Agriculture

Supporting PEI Animal Agriculture Producers with Local Diagnostic Services Program
Necropsy Activity Analysis Report
2023-2025



Executive Summary

This report provides an overview of 2023 to 2025 necropsy submissions conducted under the "Supporting PEI Animal Agriculture Producers with Local Diagnostic Services" program; a Prince Edward Island (PEI) Department of Agriculture–Atlantic Veterinary College Diagnostic Services (AVC-DS) diagnostic funding agreement that encourages the submission of Island livestock for necropsies by subsidizing the cost of this service for Island producers. The analysis focuses on trends in necropsy activity, disease patterns, pathogen detection, and antimicrobial susceptibility testing.

Necropsy submissions increased over the study period, with 2025 representing the highest level of activity. This suggests improved program uptake and more consistent participation over time, although submission levels may still vary by species and producer/veterinary engagement.

Bovine cases accounted for the majority of submissions and provided the most robust dataset for analysis. Across species, disease patterns varied between years, with notable shifts between respiratory and enteric conditions, particularly in bovine and ovine cases. These changes likely reflect a combination of management, environmental, and population factors.

Pathogen analysis showed evolving patterns over time, particularly in bovine cases, where several bacterial and viral agents increased in frequency. In contrast, pathogen data for other species were more variable, limiting the interpretation of trends.

Antimicrobial susceptibility testing increased over time; however, the number of isolates for which sensitivity was determined remained limited, and results should be interpreted with caution.

Overall, the findings highlight the value of the necropsy program as a tool for monitoring animal health and disease trends in Prince Edward Island. Continued participation and data collection will further strengthen its role in supporting surveillance and evidence-based decision-making.

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1. Introduction

This report presents an analysis of 2023-2025 necropsy submissions conducted under the "Supporting PEI Animal Agriculture Producers with Local Diagnostic Services" program; a Prince Edward Island (PEI) Department of Agriculture–Atlantic Veterinary College Diagnostic Services (AVC-DS) diagnostic funding agreement that encourages the submission of Island livestock for necropsies by subsidizing the cost of this service for Island producers. The dataset includes only cases submitted through this program and does not represent all necropsies performed at AVC, all animal deaths on Prince Edward Island, or the full spectrum of pathogens and antimicrobial resistance patterns in the PEI livestock population.

A year-over-year approach was used to describe patterns in necropsy activity, including variation in submission volume, monthly distribution, and differences across species. Disease patterns were examined within species using the primary diagnosis recorded for each case.

A syndrome-based classification (respiratory, enteric, sepsis/endotoxemia, and other conditions) was used to allow consistent comparison across years and species, acknowledging that a single definitive cause of death could not be determined in all cases. Diagnostic limitations may arise due to antimicrobial treatment, post-mortem autolysis, incomplete tissue preservation, and multifactorial disease processes, with many cases presenting multiple concurrent lesions.

Necropsy submissions reflect voluntary participation and may vary over time depending on producer awareness, economics, logistics and willingness to submit cases. As the program was initiated at the end of 2022, lower submission numbers observed in early 2023 may reflect initial program uptake. Therefore, the results presented in this report describe observed patterns from these voluntary submissions and should be interpreted within this context.

In addition, this report includes a summary of antimicrobial susceptibility testing and pathogen detection to provide an overview of pathogen distribution and resistance patterns within the dataset.

2. Necropsy Activity Overview (2023–2025)

2.1 Year-over-Year Comparison

Table 1: Year-over-year comparison of necropsy activity under the Supporting PEI Animal Agriculture Producers with Local Diagnostic Services 2023–2025

	2023	2024	2025
Total number necropsies	169	153	182
Average necropsies per month	14.1	12.8	15.2
Highest # necropsies in a month	20	22	27
Lowest # necropsies in a month	6	4	7

Table 1 summarizes the temporal evolution of necropsy activity from 2023 to 2025. Overall, 2025 represents the strongest year, with a notable increase in total necropsies compared with 2024, indicating recovery following a temporary decline. The average number of necropsies per month increased for 2025, reflecting more consistent activity throughout the year. In addition, peak monthly submissions reached higher levels in 2025, while the minimum monthly values also increased, indicating fewer low-activity periods. Together, these findings suggest that necropsy activity has not only increased in volume but has also become more stable over time.

