

# The relevance of disease in the evolving swine industry and the changing role of the vet

**M**ost swine veterinarians are aware that the swine industry is undergoing a period of dramatic change. This will mean that the way we practice veterinary medicine will evolve as numbers of farms decrease and farm sizes become larger. Recently, Dr. Kirk Clark of Purdue University met with Drs. Harry Snelson, Gene Nemechek, and Max Rodibaugh to discuss how the swine veterinarian will continue to play a role in the changing swine industry.

## As industry implements high health strategies, will the veterinarian's knowledge of disease play an important role?

**Max:** Yes—It will change the diseases you look at, but disease will still be an important part of what a veterinarian does. It will still often be what gets the veterinarian onto the farm.

**Gene:** The veterinarian's role is going to be very important—it will change as people decide what high health status really means. I don't think we've really defined what that is. It means different things to different people. The veterinarian, who is supposed to be the one who understands the roles of diseases, will be the one who leads the pork producer in the direction of high health status.

**Harry:** High-health herds are high-risk herds, especially if you are using them in a swine-dense area. The veterinarian will still play a major role in the earlier stages in figuring out how to raise those pigs without getting into trouble with health. Also, in the later stages, veterinarians will take on a more preventive role.

**Max:** Biosecurity is an issue that's going to be important. We'll need to learn more about epidemiology, immunity, and how to measure those factors.

**Harry:** The veterinarian's role will be important in auditing those biosecurity systems. The veterinarian will need to be able to establish the basics and determine where there are breakdowns in the system.

**Kirk:** We'll need to know how to handle acute outbreaks of disease, some of which we've never seen before. We'll need to know the pathogenesis of individual diseases and how each can be treated and controlled because they will not present as groups of interrelated diseases.

**Harry:** You'll need to be well aware of the health status of your client's herd and the health status of the source of his or her re-

placement pigs—vaccination schedules or whatever—to set up these preventive strategies and isolation facilities.

**Kirk:** We'll need to be well aware of diseases within the source herd and the recipient herd so that a match can be made between the diseases and vaccination programs of the two herds.

**Gene:** We will also have to get involved in knowledge of what the cost of disease is on production—what it costs if the disease goes untreated or what it costs to prevent the disease. We have to start making these decisions based upon some economic value to the industry rather than, "Well, I think that if we vaccinate that we're going to see an improvement." If vaccination costs more than the benefits of improved performance, then we may have to decide not to vaccinate or treat.

**Kirk:** Vaccination does have a cost—not just buying the vaccine, but administering it, and the effect of vaccination on performance.

**Gene:** As this industry changes, and herds get larger and larger, labor will get more and more expensive, so the route of administration and the individual treatment of the pig is going to become more expensive. So, if we can get a higher-health-status herd where those things either don't have to be done or find another way to vaccinate or treat, it's going to be very important.

**Max:** Are diagnostics going to change? Are we going to need to find a way to make a quicker diagnosis? This will become even more important with multi-site systems. If we move pigs from multiple sow sites into a common nursery, are we going to have to move pigs regardless of the diagnosis?

**Gene:** A lot of times, you'll get locked into having to move pigs to certain destinations regardless of disease outbreaks.

**Max:** But do we need to think about having other options in those systems?

**Gene:** You may not have the facilities to do that, and the system may not allow for that. If you figure that into the economics and say, well, you might have a TGE outbreak but you know you have to move these pigs, you go ahead and move the pigs as long as you don't infect other sow farms. You adjust the movement of the pigs. But rapid diagnosis will be critical—you'll need to have a diagnosis quickly so that you can adjust the animal movement system (biosecurity) and have a plan to minimize further problems. You may need to postpone animal movement for a couple of days to prevent contaminating a sow herd.

Kirk: It's pretty obvious that the veterinarian's role will be changing, but our base knowledge will continue to be very useful to us—continuing education will even be more critical than it has been.

