Disclosures:

• We sell services
  – Consultation by contract or hourly fee
  – Emergency and sick calls
  – Farm management, training, records

• We sell products
  – Vaccines/biologicals
  – Antibiotics for injection and water
  – Other medical/health products

I am paid by farmers.
What does swine medicine look like today?

- Herd health consultation – how?
  - On the farm to see the pigs & people
  - Diagnostics
    - Autopsies, serology, oral fluids “ropes”, bacteriology, virology
    - Production records, water meters, temp sensors
  - Farms have teams of advisors
    - Veterinarian, nutritionist, geneticist, financial analyst, university, banker, farm managers and caretakers
  - Farm specific health programs based on diagnostics, science, and experience
What is Herd Health?

- Traditional:
  - Diagnostics-centered population medicine
  - Vaccines, biologics, antibiotics

- Innovations:
  - Biosecurity – keeping new disease out
    - Transportation, site management, hygiene
    - Air filtration
  - Pathogen elimination
    - Farms and flow(s) of animals
    - Area/regional cooperation
  - Nutrition – new challenges
    - Vitamins, minerals, enzymes, other, costs
Diagnosis is at the center of judicious use
Antimicrobials: Key factors to consider

- Timeliness – epidemic or endemic
- Routes of administration
  - Inject, oral
- Labor
  - Training, safety
- Budget
  - Costs
- Pig flow details
  - Multi-site, nursery/finish or wean-finish
Feed delivery
Water delivery
Health status is dynamic

Group Mortality Wean-Market

% Mortality
25
20
15
10
5
0

Summer Closed Groups (16,000 pigs)

2006
2011
Health plans are dynamic too

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td>% Mortality</td>
<td>9.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Feed Antimicrobial (g/pig)</td>
<td>48</td>
<td>27</td>
</tr>
</tbody>
</table>

10 groups / year (16,000 pigs)
Biosecurity – some is easy

- Bench at entryway for footwear traffic
Biosecurity – others complex

- Pre-filter and 0.3 micron filter (95 – 99%)
Impact of Air Filtration
2 year study

• 26 control farms
  – 37 PRRS breaks
  – 1.42 cases/farm

• 10 filtered farms
  2 PRRS breaks
  0.2 cases/farm
  7x fewer
  P<0.0005

Prevent just ONE outbreak and it pays!
Dee, et al., Vet Record
2010 167:976-977
Goals: healthy pigs & safe food
Responsible Use in Swine

- Pork Quality Assurance
- Judicious Use Guidelines
- Take Care – Use Antibiotics Responsibly
What do pig farms look like today?

- Farms of all sizes and ownership types
  - My practice is 95% family operations
  - Generational transfer: challenges & opportunities
  - Pig farms are like other businesses
    - must adapt & adopt to stay viable

- Farms are specialized
  - Group ownership, neighbors work together
  - Flows of larger numbers, same age & health
  - Pathogen control differs from old single-site
  - Uniformity for care, feeding, & marketing
What do pig farms look like today?

Land-based animal agriculture is a sustainable business model.

- land
- crops
- livestock
- manure
Antibiotic Use in Food Animals: A Dialogue for a Common Purpose

A Swine Practitioner’s Perspective

Dr. Paul D. Ruen, DVM
Fairmont Veterinary Clinic
Fairmont Minnesota

NIAA Symposium, October 2011 Chicago IL
Our Clinic’s Experience With “Antibiotic-free” Pigs

- 2 years of data
- Conventional nursery and finishers
- ~5500 sow flow
- 2500 head groups of pigs at weaning
Our Clinic’s Experience With One “Antibiotic-free” Pig Farm

- 2500 weaned
- All new barns
- ~8% nursery death loss
- ~7% finisher death loss
- ~15% culls
- = 70% full value pigs in each barn

- Treated individual pigs sorted off to separate pens and ear tagged.
- And 30% of groups fell out of antibiotic-free market because they needed group treatment

