



CIPARS AMU and AMR surveillance

Poultry 2024 results

Dr. Agnes Agunos

World Antimicrobial Resistance
Awareness Week
November 18th, 2025.



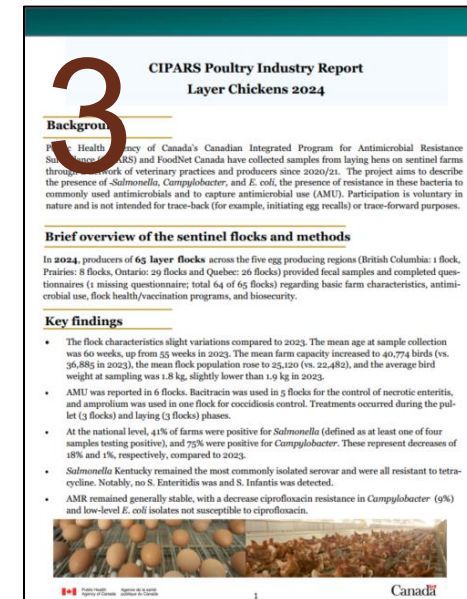
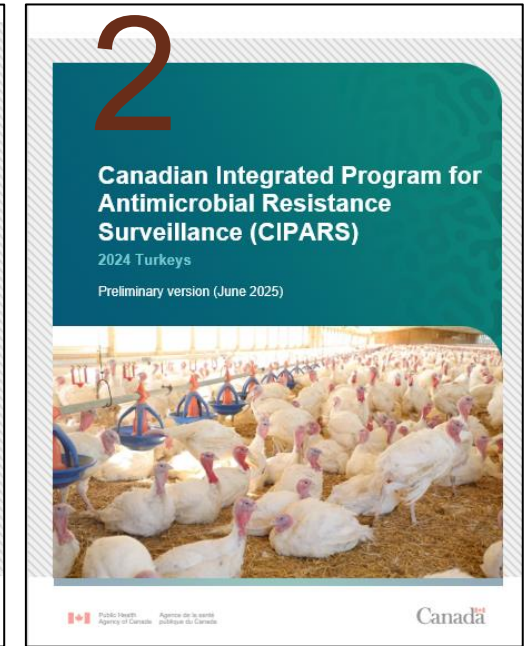
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About the data presented today

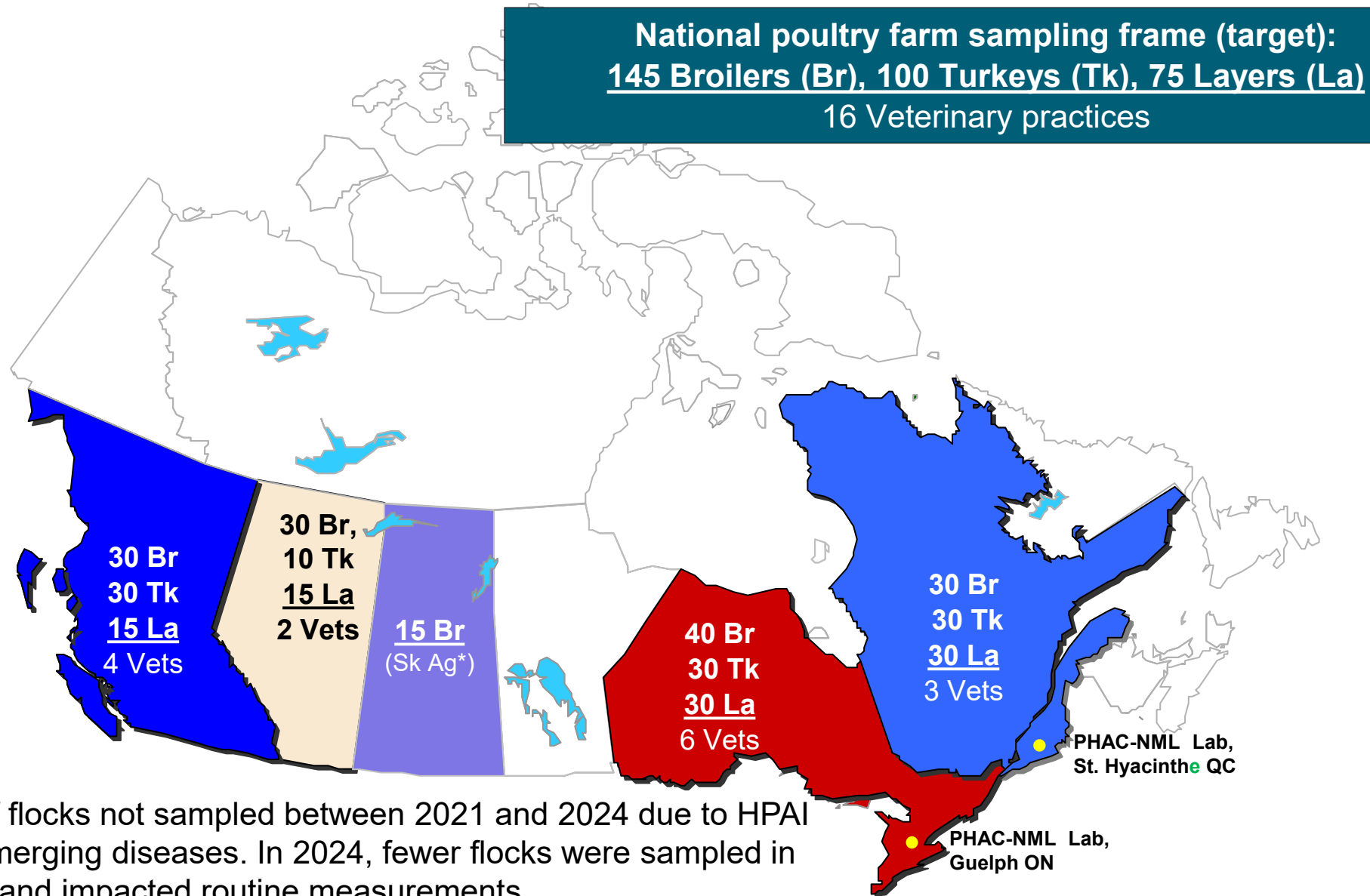
- Select findings will be discussed. Detailed information is provided in the poultry industry reports available in English. Please contact either:
 - Louise (louise.bellai@phac-aspc.gc.ca)
 - Kelly (Kelly.pike@phac-aspc.gc.ca)
- Data up to 2023 is available via our interactive data visualization platform (CIPARS data visualization's webpage on Health Infobase).
- If you need to leave early and have questions – please use the chat function.



Agenda

- CIPARS farm antimicrobial use (AMU), antimicrobial resistance (AMR), and flock health
 - Broiler chickens
 - Turkeys
 - Layers
- Poultry overall
 - Veterinary Antimicrobial Sales Reporting (VASR)
 - Whole genome sequencing (WGS) of *Salmonella* isolates

Design and Methods



Target number of flocks not sampled between 2021 and 2024 due to HPAI outbreaks and emerging diseases. In 2024, fewer flocks were sampled in British Columbia and impacted routine measurements.

*Field workers are supervised by the Saskatchewan Agriculture

Review of CIPARS surveillance objectives

Abattoir

- To provide nationally representative, annual antimicrobial resistance (AMR) data for bacteria isolated from animals entering the food chain.
- To monitor temporal variations in the prevalence of AMR in these bacteria.

Farm

- Primary Objective
 - Provide representative qualitative and quantitative farm data on antimicrobial use (AMU)/AMR at the national and regional levels.
- Secondary Objective
 - **Investigate associated trends in AMU/AMR** at a national and regional level.  Further analysis or research
- Long-term objectives
 - Provide sound data for human health risk assessments.
 - Provide **data to industry** to help support science-based decisions to reduce AMR.  Further analysis or research

BROILER CHICKENS



Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS)

2024 Broiler chickens



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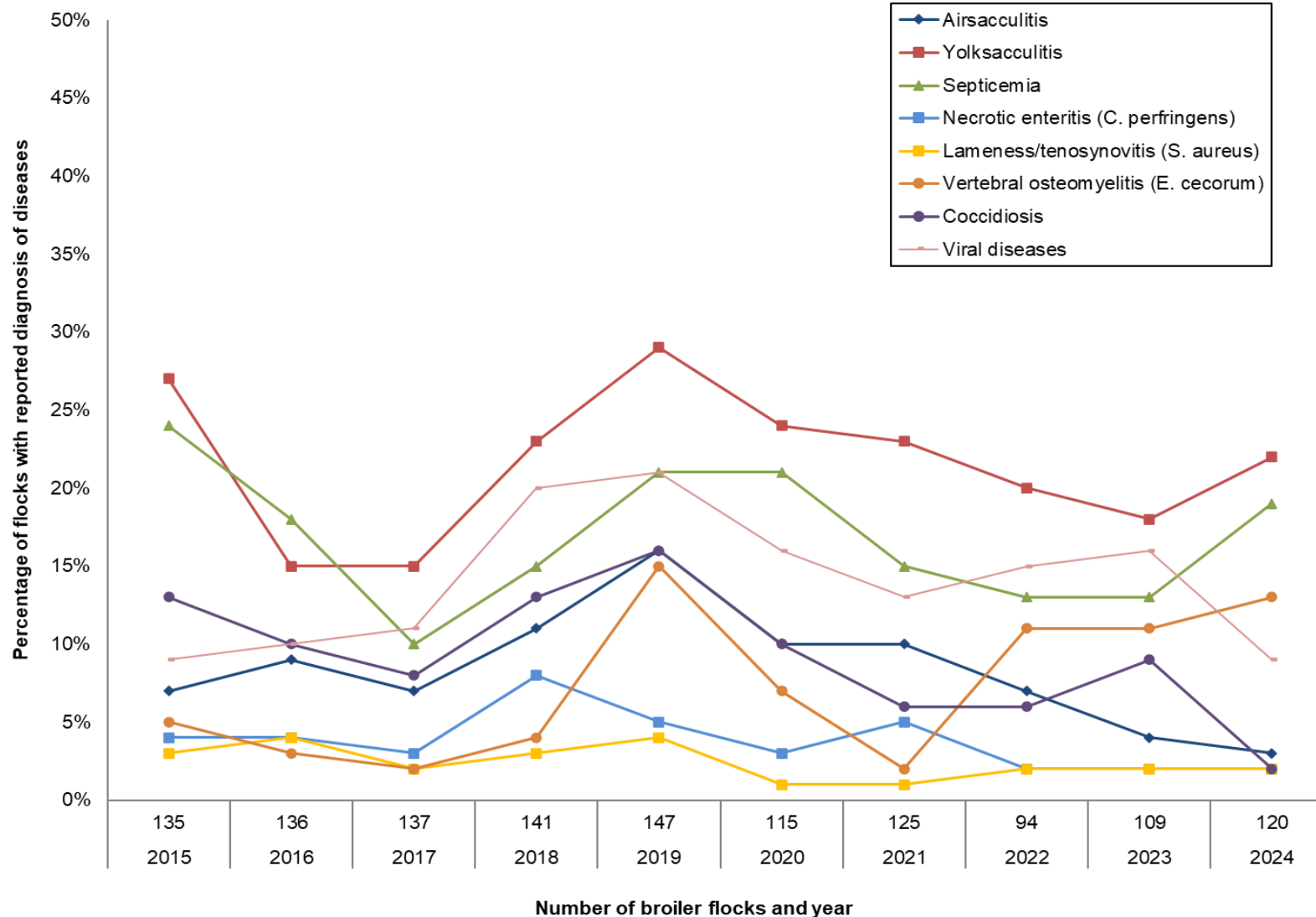


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Broiler health status – diseases* continued to be diagnosed