2.2 Monthly Trends

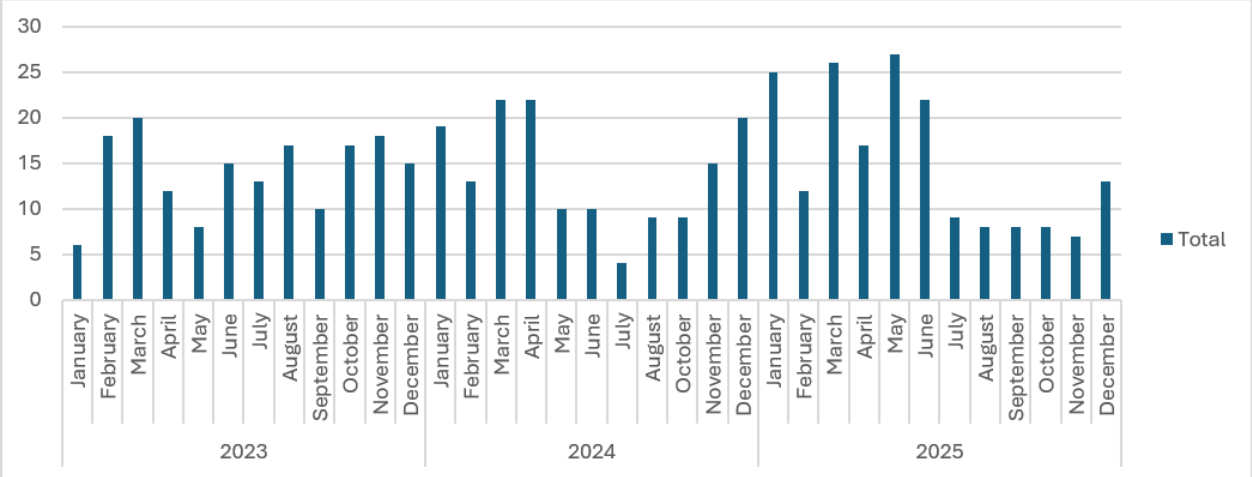


Figure 1. Monthly Totals and Trends from 2023 to 2025

Figure 1 shows the monthly totals recorded from 2023 to 2025. The values vary across the months within each year, showing a clear pattern of fluctuation over time. In 2023, the values increase from January to March, followed by variations with both decreases and increases throughout the remaining months.

In 2024, a similar pattern is observed, with relatively higher values recorded between March and May, followed by a noticeable decrease during the middle of the year and a subsequent rise towards the end of the year.

In 2025, the values reach some of the highest levels in the entire period, particularly between February and May, after which a gradual decrease is observed during the later months.

Overall, the figure shows that the monthly values fluctuate throughout each year, with periods of increase and decrease, while some of the highest values are concentrated in the early months of 2025 compared to previous years. A tendency for increased submissions during late winter and spring is observed across years, with March consistently representing one of the higher monthly values, although not always the peak. However, this pattern should be interpreted cautiously, as submission frequency may have several influences including but not limited to producer and veterinary practices and seasonal economic factors. In addition, early 2023 values should be interpreted with caution, as the program was newly implemented and submission patterns were still being established. Please see Appendix 1 for more details.

3. Distribution of Submissions by Species

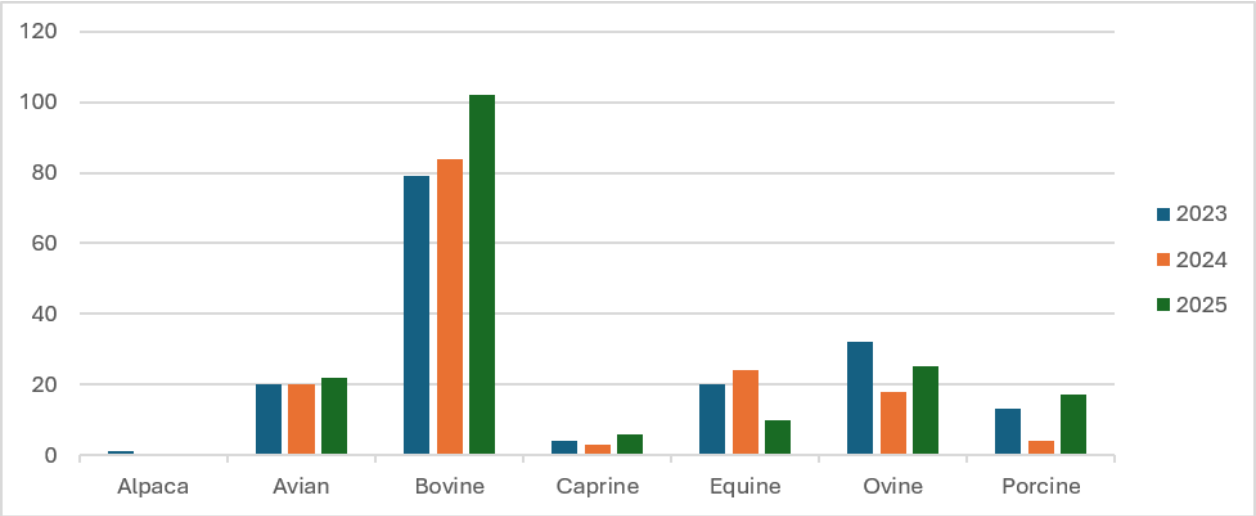


Figure 2: Number of animals submitted for necropsy by species under the Supporting PEI Animal Agriculture Producers with Local Diagnostic Services program, 2023–2025

Figure 2 illustrates the distribution of necropsy submissions by species from 2023 to 2025. Overall, bovine cases account for the largest proportion of submissions across all years, with a marked increase from approximately 80 cases in 2023 to over 100 in 2025. Avian submissions remain relatively stable over time, while ovine and porcine cases show moderate fluctuations over the years.

Submissions for equine and caprine species are comparatively low, with some variation, including a decline in equine cases in 2025. Alpaca cases are minimal across all years. Overall, the data indicates that necropsy activity under the program is primarily driven by bovine cases, while other species contribute smaller and more variable numbers.

4. Disease Patterns by Species

4.1 Bovine

Table 2. Primary Diagnoses in Bovine Cases (2023–2025) — Year-over-Year Analysis (N=265)

Category (Primary Diagnosis)	2023(79)	2024(84)	2025(102)
Respiratory disease (Bronchopneumonia, interstitial pneumonia, bronchointerstitial pneumonia, pleuropneumonia, respiratory failure)	38%	27% ↓	38% ↑
Enteric disease (Enteritis, diarrhea, enterocolitis, neonatal scours, abomasitis, abomasal ulcers, perforation, clostridial enteritis)	27%	41% ↑	30% ↓
Sepsis / Endotoxemia (Septicemia, endotoxemia, septic shock, bacteremia. Only when recorded as primary diagnosis)	9%	10% ↑	5% ↓
Other conditions (Congenital defects, metabolic disease, emaciation, trauma, cardiac disease, abortion, unknown)	26%	22% ↓	27% ↓

Bovine cases showed clear year-to-year variation in disease patterns across the study period. Respiratory disease was the predominant category at baseline, while enteric conditions represented a substantial secondary contribution.

