Fibrillation
- Asystole
- Severe allergic reaction
- Status Asthmaticus

Onset
IV – 2 minutes
SQ – 10 minutes
Nebulized – 1-5 minutes

Peak
IV <5 minutes
SQ 20 minutes
Nebulized – 1-3 minutes

Duration
IV 5-10 minutes
SQ 20-30 minutes
Nebulized 1-3 minutes

F Fainting

Ammonia Inhalant - Aromatic ammonia spirit

- Reflex respiratory stimulant by peripheral irritation of the sensory receptors in the nasal mucous membranes
- 0.33mL capsule
- 15% ammonia
- 35% alcohol

G Glucose

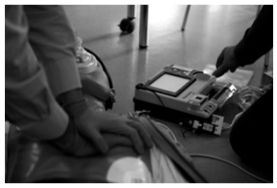
- Pancreas produces insulin and glucagon which are needed for regulation of blood glucose
- Glucagon increases blood glucose levels by stimulating conversion of glycogen into glucose.

1.0 mg Glucagon IM, IV, SC
- 5-15 minute onset

2.0-3.0 mg Glucagon Intranasal
- 5-15 minutes onset

The most important component regarding medical emergencies in the dental office is?

1. Having oxygen and airway equipment available
2. Having an AED and staff trained in BLS
3. Have a written protocol & practice response to common emergencies
4. Having a medical office nearby

Who pitched the first no-hitter in Montreal Expos History?

1. Bill Stoneman
2. Pedro Martinez
3. Randy Johnson
4. Dennis Martinez

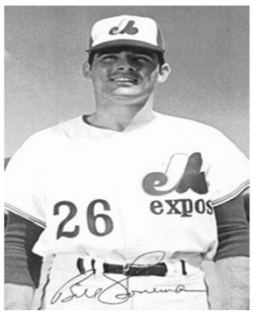
The most important component regarding medical emergencies in the dental office is?

✓Have a written protocol and practice response to common emergencies!

Together
Everyone
Accomplishes
More

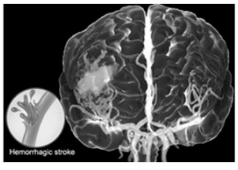
Who pitched the first no-hitter in Montreal Expos history?

1. Bill Stoneman



When a cerebrovascular accident (CVA) is suspected the proper order of treatment for the dental team is:

1. Call EMS, apply oxygen, assess ABC's, have patient chew 325mg aspirin
2. Assess ABC's, apply oxygen, call EMS, administer 1.0mg epinephrine
3. Assess ABC's, apply oxygen, administer 0.5mg epinephrine, call EMS
4. Assess ABC's, apply oxygen, call EMS, monitor vital signs, manage complications as they develop



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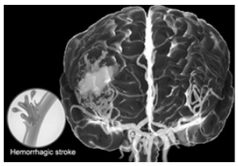
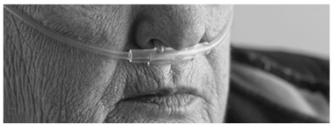


A very anxious asthmatic patient who lists allergies to peanuts, cats, and "Novocain" with epinephrine is stung by a bee entering your office and complains about difficulty breathing. The correct treatment sequence would be to:

1. Do not attempt to assess the cause and call EMS immediately.
2. Treat both allergic reaction and asthma by having the patient use Albuterol inhaler and take 50mg Benadryl.
3. Rule out allergic reaction and administer 1.0mg epinephrine plus call EMS.
4. Rule out asthma first by using Albuterol inhaler and if not better in five minutes call EMS.

The maximum flow rate through a nasal cannula is:

1. 6 liters per minute
2. 4 liters per minute
3. 10 liters per minute (or the unit's maximum flow setting)
4. 3 liters per minute



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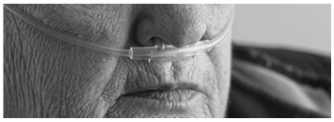
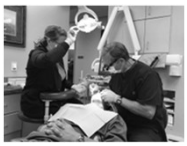


Which of the following is an advanced provider during emergency care?

1. Emergency Medical Technician
2. 911 Dispatcher
3. Paramedic
4. Certified Dental Assistant



Which of the following is an advanced provider during emergency care?

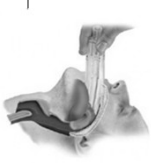
✓Paramedic

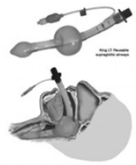
When performing CPR the pulse check is:

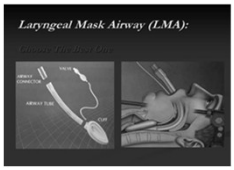
1. 4-5 seconds
2. 6-8 seconds
3. 8-10 seconds
4. 10-15 seconds

The easiest advanced airway to place is:

1. King Airway
2. Endotracheal Tube
3. Laryngeal Mask Airway
4. iGel Airway





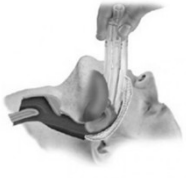


When performing CPR the pulse check is:

✓8-10 seconds

The easiest advanced airway to place is the:

iGel Airway

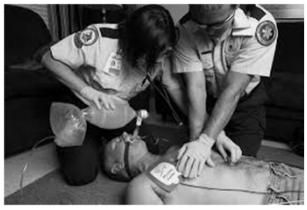


When an advanced airway is placed ventilation is:

1. Every 4 seconds
2. Every 6 seconds
3. Every 8 seconds
4. Every 10 seconds

When an advanced airway is in place ventilation is:

✓Every 6 seconds



The best sequence of treating syncope is:

1. Activate aromatic ammonia capsule, administer O_2, place in semi-reclined position.
2. Place victim supine, place cool towel on forehead, activate aromatic ammonia capsule.
3. Tilt body with head lower than feet, place cold compress over eyes and neck.
4. Place cold compress on forehead and position victim flat.

The most common causes of cardiopulmonary arrest are:

1. Hypocalcemia, Hypokalemia, Hypoglycemia
2. Hypothermia, Hypovolemia, Hypotension
3. Hypoxemia, Thrombus, Toxins
4. Hypoxia, Thrombus, Tension pneumothorax

The best sequence of treating syncope is:

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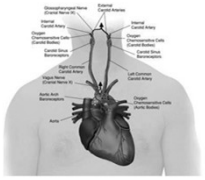

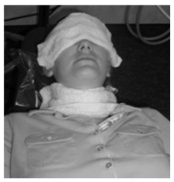

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When a cerebrovascular accident (CVA) is suspected the proper order of treatment for the dental team is:

✓Assess ABC's, apply oxygen, call EMS, monitor vital signs, manage complications as they develop

Which of the following emergency drugs is not approved for intranasal administration?

1. Naloxone
2. Epinephrine
3. Midazolam
4. Glucagon

Which of the following highest concentration of sugar to treat hypoglycemia in a conscious victim?

1. Tropicana Orange juice
2. Welch's White Grape juice
3. Gatorade
4. ReliOn Glucose Tablets

Which of the following emergency drugs is not approved for intranasal administration?

~~Epinephrine~~

Which of the following highest concentration of sugar to treat hypoglycemia in a conscious victim?

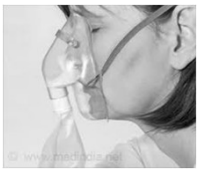
Welch's White Grape juice…36g

The concentration of which is decreased as a result of hyperventilation?

1. Oxygen
2. Nitrogen
3. Carbon Dioxide
4. Glucose

The concentration of which is decreased as a result of hyperventilation?

Carbon Dioxide



Merci!