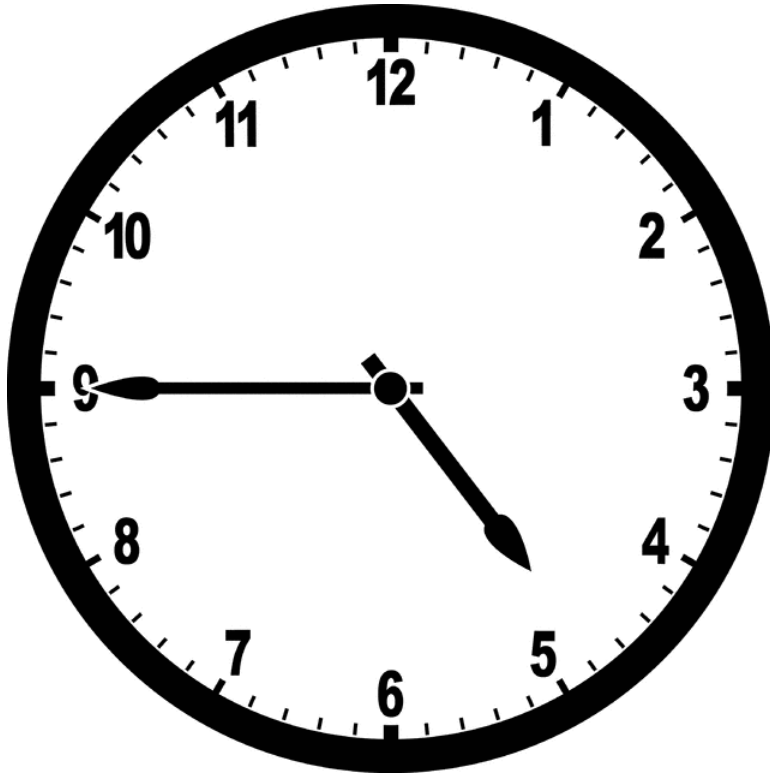


# Five O'Clock Shadow Handling End of the Day Emergencies

Amber Hart, RVT VTS (ECC)

It's 4:45pm, end of the day, and in walks.....



Toxin Ingestion  
GDV  
Respiratory distress  
Shock

# Toxin Ingestion

# Toxin Ingestion

- All poisoning should be treated urgently
- Always ask: What, How Much, and When
- Start treatment
- Have the owner set up an account with Poison Control
  - ASPCA Poison Control (888) 426-4435 (\$65)
  - Pet Poison Helpline (855) 764-7661 (\$59)

# Steps to Treatment

## ***“Get Out What You Can”***

Decontamination

## ***“Block What You Can”***

Adsorbant Agents

Reversal Agents

## ***“Support What You Can”***

Fluid Support

Monitoring

# Decontamination

Even with rapid and successful vomiting, only 75% of the toxin will be removed from stomach

Do **NOT** use

Syrup of ipecac

Salt water

Mustard or hot sauces

Dishwashing soap

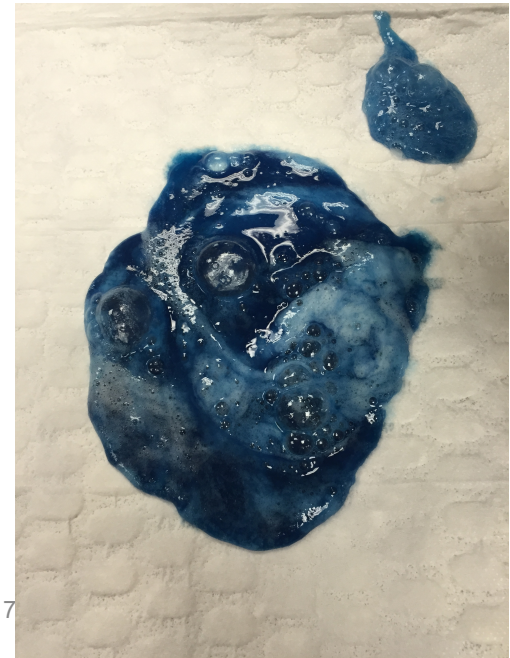
Sticking fingers down  
their mouth



# Decontamination in Dogs

## Apomorphine

- 0.03-0.04mg/kg
- Can repeat the dose
- Should see results in 1 minute
- Can reverse with naloxone 0.04mg/kg IV
  
- Subconjunctival capsule 0.25mg/kg
  - Flush generously afterwards



# Decontamination in Dogs



## Hydrogen peroxide

- 1 tsp per 5 lbs
- 2 dose limit; 10 tsp limit
- Should see results in 10 minutes
- Can give them a little food to eat with dose
  - Soak it into bread
- GI protectant afterwards!