In 2024, a notable shift occurred, with enteric disease becoming the dominant category, indicating a substantial increase in gastrointestinal involvement, particularly conditions associated with enteritis and neonatal diarrhea. This shift coincided with a decline in respiratory diagnoses and a modest increase in cases classified as sepsis.

In 2025, respiratory disease re-emerged as the leading category, while enteric disease remained an important contributor, reflecting a transition toward a mixed disease pattern rather than a return to baseline conditions. Sepsis and endotoxemia remained relatively uncommon as primary diagnoses across all years.

Variability in cases classified under “other conditions” suggests differences in case complexity and diagnostic resolution over time.

Overall, bovine data indicate a dynamic transition from a respiratory-dominated pattern to an enteric-dominated phase, followed by a mixed distribution, potentially reflecting shifts in management practices, environmental conditions, or population dynamics.

4.2 Avian

Table 2. Primary Diagnoses in Avian Cases (2023–2025) — Year-over-Year Analysis (N=62)

Category (Primary Diagnosis)	2023 (20)	2024 (20)	2025 (22)
Enteric disease (enteritis, necrotizing enteritis, colibacillosis, enterocolitis, parasitism)	50%	75% ↑	45% ↓
Respiratory disease (avian influenza, pulmonary lesions)	0%	0% →	18% ↑
Sepsis / Endotoxemia (septicemia, bacteremia)	20%	0% ↓	0% →
Other conditions (trauma, cannibalism, neuropathy, metabolic, unknown)	30%	25% ↓	36% ↑

Avian cases demonstrated variability in disease patterns over time, with enteric disease consistently representing a major component and becoming dominant in 2024. This highlights the importance of gastrointestinal and infectious conditions during that period.

In 2025, the distribution became more heterogeneous, with the emergence of respiratory-related conditions alongside a relative decline in enteric disease. Other conditions, including nutritional and management-related factors, also contributed more prominently.

Overall, avian cases show a transition from an enteric-focused pattern toward a more diverse distribution of disease syndromes, suggesting increased variability in underlying health challenges.

4.3 Caprine

Primary Diagnoses in Caprine Cases (2023–2025) — Year-over-Year Analysis (N=13)

Category (Primary Diagnosis)	2023 (4)	2024 (3)	2025 (6)
Respiratory disease (aspiration pneumonia, chronic pneumonia, bronchopneumonia, pleuropneumonia, pulmonary edema)	50%	67% ↑	17% ↓
Enteric / metabolic / nutritional (emaciation, endoparasitism, parasitism, hypoglycemia)	50%	0% ↓	33% ↑
Sepsis / Endotoxemia (sepsis, septic shock, peracute bacterial infection)	0%	33% ↑	0% ↓
Other conditions (meningoencephalitis, myocarditis, degenerative myelopathy, musculoskeletal abnormalities, unclear)	0%	0% →	50% ↑

Caprine cases showed considerable variability across years, with a balanced distribution between respiratory and enteric or nutritional conditions in 2023. In 2024, respiratory disease predominated and was accompanied by sepsis-related diagnoses, suggesting more acute clinical presentations.

In 2025, the pattern shifted toward a more heterogeneous distribution, with a higher proportion of cases classified under other conditions, including neurological and cardiac findings, along with a reduction in respiratory diagnoses.

Overall, caprine cases demonstrate fluctuating patterns over time, likely influenced by low submission numbers and case-level variability, limiting broader interpretation.

4.4 Equine

Primary Diagnoses in Equine Cases (2023–2025) — Year-over-Year Analysis (N=54)

Category (Primary Diagnosis)	2023 (21)	2024 (23)	2025 (10)
Respiratory disease (pneumonia, pleuropneumonia)	40%	13% ↓	0% ↓
Enteric disease (colic, enteritis, intestinal conditions)	30%	33% →	20% ↓
Sepsis / Endotoxemia (sepsis, septic shock)	0%	29% ↑	20% ↓
Other conditions (reproductive, neuro, neoplasia, renal, trauma, cardiac, metabolic, unclear)	30%	25% →	60% ↑

Equine cases also demonstrated variability across the study period. In 2023, respiratory disease predominated, largely owing to an outbreak of Equine Viral Arteritis during this period, alongside a notable contribution of enteric conditions.

In 2024, the distribution became more balanced, with an increase in enteric and sepsis-related diagnoses and a decline in respiratory cases. In 2025, a marked shift toward “other conditions” was observed, indicating a more heterogeneous case mix.

Overall, equine cases reflect a transition from a respiratory-influenced pattern to a more diverse and less predictable distribution of diagnoses over time.

4.5 Ovine

Primary Diagnoses in Ovine Cases (2023–2025) — Year-over-Year Analysis (N=75)

Category (Primary Diagnosis)	2023 (32)	2024 (18)	2025 (24)
Respiratory disease (bronchopneumonia, bronchointerstitial pneumonia, pulmonary edema)	22%	28% ↑	21% ↓
Enteric disease (enteritis, coccidiosis, parasitism, abomasal disease, diarrhea)	50%	44% ↓	46% ↑
Sepsis / Endotoxemia (sepsis, septicemia, endotoxemia, septic peritonitis)	9%	11% ↑	8% ↓
Other conditions (reproductive, neuro, trauma, neoplasia, cardiac, metabolic, unclear)	19%	17% ↓	25% ↑

Ovine cases were consistently dominated by enteric disease across the study period, with gastrointestinal conditions such as coccidiosis, parasitism, and enteritis representing the largest proportion of diagnoses in all years. Respiratory disease remained an important secondary contributor.