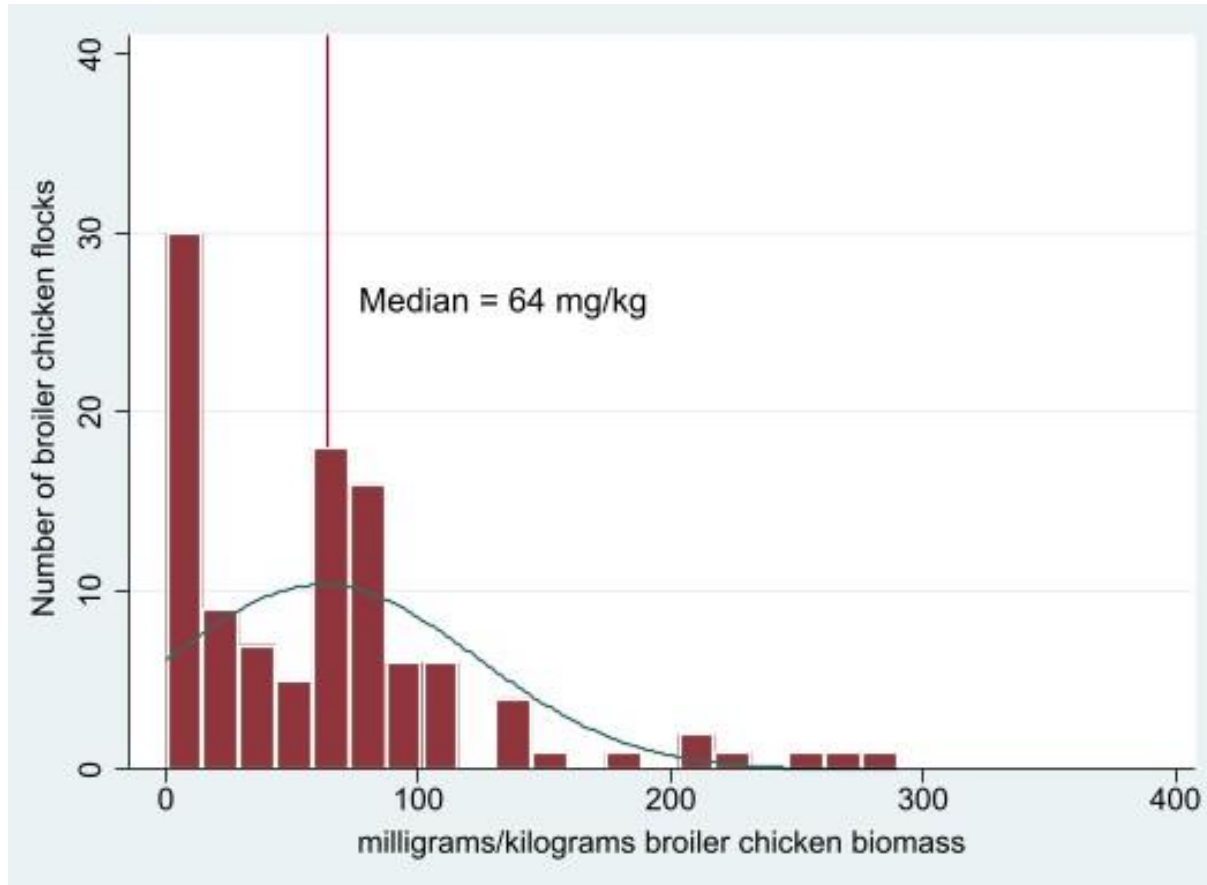


- Average flock mortality: 5.35% (↑ 0.76%).
- Most frequently diagnosed:
 - **Yolk sacculitis** (↑ 3%),
 - **Septicemia** (↑ 6%)
 - Vertebral osteomyelitis - **Enterococcus cecorum** (↑ 2%) mostly from Quebec (14/16 flocks)
- Stable necrotic enteritis and lameness (**Staphylococcus aureus**)
- Decreased **coccidiosis**
- Viral diseases diagnosed:
 - Inclusion Body Hepatitis (**IBH**, 6 flocks);
 - Infectious Bursal Disease (**IBD**, 4 flocks);
 - Infectious Bronchitis (**IBV**, 2 flocks)

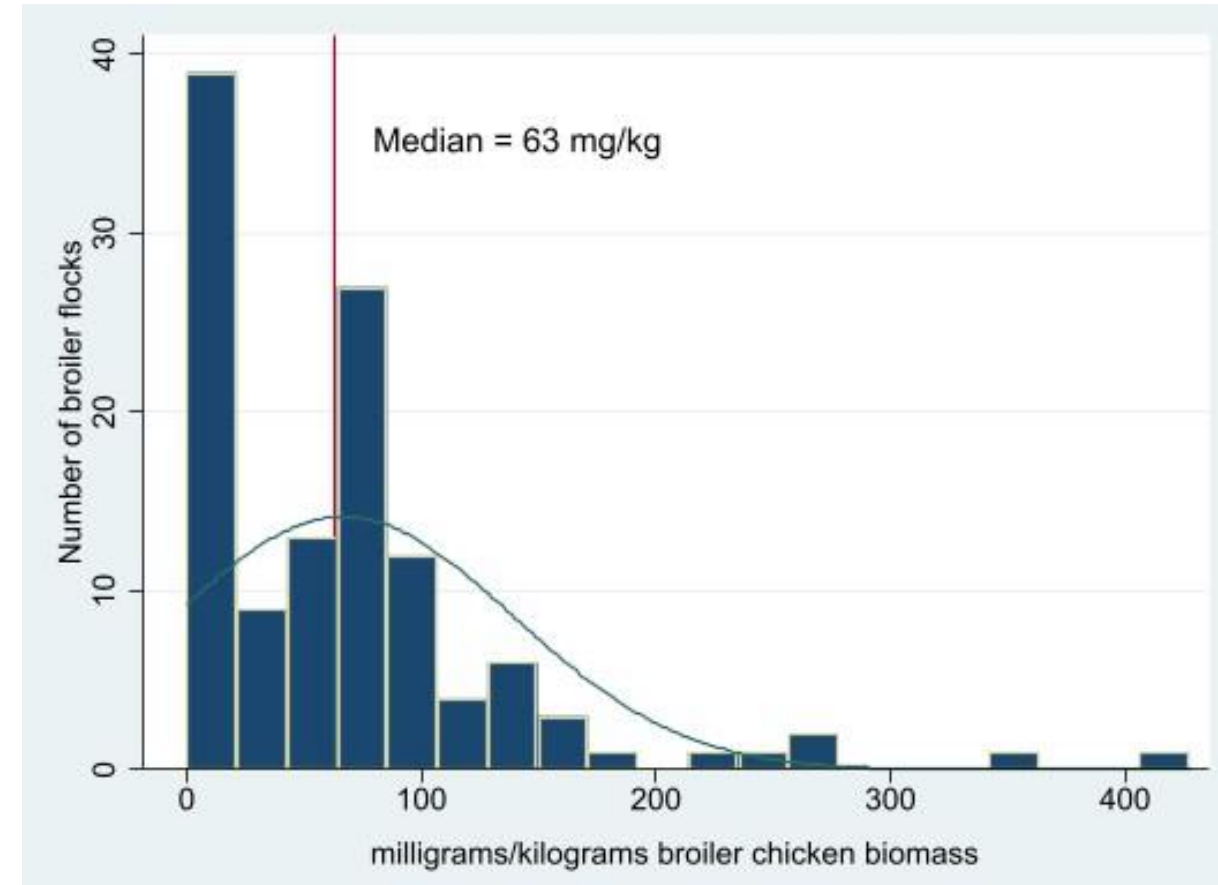
*Syndromic data, as captured in the questionnaire, include responses classified as confirmed positive or likely positive for the disease.

Flock level quantity of use – depends on the flock health situation

2023 (n = 109 flocks)



2024 (n = 120 flocks)

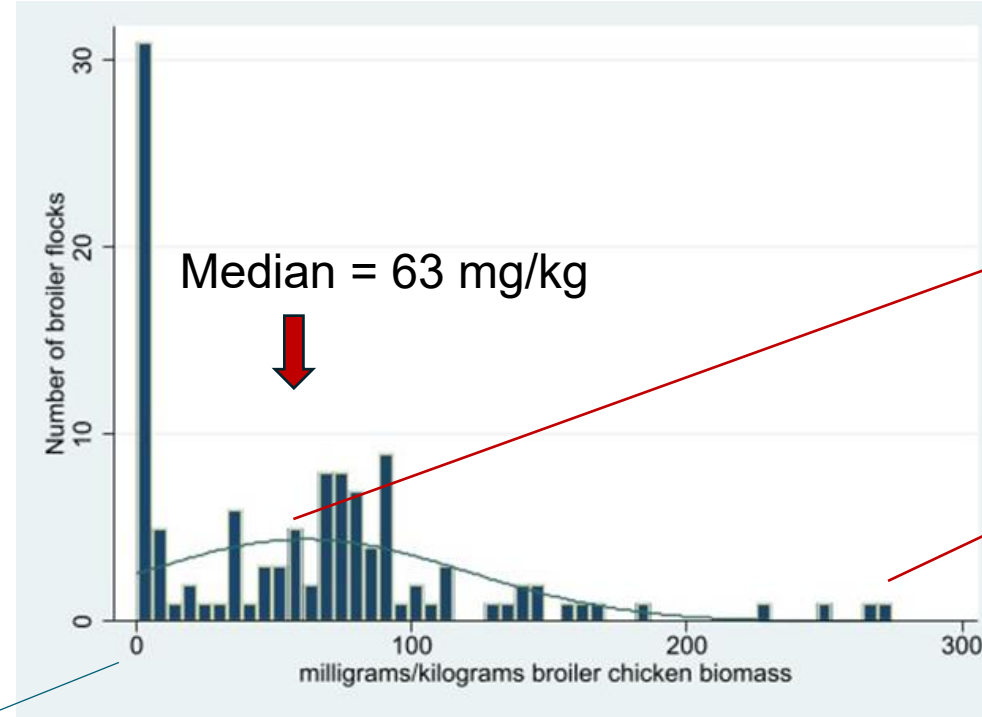


The data represent flock-level AMU estimates. The distribution of flocks classified as low, medium, and high users remained relatively stable between 2023 and 2024*.

*Analyzed using two-sample Wilcoxon rank-sum test

Flock level quantity of use – high users are diseased flocks and the main drivers of AMU

Enhanced version of the flock distribution of mg/kg animal biomass



This flock used bacitracin

This flock used penicillin, sulfamethazine and avilamycin

Low users

- A flock that is **raised without antibiotic, organic or conventional, with no or very low use** (e.g., *Clostridium perfringens* vaccine)

Medium users

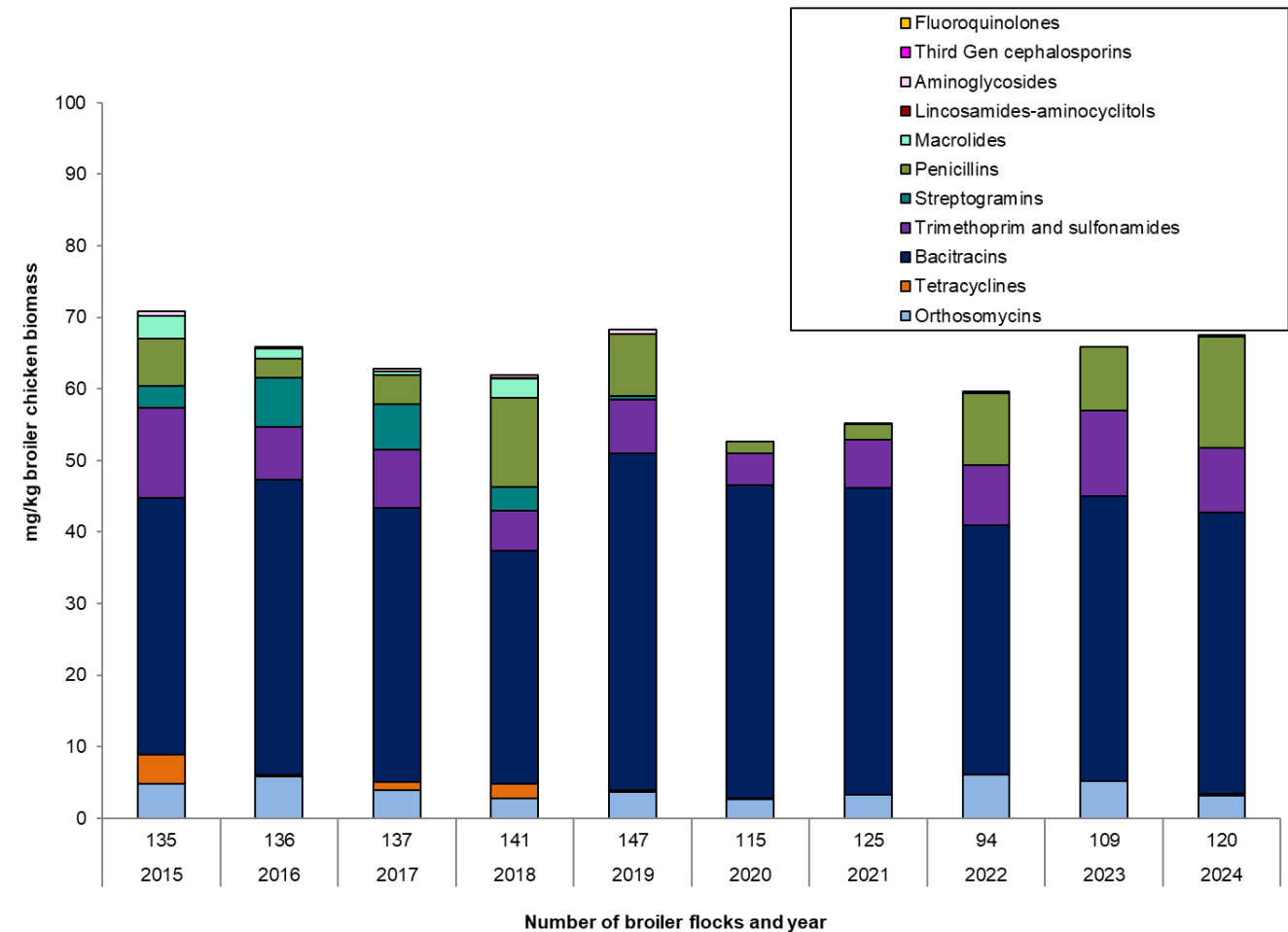
- A flock that has a **necrotic enteritis program**, for example flock that used **bacitracin** or **avilamycin** in 1 or more rations

High users

- A flock that has a **necrotic enteritis program** (**bacitracin**) and treated for **septicemia** (**trimethoprim-sulfadiazine**) or *Enterococcus cecorum* (**penicillin**)

Antimicrobials are used for the control of bacterial diseases in broiler chickens

