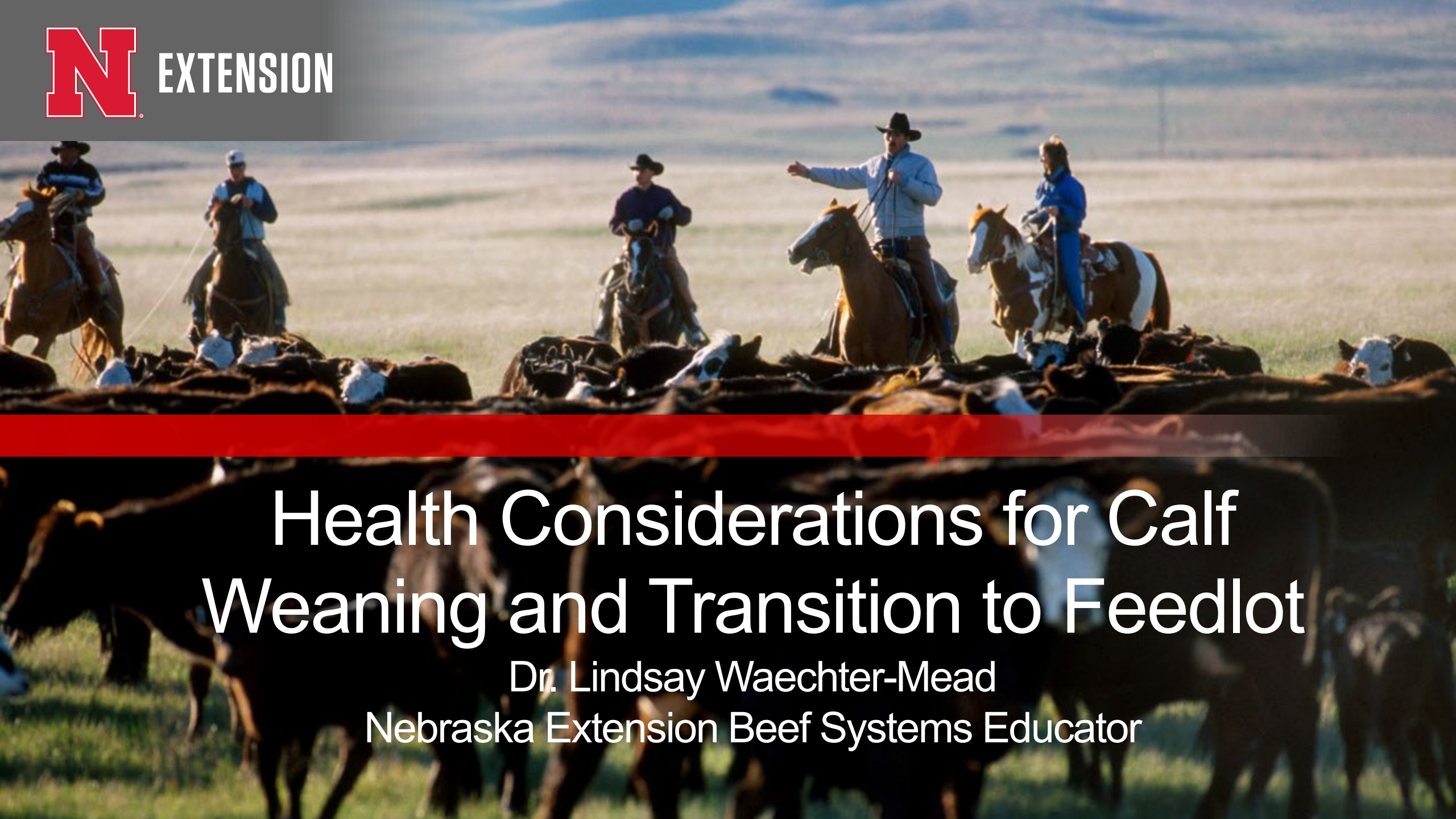

Health Considerations for Calf Weaning and Transition to Feedlot

Dr. Lindsay Waechter-Mead
Nebraska Extension Beef Systems Educator

Why Health Matters at Weaning

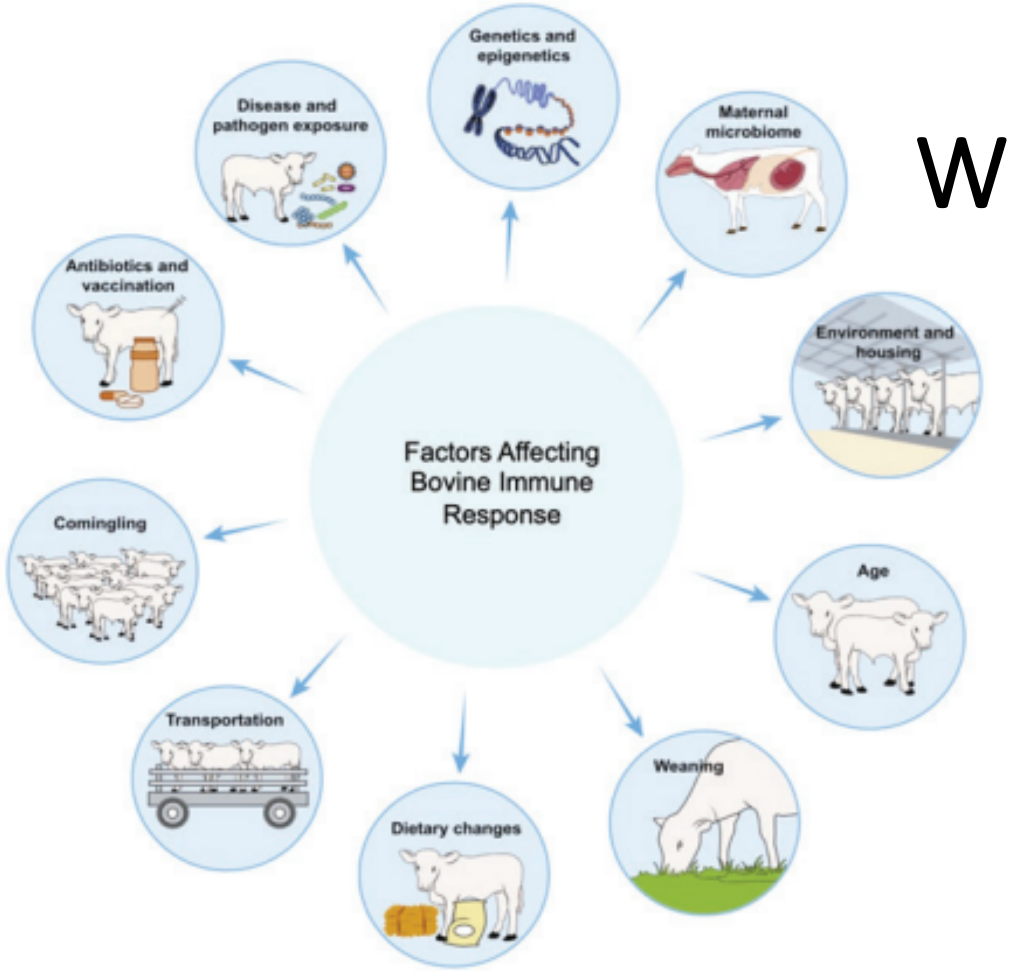

Figure 8. Immune responses are highly dynamic and are shaped by various host and environmental factors, including host genetics, mode of delivery, diet and the microbiota of the mother, environmental housing, weaning, feeding type, transportation, comingling, antibiotic treatment, vaccination, and pathogen exposure. Adapted from Zeineldin M, Lowe J, Aldridge B. Contribution of the mucosal microbiota to bovine respiratory health. *Trends Microbiol* 2019;27:753-770. doi:10.1016/j.tim.2019.04.005

Stress affects immune function

- Can lead to increased incidence of infectious disease

Signs of stress: Walking the pen, bawling/vocalizing, decreased feed intake

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#1 goal: Minimize Stress

- ✓Nutritional management
- ✓Low stress weaning options
- ✓Processing calves
- ✓Parasite control – internal and external
- ✓Environmental stress – dust, heat, mud
- ✓Health Plans – vaccination and treatment plans

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Preparing Calves for Weaning - Preconditioning

- "Practices that help a calf become ready to leave the operation of origin and that help reduce the calf's stress when adjusting to a new location, such as a feedlot." (NAHMS 2017)

Management protocols

- Weaning strategies
  - Abrupt weaning – complete separation of calf and dam.
  - Fence line
  - Nose flaps
  - Other options?