In 2024, a slight reduction in enteric cases was observed, accompanied by a relative increase in respiratory and sepsis-related diagnoses. In 2025, the overall pattern remained stable, although cases classified as “other conditions” increased, reflecting greater diagnostic diversity.

Overall, ovine cases exhibit a stable enteric-dominated pattern with moderate year-to-year variation and a gradual increase in diagnostic heterogeneity.

4.6 Porcine

Primary Diagnoses in Porcine Cases (2023–2025) — Year-over-Year Analysis (N=34)

Category (Primary Diagnosis)	2023 (13)	2024 (4)	2025 (19)
Respiratory disease (bronchopneumonia, pulmonary edema, Glässerella, Pasteurella)	31%	25% ↓	21% ↓
Enteric disease (colitis, diarrhea, enteritis, Salmonella, rotavirus, E. coli, Lawsonia)	38%	25% →	32% ↑
Sepsis / Endotoxemia (septicemia, septic shock, Actinobacillus, systemic infection)	8%	50% ↑	21% ↓
Other conditions (derma, cardiac, metabolic, trauma, non-specific, unclear)	23%	0% ↓	26% ↑

Porcine cases showed marked variation between years. In 2023, enteric disease was the dominant category, followed by respiratory conditions. In 2024, sepsis-related diagnoses increased substantially, representing the majority of cases, although the total number of submissions was low.

In 2025, enteric disease again became prominent, accompanied by increases in both sepsis and "other conditions," indicating a broader distribution of disease processes.

Overall, porcine data suggest episodic variation influenced by low sample size in some years, with intermittent increases in systemic infections that may reflect outbreak-type events.

5. Pathogen Distribution and Trends

Bovine cases have been chosen to be described in more detail because they represent the majority of submissions and provide more consistent data for evaluating pathogen trends over time. In other species, pathogen detection is variable between years, limiting detailed interpretation. Results for all species are presented in Appendix 2. Bovine viral diarrhea (BVD) was classified under the enteric syndrome category for the purposes of this report. However, it is important to recognize that BVD is a systemic disease that can affect both the respiratory and enteric systems.

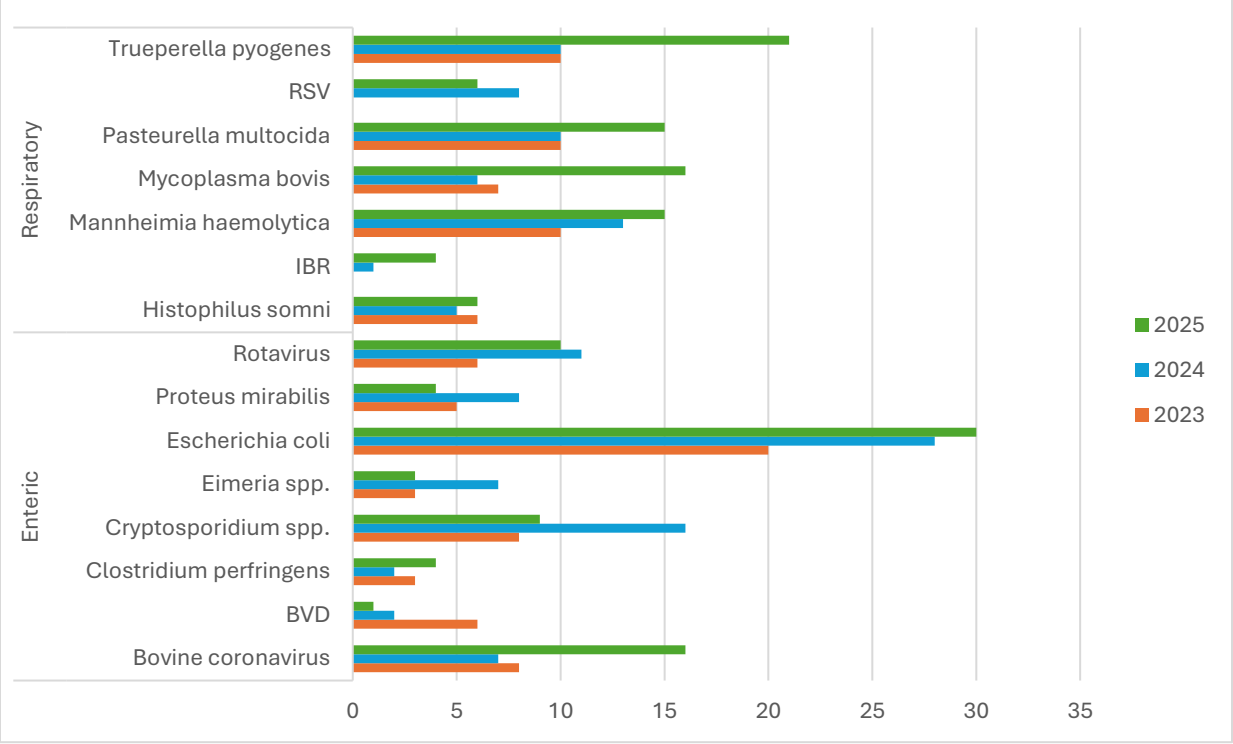


Figure 3. Trends in major bovine pathogens (2023–2025).