# Decontamination in Cats

- No apomorphine or hydrogen peroxide
- Dexmedetomidine 7mcg/kg IM
  - atipamezole 50-100mcg/kg IM
- Xylazine 0.44mg/kg IM
  - yohimbine 0.4mg/kg IV



# When NOT to induce vomiting

- If patient is symptomatic
- $\geq 4$  hours since ingestion
- Brachycephalic breed
- Decreased gag reflex or level of consciousness
- Ingestion of the following toxicants
  - Salt (table salt, paint balls, homemade play-doh)
  - Corrosive or caustic agents (bleach, batteries)
  - Hydrocarbons (gasoline, kerosene, motor oil)

# Activated Charcoal



- Binds to products in the GI tract and prevent absorption
- The –ols don't respond to charcoal
  - Alcohol/ethanol
  - Xylitol
  - Ethylene glycol
- +/- the use of sorbitol as a cathartic
- Repeat doses because of hepatic recirculation
- Dose dependent on product ~ 3-5ml/pound

# Topical Toxins

- Use gloves, aprons, and eye protection
- Bath with dishwashing liquid and water
- For oil based substances, apply mineral/vegetable oil first at the sight, then bath with dishwashing liquid



# Gastric Dilatation Volvulus

# Gastric Dilatation Volvulus (GDV)

Air filled stomach flips on its axis

- Results in compression of the vena cava and obstruction of the return of blood to the heart
  - Occludes the flow of gastric contents causing a dilated stomach
  - Occludes the blood supply to the stomach (and usually the spleen)
- Cause is undetermined with lots of speculated possibilities
- Diagnosis: a right lateral abdominal radiograph
  - looking for the 'double bubble'



# Stabilizing Treatment

Place two, large bore, short, front leg catheters

Blood pressure goal is a systolic  $>90\text{mmHg}$

- Shock dose fluids  $90\text{ml/kg/day}$  in aliquots
- Hypertonic bolus of  $4\text{-}6\text{ml/kg}$

Provide oxygen support

ECG Monitoring (ventricular arrhythmias)

- lidocaine bolus  $2\text{mg/kg}$ ; CRI  $25\text{-}75\text{ mcg/kg/min}$

Analgesic Support

- Hydromorphone  $0.025\text{ - }0.1\text{mg/kg IV}$
- Fentanyl  $4\text{-}6\text{mcg/kg IV}$ , quickly followed by CRI



# Gastric Decompression

## Orogastric Tube Placement

- requires analgesia/sedation
- if there is volvulus it will not pass

## Trochar (Gastrocentesis)

- Percuss the most tympanic spot
- Large bore catheter/needle is inserted to vent off gas





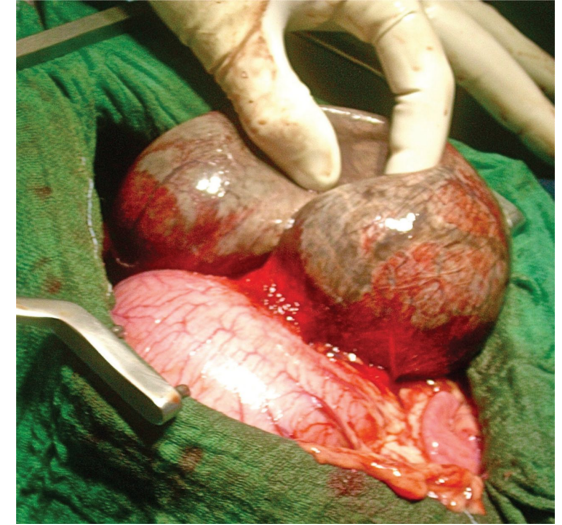
# Treatment

Abdominal surgery is the corrective treatment

- Decompress stomach
- Rotate stomach into correct orientation
- Tack stomach to body wall
  
- +/- splenectomy
- +/- gastric resection

Closing monitoring for 24 hours post-surgery

- Analgesic support
- Heart rate and rhythm monitoring
- Fluid support
- Get patient “Up and At ‘Em”



