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Section C

How Does MRSA Spread Within and Out of Farms?
Confinements as Amplifiers

- Thousands of animals in a small space
- Ventilation systems circulate aerosolized bacteria
- Low-tech environmental sampling: 10 plates open to air in Production System A barns
- All but one grew MRSA
A Needle in a Haystack vs. A Haystack of Needles

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Follow-up Environmental Sampling

- Andersen impactor
- CFUs/volume of air
- MRSA present in respirable and non-respirable portions; ~700 CFU/m³

Sources: Teagasc, the agricultural and food development authority in Ireland; newterra (formerly Pacwill Environmental). Retrieved from http://www.pacwill.ca/en/ProductsServices/6stage.htm
Follow-up Environmental Sampling

- MRSA ST398 found in showers in pork production facilities
  (Leedom Larson et al.)
Follow-up Environmental Sampling

- MRSA found in swine feed


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Follow-up Environmental Sampling

- MRSA found in meat products
Meat Samples

- One hundred eighty retail meat samples purchased in Iowa
- Two found to be MRSA-positive (1.1%), 27 MSSA-positive (15%)

Meat Samples

Prevalence of *Staphylococcus aureus* and methicillin-resistant *Staphylococcus aureus* (MRSA) on retail meat in Iowa

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What about Organic Meats?

- Are organic meats contaminated?
Retail Pork Study

- Multi-state study: Iowa, Minnesota, New Jersey

- Three hundred ninety-five pork samples (301 conventional, 94 antibiotic-free)

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Retail Pork Study

- Overall MRSA prevalence: 6.6 percent (26/395)
- Conventional meats: 19/301 (6.3%)
- ABF meats: 7/94 (7.4%)
- Other factors than just antibiotic use on farm

MRSA in Conventional and Alternative Retail Pork Products

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Swine, Farmers, and Consumers

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