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Comparing options to make a recommendation

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Comparing options to make a treatment recommendation is part of what veterinarians are trained to do. Proficiency in diagnosis, epidemiologic observations, and treatment recommendations are all parts of successful outcomes in outbreak investigation. It goes without saying that in order to make appropriate treatment recommendations you need to first have the correct diagnosis. It's ultimately important to ask the right questions in a disease outbreak. You need to ask the right questions to the client and ask the right questions to yourself and then critically listen and evaluate the answers. Once the correct diagnosis is made, the recording of epidemiologic observations is critical to implement long-term solutions and prevent problems in the future. Before the producer is interested in your long term solutions, however they want you to solve this immediate problem and people are looking for specific recommendations.

It's important to understand your clients and the different personality types that you will encounter. Understanding who the decision maker on the farm is, what politics may be involved, what can realistically get done from labor constraints, and what the hot buttons that different clients may have are all factored in to your recommendations. Comparing options to make a recommendation requires a specific two-tiered approach of treating the immediate problem and trying to prevent futuristic problems. It is vitally important to treat the immediate problem that you were asked to come out for but realize that different producers may have emotional stress tied to financial implications of a disease outbreak and part of your treatment success may involve treating the client. A wise man said that clients don't care how much you know until they know how much you care.

The next important hurdle to understand is that clients want options but yet they want you to be decisive and they want your recommendation. I feel it's important to give clients 2-3 choices and options and then to have a clear recommendation of what I feel they should do. I am the expert that they've hired to come out and for me to give a bunch of options without a specific guideline is a disservice to the client. The most important part of comparing options to make recommendations is to communicate effectively. Understanding your client and realizing their level of sophistication as well as understanding the

importance of body language, big words and speaking at the producers level and realizing that different personality styles respond to different approaches of how you give options.

I want to review treatment options for one of the most troublesome disease that I think the industry has had over the last few years; beta hemolytic *E. coli* F18/K88. It is difficult to make recommendations for this particular disease pathogen problem because there are so many treatment and prevention options.

The options include:

- Antibiotics
 - Feed
 - Injectable
 - Water
- Utilizing nutrition
 - Different ration formulations
 - Different feed additives, such as egg antibodies
 - Acids and different ingredients
- Management
 - Environmental
 - Ventilation
 - Pig flow
- Genetics. There is a predisposition to F18/K88 problems.
- Water. Different producers continue to look at hydrogen peroxide, adding citric acid, utilizing different chlorine solutions.
- Vaccines. Exposure to avirulent strains of F18 and K88 orally are frequently done throughout the United States.
- Cleanliness of nurseries
 - Physically cleaning the nursery
 - Disinfectants used

As a veterinarian, you have seven different approaches that you could use to make a recommendation to prevent beta-hemolytic *E. coli* problems for your client. To determine which approach is most effective requires looking at research. The buzzword in the industry is “outcome based” or “evidence based medicine”. Understanding that you need to have evidence in order to make appropriate recommendations is the foundation, which all successful veterinarians work from. If there is available research that imparts high levels of confidence, this gives you more data and more influence can be placed on those sources, however, practicing veterinarians live in a world where “outcome based medicine” can be difficult to practice. We tend to rely on experience, which may or may not be accurate and may not be proven with documented evidence. The approach you take to treat or prevent disease is the one that you’ve had success with and are the most comfortable with. If you don’t know a lot about rations, you are not going to reformulate rations and add egg antibodies to prevent this problem; you’re going to look more at antibiotics and vaccines. It bears repeating that I feel it’s extremely important to fix the initial problem and address what specifically can be done the day you leave until you do some sort of follow-up and diagnostic approach. Then implement a follow-up prevention program that may be more economically important. Most practitioners have a number of spreadsheets that are utilized to help discuss costs associated with various recommendations. This is an example spreadsheet that includes an option comparing injectable antibiotics, water antibiotics and feed antibiotics. Other spreadsheets can indicate a cost per head associated with rations and various feed additives. A challenge to many veterinarians is the question, do you add multiple treatment options to immediately satisfy the client or do you add one change at a time to see what is most cost effective. I think this is very client dependant and is based on your ability to read the emotional needs, the financial considerations and the individual personalities of your client.

Specifically, what do I recommend on a nursery outbreak of beta-hemolytic *E. coli*? A presumptive diagnosis can be made by doing post mortems and identifying blood tinged lumen contents with a very angry purplish color to the intestines. Swollen eyelids and indication of sudden death loss or acute diarrhea are clinical signs most frequently seen.

At that time, I typically recommend:

- Some sort of water antibiotics. I most commonly use include Gentocin and Trimethoprim/Sulfa.
- I also recommend Citric Acid utilized to decrease the pH below 4. This sometimes take 1-2 pounds of citric acid per gallon of stock solution.

- If the pigs are severely affected, I’ll often use some sort of injectable antibiotic such as Ceftiofur, Ampicillin or Florfenicol to treat the bacteria and use Banamine to help prevent toxemia.
- I recommend producers use Mistral to dry the room and dry the pigs.
- I typically recommend Mecadox at 50 gms / ton as a feed medication.

I always discuss options to prevent problems with the next group. These options would include:

- Recommending that laboratory confirmation is done to verify the diagnosis and to specifically identify the serotypes and the bacteria ability to produce toxins as well as determine antibiotic sensitivity.
- *E. coli* vaccines or exposure to avirulent *E.coli* isolates by oral injection or water.
- Ration discussions relative to feeding programs, diet quality and ration make-ups.
- pH of water and its importance in prevention *E.coli*.
- Review ventilation and the role of eliminating stress and management.

I try to tie each of these to a cost intervention and I prefer using specific numbers and percentages so that people have some idea of the effectiveness of these recommendations. By comparing options to make a recommendation, the client feels that he or she is the decision maker and your role is to help guide and direct the producer into making the best decision for his operation. Realize that there are many options that are all effective in helping producers prevent and treat disease. Our role as veterinarians is to be the guiding light to help highlight treatment strategies from all treatment options available to the producers. By doing what’s right for the pigs, you will have fulfilled your role as caretaker of animals and assisting in the financial success of your client.