# Respiratory Distress

# Respiratory Distress

## Cats

- Heart disease
- asthma

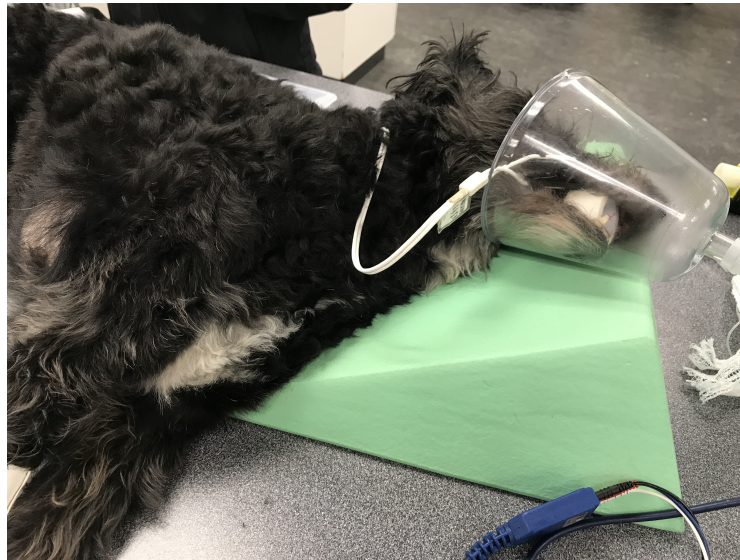
## Dogs

- Heart disease
- Pneumonia
- Obstruction
- Upper airway disease
  - Stenotic nares
  - Tracheal collapse
  - Laryngeal paralysis
  - Elongated palate



# Respiratory Distress

All patients in respiratory distress are **CRITICAL!**



These patients decompensate quickly.

# Stabilization

## Minimalize handling

- Avoid scruffing
- Combine efforts

## Use sedation

- Allow time for the drugs to take full effect (~20min)
- Acepromazine 0.01mg-0.05mg/kg IM
- Butorphanol 0.1mg-0.2mg/kg IM

## Provide supplemental oxygen

- 40-50% FiO<sub>2</sub>
- Masks are generally not well tolerated
- Oxygen cage ideal but expensive
- MacGuyver options available



# Treatment

- Stabilized before diagnostics
- Oxygen
- Sedation (wait for full effect)
- Obtain IV catheter access
  - Allows additional treatment
  - Ready in case of an emergency
- Have supplies ready to intubate!



# Shock

# Shock

A condition that occurs when the amount of oxygen being delivered to the tissues does not meet the amount of oxygen that is needed by the tissues



# Types of Shock

## Hypovolemic

- Decrease in circulating blood volume
- Blood loss, severe dehydration

## Cardiogenic

- Decrease in cardiac function – forward flow
- CHF, arrhythmia, cardiac drug overdose

## Distributive (obstructive)

- Maldistribution of the blood volume
- GDV, sepsis, saddle thrombosis

## Hypoxemic

- Decreased oxygen content in blood
- Anemia, carbon monoxide toxicity, pulmonary disease

# Compensatory Shock

The body systems shift to accommodate to the increased demands; it can keep up. Changes in parameters may or may not be observed.

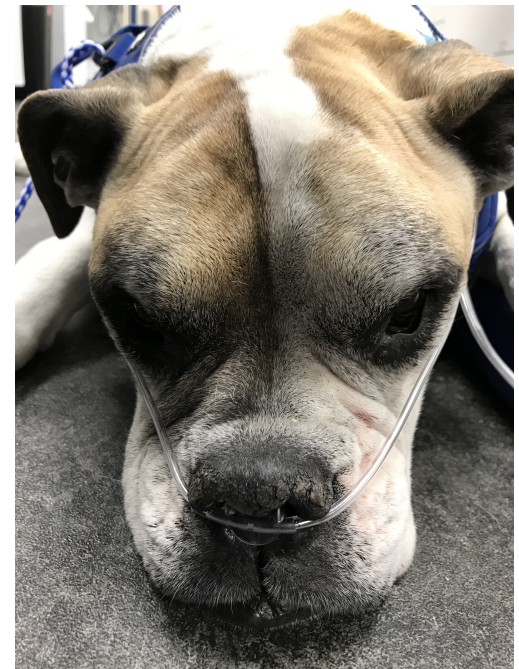
- Tachycardia
- Normal to bounding pulses
- Normal to slightly prolonged CRT
- Normal to increased body temperature
- Mild to moderate mental depression
- Normal/increased blood pressure



# Decompensatory Shock

The body is focused on getting oxygen to the heart, brain, and lungs. It is struggling to keep up. Changes are now observed and the patient will decline rapidly.