### **How does all-in-all-out management influence the role of the veterinarian?**

Max: It forced the veterinarian to think of disease in terms of management and epidemiology rather than in terms of constant medication and/or vaccination for disease control.

Gene: We had to think about flow of pigs to provide maximum use of space and we have economic decisions to make about what to do with tail-enders. We will have to make some decisions in the industry about how to handle substandard pigs—it will affect all phases of the industry. As we get into larger groups, we'll have to think about sources of pigs, size of buildings, how many pigs can fill a system, based on economics of construction, building designs, transport costs/trucking, etc.

Harry: I agree, Gene. As Roy Schultz mentioned at the Lemman Conference last fall, all-in—all-out (AIAO) is not a new technology—we just understand better now why and how it works.

Max: It has given the veterinarian better opportunities to analyze performance records. With continuous flow, it's difficult to get accurate wean-to-market or "close-out" data, whereas you can really track performance with AIAO.

Kirk: Our research shows that AIAO stops lateral transmission of disease—older to younger pigs—and segregated early weaning (SEW) stops vertical transmission of disease from sows to offspring. If we use both of these tools, we can get high-health-status pigs. The biggest problem I've seen all over the country is the tendency to leave poor-doing pigs back a group. Over time, the health status of a herd regresses and performance is reduced.

### **Have MEW strategies reduced the role of the veterinarian?**

Harry: No. If anything, they have given the veterinarian another niche to get onto a farm. To do medicated early weaning (MEW) properly, a veterinarian must know what diseases are to be eliminated. That's the major role the veterinarian can play: the veterinarian has to diagnose what diseases are present clinically and subclinically, determine their economic importance, and then set up a MEW protocol that will do the best job to eliminate those pathogens that are present over the long term.

Gene: I agree. The opportunities it presents to a producer—the potential for improvement by getting rid of disease problems—creates opportunities for the veterinarian to help keep it that way. But, I also think we'll see many 'high-health-status pigs' that will be susceptible to a lot of problems—these present an opportunity for the veterinarian not only to treat them but to help prevent disease. Most people out there today probably don't have the expertise or the knowledge to put the whole package together—nutrition, disease control, animal flow—I think that veterinarians have the opportunity to be that lead person in a production system, to

provide the technology and information to make an MEW system flow right.

Max: MEW is great because the profession was already evolving toward a herd-health type of approach—this is a wonderful tool. The research and development of MEW has been done by veterinarians and has been in the hands of the veterinarian from the start. It shouldn't be a threat at all to veterinarians.

Kirk: First, MEW and SEW are similar, but not the same. SEW does not rely on medication except in herds with a specific disease problem. Seeing how pigs can grow when they are put through an SEW system and are free from disease has rejuvenated my interest in veterinary medicine as it relates to pork production—all of us need to have the opportunity to observe the kind of performance associated with this technology.

### **What challenges are there to practices regarding SEW; what are clients asking?**

Max: They are asking "Are we big enough to take advantage of this technology? Are we in an OK location? How do we grind feed and get it delivered? How do we transport pigs and people? How do we adapt old facilities to SEW?" I also hear that "it's too expensive—cost-wise, I can't justify this." Surprisingly, I'm getting this response even from people doing new construction.

Gene: I hope people aren't trying to implement SEW thinking that it's going to end all problems. Sometimes it creates more problems than it solves. We need to be careful to tell our clients that it is not a panacea for all the problems within swine production. Problems stem from where these facilities are located in relation to other pigs, because SEW pigs are so susceptible. If we recommend an SEW strategy across the board, I think it would be guiding some people in the wrong direction. There are producers who won't implement SEW who will still be profitable producers.

Harry: The veterinarian's role is making producers understand what they'll need to do to make it work. You'll need to know the full financial picture of the clients to guide them properly, to do the cost:benefit analysis. There's expense involved with moving the pigs again, the extra labor, extra transportation costs, and extra facilities for a three-site system. It's just another tool for us to use, but you can have a major failure with it.