So issues of welfare and cost.
AASV Guidelines for 
Judicious Therapeutic Use of 
Antimicrobials

- www.aasv.org
- Establish DIAGNOSIS
- Recognize factors in disease
  - Genetics
  - Nutrition
  - Housing
  - Management
  - Health
Establishing Health Goals

- Appropriate clinical diagnosis
- Give options
  - Food chain
  - Cost & investments, labor and safety
  - What tools fit the farm?
  - Returns/benefits
  - “Within farm” records
Epidemic?
Pork Quality Assurance

- PQA Plus
  - Producer training
  - Site assessment
- Opportunity to visit with producers
  - Teach
  - Build trust
  - Develop a relationship
  - Better for pig, consumer, producer
AVMA Steering Committee for FDA Policy on Veterinary Oversight of Antimicrobials

• “VOSC” organized in spring 2011
• Member Veterinarians
  – Joni Scheftel (Chair), MN Department of Health
  – Lorin Warnick, Cornell University
  – Thomas Hairgrove, Texas A&M
  – Charles Hofacre, University of Georgia
  – Paul Ruen, Fairmont Veterinary Clinic
  – *Christine Hoang, AVMA Staff
  – *John Brooks, AVMA Board Liaison
VOSC

Objectives:

- Ascertain the FDA’s expectations of the veterinary community and limitations of FDA authority for antimicrobial policy
- Address the advisability and feasibility of various avenues of veterinary oversight for antimicrobial use in food animals
- Advise and provide feedback to AVMA Executive Board and committees
VOSC: What’s happening?

- FDA is moving toward greater veterinary oversight of the use of antimicrobials in food animals – VFD for all feed use
- Eliminate “production uses”
- Limit to those uses considered necessary for assuring animal health, Guidance 209
- Focus on medically important antimicrobials, Guidance 152 Appendix A
VOSC: Discussion Points

- Define veterinary oversight (not VCPR)
  - Veterinary knowledge has many inputs
- Need “workable” Veterinary Feed Directive
  - Treatment time, Expiration, State laws
  - Flexible for group, flow, flock
  - Feed mill capabilities & restrictions
- Recognize farm and species differences
Compost facility

Dr. Paul Ruen
Fairmont Veterinary Clinic
August 2010
Load out room

Dr. Paul Ruen
Fairmont Veterinary Clinic
August 2010
Alternative Subtherapeutics

- Many used by themselves or with other legally approved products
  - Acids (adjust intestinal pH)
  - Minerals
  - Spices
  - Varying scientific rigor, some GRAS products, others “foo foo” with no science or safety data
Common Use of Feed Grade Antimicrobials on Farms in Southern Minnesota

• Sow herds: infrequent, if used = treatment
• Weaned pigs: most common stage for use
  – over 90% of pigs for 2 to 8 weeks of time
  – disease prevention, control or treatment
• Finisher pigs: common use
  – Production use with high feed costs
  – disease prevention, control or treatment
Goals of Responsible Use

• Prevent violative drug residues
  – Pork industry has a good record
  – exports

• Minimize the risk of antibiotic resistance – antibiotic use selects for resistant populations

• Optimize the effectiveness of antibiotics

• Maintain the availability of antibiotics
Appropriate Clinical Diagnosis

• Clinical signs
• Herd history
• Response to therapy
• Necropsy
• Laboratory testing
  – Bacterial culture & sensitivity
    • Product selection and administration
    • ELDU
  – Serology
Responsible Use

• Use antibiotics only when necessary
• Smallest number of animals feasible
• Least amount of time
  – Alleviate clinical symptoms
  – Prevent reoccurrence
• Balance with need to preserve animal health & welfare
Conclusion

• Shared responsibility for responsible use of antibiotics
• Heightened attention of the public
• Demonstration of concern through voluntary action
• Swine veterinarians & pork producers take the risk seriously
Organic Food Production

- Definitions
- Experience in my practice
- Reported food safety
- Perceptions
- Costs
Disease is blowing in the wind!