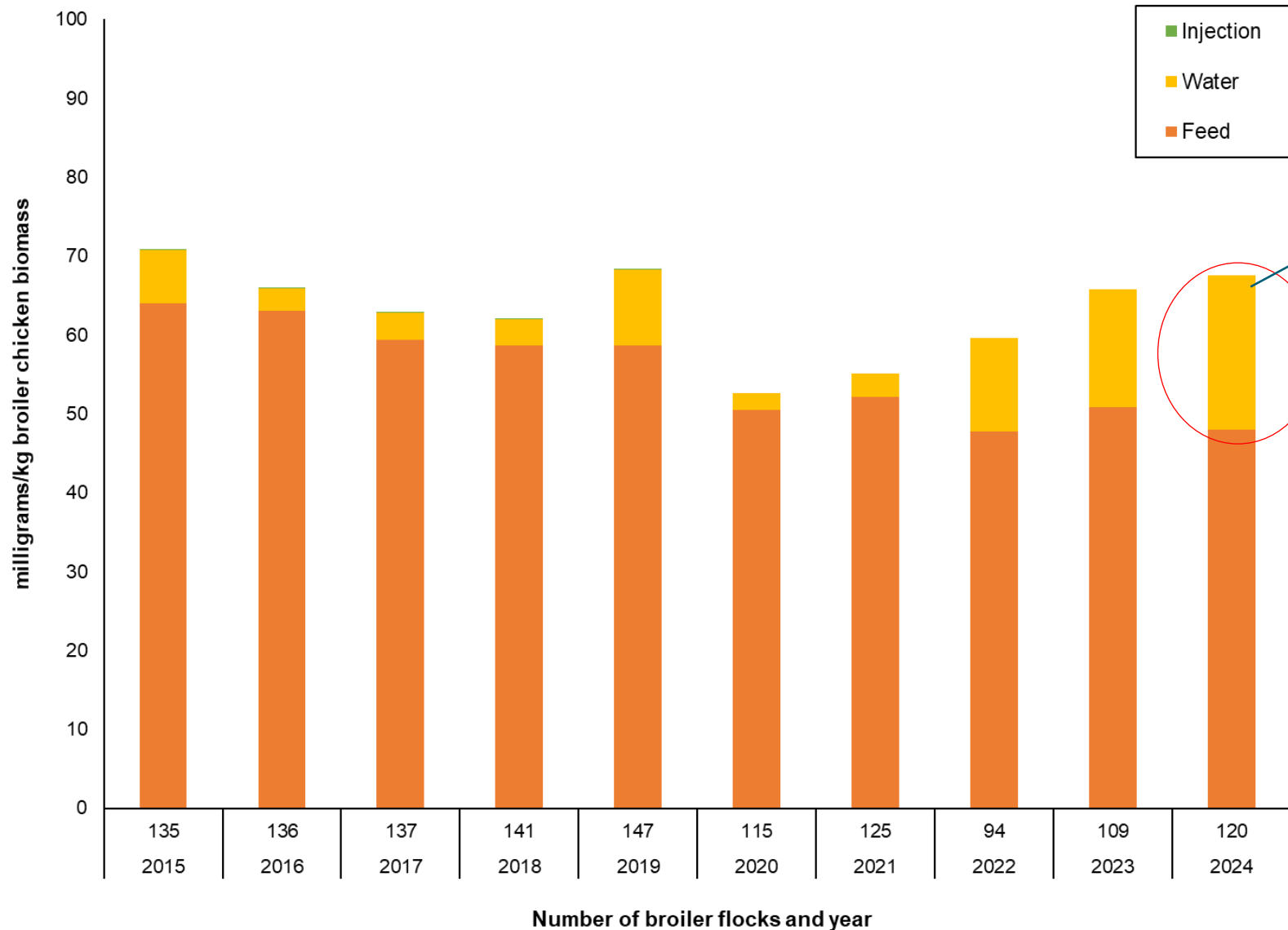
mg/kg broiler chicken biomass indicates stable trend since 2023



- Increased in AMU quantity by **3%**, but the diversity of antimicrobial classes used was similar to 2023.
- Driven by **bacitracins, penicillins, and trimethoprim-sulfonamides** (slight change in ranking).
- Days of exposure (necrotic enteritis control) slightly changed compared to 2023
 - **Bacitracin**: ↑ 2 days
 - **Avilamycin**: ↓ 2 days
- One flock used **fluoroquinolones** in 2024 (for the treatment of septicemia).

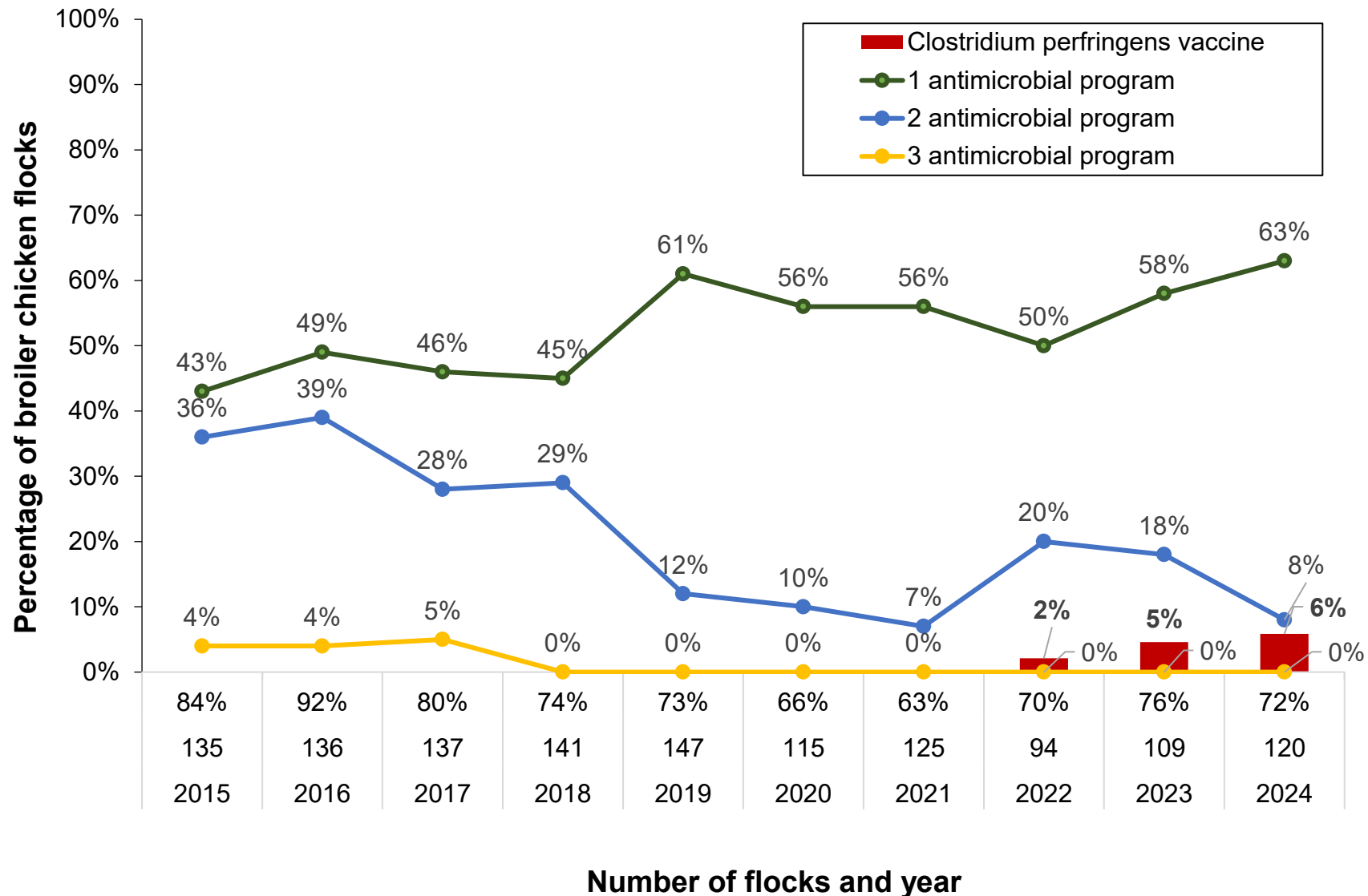
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2023 vs. 2024 (% change)
Total	71	66	63	62	68	53	55	60	66	68	↑ 2 mg/kg (+ 3%)

Water-administered antimicrobials continued to increase



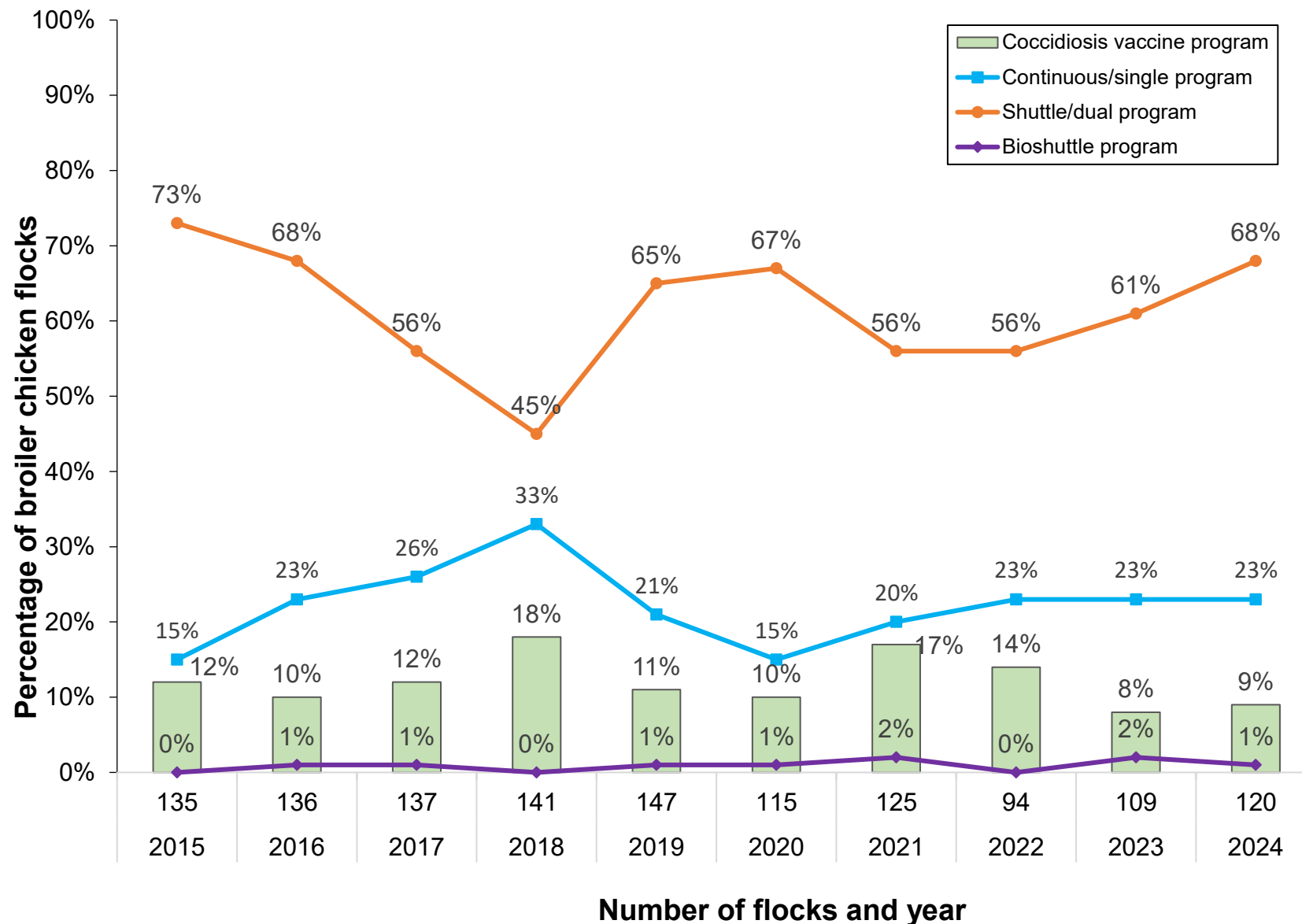
- Feed route - is the most common administration route.
- Water-administered antimicrobials increased (↑ 5%) compared to 2023.
- Antimicrobials used via water: **penicillins** and **sulfonamides**.
- Limited quantity used via injection (**gentamicin** in 4 flocks)

Enteric disease control – necrotic enteritis programs contributes to total AMU



- Use of **one antimicrobial** (63%) remained the most common program for necrotic enteritis(NE) control.
 - 1 antimicrobial program: **bacitracin**
- Use of **2 antimicrobials** (8%) fluctuated over time
 - 2 antimicrobial program: **bacitracin-avilamycin**
- **Clostridium perfringens Type A vaccination** is an emerging tool for necrotic enteritis control.
 - 2022 (2 flocks), 2023 (5 flocks), 2024 (7 flocks)
 - AMR implications → **Research**

Enteric disease control – coccidiosis programs complement necrotic enteritis programs



- **Continuous/single (23%)** – stable
 - Most common - **zoalene**
- **Shuttle/dual program (68%)**, increased and remained the most common program.
 - Most common - **narasin-nicarbazin followed by narasin**
- **Coccidiosis vaccination (9%)** fluctuated over time but has not replaced the use of coccidiostats