Weaning calves prior to shipping has been shown to reduce BRD, even without vaccination (NAHM, 2017)

Timing depends on your operation – at least 45 days prior to shipping

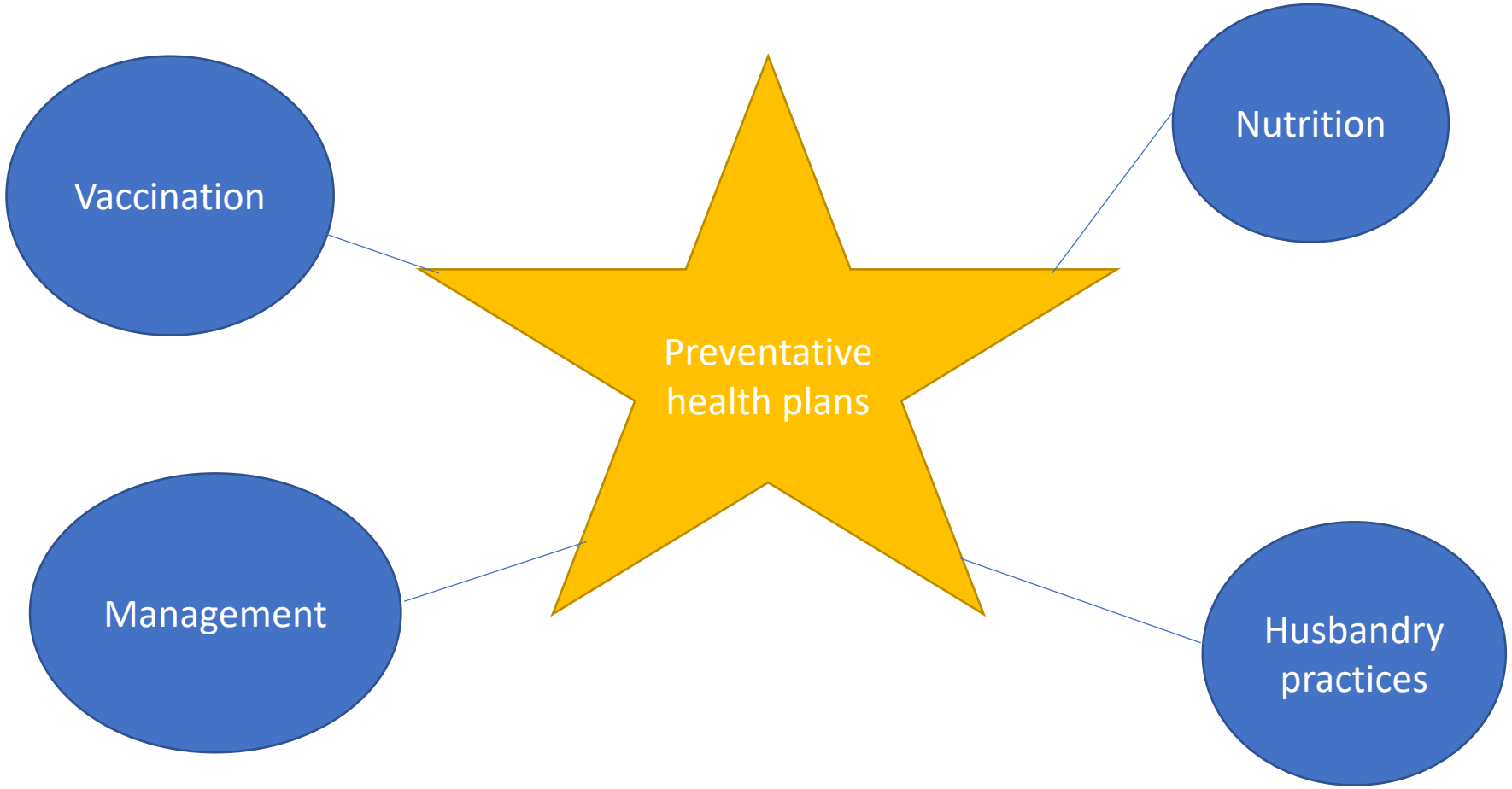
Management protocols

- Castration and dehorning early in life
- Fly control
- Deworming
- Environmental management
- Close monitoring twice daily
  - Walk through calves
  - Establish treatment protocols with your veterinarian

Nutritional protocols

- Nutritional consultation prior to weaning to establish balanced ration
  - Proper nutrition improves calf health
- Create enough bunk space – 12-18 inches per calf
- Clean, easy to reach water source
- Monitoring feed intake daily