Kirk: Nearly everyone in the midwest has a small farm and it's all in one place. These producers want to know whether they can implement SEW and how far they have to put the nursery away from the rest of the operation, and we just don't have all the answers.

Gene: I often see people who want to take their existing unit and move the nursery off site and move the finishing off site and think it will alleviate all their problems. Eventually, they end up transferring diseases to the off-site nursery, and then you've got multiple-aged pigs on a supposedly SEW farm. We have to be careful to direct our clients into what is true SEW—by site, by room, etc.—one of our challenges as vets is to be sure to evaluate the return to that person. They need to know where they are and whether there is enough chance for improvement or the improve-

ment will be big enough to offset the additional costs. We need to challenge the producers to keep better records, so they can perform this kind of cost:benefit analysis.

### **How does the loss of many (if not all) feed-grade antibiotics play a role in the future of veterinary medicine?**

Max: Most veterinarians try to reduce feed-grade antibiotics because of resistance problems and cost. As we lose antibiotics, we are going to have to improve management systems—SEW will be one tool that will allow us to do that. We will have acute problems, however, where we will desperately need antibiotics in some form. We'll use less, but we will still need them.

Gene: It may not be a bad thing for the pork industry. I would hate to lose them completely. I would like to be able to use them for treatment in outbreaks. But loss of antibiotics might be good for us in that it will force us to learn to raise pigs without feed-grade antibiotics. The problem is in hog-dense areas where you can't control what your neighbor is doing. We have managed to learn to raise pigs without Furox®™. Other technology/vaccines will take the place of feed-grade antibiotics, which may cost more.

Harry: Personally, I don't use many feed-grade antibiotics, especially for treating outbreaks of disease—I only use them for growth promotion. It's always bad when they take away an option, but it won't directly affect the way I practice veterinary medicine.

Kirk: It would be good to keep feed-grade antibiotics for disease control and growth promotion, but management and freedom from disease will probably be the ultimate growth promoters. After feed-grade antibiotics are gone, pigs will continue to be raised in the same numbers as now.

Harry: Too many people use antibiotics as a management plan, rather than as a short-term solution to a problem. They become dependent on them and come to believe that they can't quit using them. It's hard to convince producers that you can cut out antibiotics and that their production systems won't crash.

Max: We can easily monitor feed-grade antibiotic costs because it is a line on the production costs statement. As producers have gone to the better management technologies, they've been much more willing to reduce antibiotic use.

Harry: It is difficult in a large system to manufacture a special feed for one farm—we use water or injectable medications or management changes instead.

Max: In some instances if you buy commercial feed, it may be cheaper to buy the ration with the antibiotics rather than the one without the antibiotics.

Gene: That will change as more and more producers demand antibiotic-free feeds and go elsewhere if their supplier won't provide them.

### **How do we play a role in the sophisticated units?**

Harry: Veterinarians need to be thinking about how they can change their role—it won't be the traditional practitioner-type role—but there are tremendous opportunities for people who are trained like veterinarians in that system: trained to diagnose problems and trouble-shoot farms. That is not how recent veterinary medicine graduates are trained to perceive themselves, but they need to rethink their role—there are tremendous opportunities.

Gene: The role of veterinarians in larger organizations will change. It could remain a practitioner-type position; there is also the opportunity to develop more in the business end of companies. This is not just because we've implemented SEW. It's because companies are getting larger and the entire makeup of the swine industry is changing. When pork production systems get to a point that they can afford to have a veterinarian on staff, that veterinarian can make a good living and contribute to the profitability of the business. That veterinarian will still need to diagnose disease and do clinical evaluation and diagnosis on farms, but will also need to be able to integrate that into the economics of the organization. The veterinarian is the only one who has that training, although some don't have enough of a business background.

Max: There may be other opportunities for veterinarians that we haven't thought of—maybe as herd managers in those big organizations, and new graduates can move up within the organization. In the more traditional production areas, as producers get bigger and better, a group of producers may decide to group together and employ a full-time veterinarian—then that veterinarian can concentrate his/her efforts on just those farms.

