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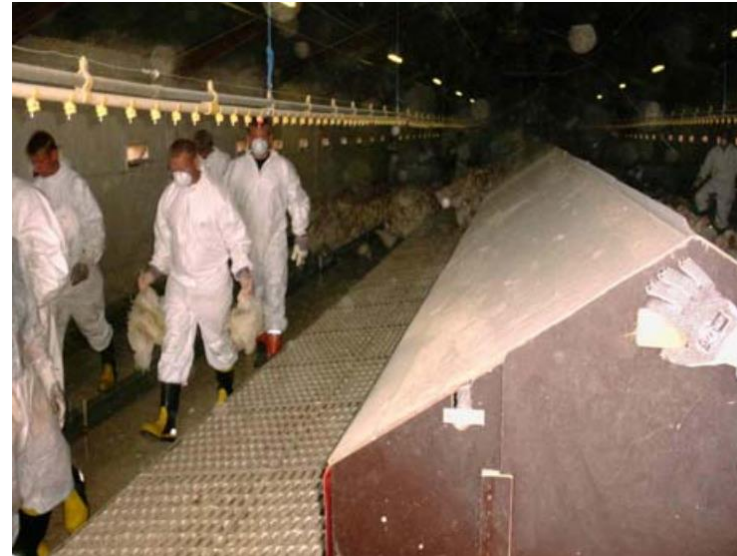
# NDV outbreak in pigeons in Denmark, 2023

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# Background – NDV in Denmark

- Outbreaks in 1995, 1996, 1998, 2002, 2005 and 2022 (pigeons)
- Widespread outbreak in 2002
- Mandatory vaccination program started in 2004

NDV 2002



From Newcastle Disease Outbreaks in Denmark 2002, Final Report, Danish Veterinary and Food Administration 2003

# Suspicion of AI/ND

- 19. June 2023
- Summer-house community, Aalborg
- Approx. 40 owners
- >1850 birds: pigeons, chicken, ornamental birds etc.
- High mortality in flock with 40 pigeons
  - CNS symptoms
  - Respiratory symptoms



# Diagnostics - suspicion samples from pigeons

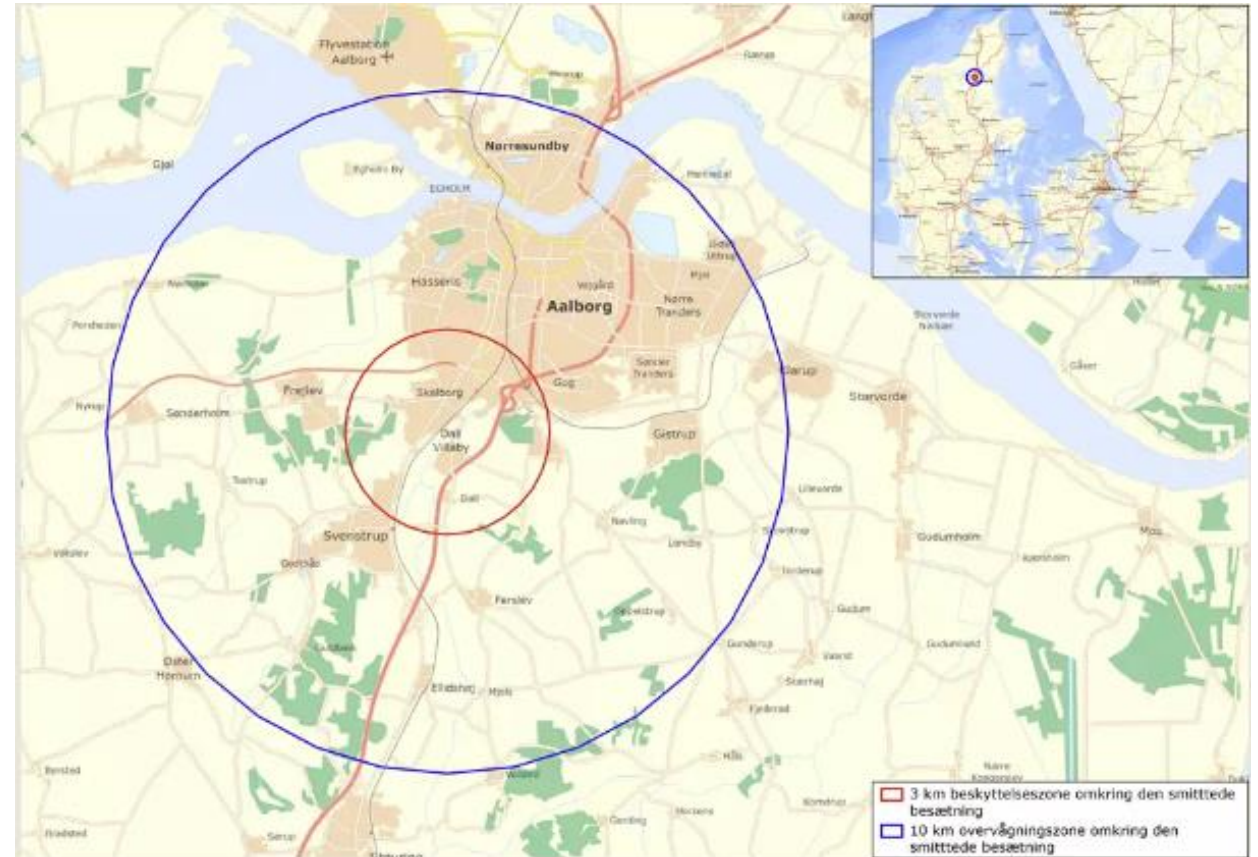
Sample	Material	APMV1-L Ct	APMV1-M Ct	APMV1-F gel	F-gene CS seq	AIV Ct	VI
1	Sick, OP-swabx5	37	0	Positive		0	
2	Next to sick birds, OPx5	33	34	Positive		0	
3	Sick, OPx5	33	34	Positive		0	
4	Sick, OPx4	25	27	Positive	KRQKRF	0	APMV-1 isolated
5	Sick, CLx5	0	0	0		0	
6	Next to sick birds, CLx5	30	31	Positive		0	
7	Sick, CLx5	28	29	Positive		0	
8	Sick, CLx4	28	29	Positive	KRQKRF	0	
9	Dead, OPx2	25	27	Positive	KRQKRF	0	
10	Dead, CLx5	26	28	Positive	KRQKRF	0	APMV-1 isolated
11+12	2 cadavers: pooled organ-wise: Brain, lung, trachea, intestine, caecale tonsills	22-25	22-25	Positive	KRQKRF (brain)	0	