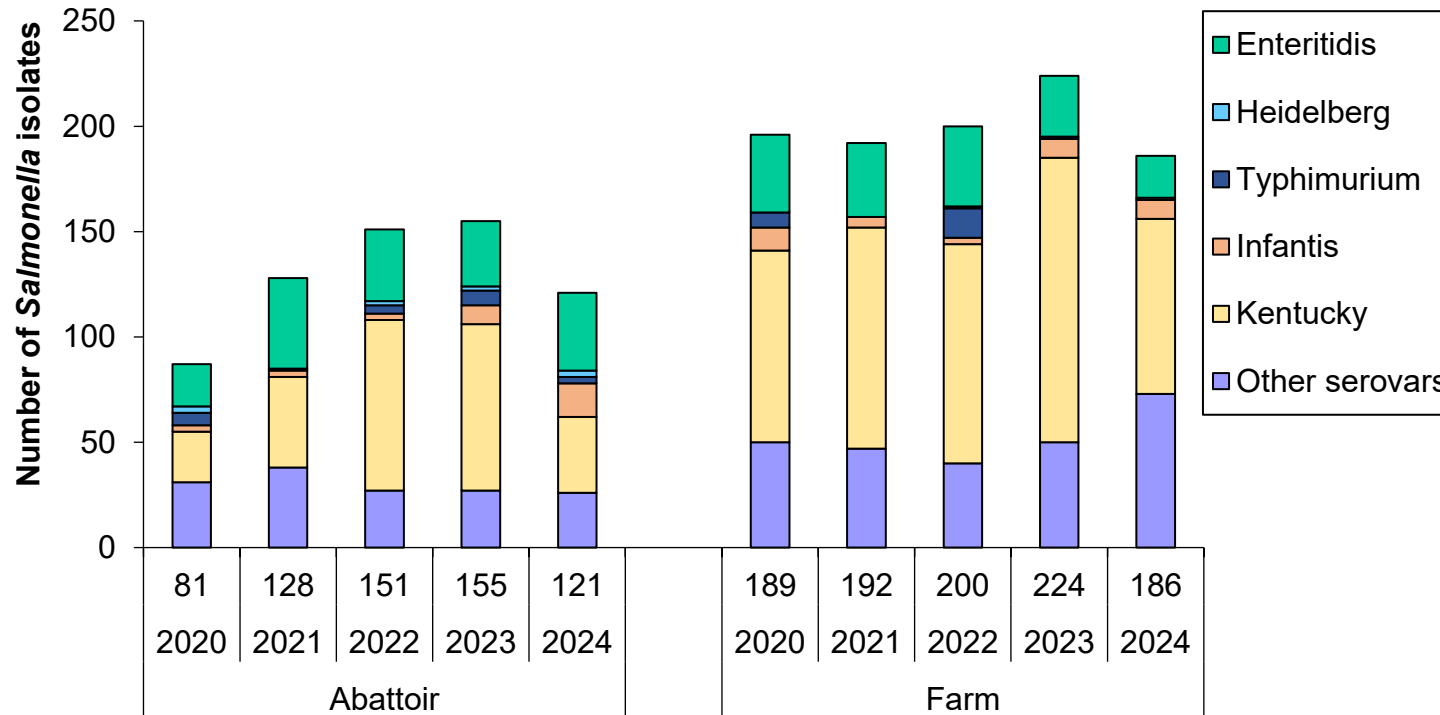
Bacterial recovery and the most common *Salmonella* serovars

Stable percentage of bacterial recovery in farm and slaughtered broiler chickens

	2020	2021	2022	2023	2024	Trends					2023 vs. 2024
Abattoir											
Salmonella	19%	15%	20%	22%	15%						-7%
Campylobacter	21%	20%	21%	22%	22%						0%
Farm											
Salmonella	41%	38%	53%	51%	40%						-11%
Campylobacter	19%	25%	33%	32%	17%						-15%

Salmonella decreased in farm and slaughtered broiler chicken samples. *Campylobacter* was stable in slaughtered broilers, while it decreased in farm broiler chicken samples.

Salmonella serovars



Surveillance component, year and number of isolates

The order of the top three serovars has changed slightly compared to 2023:

Abattoir

- Enteritidis (11 isolates: CIP-NS/NAL-R)
- Kentucky (1 isolate: NAL-R)
- Infantis (15 isolates: CIP-NS/NAL-R)

Farm

- Kentucky
- Enteritidis (4 isolates: CIP-NS/NAL-R)
- Infantis (7 isolates: CIP-NS/NAL-R)

CIP-NS: ciprofloxacin not susceptible
NAL-R: nalidixic acid resistant

AMR status of farm and slaughtered broiler chickens

Salmonella, E. coli and Campylobacter

Province/region Year	Abattoir					Farm				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Salmonella , number of isolates	81	128	151	155	121	314	189	200	224	186
Ampicillin	4%	5%	6%	4%	17%	7%	9%	5%	10%	9%
Ceftriaxone	4%	2%	5%	4%	9%	4%	9%	5%	7%	5%
Ciprofloxacin, not susceptible	5%	2%	9%	10%	17%	4%	5%	10%	10%	1%
Gentamicin	4%	2%	1%	5%	7%	0%	4%	0%	3%	5%
Nalidixic acid	4%	2%	6%	9%	17%	3%	4%	8%	4%	5%
Tetracycline	52%	51%	56%	47%	32%	54%	58%	54%	36%	32%
Trimethoprim-sulfamethoxazole	1%	0%	2%	4%	7%	1%	2%	2%	3%	2%
E. coli , number of isolates	397	338	179	170	198	422	485	368	428	453
Ampicillin	27%	28%	25%	23%	23%	31%	33%	36%	35%	40%
Ceftriaxone	3%	2%	2%	2%	2%	4%	4%	2%	4%	6%
Ciprofloxacin, not susceptible	10%	12%	11%	15%	19%	9%	6%	7%	9%	6%
Gentamicin	13%	19%	18%	14%	10%	18%	16%	13%	19%	15%
Nalidixic acid	9%	10%	9%	15%	17%	8%	5%	5%	7%	6%
Tetracycline	35%	35%	36%	34%	31%	35%	33%	37%	37%	44%
Trimethoprim-sulfamethoxazole	16%	21%	18%	15%	18%	11%	15%	18%	24%	22%
Campylobacter , number of isolates	90	168	158	159	178	78	123	123	140	81
Azithromycin	1%	1%	1%	0%	2%	8%	2%	2%	0%	0%
Ciprofloxacin	21%	20%	25%	30%	29%	30%	22%	34%	33%	15%
Gentamicin	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tetracycline	53%	51%	44%	39%	39%	41%	35%	43%	38%	31%

Reference

Not detected	
Rare	< 0.1%
Very low	0.1-1%
Low	> 1 - 10%
Moderate	> 10-20%
High	> 20-50%
Very high	> 50-70%
Extremely high	> 70

Estimates were adjusted for clustering at the flock level

- A stable level of resistance across **most** antimicrobials and 3 organisms, with notable exception: a significant increase in *E. coli* not susceptible to ciprofloxacin and nalidixic acid resistant in slaughtered chickens.
- Campylobacter* spp.: ciprofloxacin resistance remained high in slaughtered broiler chicken isolates (**29%**).

TURKEYS



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Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS)

2024 Turkeys

Preliminary version (June 2025)



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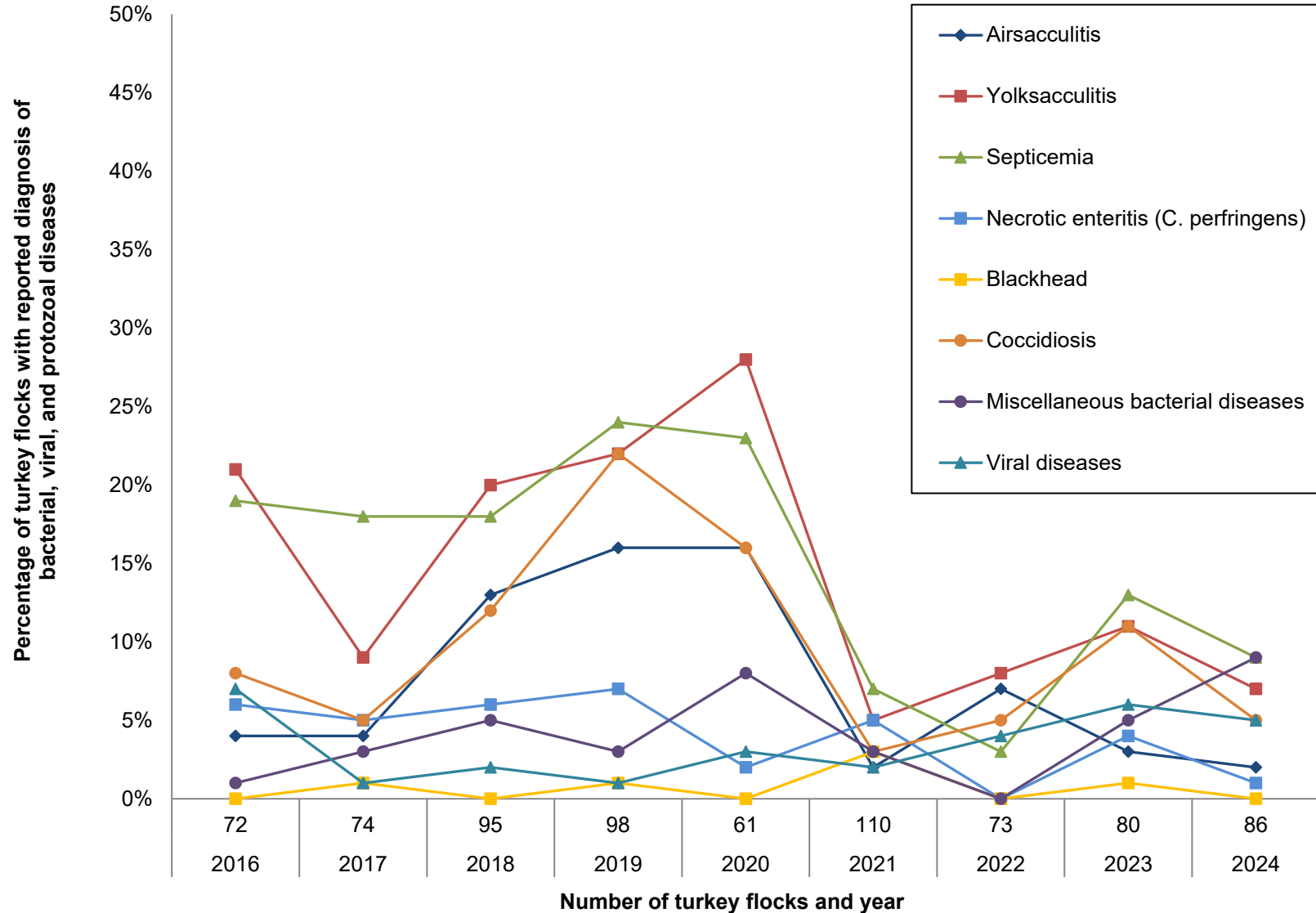


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Turkey health status – diseases* continued to be diagnosed

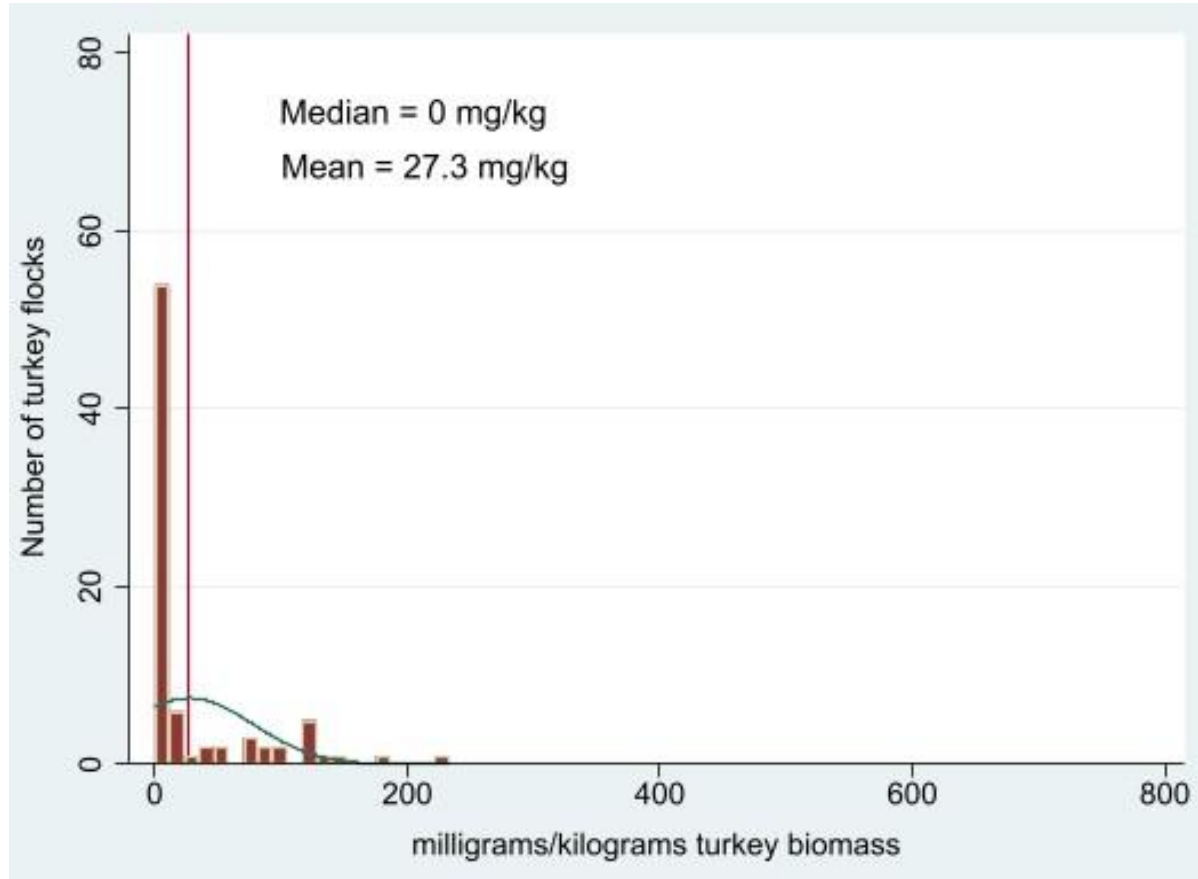


- Average mortality in 2024: 6% (↑ 0.4%)
- Common diseases mostly decreased in 2024:
 - Yolk sacculitis (↓ 4%)
 - Septicemia (↓ 4%)
 - Coccidiosis (↓ 4%)
 - Miscellaneous bacterial diseases (↑ 4%)
- Notable diseases reported in 2023-2024 (1 to 3 flocks):
 - Clostridial dermatitis
 - Salmonellosis (*S. Enteritidis*)
 - Mycoplasmosis
 - *Ornithobacterium rhinotracheale*
 - *Streptococcus gallolyticus*
 - Reovirus
 - Avian Metapneumovirus (APMV)