Note: RSV (Bovine Respiratory Syncytial Virus), IBR (Infectious Bovine Rhinotracheitis)

From 2023 to 2025, several key pathogens showed clear increases, with the highest values generally observed in 2025; however, these findings should be interpreted cautiously due to potential influences of prior antimicrobial treatment and variation in the number of submissions.

Among respiratory pathogens, *Trueperella pyogenes*, *Mannheimia haemolytica*, and *Pasteurella multocida* were the most frequently detected and all increased over time. In particular, *Trueperella pyogenes* showed the largest increase between 2023 and 2025. *Mycoplasma bovis* also increased steadily during the same period. ***Testing for Mycoplasma bovis is available upon request as an additional assay and qualifies for the program discount.*** We note this option specifically as M. bovis is commonly associated with treatment failure and has significant implications for clinical management and antimicrobial stewardship.

Among gastrointestinal pathogens, *Escherichia coli* remained the most frequently identified organism and increased consistently over time. Other important pathogens included *Cryptosporidium spp.*, rotavirus, and bovine coronavirus, with bovine coronavirus showing a marked increase toward 2025.

In contrast, *Clostridium perfringens* and *Eimeria spp.* showed relatively small changes across years, while BVD decreased over time.

In other species, pathogen detection was generally lower and more variable, with no clear temporal trends compared to bovine cases. A complete summary of pathogen frequencies by species and year is provided in Appendix 3.

6. Antimicrobial Susceptibility Testing

Antimicrobial susceptibility tests performed increased over time, with 17 tests in 2023, 21 in 2024, and 30 in 2025, showing a clear year-over-year increase in testing requests. As shown in the figure and accompanying table, bovine samples accounted for the majority of tests performed, and Pasteurella multocida and *Mannheimia haemolytica* were consistently the most frequently tested pathogens. In 2025, Pasteurella multocida showed the largest increase, becoming the most commonly tested pathogen, along with a greater diversity of pathogens compared to previous years.

These results should be interpreted with caution due to the limited number of tests performed and the small number of isolates per pathogen. Consequently, these findings cannot be used to establish reliable trends or guide general treatment decisions. Detailed results are provided in Appendix 3.

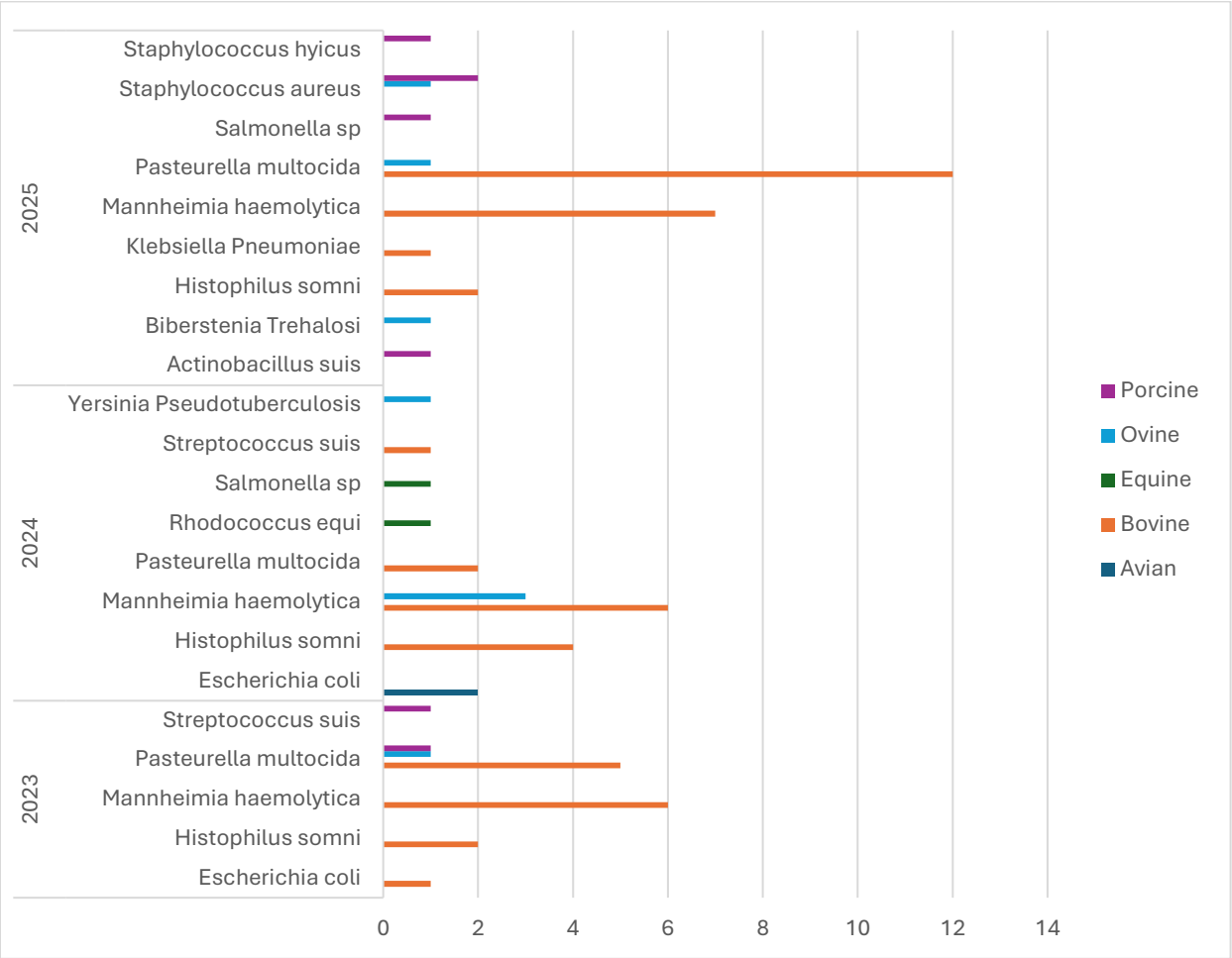


Figure 4. Distribution of Antimicrobial Susceptibility Tests by Pathogen, Host Species, and Year (2023–2025)

