



The first video-conference meeting of the Western Canadian Animal Health Network (WeCAHN) poultry network was held 26<sup>th</sup> February, 2021, discussing the period Oct.-Dec. 2020, with poultry practitioners, laboratory diagnosticians, veterinary epidemiologists, veterinary college faculty and researchers, and a representative from the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) in attendance.

#### Meeting objectives:

To identify poultry health trends occurring during the time period under discussion (Oct.-Dec. 2020).

To identify potential data sources to support discussion at future network meetings.

To discuss the best/preferred approach to presenting and sharing data and information.

**Dataset:** Practitioners' clinical impressions survey, laboratory data from Manitoba VSL, Prairie Diagnostic Services, and University of Calgary, and CFIA western federal poultry abattoir condemnation data, as well as an overview of recent CIPARS poultry sampling.

**Clinical impressions survey:** 'Commonly diagnosed across practitioners' was defined for purposes of this report as 2 or more practitioners reporting diagnosing a given pathogen 1-2 times or more, per month, from Oct.-Dec. 2020. 'Increasing' over time, for purposes of this report, was defined as one or more practitioners categorised syndrome as increasing relative to July-Sept.2020.

**Broiler diseases:** Commonly diagnosed syndromes: early systemic bacterial infections; late systemic bacterial infections; other causes of early mortality; ascites; Inclusion Body Hepatitis; Infectious Bronchitis; Infectious Bursal Disease; bacterial, viral, or developmental lameness; and condemnation issues.



**Time trends:** Increasing frequency of diagnoses relative to previous time period (July-Sept. 2020): ascites, Inclusion Body Hepatitis, and developmental lameness.

**Broiler-breeder diseases:** Commonly diagnosed syndromes: early systemic bacterial infection; other causes of early mortality; coccidiosis, in-lay bacterial septicemia; bacterial lameness; *Salmonella* confirmed by the lab, and aggression and cannibalism. **Time trends:** Increasing frequency of diagnosis: *Salmonella* confirmed by the lab.

**Layer diseases:** Commonly diagnosed syndromes: bacterial peritonitis/salpingitis, aggression/cannibalism, IBV associated with production drop. Salmonellosis confirmed by the lab was reported very frequently by one practitioner. **Time trends:** Increasing diagnosis: aggression-cannibalism .

**Turkey diseases:** Commonly diagnosed syndromes: early bacterial systemic infection, late bacterial systemic infection, other early mortality, aggression-cannibalism, and round heart. **Time trends:** Increasing: early bacterial systemic infections, histomoniasis, aggression and cannibalism, and round heart.

## INTRODUCTION:

The first video-conference meeting of the WeCAHN poultry network was held 26<sup>th</sup> February 2021, discussing data and events occurring from October-December, in poultry animal health in western Canada.

### *Participants attending the meeting:*

- Poultry practitioners representing the f western provinces.
- Provincial veterinary epidemiologists.
- Diagnostic laboratory representatives.
- Faculty from each of the western veterinary colleges.
- Representative from the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS).

### **Data discussed:**

- Poultry veterinarians completed an online clinical impressions survey capturing the relative frequency of diagnosis of various clinical syndromes and associated agents, as well as new diagnoses or unusual presentations of recognized clinical syndromes.

- Laboratory data pertaining to poultry submissions collected during the period October-December 2020.
- CFIA abattoir condemnations publicly available, originating from the four western provinces.
- An overview of CIPARS poultry sampling programs.

## FINDINGS:

### 1. Practitioners' survey

The purpose of the clinical impressions survey is to be a simple, quick overview of diagnoses by practitioners, which does not require practitioners to extract data from their information management systems to complete (as this can be a major barrier to participation).

It asks practitioners to report, for a list of selected pathogens/syndromes for each of the four feather groups, how frequently (never/rarely/commonly/very frequently, as defined within the survey) they have diagnosed these pathogens over the time period in question (for this pilot meeting of the network, Oct.-Dec. 2020). Additionally, they are asked whether, compared to the previous time period (for purposes of this meeting, July-Sept. 2020) their diagnosis of these pathogens is increasing/ decreasing/ or stable.



**Broiler production:** Commonly (defined for purposes of this report as 2 or more individual practitioners reporting a syndrome diagnosed once or twice a month, or more frequently, in the practitioners' survey) reported diagnoses included:

- Early systemic bacterial infections,
- Late systemic bacterial infection
- Other causes of early mortality
- Ascites
- Inclusion Body Hepatitis
- Infectious Bronchitis
- Infectious Bursal Disease
- Bacterial, viral, and developmental lameness
- Condemnation issues

**Time trends:** Ascites, Inclusion Body Hepatitis, developmental lameness, and *Salmonella* confirmed by the lab, were each diagnosed with increasing frequency by one or more practitioners, relative to the previous time period (July-Sept. 2020).