Health Protocols



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VCPR

- Required for all prescription medications, ELDU, and all FDA feed medications requiring a VFD
- Working relationship with a veterinarian who oversees herd health plans and treatment protocols.
- Written documented form
  - Reviewed and updated annually

Nebraska Beef Quality Assurance

Phone: 308-633-0158
Email: nebraskabqa@unl.edu
4502 Avenue I, Scottsbluff, NE 69361

Veterinary-Client-Patient-Relationship (VCPR) Validation Form

Operation Owner/Manager

Operation Owner/Manager Name: _____

Operation Address: _____

City: _____ State: _____ Zip: _____

Premises ID Number *(optional)*: _____

Email: _____

Primary Phone Number: _____ Secondary Phone Number: _____

Veterinarian

Veterinarian or Veterinary Practice Name: _____

Clinic Address: _____

City: _____ State: _____ Zip: _____

Email: _____

Primary Phone Number: _____ Secondary Phone Number: _____

I hereby certify that a valid Veterinarian-Client-Patient Relationship (VCPR) is established for the above listed owner and will remain in force until canceled by either party.

Upon execution of this Agreement and the establishment of the VCPR, Producer, on behalf of himself and his present or past legal representatives, predecessors, successors, assigns, agents and heirs, hereby releases and forever discharges Veterinarian from any and all claims, actions, disputes, damages or demands, at law or in equity, that Producer could or may bring in regard to Producer's participation in, or disqualification from the BQA program. Producer expressly waives any right or claim of right to assert hereafter that any claim in such regard has through ignorance, oversight or error, been omitted from the terms of this Agreement."

"In addition, upon execution of this Agreement and the establishment of the VCPR, BQA, on behalf of itself and its present or past legal representatives, predecessors, successors, assigns, agents and affiliates, hereby releases and forever discharges Veterinarian from any and all claims, actions, disputes, damages or demands, at law or in equity, that BQA could or may bring in regard to Veterinarian's participation in the VCPR; or Producer's participation in, or disqualification from the BQA program. BQA expressly waives any right or claim of right to assert hereafter that any claim in such regard has through ignorance, oversight or error, been omitted from the terms of this Agreement.

Operation Owner / Manager:	Date:
Veterinarian of Record:	Date:

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Principles of Vaccination

- Minimizes risk
- Should not be assumed to provide 100% protection
- Takes time to build immunity
  - Mature immune response takes at least 3 weeks
- Not all animals are protected equally
- Always follow vaccine withdrawal times

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When to Vaccinate?

- **Only healthy animals**
- Low stress = ↓ cortisol levels
- High cortisol = ↓ immune response
- Evidence to wait to vaccinate at least 2 days and as long as 2 weeks after stress event(Richeson, et al)

What are your goals?

What are you trying to prevent?

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Vaccine Protocols

Core Vaccines: (AABP Vaccination Guidelines, 2021)

> "Protect from diseases that are endemic to a region, those with potential public health significance, required by law, virulent/high infectious, and/or those posing a risk of severe disease"

1. Infectious Bovine Rhinotracheitis virus (**IBRV**)
2. Bovine Viral Diarrhea Virus (**BVDV-Type 1 & 2)**
3. Parainfluenza Virus (**PI3**)
4. Bovine Respiratory Syncytial Virus (**BRSV**)
5. **Clostridial** Vaccines "7-way"

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Preweaning Vaccine Protocols

"A survey of recommended practices made by veterinary practitioners to cow-calf operations in the United States and Canada." Fike, et al. 2017

- Bovine veterinarians from 35 states and 3 provinces
- Most common recommended vaccines preweaning:
  - **IBR** (99%)
  - **BRSV** (98%)
  - **BVD – Types 1 and 2** (96%)
  - **PI-3** (93%)
  - **Clostridial** (77%)
  - Mannheimia haemolytica (77%)
  - 90% of veterinarians recommended **MLV** vaccines; 10% killed

Weaning Vaccine Recommendations

Item	Responses (no.)	Responses (%)
Antigens recommended for vaccinating calves for the first time after weaning (n = 120; 82% response rate)		
Bovine viral diarrhea, Type 2	116	97
Infectious bovine rhinotracheitis	116	97
Bovine viral diarrhea, Type 1	115	96
Bovine respiratory syncytial virus	115	96
Parainfluenza-3	109	91
Clostridial	70	58
Mannheimia haemolytica	59	49
Histophilus somni	44	37
Pasteurella multocida	36	30
Leptospirosis	18	15
Moraxella bovis	14	12
Mycoplasmal pneumonia	4	3
Others not listed[1]	4	3
Vibriosis	3	3

Handling Animal Health Products

- Only mix what will be used within one hour
- Discard any unused mixed product
  - **Cannot be stored**
- Killed vaccines can be stored after opening ONLY if sterile needles were used

Why precondition?