7. Conclusions

Overall, the data indicate a progressive increase in necropsy activity under the Supporting PEI Animal Agriculture Producers with Local Diagnostic Services" program from 2023 to 2025, suggesting improved program uptake and more consistent case submission over time. Bovine cases accounted for the largest proportion of submissions and demonstrated clear monthly temporal patterns in both disease syndromes and pathogen distribution, providing the most robust basis for trend analysis.

Disease patterns varied across years and species, with notable shifts between respiratory and enteric conditions in several groups. These variations likely reflect a combination of management practices, environmental influences, and population dynamics, although interpretation is limited by case variability and the voluntary nature of submissions.

Pathogen detection also showed evolving patterns over time, particularly in bovine cases, with increases in several bacterial and viral agents. In contrast, data from other species were more variable, limiting detailed interpretation of trends. Antimicrobial susceptibility testing increased over the study period, although the number of isolates remained low and results should be interpreted with caution.

Overall, this report provides a useful overview of necropsy activity, disease patterns, and pathogen distribution within the program, highlighting the value of continued surveillance and data collection to support animal health monitoring on Prince Edward Island.

8. Recommendations

The results of this report highlight the value of the necropsy program as a tool for monitoring disease patterns and pathogen distribution in animal populations on Prince Edward Island. While these data cannot be used to draw definitive conclusions about Island-wide population health, the program provides significant value at the individual farm level. Veterinarians and producers can use these findings to inform farm-specific diagnoses, guide treatment decisions, and improve management practices. Continued efforts to promote awareness of the program and encourage participation across all sectors may help improve data completeness and representativeness, particularly in species with lower submission numbers.

Increasing participation would support more robust analysis of disease trends and enhance the ability to detect emerging health issues. In addition, continued expansion of antimicrobial susceptibility testing may provide further insights into resistance patterns over time.

Overall, strengthening engagement with the program will contribute to improved surveillance and support evidence-based decision-making in animal health management.

9. Appendices

Appendix 1: Monthly number of necropsies conducted under the Supporting PEI Animal Agriculture Producers with Local Diagnostic Services 2022-2025.

Month	*2022*	*2023*	*2024*	*2025*	*Total*
January		6	20	25	51
February		18	13	12	43
March		20	22	26	68
April		9	22	17	48
May		11	10	27	48
June		15	10	22	47
July		13	4	9	26
August		17	9	8	34
September		10	0	8	18
October	1	17	9	8	35
November	3	18	15	7	43
December	4	15	19	13	51
Grand	**8**	**169**	**153**	**182**	**512**

Appendix 2. Pathogen data by year, species and system.

Year	Species	Syndrome	Pathogen	n
2023	**Bovine**	**Respiratory**	***Mannheimia haemolytica***	**10**
2023	**Bovine**	**Respiratory**	***Pasteurella multocida***	**10**
2023	**Bovine**	**Respiratory**	***Trueperella pyogenes***	**10**
2023	**Bovine**	**Respiratory**	***Mycoplasma bovis***	**7**
2023	**Bovine**	**Respiratory**	***Histophilus somni***	**6**
2023	**Bovine**	**Respiratory**	**RSV**	**3**
2023	**Bovine**	**Respiratory**	**IBR**	**0**
2023	**Bovine**	**Enteric**	***Escherichia coli***	**20**
2023	**Bovine**	**Enteric**	***Cryptosporidium spp.***	**8**
2023	**Bovine**	**Enteric**	**Bovine coronavirus**	**8**
2023	**Bovine**	**Enteric**	**Rotavirus**	**6**
2023	**Bovine**	**Enteric**	***Proteus mirabilis***	**5**
2023	**Bovine**	**Enteric**	***Clostridium perfringens***	**3**
2023	**Bovine**	**Enteric**	***Eimeria spp.***	**3**
2023	**Bovine**	**Systemic**	**BVD**	**6**
2023	**Ovine**	**Respiratory**	***Bibersteinia trehalosi***	**3**
2023	**Ovine**	**Respiratory**	***Pasteurella multocida***	**3**
2023	**Ovine**	**Respiratory**	***Mannheimia haemolytica***	**2**
2023	**Ovine**	**Respiratory**	***Escherichia coli***	**1**
2023	**Ovine**	**Enteric**	***Eimeria spp.***	**15**
2023	**Ovine**	**Enteric**	***Cryptosporidium spp.***	**12**
2023	**Ovine**	**Enteric**	***Escherichia coli***	**10**
2023	**Ovine**	**Enteric**	***Clostridium perfringens***	**5**
2023	**Ovine**	**Enteric**	***Trichostrongyle-type***	**3**
2023	**Caprine**	**Respiratory**	***Escherichia coli***	**2**
2023	**Caprine**	**Enteric**	***Escherichia coli***	**2**
2023	**Caprine**	**Enteric**	***Proteus mirabilis***	**2**
2023	**Caprine**	**Enteric**	***Trichostrongyle-type***	**2**
2023	**Caprine**	**Enteric**	***Eimeria spp.***	**2**
2023	**Porcine**	**Respiratory**	***Streptococcus suis***	**4**
2023	**Porcine**	**Respiratory**	***Pasteurella multocida***	**3**
2023	**Porcine**	**Respiratory**	***Actinobacillus spp.***	**2**
2023	**Porcine**	**Enteric**	***Escherichia coli***	**2**
2023	**Porcine**	**Enteric**	***Salmonella sp.***	**1**
2023	**Porcine**	**Enteric**	***Enterococcus cecorum***	**1**
2023	**Equine**	**Respiratory**	***Streptococcus zooepidemicus***	**4**
2023	**Equine**	**Respiratory/Systemic**	**Equine Ateritis Virus**	**5**
2023	**Equine**	**Enteric**	***Enterococcus sp***	**4**