**Broiler-breeder production:**

Commonly diagnosed syndromes included:

- Early systemic bacterial infection
- Other early mortality
- Coccidiosis
- In-lay bacterial septicemia
- Bacterial lameness
- *Salmonella* confirmed by the lab
- Aggression and cannibalism.

**Time trends:** *Salmonella* confirmed by the lab was reported increasing in broilers by one practitioner relative to the previous (July-Sept. 2020) 3 months.

**Layer production:** Commonly reported diagnoses included:

- Bacterial peritonitis/salpingitis
- Aggression/cannibalism
- IBV associated with production drop
- Salmonellosis confirmed by the lab

**Time trends:** Aggression-cannibalism was categorized increasing in frequency in layers by one practitioner, relative to the previous 3 months.

**Turkey production:** Commonly diagnosed syndromes included:

- Early bacterial systemic infection.
- Late bacterial systemic infection.
- Other early mortality.
- Aggression-cannibalism.
- Round heart.

**Time trends:** Early bacterial systemic infections, Histomoniasis, aggression and cannibalism, and Round Heart were each reported by one or more practitioners to be increasing relative to the previous 3 months.



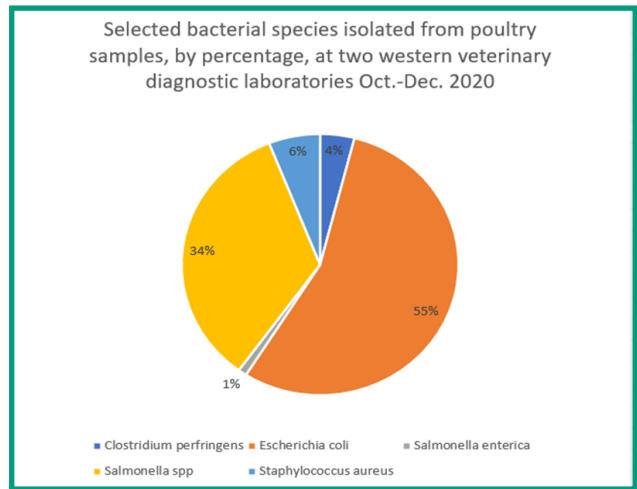
## 2. Western veterinary diagnostic laboratory data

Bacteriology, PCR detection, and pathology data were shared by provincial laboratories from Manitoba, Saskatchewan and Alberta. Count data combined across laboratories were presented for each of these disciplines.