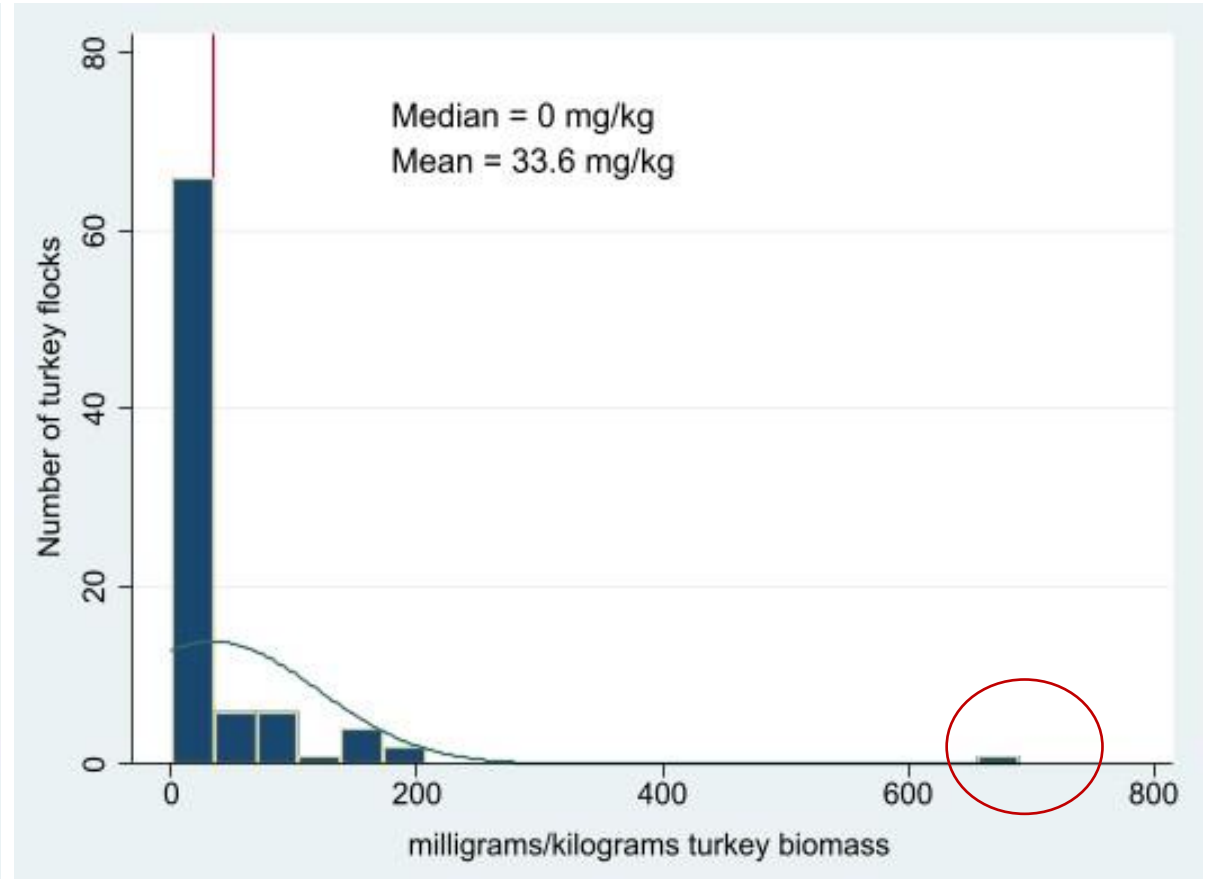
*Syndromic data, as captured in the questionnaire, include responses classified as confirmed positive or likely positive for the disease.

Flock level quantity of use – depends on the flock health situation

2023 (n = 80 flocks)



2024 (n = 86 flocks)

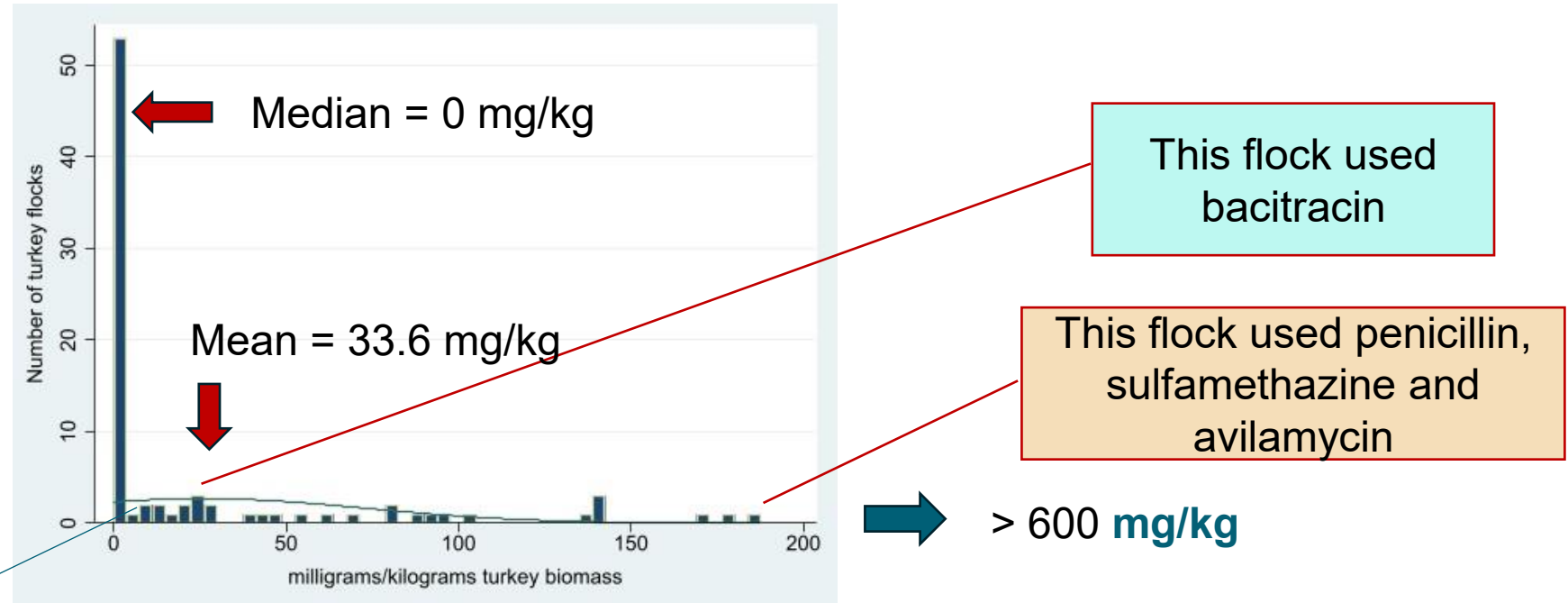


The data shown represent flock-level AMU estimates. The distribution of flocks classified as low, medium, or high users remained relatively stable between 2023 and 2024*.

*Two-sample Wilcoxon rank-sum (Mann–Whitney) test

Flock level quantity of use – high users are diseased flocks and the main drivers of AMU

Enhanced version of the flock distribution of mg/kg turkey biomass (outlier flock removed)



Low users

- A flock that is **raised without antibiotics, organic or conventional, with no or very low use**

Medium users

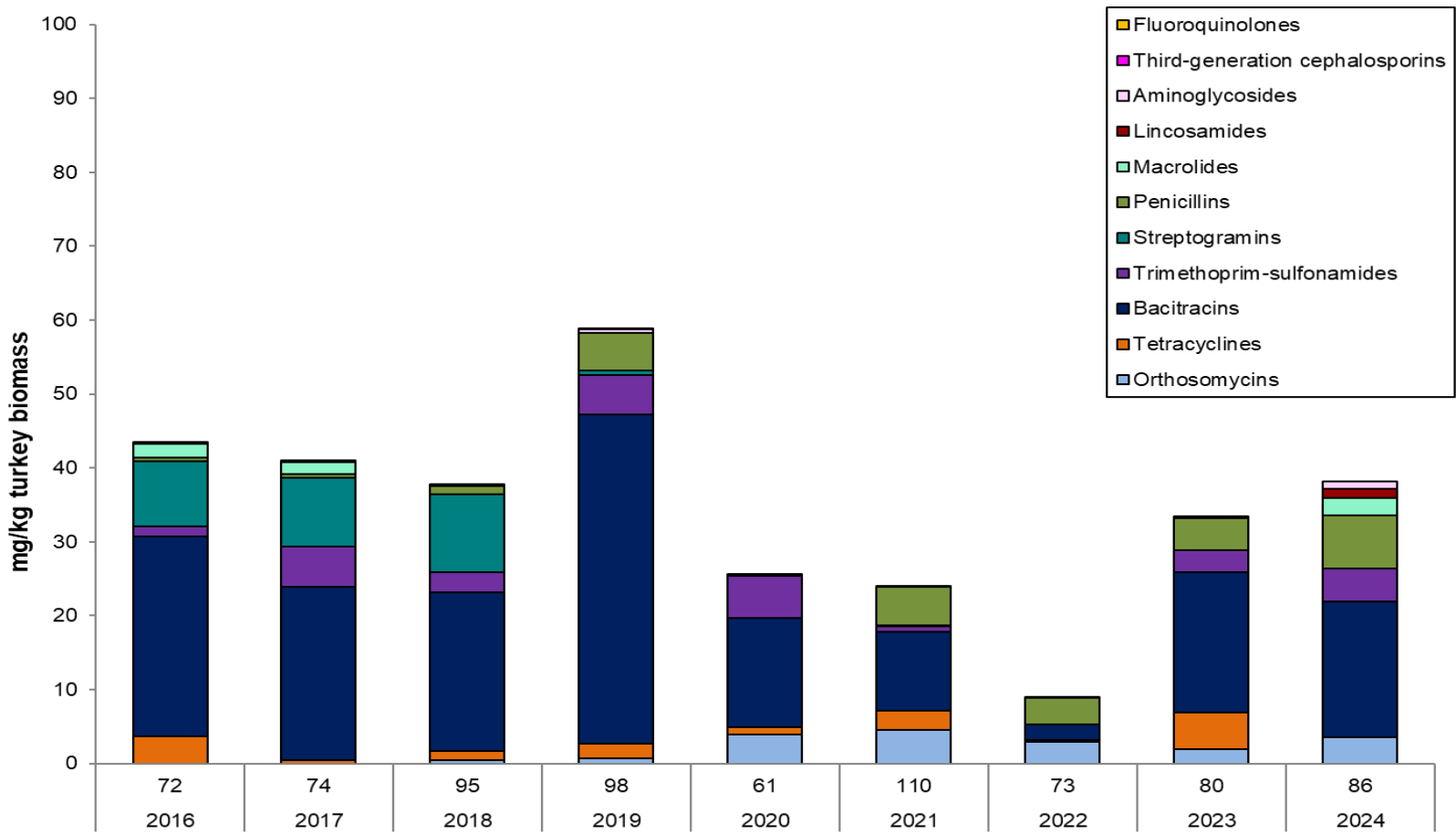
- A flock that has a **necrotic enteritis program**, for example flock that used **bacitracin** or **avilamycin** in 1 or more rations

High users

- A flock that has **necrotic enteritis program**, and experienced clostridial dermatitis (**penicillin** in water) or septicemia (**trimethoprim-sulfadiazine**)