2023	**Equine**	**Enteric**	***Escherichia coli***	**3**
2023	**Equine**	**Enteric**	***Clostridium perfringens***	**0**
2023	**Avian**	**Respiratory**	***Escherichia coli***	**2**
2023	**Avian**	**Enteric**	***Escherichia coli***	**9**
2023	**Avian**	**Enteric**	***Eimeria spp.***	**7**
2023	**Avian**	**Enteric**	***Clostridium perfringens***	**6**
2023	**Avian**	**Enteric**	***Enterococus sp.***	**3**
2024	**Bovine**	**Respiratory**	***Mannheimia haemolytica***	**13**
2024	**Bovine**	**Respiratory**	***Pasteurella multocida***	**10**
2024	**Bovine**	**Respiratory**	***Trueperella pyogenes***	**10**
2024	**Bovine**	**Respiratory**	**RSV**	**8**
2024	**Bovine**	**Respiratory**	***Mycoplasma bovis***	**6**
2024	**Bovine**	**Respiratory**	***Histophilus somni***	**5**
2024	**Bovine**	**Respiratory**	**IBR**	**1**
2024	**Bovine**	**Enteric**	***Escherichia coli***	**28**
2024	**Bovine**	**Enteric**	***Cryptosporidium spp.***	**16**
2024	**Bovine**	**Enteric**	**Rotavirus**	**11**
2024	**Bovine**	**Enteric**	***Proteus mirabilis***	**8**
2024	**Bovine**	**Enteric**	***Eimeria spp.***	**7**
2024	**Bovine**	**Enteric**	**Bovine coronavirus**	**7**
2024	**Bovine**	**Enteric**	***Clostridium perfringens***	**2**
2024	**Bovine**	**Systemic**	**BVD**	**2**
2024	**Ovine**	**Respiratory**	***Mannheimia haemolytica***	**5**
2024	**Ovine**	**Respiratory**	***Bibersteinia trehalosi***	**0**
2024	**Ovine**	**Respiratory**	***Pasteurella multocida***	**0**
2024	**Ovine**	**Respiratory**	***Escherichia coli***	**0**
2024	**Ovine**	**Enteric**	***Clostridium perfringens***	**5**
2024	**Ovine**	**Enteric**	***Trichostrongyle-type***	**7**
2024	**Ovine**	**Enteric**	***Eimeria spp.***	**3**
2024	**Ovine**	**Enteric**	***Escherichia coli***	**1**
2024	**Ovine**	**Enteric**	***Cryptosporidium spp.***	**0**
2024	**Caprine**	**Respiratory**	***Escherichia coli***	**0**
2024	**Caprine**	**Enteric**	***Trichostrongyle-type***	**2**
2024	**Caprine**	**Enteric**	***Eimeria spp.***	**2**
2024	**Caprine**	**Enteric**	***Escherichia coli***	**0**
2024	**Caprine**	**Enteric**	***Proteus mirabilis***	**0**
2024	**Porcine**	**Respiratory**	***Streptococcus suis***	**1**
2024	**Porcine**	**Respiratory**	***Pasteurella multocida***	**1**
2024	**Porcine**	**Respiratory**	***Actinobacillus spp.***	**0**
2024	**Porcine**	**Enteric**	***Escherichia coli***	**0**

2024	**Porcine**	**Enteric**	***Salmonella sp.***	**0**
2024	**Porcine**	**Enteric**	***Enterococcus cecorum***	**0**
2024	**Equine**	**Respiratory**	***Streptococcus zooepidemicus***	**5**
2024	**Equine**	**Respiratory/Systemic**	**Equine Ateritis Virus**	**1**
2024	**Equine**	**Enteric**	***Escherichia coli***	**9**
2024	**Equine**	**Enteric**	***Enterococcus sp***	**4**
2024	**Equine**	**Enteric**	***Clostridium perfringens***	**3**
2024	**Avian**	**Respiratory**	***Escherichia coli***	**2**
2024	**Avian**	**Enteric**	***Enterococus sp.***	**3**
2024	**Avian**	**Enteric**	***Escherichia coli***	**2**
2024	**Avian**	**Enteric**	***Clostridium perfringens***	**0**
2024	**Avian**	**Enteric**	***Eimeria spp.***	**0**
2025	**Bovine**	**Respiratory**	***Trueperella pyogenes***	**21**
2025	**Bovine**	**Respiratory**	***Mycoplasma bovis***	**16**
2025	**Bovine**	**Respiratory**	***Mannheimia haemolytica***	**15**
2025	**Bovine**	**Respiratory**	***Pasteurella multocida***	**15**
2025	**Bovine**	**Respiratory**	***Histophilus somni***	**6**
2025	**Bovine**	**Respiratory**	**RSV**	**6**
2025	**Bovine**	**Respiratory**	**IBR**	**4**
2025	**Bovine**	**Enteric**	***Escherichia coli***	**30**
2025	**Bovine**	**Enteric**	**Bovine coronavirus**	**16**
2025	**Bovine**	**Enteric**	**Rotavirus**	**10**
2025	**Bovine**	**Enteric**	***Cryptosporidium spp.***	**9**
2025	**Bovine**	**Enteric**	***Proteus mirabilis***	**4**
2025	**Bovine**	**Enteric**	***Clostridium perfringens***	**4**
2025	**Bovine**	**Enteric**	***Eimeria spp.***	**3**
2025	**Bovine**	**Systemic**	**BVD**	**1**
2025	**Ovine**	**Respiratory**	***Mannheimia haemolytica***	**1**
2025	**Ovine**	**Respiratory**	***Bibersteinia trehalosi***	**1**
2025	**Ovine**	**Respiratory**	***Pasteurella multocida***	**1**
2025	**Ovine**	**Respiratory**	***Escherichia coli***	**0**
2025	**Ovine**	**Enteric**	***Eimeria spp.***	**8**
2025	**Ovine**	**Enteric**	***Clostridium perfringens***	**5**
2025	**Ovine**	**Enteric**	***Trichostrongyle-type***	**5**
2025	**Ovine**	**Enteric**	***Escherichia coli***	**3**
2025	**Ovine**	**Enteric**	***Cryptosporidium spp.***	**1**
2025	**Caprine**	**Respiratory**	***Escherichia coli***	**0**
2025	**Caprine**	**Enteric**	***Trichostrongyle-type***	**5**
2025	**Caprine**	**Enteric**	***Eimeria spp.***	**5**
2025	**Caprine**	**Enteric**	***Escherichia coli***	**0**

