Evaluation of
Current and Potential Components
of the
Canadian Animal Health Surveillance System

CAHSS Poultry Network Group and NFAHWC Forum
Nov. 29 & 30, 2016
Ottawa
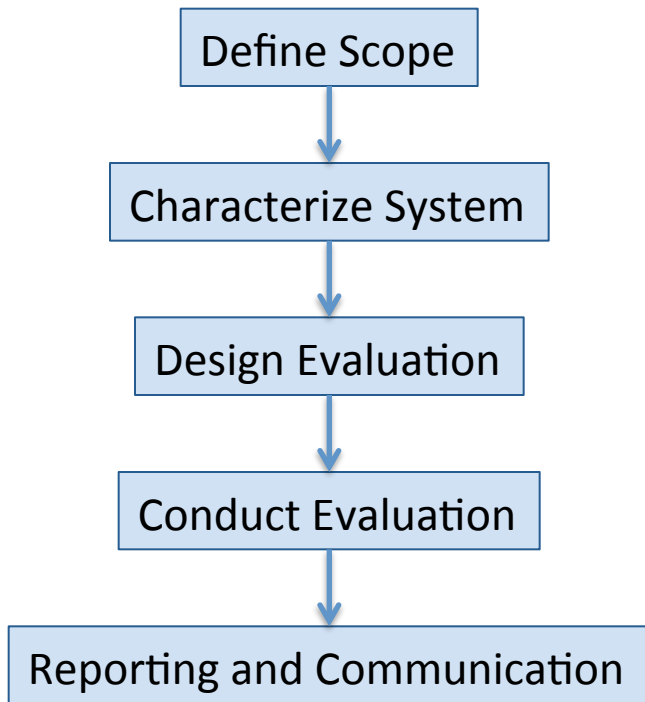
W. Bruce McNab DVM PhD

Bruce **M**cNab **E**pidemiology

Why Evaluation of Surveillance Is Important

- **Animal Agriculture is Important**
  - feeding people, the economy

- **Animal Health is Important**
  - animal welfare, production efficiency, sales/trade
     public health (zoonoses), safe food

- **Animal Health Surveillance is Important**   **QUALITY ASSURANCE "ISO"**
  - demonstrate health & quality context in support of sales
  - detect changes & help manage endemic diseases
  - detect emerging / exotics & help manage emergencies

- **Evaluating Surveillance is Important**
  - to compare & assure surveillance in support of sales/trade
  - to manage & improve surveillance (biggest bang for $)

- **Other Jurisdictions (Canada's competitors) are already doing this**
  - using published surveillance evaluation systems
  - provide evidence of health and safety in support of exports

SERVAL Animal Health Surveillance Evaluation System

Drewe et al. 2015
22 international experts

Define Scope
↓
Characterize System
↓
Design Evaluation
↓
Conduct Evaluation
↓
Reporting and Communication