### i. Bacterial culture of selected potential pathogens from two western diagnostic laboratories:

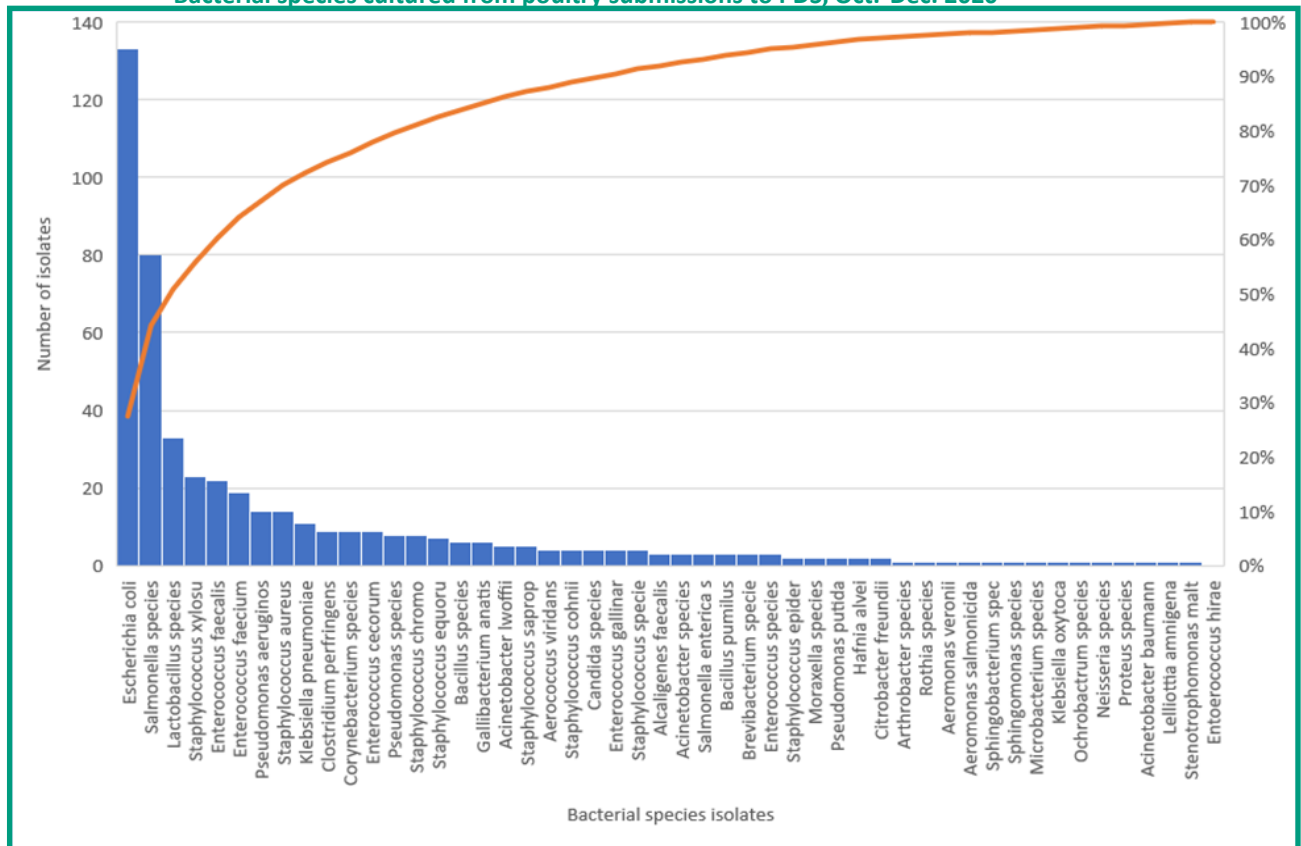
A small number of potentially pathogenic bacterial species accounted for the majority of 'positive' isolations, across two reporting diagnostic laboratories.

Proportion of selected bacteria isolated from 'positive' poultry samples at PDS and Manitoba VSL, Oct.- Dec. 2020



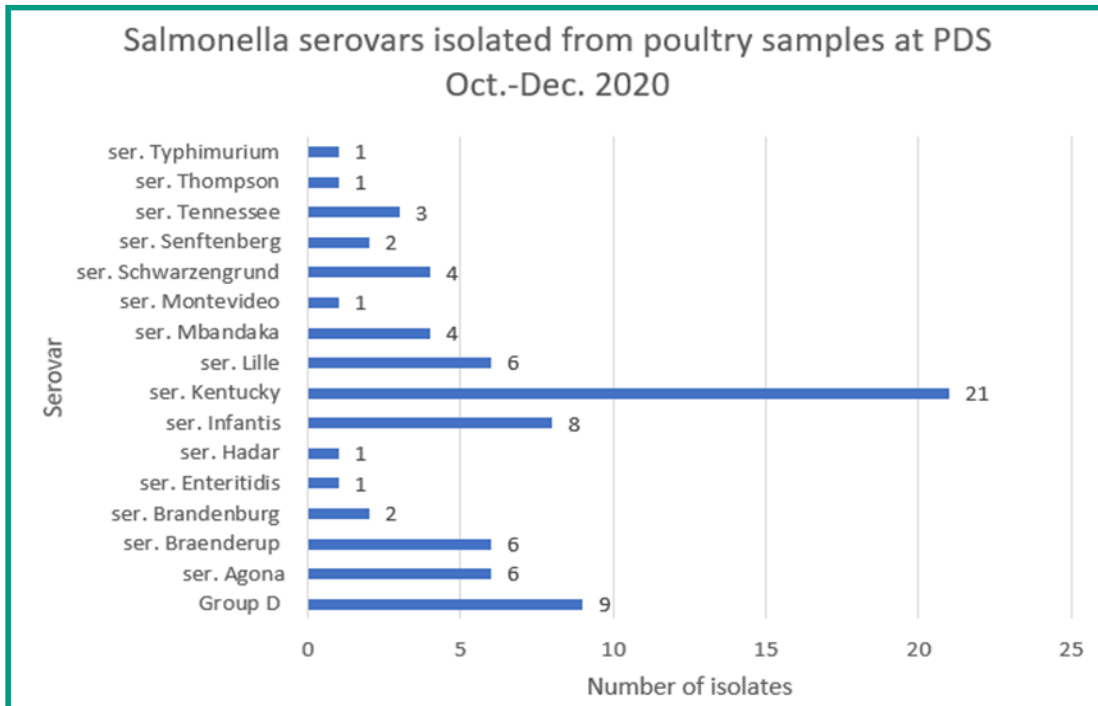
However, many more non-pathogenic species were also cultured, demonstrating the need for careful interpretation of laboratory culture reports.