2025	**Caprine**	**Enteric**	***Proteus mirabilis***	**0**
2025	**Equine**	**Respiratory**	***Streptococcus zooepidemicus***	**2**
2025	**Equine**	**Respiratory/Systemic**	**Equine Ateritis Virus**	**0**
2025	**Equine**	**Enteric**	***Escherichia coli***	**4**
2025	**Equine**	**Enteric**	***Enterococcus sp***	**3**
2025	**Equine**	**Enteric**	***Clostridium perfringens***	**1**
2025	**Porcine**	**Respiratory**	***Streptococcus suis***	**4**
2025	**Porcine**	**Respiratory**	***Pasteurella multocida***	**3**
2025	**Porcine**	**Respiratory**	***Actinobacillus spp.***	**3**
2025	**Porcine**	**Enteric**	***Escherichia coli***	**5**
2025	**Porcine**	**Enteric**	***Enterococcus cecorum***	**1**
2025	**Porcine**	**Enteric**	***Salmonella sp.***	**0**
2025	**Avian**	**Respiratory**	***Escherichia coli***	**2**
2025	**Avian**	**Enteric**	***Escherichia coli***	**3**
2025	**Avian**	**Enteric**	***Enterococus sp.***	**2**
2025	**Avian**	**Enteric**	***Clostridium perfringens***	**0**
2025	**Avian**	**Enteric**	***Eimeria spp.***	**0**

Appendix 3: Antimicrobial Resistance Susceptibility Testing by Pathogen and Species (2023–2025).

Species	Pathogen	Antimicrobial	Frequency of resistance	Total of test
Avian	Escherichia coli	Ampicillin	2	2
		Tetracycline	1	2
		Gentamicin	1	2
Bovine	Escherichia coli	Ampicillin	1	1
		Florfenicol	1	1
		Gentamicin	1	1
		Tetracycline	1	1
		Trimethroprim/Sulphamexazole	1	1
	Histophilus somni	Ampicillin	2	8
		Penicillin	2	8
		Spectinomycin	3	8
		Tetracycline	3	8
		Tulathromycin	3	8
		Florfenicol	1	8
		Gamithromycin	2	8
	Klebsiella Pneumoniae	Ampicillin	1	1
		Florfenicol	1	1
		Gamithromycin	1	1
		Tildipirosin	1	1
	Mannheimia haemolytica	Penicillin	1	1
		Florfenicol	2	19
		Tetracycline	5	19
		Tildipirosin	2	19
		Tilmicosin	6	19
		Gamithromycin	4	19
		Tulathromycin	4	19
	Pasteurella multocida	Ampicillin	1	19
		Penicillin	2	19
		Spectinomycin	3	19
		Tetracycline	4	19
		Florfenicol	2	19
		Gamithromycin	4	19
		Tulathromycin	3	19
	Streptococcus suis	Clindamycin	1	1
		Tetracycline	1	1
Equine	Rhodococcus equi	Chloramphenicol	1	1
		Tetracycline IR	1	1
		Trimethroprim/Sulphamexazole	1	1
	Salmonella sp	Ampicillin	1	1
		Doxycycline	1	1
		Enrofloxacin	1	1
Ovine	Mannheimia haemolytica	Tetracycline IR	1	3
	Biberstenia Trehalosi	Ampicillin	1	1
	Biberstenia Trehalosi	Penicillin	1	1
	Staphylococcus aureus	Penicillin	1	1
	Pasteurella multocida	Tetracycline	1	2
	Streptococcus suis	Clindamycin	1	1
		Penicillin	1	1
		Tetracycline	1	1
Porcine	Staphylococcus aureus	Penicillin	2	2
		Cefoxitin	1	2
	Staphylococcus hyicus	Ampicillin	1	1
	Staphylococcus hyicus	Clindamycin	1	1
	Staphylococcus hyicus	Danofloxacin	1	1
	Staphylococcus hyicus	Penicillin	1	1
	Staphylococcus hyicus	Tetracycline	1	1
	Actinobacillus suis	Tetracycline	1	1