Antimicrobials are used for the control of bacterial diseases in turkeys

mg/kg turkey biomass increased and was similar to the 2018 level



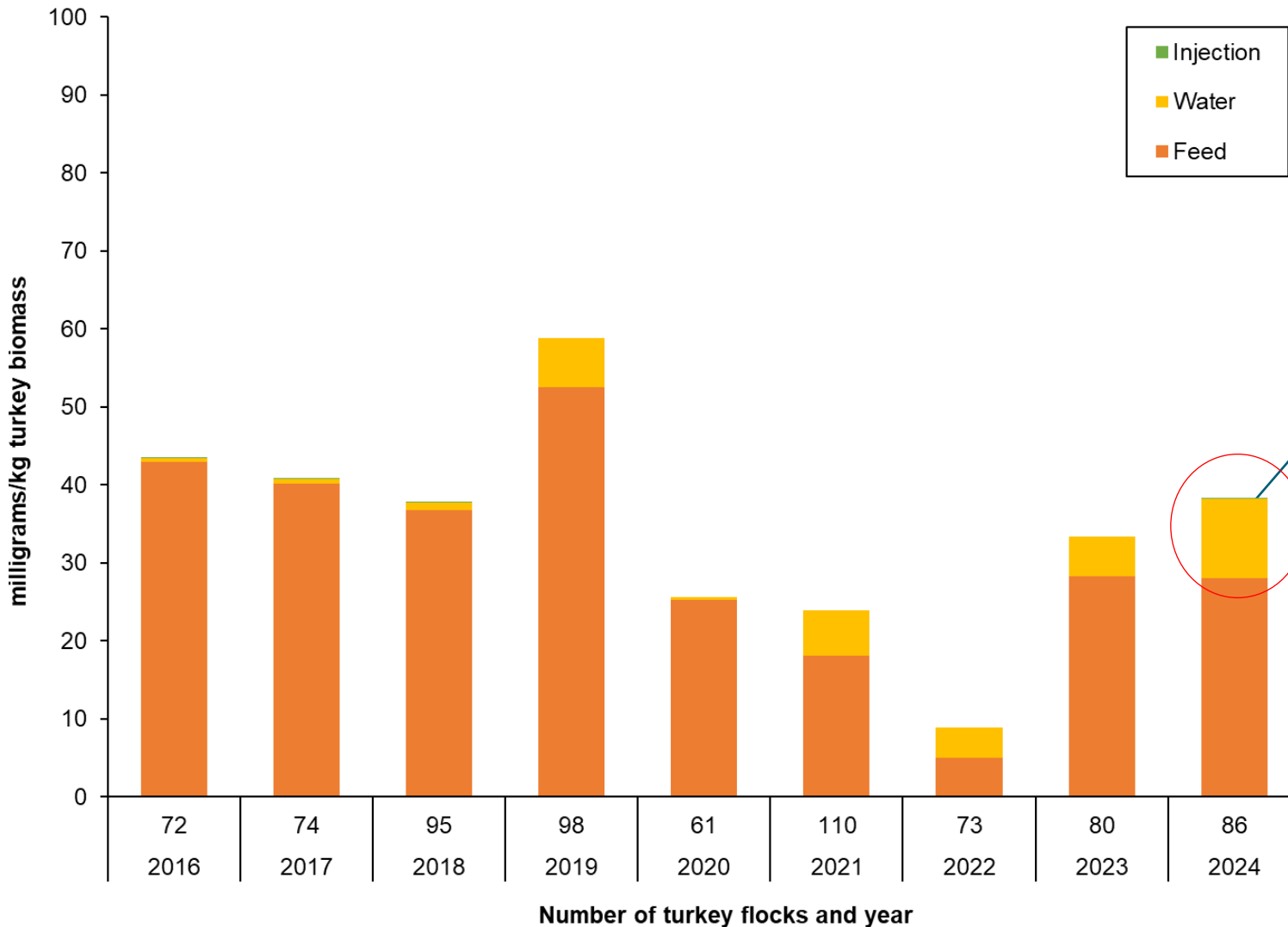
Number of turkey flocks and year

- AMU trends (2024 vs. 2023): shifts in quantity and patterns of use
 - Increased use: **penicillins**, **trimethoprim-sulfonamides**, and **orthosomycins**
 - Stable use: **bacitracins**
- **Macrolides**: this class reappeared after being reported in 2017
- Days of exposure for necrotic enteritis control:
 - **Bacitracin**: ↓ 7 days
 - **Avilamycin**: stable
- Category I use
 - No reported use.

	2017	2018	2019	2020	2021	2022	2023	2024	2023 vs. 2024 (% change)
Total	41	38	59	26	24	9	33	38	↑ 5 mg/kg (+15%)

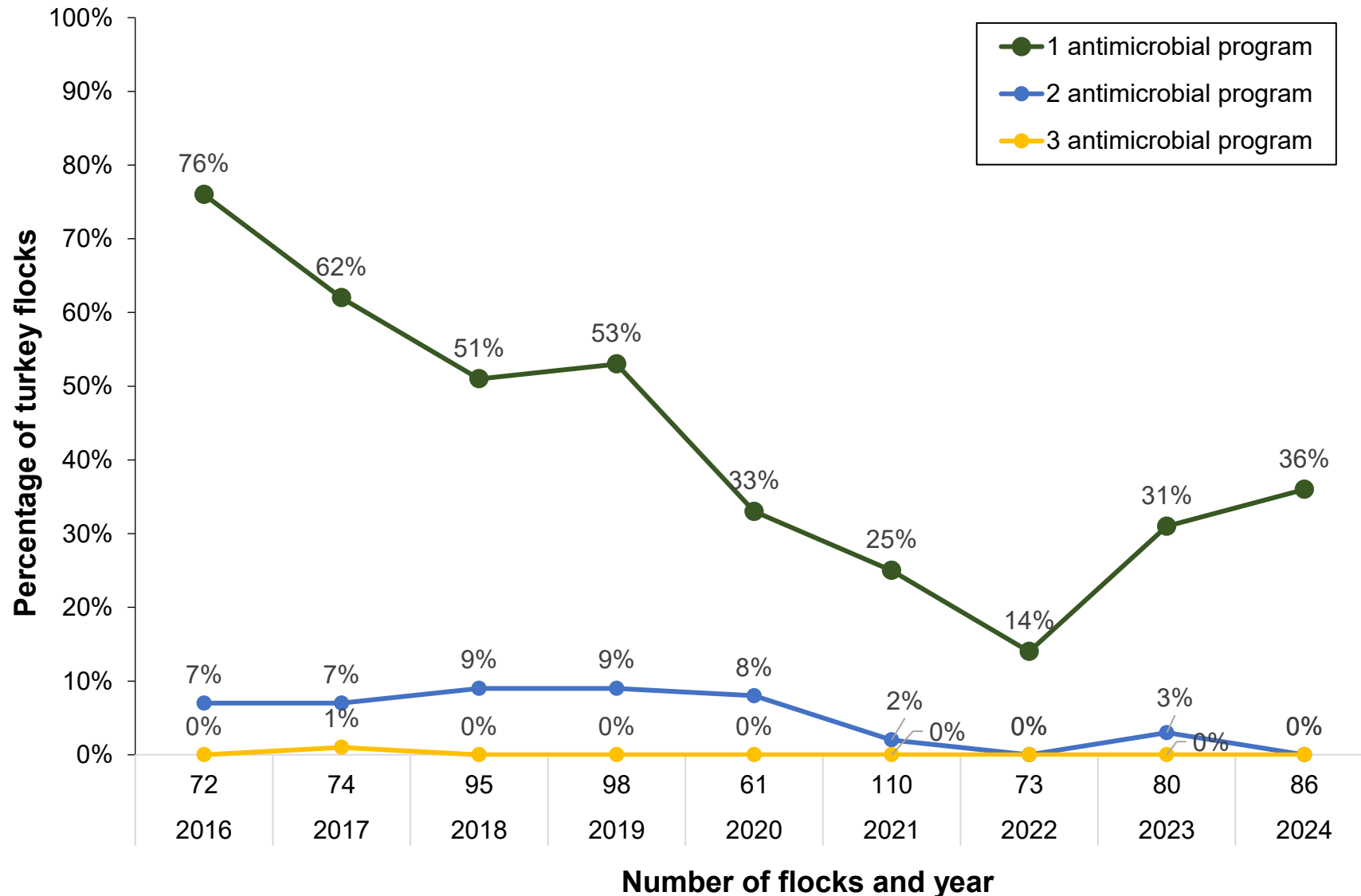
Shift in the route of administration from feed to water

mg/kg turkey biomass – proportion administered via water increased



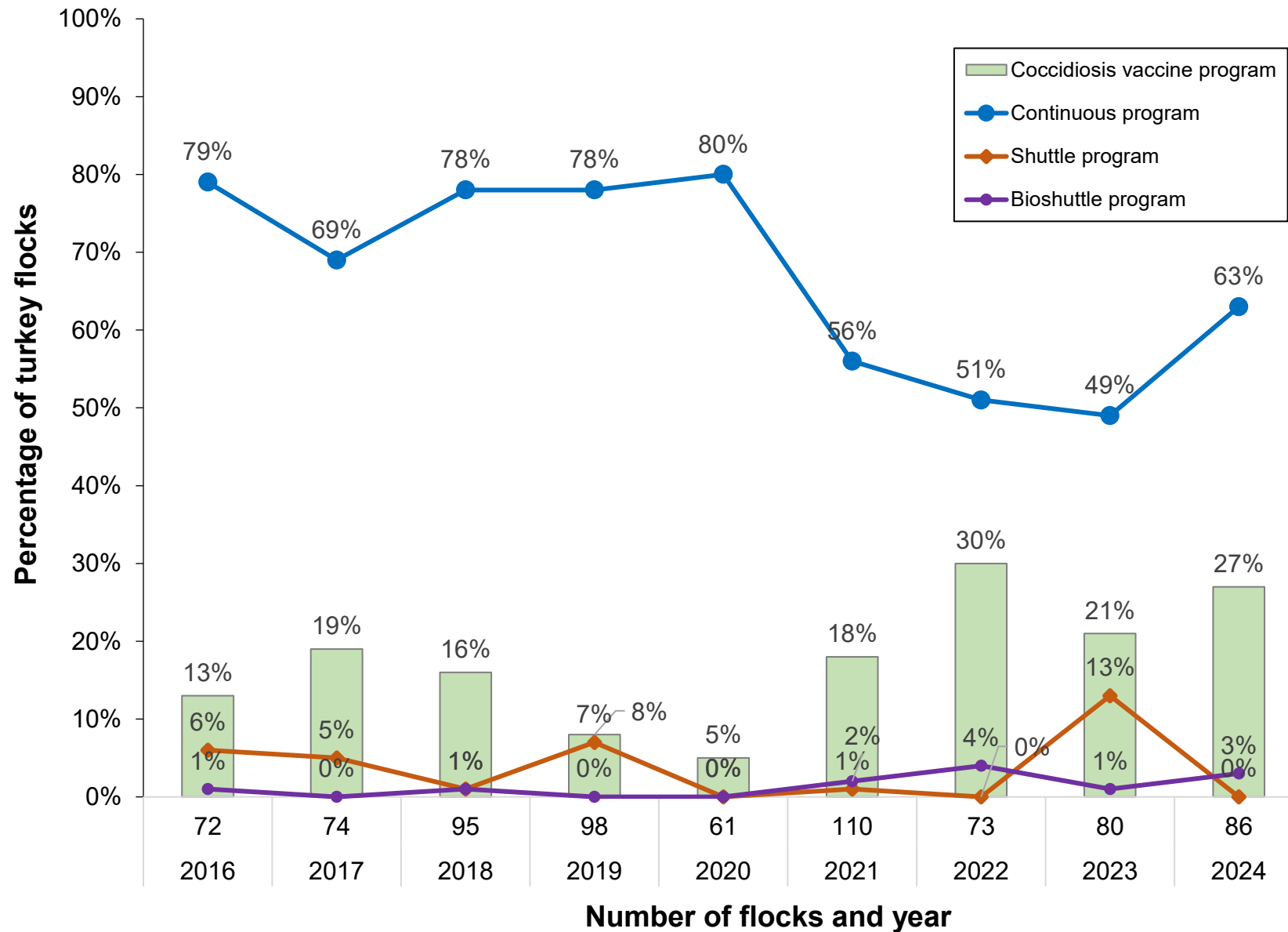
- Water-administered antimicrobials:
 - Increased from 15% (2023) to 26% (2024).
 - Commonly used in 2024:
penicillins, aminoglycosides, lincosamides
- Small quantity of injectable antimicrobial – gentamicin.

Enteric disease control – necrotic enteritis control contributes to total AMU



- Use of **one antimicrobial** (36%) remained the most frequent necrotic enteritis control
 - 1 antimicrobial program: **bacitracin**
- No use of 2 to 3 antimicrobial program.
- Unlike in broilers, *C. perfringens* vaccination was not reported.