SERVAL Framework Table
download from www.rvc.ac.uk/serval

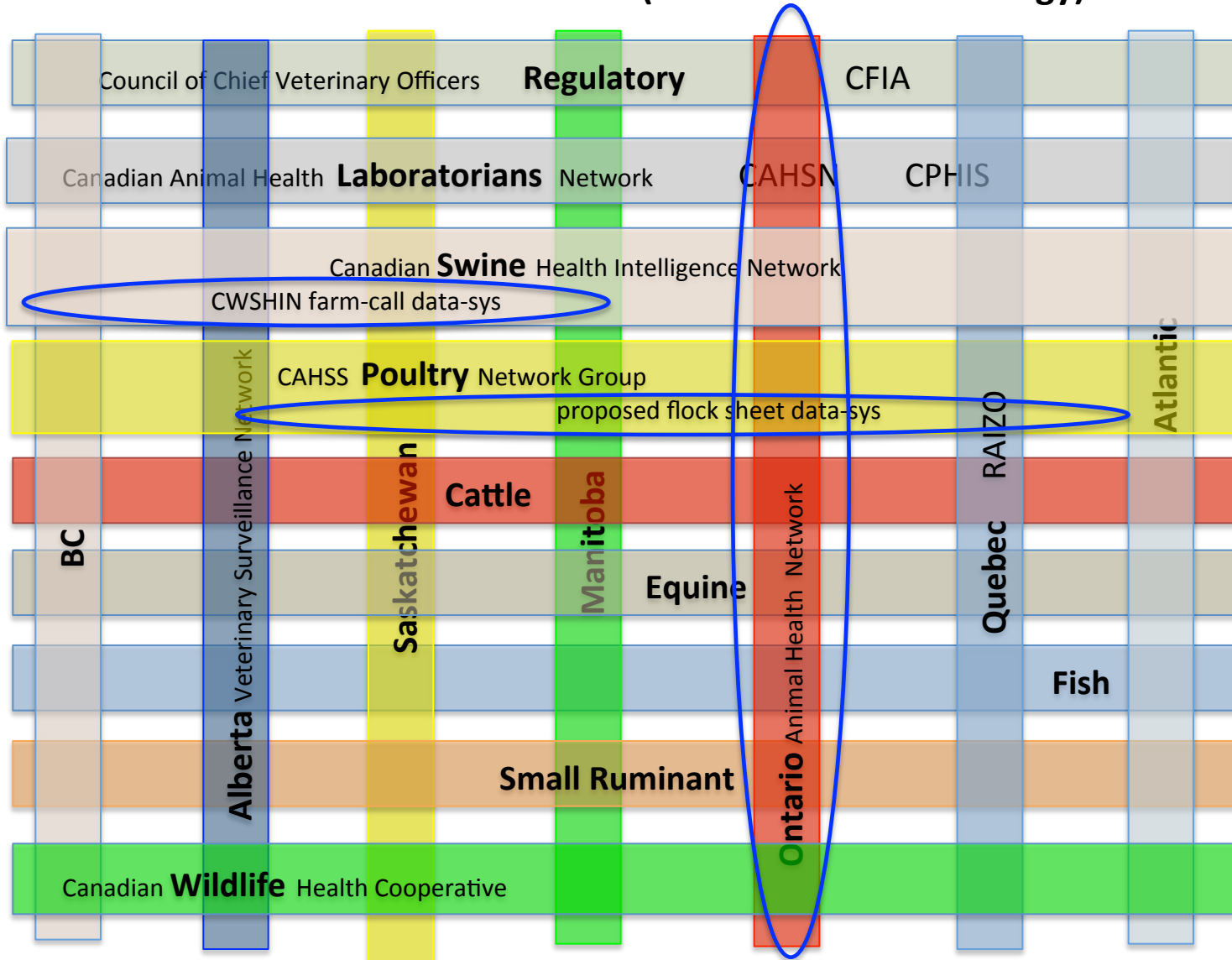| Framework Section	Guidance Notes	Case Study
Scope		
System		
Design Evl		
Conduct Evl		
Reporting		

Can drill down into extreme detail

Study Objectives:
Try Out and Use SERVAL

Study Objectives:

1. To try out SERVAL within the Canadian context,
   using 3 strategically selected components of CAHSS.

2. To Evaluate
   a) The Ontario Animal Health Network (OAHN)
   b) The CWSHIN farm-call data system
   c) A proposed poultry "flock sheet" data system

3. To Identify Potential Additional Data Sources
   - Could be evaluated for expected contribution to surveillance
   - Could be prioritize for further investigation / implementation

Canadian Animal Health Surveillance System

CAHSS Network-of-Networks (tartan schematic analogy)

Council of Chief Veterinary Officers — **Regulatory** — CFIA

Canadian Animal Health **Laboratorians** Network — CAHSN — CPHIS

Canadian **Swine** Health Intelligence Network
CWSHIN farm-call data-sys

CAHSS **Poultry** Network Group
proposed flock sheet data-sys

Cattle

Equine

Fish

Small Ruminant

Canadian **Wildlife** Health Cooperative

BC
Alberta Veterinary Surveillance Network
Saskatchewan
Manitoba
Ontario Animal Health Network
Quebec RAIZO
Atlantic

Findings and Recommendations….

1) Applicability of SERVAL within Canadian Context

Findings:

- Tested SERVAL by applying it as downloaded

- Found SERVAL to be quite thorough and yet flexible for different scenarios

- Thorough but somewhat tedious and repetitive when completed in full

Recommendations:

1. Use SERVAL in Canada to evaluate current and potential components of CAHSS

2. Reformat report from landscape table to portrait document

3. Cut back on introduction detail and focus on evaluation of system attributes

Framework Section	Guidance Notes	Case Study
Scope		
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Introduction
This study …

Eval of Attributes
Attribute "A" was…..

Conclusn & Recomend
We found…..

Findings and Recommendations   cont....