- Hypotension and poor pulse quality
- Cool extremities; hypothermia
- Pale mucous membranes
- Prolonged CRT
- Depressed mentation



# Managing Shock

## Vascular Access

- May be difficult due to hypotension
- Consider a multi-lumen central line
  - Administer several fluids at the same time
  - Co-administration of incompatible or vesicating drugs
  - Port for repeated sampling.

## Analgesia

- Use of CRI for titrating to effect
- Use of multi-modal drugs to provide full coverage

## Antimicrobial Therapy

- Providing full spectrum coverage
- Enrofloxacin 5-20mg/kg and Ampicillin & sulbactam 30-50mg/kg
- Piperacillin-Tazobactam
  - Bolus dosing 50mg/kg q 4-6hr
  - Bolus 3mg/kg followed with a 3mg/kg/hr CRI

# Managing Shock – Fluid Therapy

## Crystalloids

- Increases intravascular volume briefly
- Shock Dose: 90ml/kg dogs; 40ml/kg cats
- Maintenance 60ml/kg/day dogs; cat 45ml/kg/day

Give in aliquots  
Re-evaluate frequently!!

## Hypertonic Saline (7.5%)

- Causes an intravascular fluid shift
- Decreases intracranial pressure
- Bolus: 5ml/kg dogs; 2.5ml/kg cats

## Colloids

- Maintain vascular volume
- Bolus: 20ml/kg dogs; 10ml/kg cats

## Vasopressors

- titrate to effect after fluids
- Norepinephrine 0.05 – 2.0mcg/kg/min
- Vasopressin 0.5 -5.0milliunits/kg/min
- Dopamine 5-15 mcg/kg/min

# Techy TidBits

*to help  
you get  
through  
the day*



# Wounds

- Don't get distracted by the gross and obvious
- Make a complete evaluation
- Then address injuries by triage severity
- Cover open wounds to preserve tissues
- Start antibiotics quickly



# Location for Patient Treatment

- Have an identified station where critical/urgent patients are treated
- Location should be easily accessible, prepped and stocked at all times
  - If used, it should be immediately reset





# Equipment Availability

Equipment accessibility, function, and staff familiarity can affect outcomes

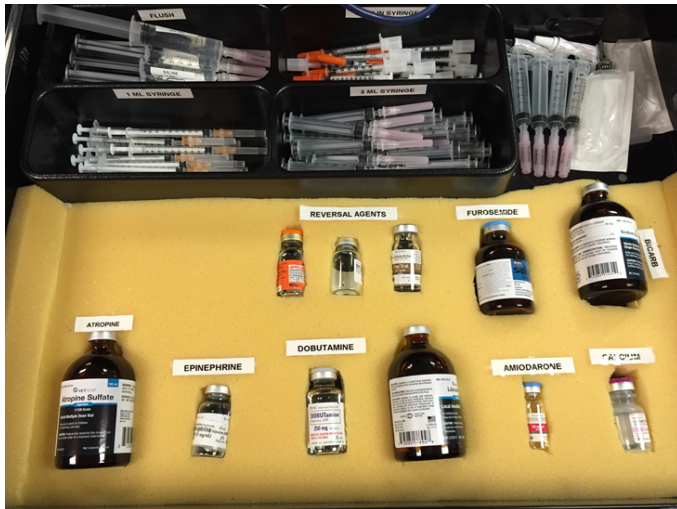


Take time to open drawers and play with equipment

# Crash Cart

Allows for the availability of equipment into a portable/mobile unit.

