

# 30<sup>th</sup> Annual Meeting

of the National Reference Laboratories for Avian Influenza  
and Newcastle Disease of European Union Member States



Venice Mestre  
October 10-11, 2024

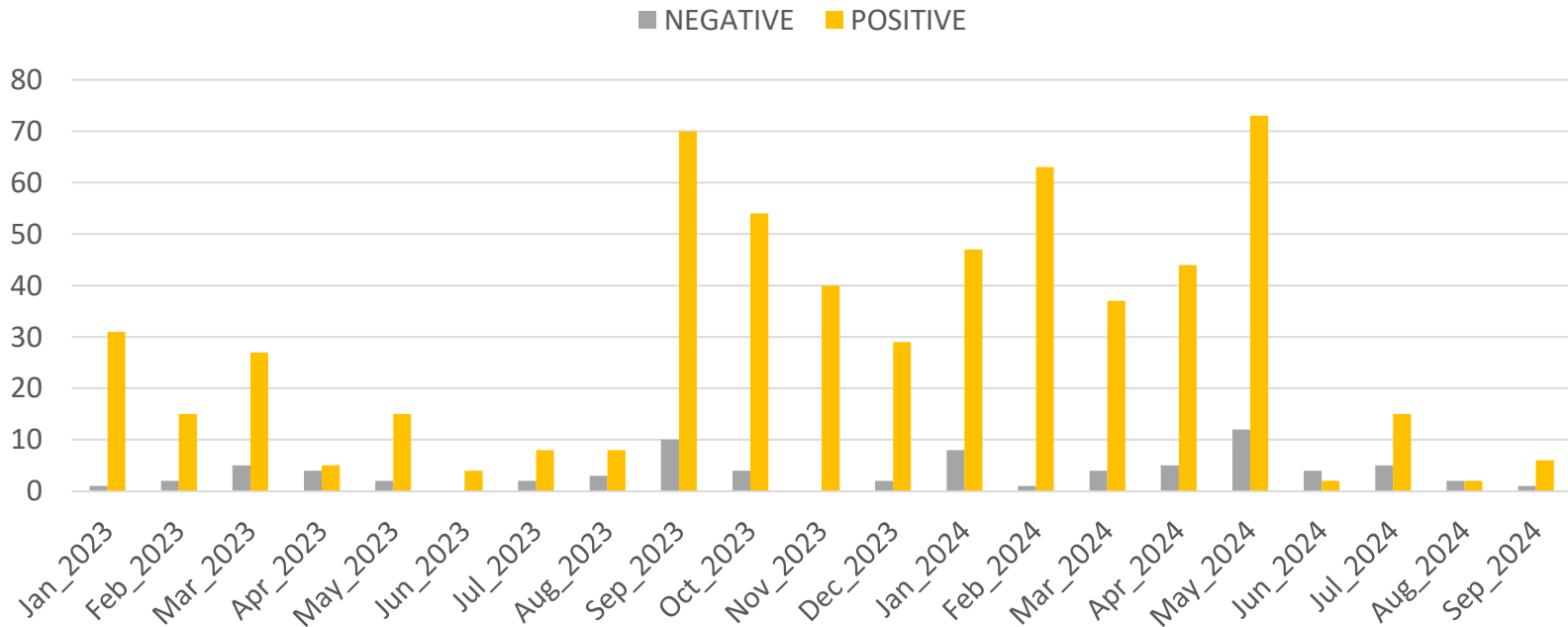
## NDV outbreaks in Columbidae farms in Italy, 2024

A. Bortolami, I. Zambon, A. Fusaro, P. Mulatti, C. Terregino

*EURL (IZSVe)*

# ND in Italy 2023 - 2024

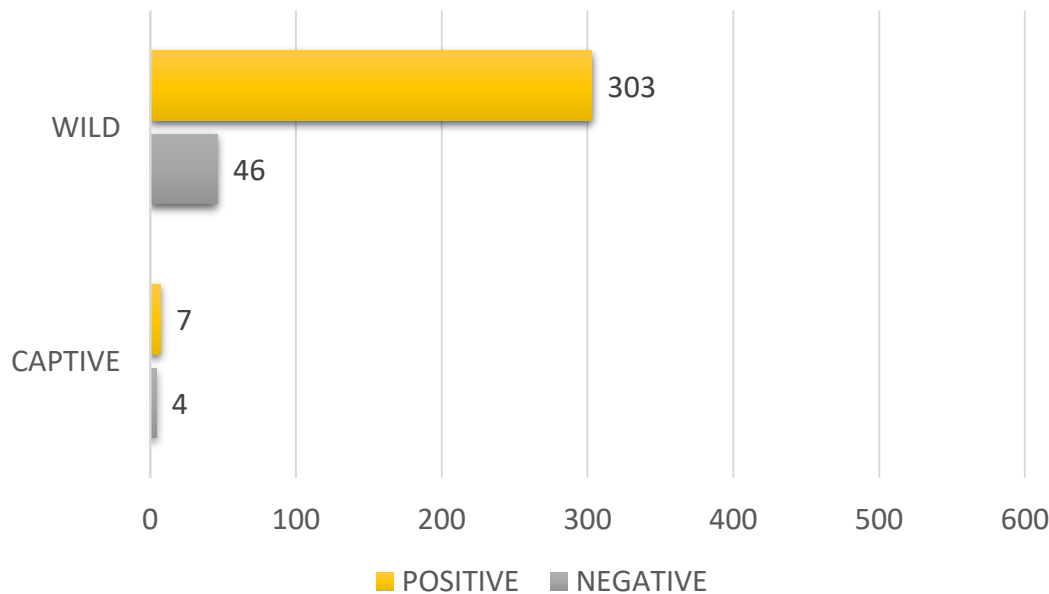
- Increase in detections occurs generally during colder months