2a) SERVAL Evaluation of Ontario Animal Health Network (OAHN)

Findings:

- SERVAL assessed OAHN as good to excellent on all attributes assessed

- Economic evaluation (albeit crude) indicated strongly positive benefit/cost ratio

- OAHN is meeting its objectives

Recommendations:

1. Encourage direct participation of more industry reps on sector committees

2. Ensure stakeholders appreciate utility of surveillance in support of sales/trade including submission and use of contextual Information (i.e. animals at risk & location)

3. Consider implementing CWSHIN vet/tech-farm-call system in Ontario (swine plus other)

4. Consider implementing "flock sheet" data-sys for health surveillance using owner data

5. More timely reports using more GIS maps in analysis (e.g. coverage and heat maps)

6. CAHSS encourage other provinces and regions to meet or exceed OAHN

Findings and Recommendations   cont....

2b) SERVAL Evaluation of CWSHIN vet/tech-farm-call data system

Findings:

- SERVAL evaluated farm-call data sys as good to excellent on all attributes assessed

- Essentially all "room for improvement notes" related to broader implementation

- Economic analyses (albeit crude) indicated positive benefit/cost ratio

- Essentially all development, implementation, testing work and costs done and paid

Recommendations:

1. Implement CWSHIN vet/tech-farm-call data system in swine across Canada

2. Encourage development and implementation in all major farmed species

3. Improve ease of linking with vet-practice management systems for data entry and ease of tailored reports from veterinarians to respective clients, relative to region and nation

4. Use data to map surveillance coverage by veterinarians and what they see (aggregate shaded "heat" maps for CAHSS to get credit for surveillance already being done)

Findings and Recommendations   cont....

2c) SERVAL Evaluation of proposed "flock sheet" analytic data system

Findings:

- Owner observations captured on "flock sheets" provide valuable surveillance information

- All expected SERVAL attributes of the proposed system were assessed as good to excellent (would help Canada to get credit for surveillance already being done)

- Some existing electronic systems (e.g. CFO - designed to manage bird-flow, "flock sheets" & monitor AMU), already capture the data; just need to add epidemiological analytic module, for big return on marginal investment

Recommendations:

1. Get detailed cost estimates, with intention of implementing electronic "flock sheet" data system (with capacity to conduct analyses for health surveillance, including mapping), to be implemented for all poultry entering federally <u>and</u> provincially inspected abattoirs across Canada.

2. Consider potential application of the principals to pork and beef sectors (i.e. record and get surveillance credit for animal health observations made by animal owners and custodians)

Findings and Recommendations   cont....

3) Potential additional surveillance data sources

Findings & Recommendations: Use SERVAL to assess/prioritize potential/proposed data

General Source	More Specific Sources	Comments re some key surveillance attributes
Lab data	Collating lab data	Timely, sensitive, specific, representative of cases serious enough to submit to lab. Challenge of: variation in coding, complexity of interpretation, analyses
Official **Inspections**	fed/prov/industry farm/ship/mrkt/abbtr exprt/QA inspections	Timely, sensitive, needs lab follow-up for specificity, Bias towards healthy animals, but shows extent of healthy and extent of absence of serious disease (should get credit)
Vet / Tech **Observations**	Data from each farm call	More timely, more sensitive, more specific but still require lab Bias towards animals having veterinary care; also shows coverage of professional observation surveillance coverage
Owner Observations	Observ: health, cnsumptn, prductivity	Very timely, sensitive, but requires lab follow up for disease specificity; But extensive coverage, contributes to specificity of the system helping show where serious disease is NOT
Owner Actions	Prvntive & treatmnt pharmaceutical use	Could be more sensitive to detect situations requiring pharma, Depending on product may vary in specificity
Owner/Vet Queries	Internet, social media, queries, blog discussions	Research in public health shows this more timely CEZD-IIR looking into this

Take Home Bottom Line ....

Animal Health Surveillance Is IMPORTANT as your QA

Evaluation / Demonstration of Surveillance is IMPORTANT

1. The SERVAL Animal Health Surveillance Evaluation System works and should be used in Canada.

2. a) The OAHN
   - works well, can be refined, other provinces/regions should meet or exceed

   b) The WCSHIN farm-call system
   - works well, should be expanded across Canada, in all farmed species

   c) The proposed "flock sheet" data / analyses system
   - would contribute greatly, should be developed and implemented fed & prov

3. Others data sources for surveillance
   - should be further characterized and assessed/prioritized for implementation

QA We know we matter because we enumerate - We count because we count !

Questions ?