Kirk: Might there be two types of veterinarians: one that consults with companies, and one who has a private community practice and does the day-to-day, on-the-farm work?

Harry: This is happening already in the industry—a lot of larger companies that have a full-time veterinarian to oversee the herd health scheme will use local veterinarians for the on-farm work to save time.

Kirk: So there is already the beginnings of a two-tiered system in place, and graduates can decide whether they want to be a general practitioner or a consultant and prepare themselves during and after college for one or the other.

### **How optimistic are you about the future of the veterinarian in the swine industry?**

Gene: There's going to be a lot of opportunity—we just need to decide how we want the veterinarian to be involved: where we want to set our sights and not let someone else steal that niche from us.

Harry: The veterinarian is in the greatest position to act as disseminator of new technologies and information—s/he's an independent, unbiased provider of ideas and costs who isn't trying to sell a certain product and is out there on the farm. Practitioners see a lot of populations of pigs and know a lot about what occurs on a day-to-day basis on the farm.

## How should DVM programs in veterinary schools be changed to help the prospective swine veterinarian enter and maintain a place in this challenging industry?

Harry: That's a difficult question to answer. You've got to have the basics—there is so much information coming out that no veterinary school can keep up. Veterinary schools need to teach people problem solving, moving through a decision tree, etc. . . . But veterinary schools need to push people into the swine industry. Colleges and veterinary schools need to be more proactive at the high school level to interest young people in the many opportunities available in the swine industry.

Gene: New graduates really need good strong basics—anatomy, pathology, physiology. Schools need to teach the basics and then allow students to specialize in their last year or half year, so that they have the background to be flexible. When they have finished their four years of basics, then more programs need to be set up to allow students to specialize.

Max: If a student in his/her junior year knows s/he wants to specialize in swine, I also would like the programs to be designed to allow that person to specialize. Even if that meant that the student

didn't have exposure to beef, dairy, or equine, I would hope that a program could be designed to allow him/her to specialize.

Harry: We also need veterinary schools to gear more toward economics—we need to train people to balance the economics (cost:benefit) of their advice.

Kirk: The problem in the universities is to find people to teach the economics that a veterinarian needs versus macroeconomics; that is, to teach economics from a veterinary perspective.

Harry: Right. One problem with veterinary schools right now is too many people who never get out of the office are trying to teach people to be field veterinarians.



### SWINE-L Update

## SWINE-L signs on its 100th+ subscriber!

SWINE-L, the electronic discussion list started by *Swine Health and Production*, now has over 100 subscribers. Posting traffic has picked up to 3–5 lively messages per day. Recent “threads” (i.e., topics of discussion) include:

- causes of rectal prolapse,
- 0-157 *Escherichia coli*,
- inducing farrowing,
- use of oxytocin on sows before they are artificially inseminated,
- PPV versus HEV as a cause of mummies,
- water quality, and
- what a gestating sow is worth (a fire liability case).

If you have access to an Internet or Bitnet account (including commercial services like NOAH, CompuServe, America Online, Genie, MCI Mail, and Prodigy), you, too, can join this ongoing discussion. Here's how:

- If you have an Internet address, send a message to: [LISTSERV@vm1.spcs.umn.edu](mailto:LISTSERV@vm1.spcs.umn.edu)

- If you have a Bitnet address, send a message to: [LISTSERV@UMINN](mailto:LISTSERV@UMINN).
- Leave the “Subject” line blank.
- In the first and only line of the message body, type in:

SUBSCRIBE SWINE-L your full name

...substituting your real name, of course. You will automatically be added to the list and will shortly afterward receive further instructions.

This can be a great way to consult with colleagues in your field. In addition to the discussion we pre-publish news items and abstracts of the next issue's feature articles on SWINE-L.

If you use a commercial service for email, please consult with your service provider for information on how to send mail to an Internet address and any charges that may be incurred. While some services allow unlimited email, others may charge more based on a larger volume of email or for email that comes in from the Internet.