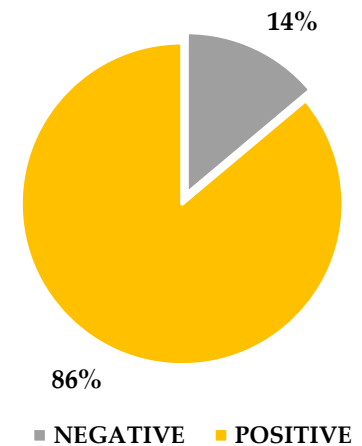
**All NDVs belong to PPMV-1 variant!**

# ● ND in Italy 2023 - 2024

- PPMV-1 positive samples detected by passive surveillance in domestic *columbiformes*
- Widespread circulation of PPMV-1 in wild birds (in particular collared doves) in Italy



Real time RT-PCR results



**40% increase in positive samples over 2021-2022**

# Outbreaks in private holdings

✓ 4 ND outbreaks

- 1 Veneto
- 1 Emilia Romagna
- 1 Toscana
- 1 Lazio



# ● Outbreaks in private holdings

- Disease control measures as provided by Commission Delegated Regulation (EU) 2020/687 were implemented in affected outbreaks

n	ADIS reference	Region	Province	Species	Virus Subtype	Confirmation date
1	IT-ND-2024-00001	VENETO	VICENZA	Domestic pigeon	PPMV-1	2024-02-28
2	IT-ND-2024-00002	TOSCANA	LUCCA	Domestic dove	PPMV-1	2024-03-18
3	IT-ND-2024-00003	LAZIO	ROMA	Eurasian collared dove	PPMV-1	2024-04-12
4	IT-ND-2024-00004	EMILIA-ROMAGNA	REGGIO NELL'EMILIA	Carrier pigeon breeders	PPMV-1	2024-05-31