Bacterial species cultured from poultry submissions to PDS, Oct.-Dec. 2020



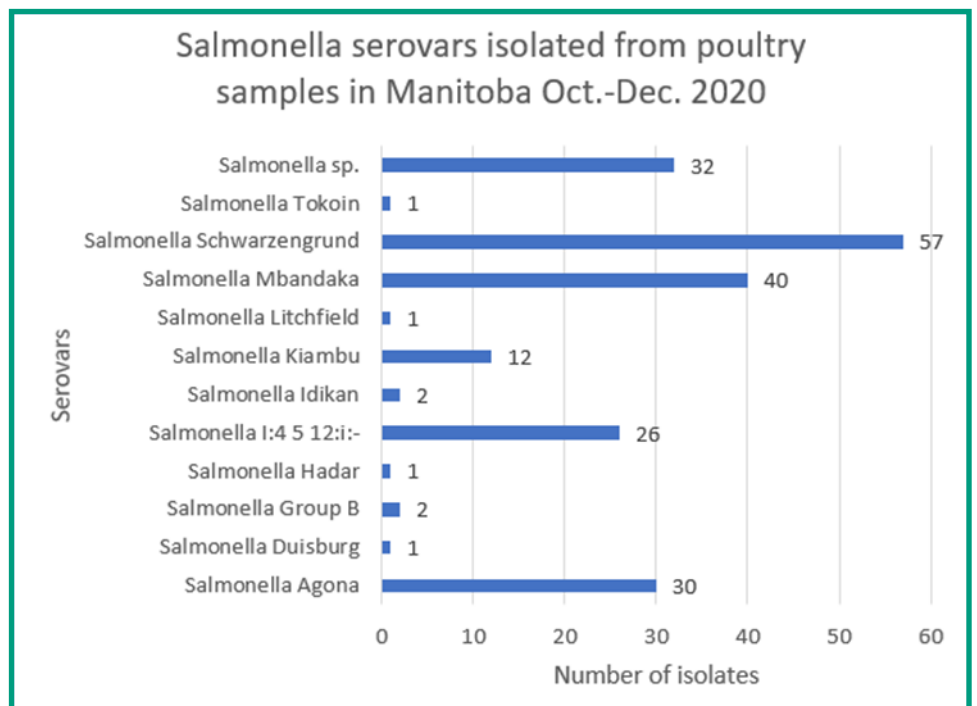
## ii. *Salmonella* serovars isolated from two western diagnostic laboratories

Prairie Diagnostic Services: *Salmonella* serovars isolated from poultry samples Oct.-Dec. 2020



