EVERY STEP OF THE WAY

‘This is the way we’ve always done our surgeries’

This excuse does not fly with me, and it should not be acceptable to you either.
THIS IS THE WAY WE’VE ALWAYS DONE IT...
Seriously, what do you do exactly the same today as you did 10 (or even 20) years ago?!?!?

In 2005, YouTube was launched by 3 former PayPal employees.

Apple released the first iPhone in 2007.

Modernize your surgical practices
- Model selection & species
- Patient preparation
- Surgical Approach
- Preventing hypothermia
- Patient monitoring
- Wound closure
- Post-op care & social housing
- Suture removal

HAVE YOU UPDATED YOUR SURGICAL PRACTICES?

What do you want to measure?
Are the similarities between model & target species helping?
Are there opportunities to improve?
  Available resources
  Pilot animals
  Surgeon experience
Modernizing surgical practices is the embodiment of putting the 3Rs in action
What are we really trying to measure??

- Recreating a clinical scenario
- Study-specific endpoints
- Efficacy
- Safety
- Pain models

MODERNIZE YOUR SURGICAL PLANNING
Model selection & data collection

MODERNIZE YOUR ANIMAL HANDLING
Low stress handling for all

Handling of the animals outside of surgery affects outcomes
REVISIT RECOGNITION & TREATMENT OF PAIN

Analgesia & anesthesia are not optional.

No matter which vertebrate you are, we all feel pain. And surgery hurts.
REVISIT RECOGNITION & TREATMENT OF PAIN

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Castration & dehorning
• routine husbandry/management procedures in livestock
• used as known painful procedures in pain research involving ruminants

What is your justification for not relieving pain associated with routine husbandry procedures?!?!

RETHINK YOUR APPROACH TO ACCLIMATION

Acclimation ≠ Habituation

No acclimation period = no surgery
Longer is better when possible.
Everything is different for them.
    Food tastes different.
    Friend are different.
    Water tastes different.
    Sounds are different.
    Change can be hard, give them time.

Things that pigs like:
(i.e. include these in your acclimation period)
    Friends
    Food treats
    24 hr. access to water
    Toys
    Friends
    Food
Elective surgery with healthy animals ONLY

Pre surgery physical exam
Blood work (ideal)
Health status of supplier
Anesthesia & surgery are not worth the risk if you suspect a health problem.
• Pneumonia
• Diarrhea
• Runny nose or coughing
• Skin or foot infection

HAVE YOU UPDATED YOUR SURGICAL PRACTICES?

Patient Preparation

Provide analgesia before the pain starts
• Multimodal analgesia facilitates anesthesia
• Do your practices differ depending on species?

Begin with a calm animal
Sedate, induce, maintain anesthesia
• Local, regional & general anesthesia

IV Catheter
• Should you place one?
HAVE YOU UPDATED YOUR SURGICAL PRACTICES?

Surgical Preparation

Clean vs. Sterile Technique
- Don’t be lazy (or dirty).
- Best practices are not always the easiest route.
- Do your practices differ depending on species?

Surgical Site Preparation
- Clean your clippers!
- 5 minute scrub vs. one-step products
- Surgery drape

HAVE YOU UPDATED YOUR SURGICAL TECHNIQUE?

Surgical Approach & Wound Closure

Have you asked why the surgery is done this way?
- There’s more than one way to...
- How can post-op complications be reduced?

Surgical Site Closure
- Interrupted vs. continuous suture pattern
- Buried sutures for skin closure?
- Wound clips & staples

Remember – incisions heal side to side, not top to bottom.
HAVE YOU UPDATED YOUR PATIENT SUPPORT?

Preventing Hypothermia & Patient Monitoring

Peri-anesthesia hypothermia is a real problem.
Heat loss from many areas
• Shaved surgical site
• Wet fur
• Extremities (head, hands/feet/paws)
• Tail

Preventing ≠ Correcting Hypothermia
(but both are important)
• Warming blankets
• Warmed fluids
• Insulating layers
• Preheating vs. reheating patient

If you don’t monitor the animal, how do you know?

HAVE YOU UPDATED YOUR WOUND MANAGEMENT?

Post Operative Care & Beyond

To Cover or Not To Cover? That is the question.
• Why does the wound need to be covered?
• If it really does need to be covered
  • ...for how long?
  • ...with what?

Surgical Site Care
• If you wouldn’t put it in your eye, don’t put it in a healing wound.
• Suture removal

Pair Housing
SPECIAL CONSIDERATION

Pregnant Animals

Do you have to put this animal on its back for hours?
Her energy requirements are much higher than non-pregnant animals.
Her rumen fill is already markedly reduced.
Are you going to subject her to the same withholding of feed as non-pregnant animals?
The fetus(es) are exposed to pretty much everything you give the ewe/doe.

SPECIAL CONSIDERATION

Neonates

Things neonates need and want:
• To be with their moms and other babies
• Good colostrum for their first meal within 1st 12 hrs.
• To not miss a meal
• To stay warm and dry
• For you to provide analgesia and anesthesia for procedures because babies feel pain too
IMPORTANT RULES TO REMEMBER

We owe it to our animals to explore all options for improving welfare.

• Choose the right surgical model
• No acclimation period = no surgery
• Analgesia & Anesthesia
• Elective surgery on healthy animals
• Monitoring & supportive care are obligatory

CONTACT INFORMATION

Research, surgery and animal welfare are my passions.
(And I really, really love ruminants!)
If you want to have philosophical discussions over coffee, you know where to find me.
Don’t be shy.

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