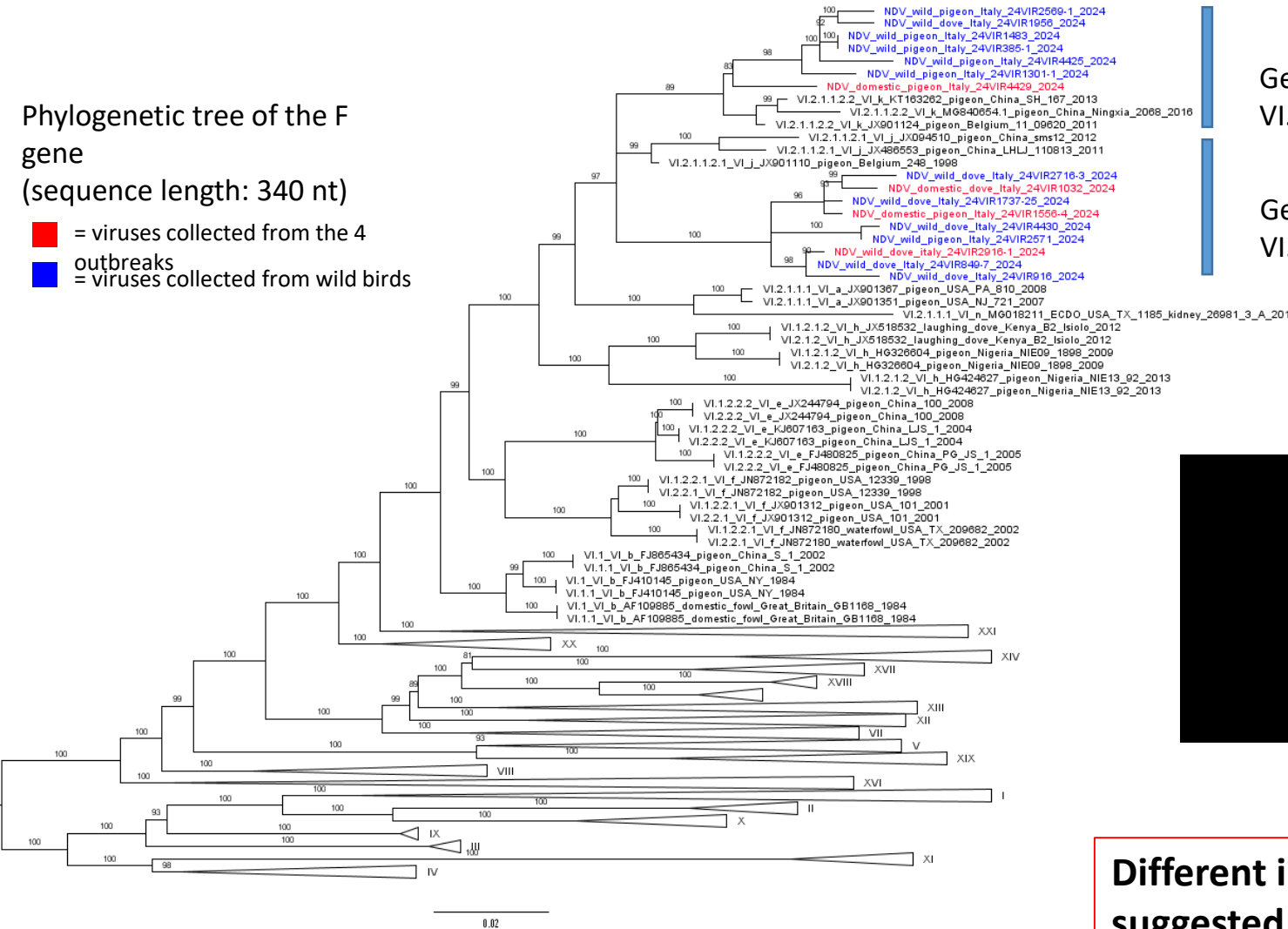
# Outbreaks in private holdings

Phylogenetic tree of the F gene  
(sequence length: 340 nt)

- = viruses collected from the 4 outbreaks
- = viruses collected from wild birds

Genotype  
VI.2.1.1.2.2

Genotype  
VI.2.1.1.2.1



Different introductions as suggested by epidemiological and genetic data

# ● IT-ND-2024-00001 - Veneto region

- Amateur pigeon farm (with 45 pigeons) in the municipality of Isola Vicentina (VI) found 2 dead birds
- Dead collared doves in the surroundings of the farm reported in the previous weeks
- Presence of a NDV – Pigeon variant (PPMV-1) **genotype VI.2.1.1.2.1**
- Epidemiological investigation revealed no contacts with commercial poultry farms (**outbreak in the DPPA of Veneto region**)



## Disease control measures as provided by Commission Delegated Regulation (EU) 2020/687

- Epidemiological investigation
- Culling, disposal of carcasses, cleaning and disinfection procedures
- Establishment of protection and surveillance zones (3 and 10 km)
- Derogation referred to in regulation (EU) 2020/687, art. 23, letter c) were applied (LESS THAN 50 BIRDS) for measures to be applied in the SZ and PZ after a risk assessment.

- ✓ Following the favorable outcome of the surveillance activities carried out, after 30 days the restriction zones were lifted

# ● IT-ND-2024-00002 - Toscana region

- Amateur farm (with 6 doves) in the municipality of Seravezza (LU) found 1 dead bird
- Owner did not reported dead wild birds around the premises in the previous days.
- Presence of a NDV – Pigeon variant (PPMV-1) confirmed **genotype VI.2.1.1.2.1**

## Disease control measures as provided by Commission Delegated Regulation (EU) 2020/687

- Epidemiological investigation
- Culling and disposal of the remaining 5 doves, cleaning and disinfection procedures
- Establishment of protection and surveillance zones (3 and 10 km)
- Derogation referred to in regulation (EU) 2020/687, art. 23, letter c) were applied (LESS THAN 50 BIRDS)

- ✓ Vaccination in hobby flocks in the protection and surveillance zones
- ✓ Following the favorable outcome of the surveillance activities carried out, after 30 days the restriction zones were lifted



# ● IT-ND-2024-00003- Lazio region

- 21 Eurasian collared dove farm were found dead in an aviary located in a confined establishment (Zoo) in the municipality of Rome (RM) found 1 dead bird
- Presence of a NDV – Pigeon variant (PPMV-1) confirmed **genotype VI.2.1.1.2.1**
- 13 Eurasian collared dove died and 41 were culled
- In the aviary 42 birds of different species were present

## **Disease control measures as provided by Commission Delegated Regulation (EU) 2020/687**

- Epidemiological investigation
- Culling and disposal of the remaining collared doves, cleaning and disinfection procedures
- Complete seizure of the aviary for 21 days (no visitors allowed)
- NO establishment of protection and surveillance zones (3 and 10 km) according to regulation (EU) 2020/687, art. 21, point 3 letter a)
- No killing of the remaining birds in the aviary according to derogation referred to in regulation (EU) 2020/687, art. 13, point 2 b) d) applied.