Enteric disease control – coccidiosis programs complement necrotic enteritis programs



- **Continuous/single (49%)** – remained the most frequently used program
 - Most common - **monensin**
- **Shuttle/dual program** – no flocks using this program in 2024
- **Coccidiosis vaccination (27%)** fluctuated over time but has not replaced the use of coccidiostats

Bacterial recovery and the most common *Salmonella* serovars

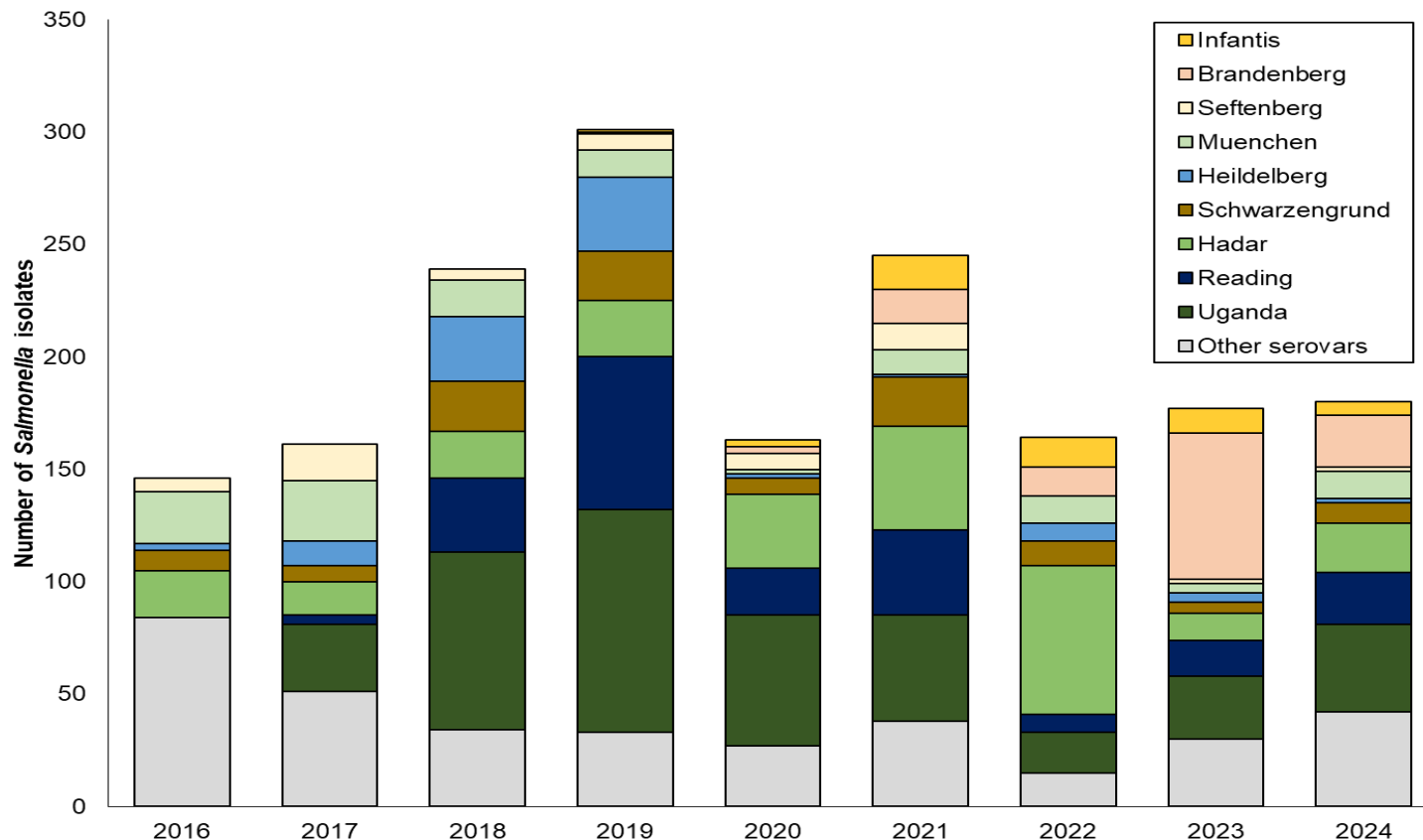
Percentage of bacterial recovery in farm turkey samples

	2020	2021	2022	2023	2024	Trends	2023 vs. 2024 (% difference)
<i>Salmonella</i>	69%	57%	56%	55%	52%		-3%
<i>Campylobacter</i>	43%	56%	39%	34%	43%		9%

Decreased *Salmonella*-positive farm samples

Increased *Campylobacter*-positive farm samples

Salmonella serovars



- The diversity and proportion of serovars varied each year.
- Top frequently isolated serovars were similar to 2023, though with a slightly different order in 2024:
 - **Uganda** (39 isolates: SSS-TET)
 - **Brandenburg**
 - **Reading** (3 isolates: AMP)
- One *S. Muenchen* isolate from Ontario was phenotypically resistant to **colistin** but no resistance gene detected

AMP: ampicillin, SSS: sulfisoxazole, TET: tetracycline

AMR status of farm turkeys – stable in most antimicrobials and bacteria

Salmonella, *E. coli* and *Campylobacter*

Year	2020	2021	2022	2023	2024
<i>Salmonella</i> , number of isolates	163	245	164	164	180
Ampicillin	9%	6%	3%	6%	5%
Ceftriaxone	0%	2%	3%	2%	2%
Ciprofloxacin, not susceptible	2%	2%	3%	1%	1%
Gentamicin	3%	4%	7%	3%	4%
Nalidixic acid	0%	2%	3%	1%	1%
Tetracycline	50%	37%	58%	24%	38%
Trimethoprim-sulfamethoxazole	1%	1%	1%	1%	1%
<i>E. coli</i> , number of isolates	223	429	289	318	342
Ampicillin	36%	26%	24%	28%	24%
Ceftriaxone	0.4%	1%	0%	0%	0%
Ciprofloxacin, not susceptible	5%	2%	2%	3%	6%
Gentamicin	12%	18%	10%	13%	13%
Nalidixic acid	2%	1%	2%	2%	3%
Tetracycline	54%	49%	48%	49%	48%
Trimethoprim-sulfamethoxazole	14%	9%	5%	6%	10%
<i>Campylobacter</i> , number of isolates	90	240	115	109	147
Azithromycin	12%	11%	3%	11%	2%
Ciprofloxacin	18%	19%	11%	26%	31%
Gentamicin	0%	0%	0%	0%	0%
Tetracycline	48%	39%	44%	21%	40%

→ *S. Indiana*

→ *S. Mbandaka*

→ *S. Uganda*

Reference:

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Very low	0.1-1%
Low	> 1 - 10%
Moderate	> 10-20%
High	> 20-50%
Very high	> 50-70%
Extremely high	> 70

*Estimates were adjusted for clustering at the flock level

- Stable or decreased resistance across most antimicrobials and the 3 bacteria, except an increase in ciprofloxacin not susceptible *E. coli* (3%), and tetracycline resistant *Salmonella* (14%).
- Campylobacter* spp.:** continued to increase in 2024, where it increased by 5% compared to 2023.

LAYERS



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CIPARS Poultry Industry Report Layer Chickens 2024

3

Background

Public Health Agency of Canada's Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) and FoodNet Canada have collected samples from laying hens on sentinel farms through a network of veterinary practices and producers since 2020/21. The project aims to describe the presence of *Salmonella*, *Campylobacter*, and *E. coli*, the presence of resistance in these bacteria to commonly used antimicrobials and to capture antimicrobial use (AMU). Participation is voluntary in nature and is not intended for trace-back (for example, initiating egg recalls) or trace-forward purposes.

Brief overview of the sentinel flocks and methods

In 2024, producers of **65 layer flocks** across the five egg producing regions (British Columbia: 1 flock, Prairies: 8 flocks, Ontario: 29 flocks and Quebec: 26 flocks) provided fecal samples and completed questionnaires (1 missing questionnaire; total 64 of 65 flocks) regarding basic farm characteristics, antimicrobial use, flock health/vaccination programs, and biosecurity.

Key findings

- The flock characteristics slight variations compared to 2023. The mean age at sample collection was 60 weeks, up from 55 weeks in 2023. The mean farm capacity increased to 40,774 birds (vs. 36,885 in 2023), the mean flock population rose to 25,120 (vs. 22,482), and the average bird weight at sampling was 1.8 kg, slightly lower than 1.9 kg in 2023.
- AMU was reported in 6 flocks. Bacitracin was used in 5 flocks for the control of necrotic enteritis, and amprolium was used in one flock for coccidiosis control. Treatments occurred during the pullet (3 flocks) and laying (3 flocks) phases.
- At the national level, 41% of farms were positive for *Salmonella* (defined as at least one of four samples testing positive), and 75% were positive for *Campylobacter*. These represent decreases of 18% and 1%, respectively, compared to 2023.
- *Salmonella* Kentucky remained the most commonly isolated serovar and were all resistant to tetracycline. Notably, no *S. Enteritidis* was and *S. Infantis* was detected.
- AMR remained generally stable, with a decrease ciprofloxacin resistance in *Campylobacter* (9%) and low-level *E. coli* isolates not susceptible to ciprofloxacin.



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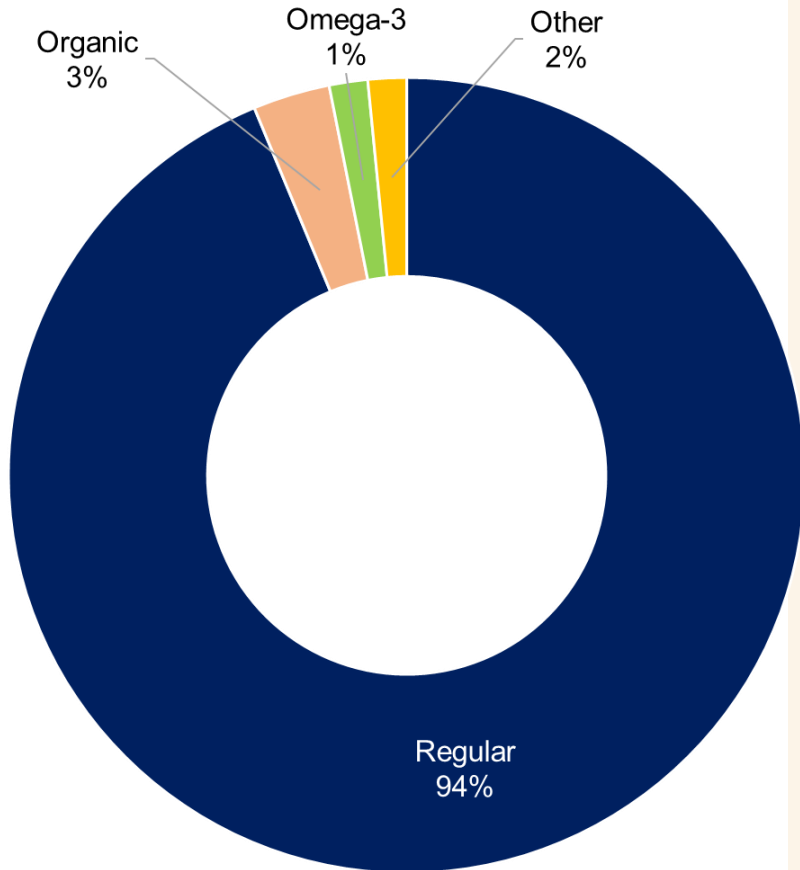
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Layer flock characteristics and disease status in 2024 (n = 64 flocks)

Eggs marketed as:



Barn set up

- 53% of the sampled flocks were housed in conventional housing system, 28% were in enriched colony system and the remaining flocks were in free-run/free range system.

Farm building structure

- 55% of the flocks originated from farms with single-barn and the remaining flocks were from farms with complex and multi-barn structures.

Egg color

- 86% were white egg producers and the remaining 14% were brown egg producers or unspecified.

Diagnosis of disease

- Focal duodenal necrosis (FDN), an emerging enteric disease of laying hens was reportedly diagnosed in 2 flocks, along with occasional necrotic enteritis and coccidiosis diagnosis as seen in previous years.