- Animal Welfare issue
- Maintain health
- Maximize feed efficiency
- Decrease treatment costs
- Reputation
- Premium pay

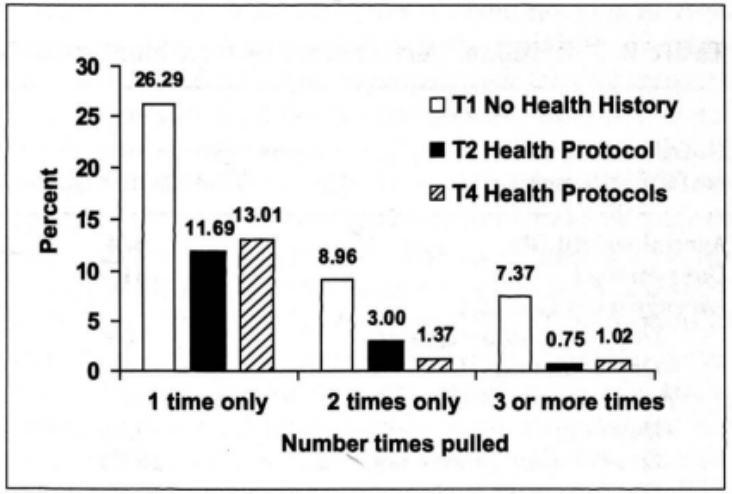

Figure 4. Percentage of pulls for respiratory disease conditions by treatment group during the period from arrival through harvest.

Seeger et al., 2008

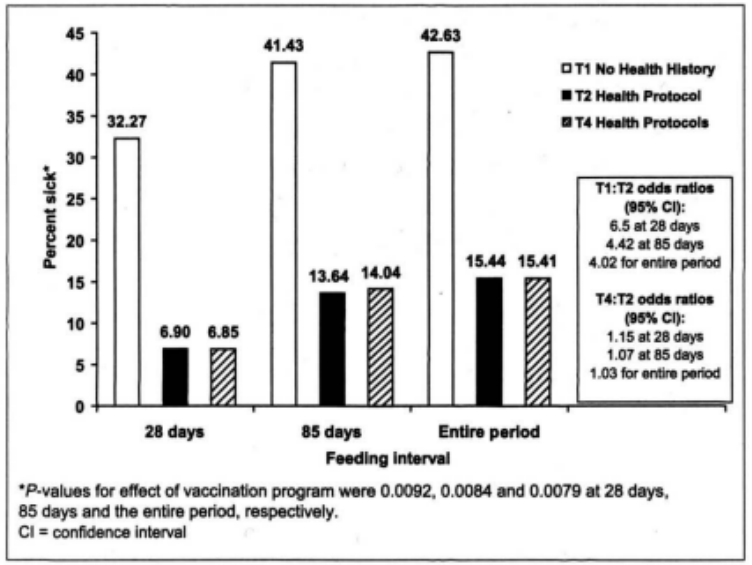

Figure 1. Morbidity (%) of steer calves at 28 and 85 days after feedlot arrival and for the entire feeding period.

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Benefits of Preconditioning

- Preconditioned calves sell at a higher price per cwt than non-preconditioned calves of similar weight and quality
- Preconditioned calves have improved health, gain, feed efficiency, and animal welfare in feedlot
- Preconditioned calves have increased carcass weight and quality grade at slaughter when compared to non-preconditioned calves (Hilton, 2015)

Table 1. Influence of sickness on performance, profitability and quality grade in eight years of the Texas A&M Ranch to Rail program[a]

Item	Healthy	Sick
Number of cattle	12306	4047
Medicine treatment cost, $/hd	0	27.03
ADG, lb**	2.99	2.67
Net return, $/hd**	67.32	-20.28
USDA Choice or higher, %**	39.6	27.5
USDA Standard, %*	10	5.25

[a]Source: McNeil et al. 2000

*Healthy vs. Sick differs (P = .02).

**Healthy vs. Sick differs (P < .01).

Does preconditioning pay?

