OAHN – Collaboration and Challenges in Disease Surveillance in Ontario

ONTARIO ANIMAL
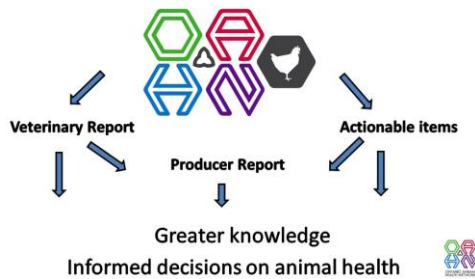HEALTH NETWORK

Who is involved:

Veterinary practitioner	OMAFRA Co-lead	Veterinary practitioner or industry co-lead
AHL species pathologist		OVC species specialist
Veterinary practitioner	Animal Health Network Coordinator	OMAFRA Provincial epidemiologist

Plan for Collaboration:

1. Survey distributed
2. Lab data compiled
3. MEETING/CALL
4. Reports generated quarterly

Survey + Condemnation Data + Lab Data

+ Updates + Research

Veterinary Report   Actionable items

Producer Report

Greater knowledge
Informed decisions on animal health

Collaboration in Action

OAHN Swine network:

- **Disease Trend Identification:**
  - Erysipelas identified to be increasing in observation frequency during consecutive quarters from 2017 into 2018
- **Network Call:** To review and discuss findings
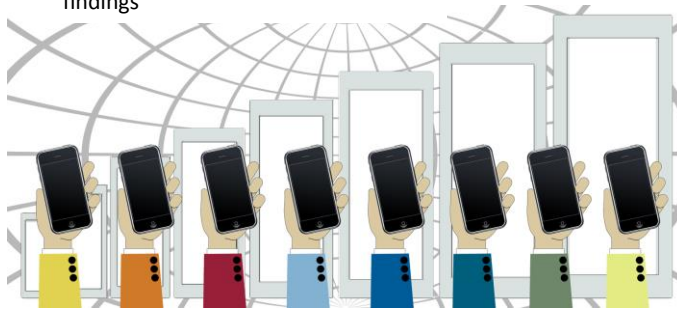
Collaboration in Action

Taking Action:
- **OAHN producer/industry and veterinary reports created** – emphasis on prevention, detection and treatment
- **Producer reports shared** via listservs
- **Network project developed** to:
  1) Confirm presence of Erysipelas in carcasses condemned at abattoirs in Ontario
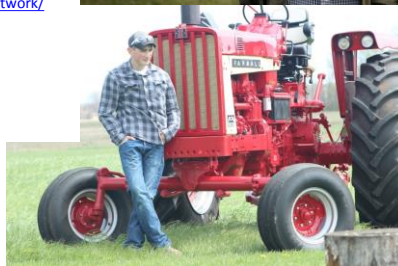 2) Characterize the isolates through whole genome sequencing

Throughout the Process:

Collaboration between OAHN swine network members, private practicing veterinarians, pork producers, Ontario Pork, Swine Health Ontario, Ontario Pork Industry Council, provincial abattoirs, federal abattoirs, pathologists, bacteriologists

Challenges along the way

Slide 1

ONTARIO ANIMAL HEALTH NETWORK

Challenge 1:

Relevance and Information Sharing

- Podcasts https://oahn.ca/?s=podcast
- Facebook posts
  https://www.facebook.com/OntarioAnimalHealthNetwork/
- Twitter posts
  https://twitter.com/OntAnHealthNet
- Infographics
- Projects

Slide 2

ONTARIO ANIMAL HEALTH NETWORK

Powerful Products of Collaboration

**OAHN Companion Animal Network:**

- Produced several successful infographics
- High uptake on social media – recent FB posts on influenza have strong public interest
- Reach to 28800 people, 2900 clicks/comments, 412 shares – 3700 hits on OAHN Canine Influenza page

Project Collaboration – Citizen Reporting

OAHN Wildlife network:
*The Wildlife Tracker*

- **Planning session** at OAHN general meeting identified niche for augmentation of wildlife disease observation

- **Idea:** Involve the public

- **OAHN project:** proposed by OVC network member Claire Jardine

- **Website creation:** Mark Reist, MPH student at OVC, with CWHC, developed website to enable citizen reporting of dead/diseased wildlife
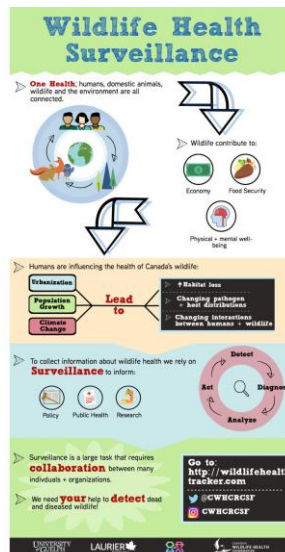
Collaboration Success – Disease Mapping