Vaccination

- Comprehensive and covered most diseases affecting layer flocks in Canada (most common: Infectious Bronchitis, Newcastle Disease)

Small number of layer flocks reportedly using antimicrobials

Year	2020/2021	2022	2023	2024	Reasons for use
Number of flocks	72	50	45	64	
Medically important					
Bacitracin	13%	20%	4%	8%	Necrotic enteritis
Oxytetracycline	1%	0%	0%	0%	Respiratory diseases
Nonmedically important (coccidiostats)					
Amprolium	3%	2%	7%	2%	Coccidiosis
Monensin	7%	0%	2%	0%	Coccidiosis

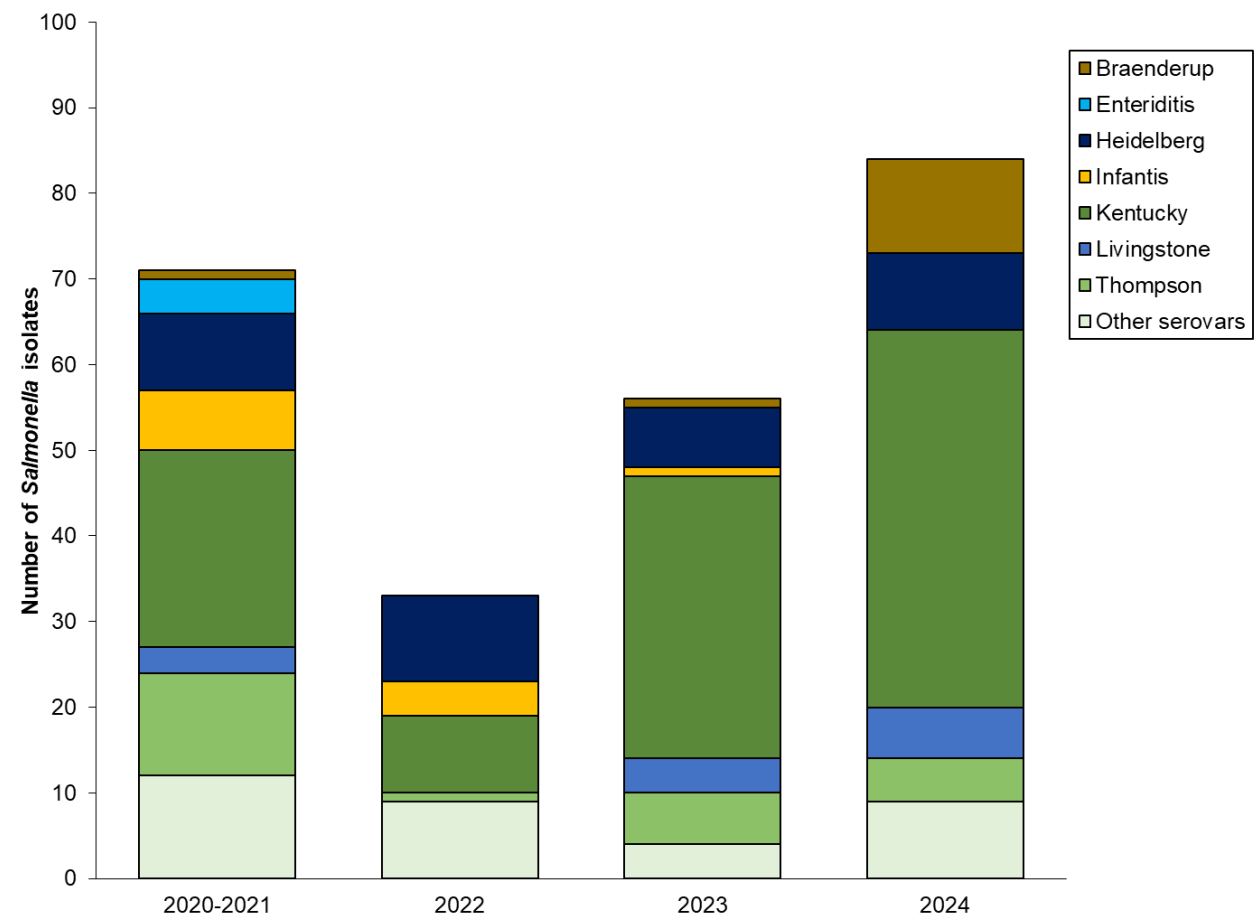
- Bacitracin was consistently reported for the control of **necrotic enteritis** and more recently, **focal duodenal necrosis (FDN)**.
- Amprolium was also consistently reported for the control of **coccidiosis**.

Bacterial recovery and the most common *Salmonella* serovars

Year	2020-2021	2022	2023	2024	Trends	2023 vs. 2024 (% difference)
Number of flocks	72	50	46	64		
<i>Salmonella</i>	42%	22%	59%	41%		-18%
<i>Campylobacter</i>	74%	68%	74%	75%		1%

Salmonella-positive farm decreased by **18%**, while *Campylobacter*-positive farm remained stable, with 1% increase

Analyzed by flock (not samples received)



In 2024, 10 *Salmonella* serovars were identified. Most common are the following

2024

- Kentucky (44 isolates: TET)
- Braenderup
- Heidelberg

Across all years

- Kentucky
- Heidelberg
- Thompson

TET: tetracycline

AMR status of layers

Salmonella, E. coli and Campylobacter

Year	2020/21	2022	2023	2024
Salmonella , number of isolates	71	33	56	84
Ampicillin	0%	0%	0%	0%
Ceftriaxone	0%	0%	0%	0%
Ciprofloxacin, not susceptible	0%	0%	0%	0%
Gentamicin	0%	0%	0%	0%
Nalidixic acid	0%	0%	0%	0%
Tetracycline	37%	27%	63%	63%
Trimethoprim-sulfamethoxazole	3%	0%	0%	0%
E. coli , number of isolates	280	198	177	253
Ampicillin	7%	8%	4%	3%
Ceftriaxone	0%	0%	0%	0%
Ciprofloxacin, not susceptible	2%	1%	1%	2%
Gentamicin	2%	0%	1%	1%
Nalidixic acid	1%	1%	1%	2%
Tetracycline	24%	23%	19%	13%
Trimethoprim-sulfamethoxazole	2%	3%	2%	1%
Campylobacter , number of isolates	183	115	107	170
Azithromycin	0%	8%	0%	0%
Ciprofloxacin	16%	15%	30%	21%
Gentamicin	0%	0%	0%	0%
Tetracycline	29%	28%	40%	27%

→ S. Kentucky

Reference:

Not detected	
Rare	< 0.1%
Very low	0.1-1%
Low	> 1 - 10%
Moderate	> 10-20%
High	> 20-50%
Very high	> 50-70%
Extremely high	> 70

*Estimates were adjusted for clustering at the flock level

Stable across years across most antimicrobials and the 3 organisms, except for a decrease in tetracycline resistant *E. coli*.

Campylobacter spp.: decreased resistance to ciprofloxacin (9%) and tetracycline (13%).

Poultry overall



Poultry

Sales of medically important antimicrobials have **decreased by 37%** relative to 2018, and **by 30%** relative to 2020.

There has been a small increase in the biomass of poultry produced since 2018.

There are small quantities of antimicrobials compounded for use in poultry each year (data not shown), including Category I antimicrobials.

CIPARS-VASR: The quantity of medically important antimicrobials sold for use in poultry by manufacturers and importers



Veterinary Antimicrobial Sales Reporting – POULTRY

Sales for **poultry** are primarily Category II and III antimicrobials.

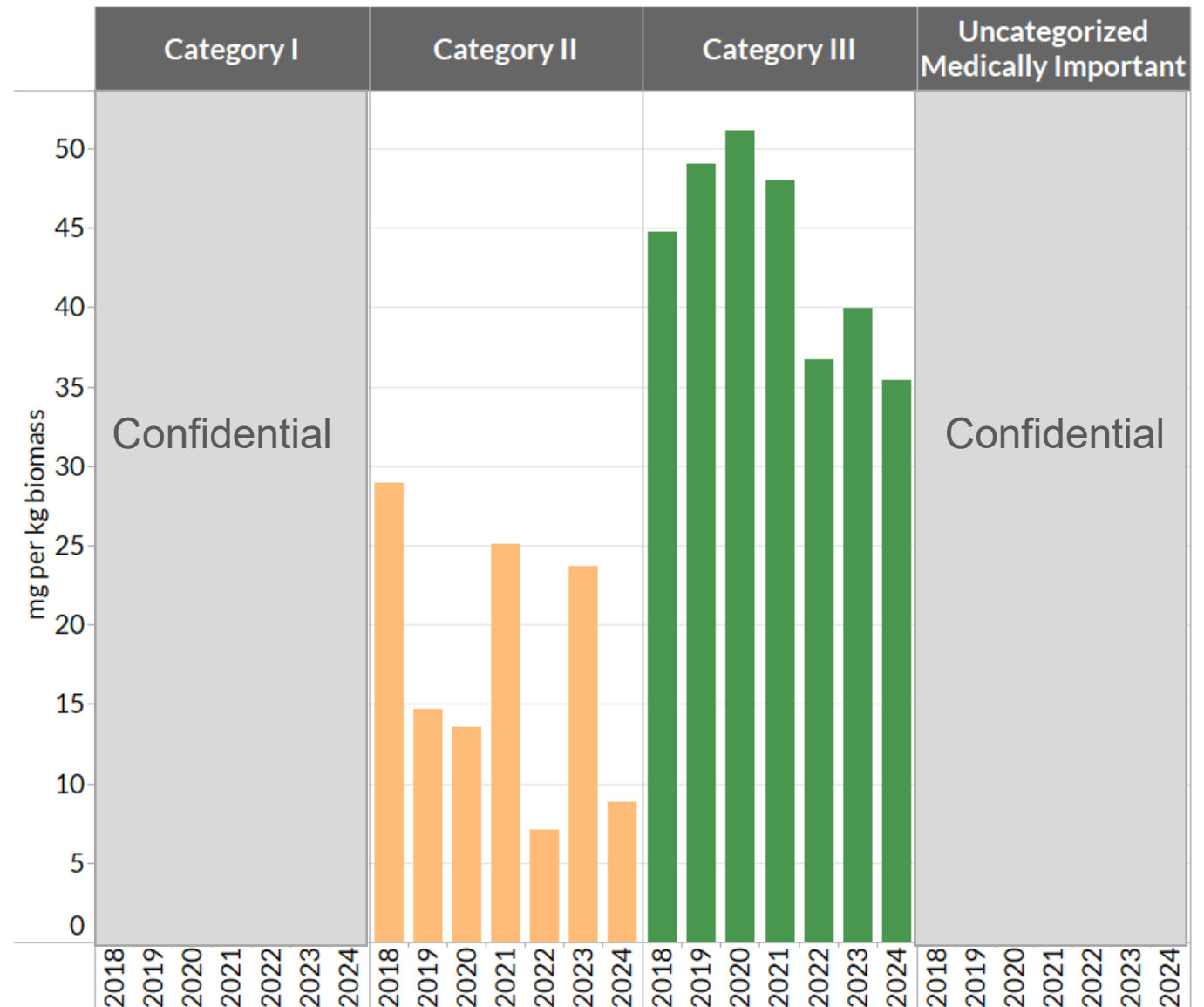
- The top class sold is **bacitracin**
- In 2024 the next highest classes included **macrolides**, **penicillins**, **orthosomycins** and **trimethoprim-sulfonamides**

There have been no Category I antimicrobial sales by manufacturers and importers since 2018.

Sales are primarily for use in **feed**, followed by water, and small quantities for use by injection.

These findings are consistent with the farm-level AMU

CIPARS-VASR: The quantity of medically important antimicrobials sold for use in poultry, by manufacturers and importers



*Category I and Uncategorized medically important antimicrobial sales not shown due to confidentiality

Salmonella – whole genome sequencing

2020-2024 CIPARS/FNC isolates sequenced in PulseNet Canada, matching to a human outbreak cluster

	Percentage of isolates matching human outbreak cluster (matches/total isolates in Pulsenet)	Common serovars
Broiler chickens (farm)	38% (337/890)	Enteritidis*, Hadar, Infantis, Kentucky, Braenderup, Typhimurium, I,4,[5],12:i:-
Broiler chickens (slaughtered chickens /abattoir)	29% (185/634)	Enteritidis*, Heidelberg, Infantis, Kentucky, Braenderup, Typhimurium, I,4,[5],12:i:-
Turkeys (farm)	77% (692/896)	Agona, Brandenburg, Hadar, Reading, Schwarzengrund, Uganda, Muenchen, Newport, Enteritidis*
Layers (farm)	14% (37/263)	Braenderup, Heidelberg, Infantis, I,4,[5],12:i:-, Enteritidis*

*seen across poultry commodities

Research findings

	Key findings
Dr. Diego Nobrega, University of Calgary	Restricted use of antimicrobials in the Canadian poultry industry: Impacts on antimicrobial resistance of <i>Enterococcus</i> spp. isolated from poultry • AMR in <i>Enterococcus</i> spp. from poultry is decreasing over time for Category II and III antimicrobials • Presence of AMR genes is also decreasing particularly for macrolides-lincosamides-streptogramins and tetracyclines • When contextualized with other data (<i>E. coli</i>, <i>Salmonella</i>), this demonstrates that the poultry strategy was very effective to reduce AMR in broiler chickens
Dr. Cassandra Reedman, CIPARS	<i>Clostridium perfringens</i> • Minimum inhibitory concentration (MIC) distributions of antimicrobials varied between poultry commodity, with a higher proportion of high MIC isolates appearing to generally reflect greater usage of the corresponding antimicrobial. • A positive relationship was detected between increased use of bacitracin and high bacitracin MIC values in both broilers and turkeys.

Take away messages

Public health/food safety

- *Salmonella* continues to be detected across commodities. Underscores the importance of ongoing surveillance and the use of WGS.
- Relatively stable AMR levels; ciprofloxacin-resistant *Campylobacter* continued to be detected across the 3 commodities.
- Based on the flock records received, AMU levels are stable or slightly increased in broiler chickens and turkeys.
- Based on VASR – total sales intended for use in poultry decreased between 2023 and 2024.

Animal health

- Bacterial diseases continued to be diagnosed across commodities, including emerging viral diseases that may complicate bacterial infections.
- Emerging non-antibiotic alternatives such as *C. perfringens* vaccines were reported. Coccidiosis vaccines are also used across the 3 commodities.

Acknowledgement

- Producers and veterinarians, participating abattoirs
- CIPARS and FoodNet Canada Farm Working Group
- PulseNet
- Provincial and national poultry marketing boards
- Saskatchewan Agriculture
- Research collaborators and funding sources
 - Chicken Farmers of Canada
 - University of Calgary
- Health Canada
- Canadian Food Inspection Agency
- Other partners and collaborators providing support to CIPARS

Where can I find more information

- CIPARS Interactive data visualizations

<https://www.canada.ca/en/public-health/services/surveillance/canadian-integrated-program-antimicrobial-resistance-surveillance-cipars/interactive-data.html>

- CARSS Interactive data visualizations

<https://health-infobase.canada.ca/carss/amu/results.html?ind=06>

- CIPARS publication's webpage

<https://www.canada.ca/en/public-health/services/surveillance/canadian-integrated-program-antimicrobial-resistance-surveillance-cipars/publications.html>

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