- Costs range from $35-$60 per head, variable based on feed resources
- “Studies from the Noble Foundation, Oklahoma State University and Kansas State University have demonstrated an increase in net value ranging from $13.71/head to $57.31/head for preconditioned calves, including the cost of the pre-conditioning program.” (OSU)
- Recognize each system is different

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Not just premium prices

- Added weight at market time
- Marketing steers vs bulls
- Dehorned vs horned or mixed
- Larger, more uniform lots
- Healthier calves

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Summary

- Plan ahead
- Minimize stress
- Establish health protocols
- Remember the goal

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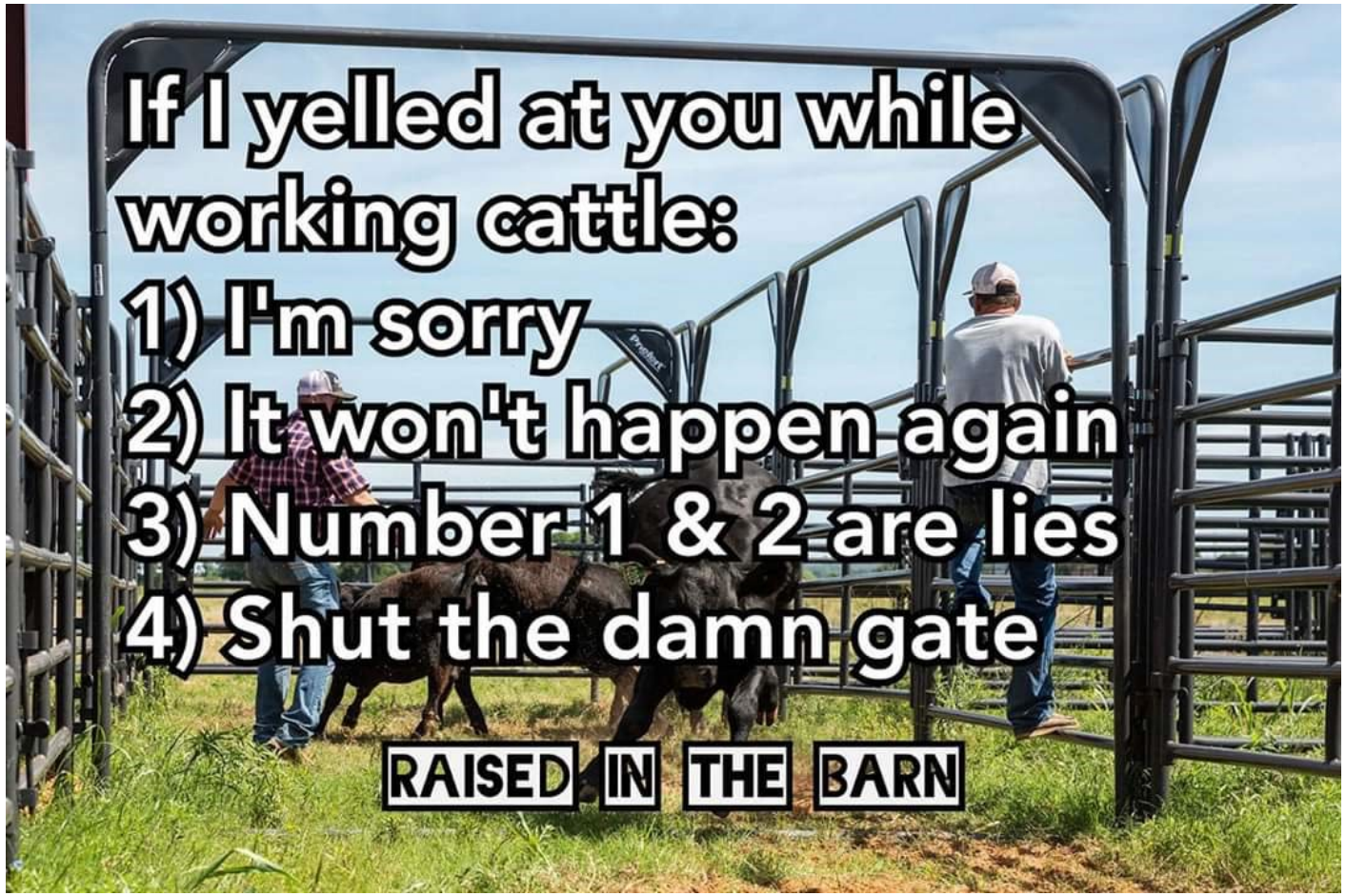

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