- Only necessary equipment
- Frequent audits
- Not an open access drawer
- Immediately restocked after use



# Critically Ill Flags

When critically ill, dogs will become **Tachycardic**

When critically ill, cats will become **Bradycardic**



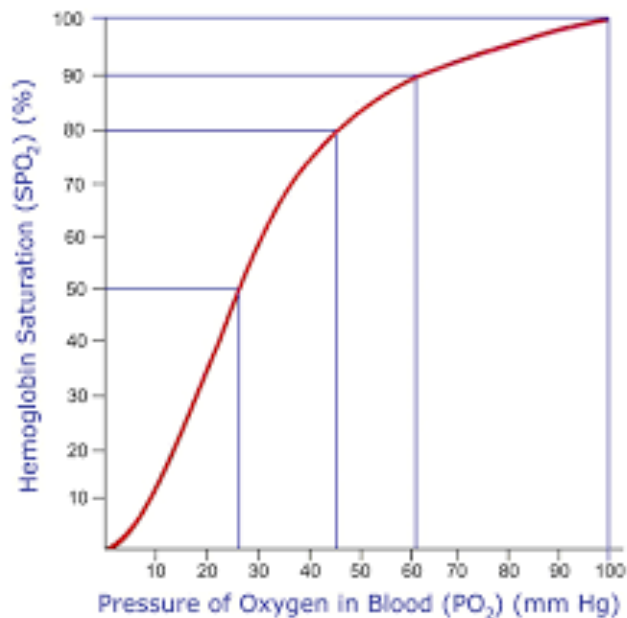
# Oxygen



- It won't hurt
- A low stress treatment to offer
- It is a life saving intervention
- You can use it before, during, and after treatments and diagnostics

# Cyanosis

- Cyanosis will not be seen until 1/3 of the blood is unsaturated
- This correlates with a pulse oximetry reading of 67%



- Mucous membrane and Capillary refill time are important evaluation pieces
- They should be considered in regards to the patient

Blue is bad  
but  
Pink is not always good

# Stertor vs Stridor

## Stertor

- expiratory noise
- snoring, coughing noise



## Assess concern by case

- A bulldog in heat stroke
- An excited Boston puppy



## Stridor

- inspiratory noise
- wheezing, high pitch noise

## Always an emergency

- Tracheal collapse
- Laryngeal paralysis
- Laryngeal edema

# Beware the quiet patient!

Just because they aren't demanding your attention  
doesn't mean they aren't critical



Especially neonates

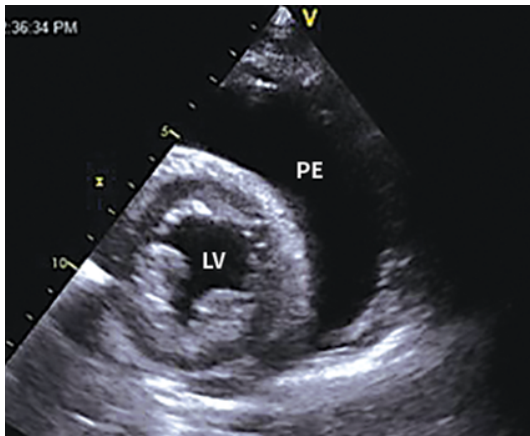


# AFAST and TFAST

The use of a focused ultrasound scan to assess the body cavities on a limited basis

## Thoracic cavity scan

- Pleural effusion
- Pericardial effusion



## Abdominal cavity scan

- Abdominal effusion
- Bladder size



\*<https://radiopaedia.org/articles/ascites?lang=us>

\*[www.cliniciansbrief.com/article/canine-pericardial-effusion](http://www.cliniciansbrief.com/article/canine-pericardial-effusion)



# The Big 4

Packed Cell Volume  
Total Protein  
Blood Glucose  
Blood Pressure



Good Initial Low Cost Diagnostics

# It's all a matter of perspective

To an owner their pet is important and should be treated as such.



What we say to an owner can vastly affect our opportunity to treat their pet – regardless of finances.

# Talking Tips

- Have a hospital plan for where the owner will go
- Use your name
- Use the pet's name and correct sex
- Make eye contact and acknowledge client concern
- If you offer a time frame, stick with it
- Maintain client consistency

# What to Say to Owners

Never say

*I am going to take Lucky to the back to be looked at.*

Say

*I am going to take Lucky to our treatment area to be assessed.*

Never say

*I am sorry for the delay there is a patient that is more critical than Lucky right now.*

Say

*I am sorry for the delay, Lucky is still okay to wait with you, until I can have a doctor assess him/her further. But please let us know if something changes that you are worried about.*

# Public Knowledge and the Media

## SPECIAL ARTICLE

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### CARDIOPULMONARY RESUSCITATION ON TELEVISION

#### Miracles and Misinformation

SUSAN J. DIEM, M.D., M.P.H., JOHN D. LANTOS, M.D., AND JAMES A. TULSKY, M.D.



# What if it was you?

Always consider what the experience would be like for you and your pet.



# Questions?



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