OAHN Bee network – tiny livestock!
- Mapping is a valuable tool for monitoring spread of pathogens
- *Varroa* **mite workshops organized** for public demonstrating testing methods, treatment
- **Producers tested hives**, submitted results
- **Map produced** of these results to monitor spread of pathogen
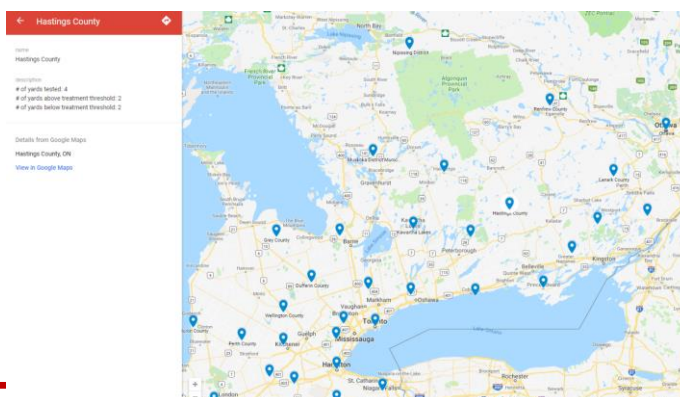
Challenge 2: Group Diversity

Integrating collaborators from multiple sectors:
- Veterinarians, Industry, Government

Creating multiple endpoint products

Collaboration to Provide Training

OAHN Small Ruminant network:

- **Recognized deficit** in training in appropriate on farm euthanasia methods using a captive bolt gun
- **Petitioned OAHN** to support Ontario Goat and OSMA in funding a hands-on training session for producers
- **6 courses held**, and 122 producers trained
- Course provided additional education on culling decisions, timing, and welfare concerns
- **Opened up broader discussion** and consideration of welfare and condemnation at slaughter

Building Trust Between Contributors

OAHN Aquatic Animal Network:
- Building productive relationships between industry, regulated parties, and regulators in disease surveillance can be challenging
- MNR, OMAFRA, and CFIA collaborated through OAHN to develop an agreement regarding roles and responsibilities when reportable aquatic diseases are identified
- Significant as farmed and wild fish often in mixed populations

Challenge 3: Maintaining Momentum

OAHN Bovine Network:
- Chronic diseases, few dramatic outbreaks
- Need observed for clarity in sample submissions to AHL
- Hope for improved diagnostic detail and results to veterinarians
- Ultimately improved diagnostic data for producers
- Templates developed with vets and AHL members of network to guide practitioners through appropriate sample collection for specific disease work up (ie abortion, pneumonia)

Challenge 4: Industry Involvement

- Some networks struggle to encourage involvement from industrial partners

- Most common in situations with multiple industrial groups all with strong individual representation

- Industries may focus on other facets (sport, genetics) as opposed to health and disease

- Other industries very interested in network involvement due to potential disease impact
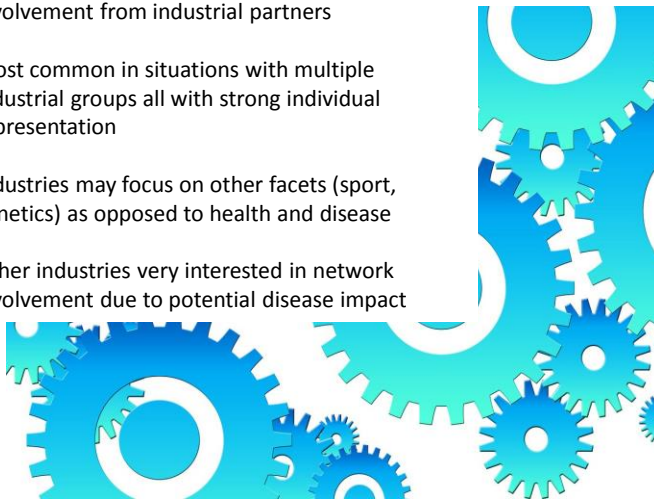
Invitation to Collaboration

OAHN Equine network:

- **Equine Guelph Biosecurity students invited** to submit questions on strangles
- **Questions divided** amongst network members
- **Podcasts created** to provide answers to these common horse-owner queries

Potential for Industry Impact - AMR

OAHN Poultry network:
- **Trend noted** in evaluation data for E. coli as an infection of chickens of all ages
- **OAHN funded** research project
- **Evaluated virulence genes and antimicrobial resistance (AMR)** of avian pathogenic Escherichia coli in Ontario broiler and broiler breeder flocks.
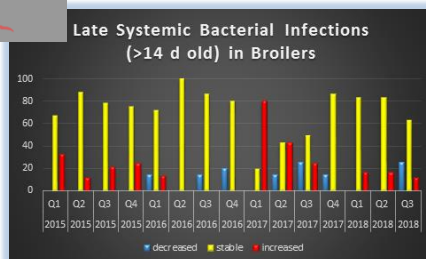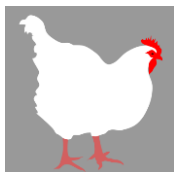
- **Identified high frequencies of resistance** to many antimicrobials that are frequently used to treat colibacillosis in broilers
- **Significant associations noted** between virulence-associated genes and resistance to antimicrobials
- **Provided a benchmark** for reduced anti-microbial use in future

Late Systemic Bacterial Infections (>14 d old) in Broilers

Summary

1) **Relevancy:** Development and distribution of information across platforms
2) **Group diversity:** Open collaboration of group to form consensus
3) **Maintaining momentum:** in cases of chronic disease or slow monitoring process
4) **Industry involvement:** Building trust with all parties, encouraging participation for broad impact, inviting contributions

Challenges will evolve as the network develops.
Flexibility and willingness of contributors helpful to rise to these challenges and achieve successful outcomes in disease surveillance.

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