- ✓ Vaccination for the other bird species present in aviary was requested
- ✓ Following the favorable outcome of the surveillance activities carried out, after 30 days the restriction zones were lifted

# ● IT-ND-2024-00004 – Emilia Romagna region

- 140 racing pigeons were found dead in an establishment located in the municipality of Scandiano (RE) with 950 racing pigeons.
- Gathering of birds from different breeders.
- Presence of a NDV – Pigeon variant (PPMV-1) confirmed **genotype VI.2.1.1.2.1**

## Disease control measures as provided by Commission Delegated Regulation (EU) 2020/687

- Epidemiological investigation
- Two virological controls (92 cloacal or tracheal swab, 3% prev). Periodical clinical controls
- Derogation referred to in regulation (EU) 2020/687, art. 21, point 3 letter a) were applied. No poultry establishment within the 3 km radius, therefore No PZ SZ established.
- Derogation referred to in regulation (EU) 2020/687, art. 13, point 2 b) d) applied. No killing of the remaining birds in the establishment due to high genetic value.

- ✓ Vaccination applied for all the pigeons in the establishment
- ✓ Following the favorable outcome of the surveillance activities carried out the restriction zones were lifted

# ● Conclusions

- **PPMV-1** circulation in wild pigeons and doves represent a constant threat for domestic *Columbiformes*
- Importance of vaccination of domestic pigeons and doves
- Baseline vaccination for NDV (as applied in Italy) is expected to reduce likelihood of introduction in domestic poultry
- Given the PPMV-1 widespread circulation in wild birds, backyard flocks (where ND vaccination is not always applied) and free range poultry are at high risk of exposure.
- The derogations provided for in the current legislation have been applied taking into account the specific situations and have avoided major disruption to the commercial poultry sector.
- Is there a need to align EU regulations with the WOAH Code (at least in countries with compulsory ND vaccination plans for poultry), where control measures do not apply to family or hobby farms?

# One Health considerations

- Newcastle disease is a minor zoonosis
- Increasing number of reports of PPMV-1 cases in humans

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## Concurrent pigeon paramyxovirus-1 and *Acinetobacter baumannii* infection in a fatal case of pneumonia

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### ABSTRACT

Pigeon paramyxovirus type 1 (PPMV-1), an antigenic variant of avian paramyxovirus type 1 (APMV-1), mainly infects pigeons. PPMV-1 genotype VI is the dominant genotype infecting pigeons in China. Human infection of avian paramyxovirus was rarely reported, and usually developed mild symptoms, such as conjunctivitis. We detected PPMV-1 in the lower respiratory sample from a fatal case with severe pneumonia; this patient aged 64 years presented cough, fever, and haemoptysis for 8 days and was admitted to hospital on Dec 26, 2020. He developed acute respiratory distress syndrome and sepsis in the following days and died of multiple organ failure on Jan 7, 2021.

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## Severe pigeon paramyxovirus 1 infection in a human case with probable post-COVID-19 condition

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### ABSTRACT

Pigeon paramyxovirus 1 (PPMV-1) is an antigenic host variant of avian paramyxovirus 1. Sporadic outbreaks of PPMV-1 infection have occurred in pigeons in China; however, few cases of human PPMV-1 infection have been reported. The purpose of this article is to report a case of severe human PPMV-1 infection in an individual with probable post-COVID-19 syndrome (long COVID) who presented with rapidly progressing pulmonary infection. The patient was a 66-year-old man who was admitted to the intensive care unit 11 days after onset of pneumonia and recovered 64 days after onset. PPMV-1 was isolated from the patient's sputum and in cloacal smear samples from domesticated pigeons belonging to the patient's neighbour. Residual severe acute respiratory syndrome coronavirus 2 was

## Under estimated zoonotic disease?

## Fatal Human Neurologic Infection Caused by Pigeon Avian Paramyxovirus-1, Australia

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Avian paramyxovirus type 1 (APMV-1) is a virus of birds that results in a range of outcomes, from asymptomatic infections to outbreaks of systemic respiratory and neurologic disease, depending on the virus strain and the avian species affected. Humans are rarely affected; those who are predominantly experience mild conjunctivitis. We report a fatal case of neurologic disease in a 2-year-old

immunocompromised child in Australia. Metagenomic sequencing and histopathology identified the causative agent as the pigeon variant of APMV-1. This diagnosis should be considered in neurologic conditions of undefined etiologies. Agnostic metagenomic sequencing methods are useful in such settings to direct diagnostic and therapeutic efforts.

Questions/Comments?