Tracking Antibiotic Resistance + Demonstrating Responsible Antibiotic Use

www.PipestonePART.com
WHO IS PIPESTONE®

- 40 Veterinarians
- 6 Veterinary Clinics
- Pig/farmer owner focused
- Veterinary Service & Farm Management
- 75 Sow farms/250,000 sows
- 1,200+ employees
- 1,000+ U.S. farmer customers
- North America, Asia and Latin America presence
History & Objectives

- Launched Jan 1, 2017
- Interactive, web-based tool
- Works to track resistance over time
- Demonstrates responsible use
- Tracks and benchmarks antibiotic use by farm
- Platform to inform the conversation on antibiotic resistance and antibiotic use
- Pipestone funded
- Research Activities
- Outreach Activities

Current Statistics

- Participants: 154 producers
- Weaned pigs: 5+ million
- Market Hogs: 3+ million
- 800 Sites
- 24 Veterinarians working with PART clients
- 270 Veterinary Visits and 1,078 Quarterly Reviews
Antibiotic Resistance Tracking: Current Focus

- Human Health
- Food Safety
- Livestock Farms
### Veterinary-Based

**Samples Collected and Sent to Diagnostic lab**

<table>
<thead>
<tr>
<th>Antimicrobial</th>
<th>E.coli</th>
<th>S.501</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>S / 4.000</td>
<td>S / 1.000</td>
</tr>
<tr>
<td>Cefotaxim</td>
<td>S / 0.500</td>
<td>S / 1.000</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>R / &gt;8.000</td>
<td>R / 1.000</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>R / &gt;16.000</td>
<td>R / 16.000</td>
</tr>
<tr>
<td>Danofloxacin</td>
<td>NI / &lt;0.1200</td>
<td>NI / &lt;0.1200</td>
</tr>
<tr>
<td>Enrofloxacin</td>
<td>S / &lt;=0.1200</td>
<td>S / &lt;=0.1200</td>
</tr>
<tr>
<td>Florfenicol</td>
<td>S / 2.000</td>
<td>R / 4.000</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>S / &lt;=1.000</td>
<td>S / &lt;=1.000</td>
</tr>
<tr>
<td>Neomycin</td>
<td>S / &lt;=4.000</td>
<td>S / &lt;=4.000</td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td>R / &gt;8.000</td>
<td>S / 1.000</td>
</tr>
<tr>
<td>Penicillin</td>
<td>R / &gt;8.000</td>
<td>R / 8.000</td>
</tr>
</tbody>
</table>

**Diagnostic lab testing confirms infection and what medications work best to treat**

**Veterinarian selects proper treatment**
VDL Summary: Tracking resistance over time
Food safety-based:

“Evaluation of AMR patterns of NARMS organisms across alternative sites”.
Recovery by Month and Site
AMR Patterns by Class of Drug* and Site

* = Based on FDA list of medically important drugs
Phenotypic evaluation of the impact of antibiotic use protocols on antimicrobial resistance patterns in PRRS virus infected swine in a naïve environment.

CARISSA ODLAND, DVM, MS-CANDIDATE
OCTOBER 12, 2018
DOING OUR PART FOR THE RESPONSIBLE USE OF ANTIBIOTICS:
RECORD, REVIEW, and RESPOND
Producer Example

On your graph, you can filter your results further by clicking antibiotic types in the legend to turn them off or on.

Antibiotic Use

Site: All

Style: Month

Start date: Jan 2017

End date: Jan 2018

Refresh

Grams Used/Pig by Category

Sites: All

Grams Used/Pig

Jan 17: 11.92
Feb 17: 0.51
Mar 17: 17.26
Apr 17: 8.42
May 17: 2.66
Jun 17: 0.65
Jul 17: 4.01
Aug 17: 0.42
Sep 17: 2.47
Oct 17: 0.55
Nov 17: 5.83
Dec 17: 2.53
Jan 18: 1.59
Feb 18: 2.23

Water
Injectable
Feed
Least, Intermediate, and Most

**Least Antibiotic Use**
- **0-2 gm/pig**
  - Example of use:
    - 20% of pigs individually treated.

**Intermediate Antibiotic Use**
- **2-15 gm/pig**
  - Example of use:
    - 20% of pigs individually treated.
    - 2 water medication events.

**Most Antibiotic Use**
- **15+ gm/pig**
  - Example of use:
    - 40% of pigs individually treated.
    - 4 water medication events.
Collaboration & Outreach

- Sanford Hospital
- McDonalds
- MN One Health
- USDA
- NARMS
- PACCARB
- University of Minnesota
- South Dakota State University
- National Pork Board
- MN Pork Producers Association
- National Pork Producers Council
- National Institute of Animal Agriculture
- Graduate Education (UMN)
- Producer Webinar Series
- International Consortium on Antibiotic Stewardship in Agriculture (ICASA)