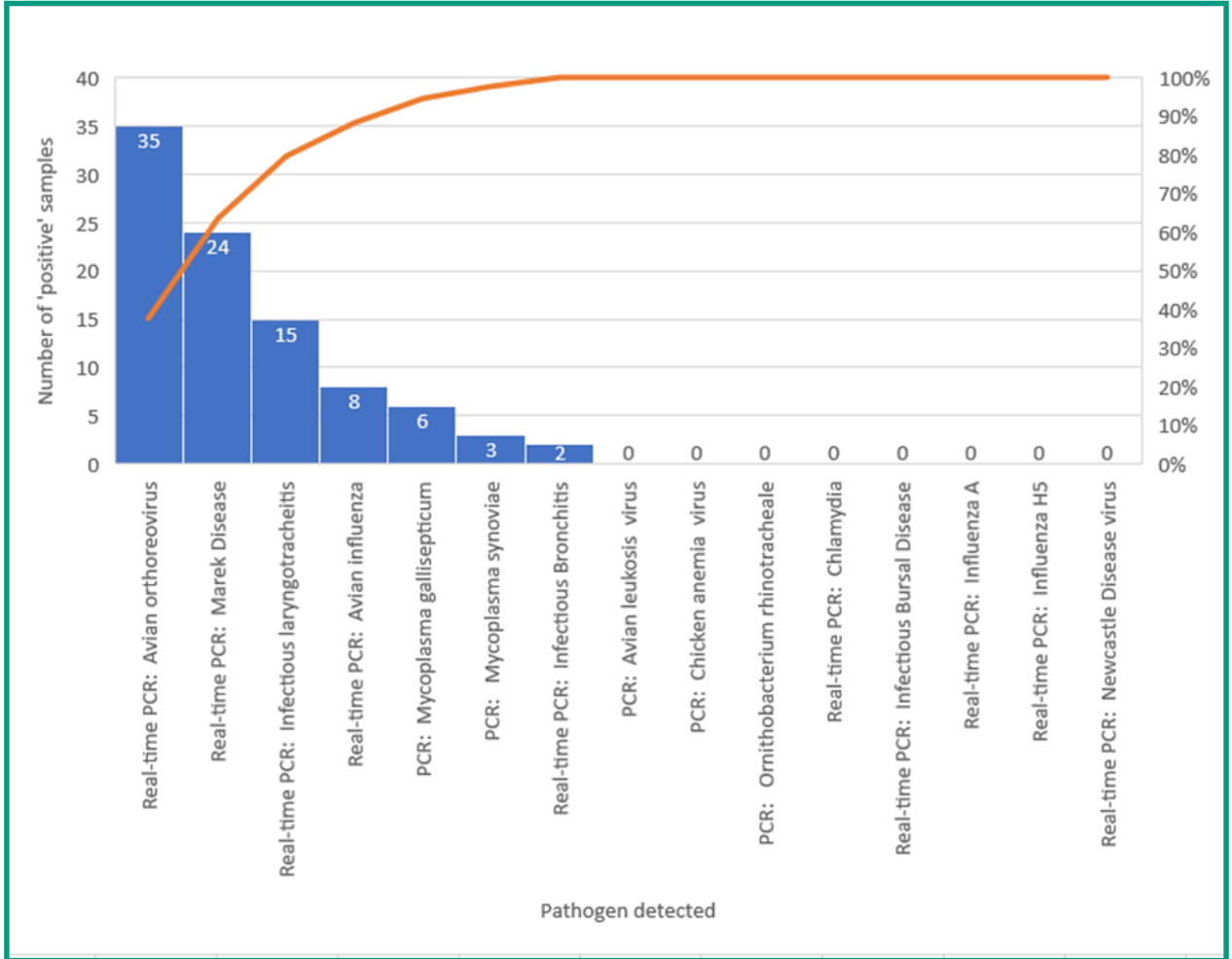
Regional variation in the relative importance of serovars was noted, with the suggestion that *S. Enteritidis*, which was not commonly reported on the prairies, was one of the predominate serovars isolated from poultry samples in B.C. One aim for the poultry network going forward is to include more lab data originating from B.C. sources.

Manitoba Veterinary Services Laboratory: *Salmonella* serovars isolated from poultry samples Oct.-Dec. 2020



iii. PCR detection of selected common pathogens from two western laboratories

Counts of PCR detection of selected common poultry pathogens, combined across PDS and Manitoba VSL poultry submissions, Oct- Dec. 2020



These counts, and the relative proportions of major pathogens detected, largely mirror the practitioners' clinical impressions survey data. One exception would be the ILT detections, which represent smallholder submissions to both laboratories.



## REPORT FROM CIPARS:

- Dr. Agnes Agunos gave an overview of her work in the CIPARS poultry program, monitoring antimicrobial usage and antimicrobial resistance. The program monitors AMR trends in several key bacteria (*E. coli*, *Salmonella* spp., *Campylobacter* spp.).
- The most recent report on broiler flocks (which collected samples in 2019) identified regional variations in the species of *Salmonella* cultured from the participating flocks, with *S. Kentucky* being predominate nationally. While the percentage of *Salmonella* positive flocks trended up relative to the preceding year (2018) in B.C., the trend was downward for the prairie provinces.
- CIPARS' 2019 broiler flock study also identified that while much of the participating broiler population could be categorized as raised within 'low' to 'medium' AMU. Nationally, usage of bacitracins, especially for Necrotic Enteritis control, increased, while usage of virginiamycin and tylosin decreased.

## CFIA monthly condemnation data 2020

Examination of publicly available data on poultry condemnations from western federal abattoirs , reported monthly for 2020, identified:

- Uptick in birds found dead, in January.
- Increase in total post-mortem condemnations in August and October.
- Increase in bruising condemnations in August and October.





### Meeting takeaways:

Local/provincial variations in the frequency of diagnosis of some specific pathogens was apparent.

Some of the difficulties in distinguishing between treatment failure and antimicrobial resistance or logistics/vaccination timing were discussed, highlighting the need for consultation with veterinary practitioners and labs to mitigate or treat poultry flock health challenges.

**This report should be interpreted carefully: the data are passively acquired from laboratories, practitioners, or other sources. This limits to an unknown extent how complete, or representative, the data are for the four major western feather groups.**