CL, cloacal swab; OP, oropharyngeal swab

# Outbreak

- NDV confirmed 20. June 2023
- One epidemiologic unit
  - Approx. 40 owners
  - >1850 birds
    - Pigeons
    - Chicken
    - Parots
    - Parakeets
    - Other ornamental birds
  - Defined as Poultry
  - Culling of all birds ended on 22 June
  - Origin of infection: unknown
    - Wild birds



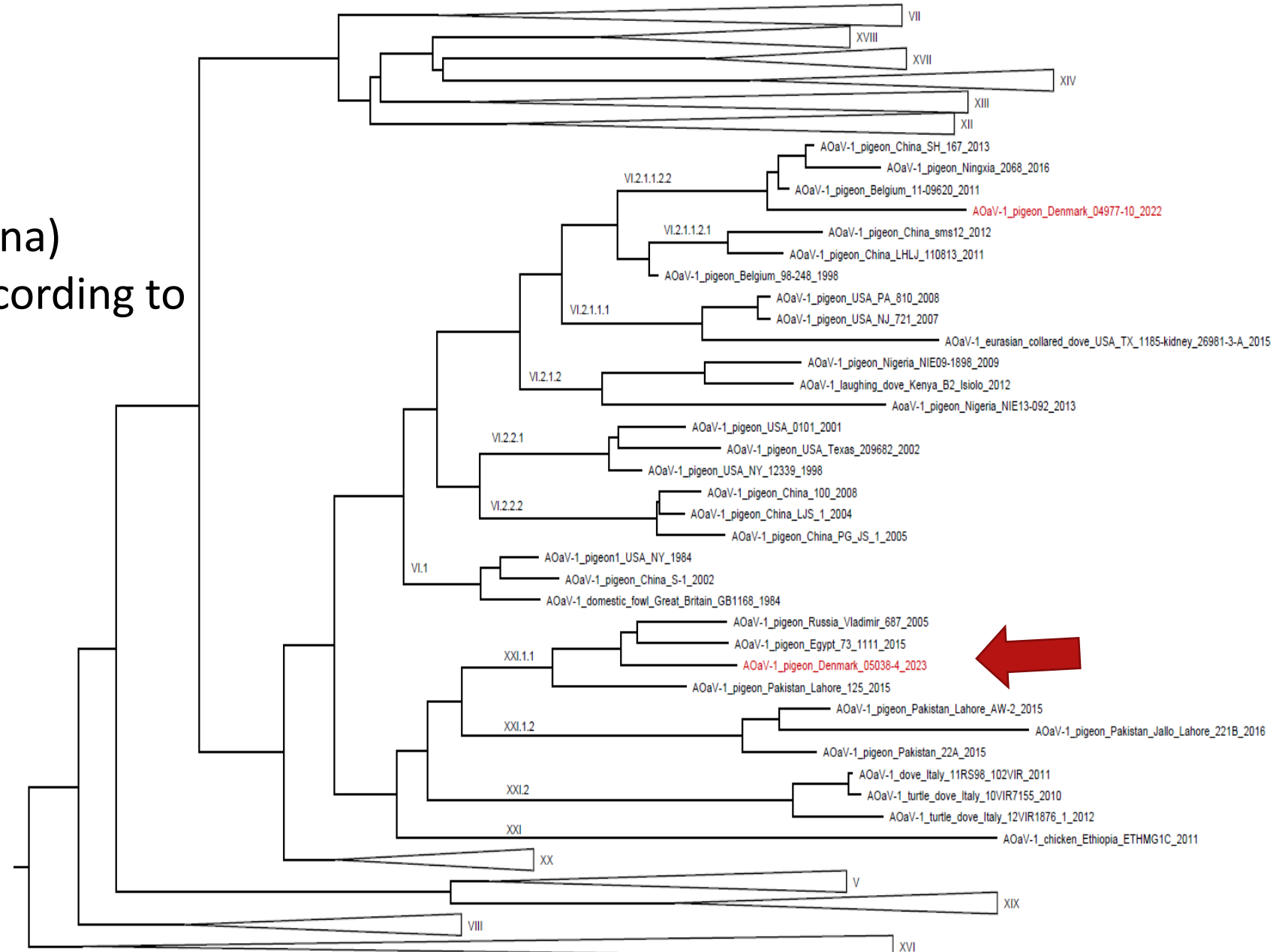
# Follow-up diagnostics

- 10 chicken
  - Cloacal swabs
  - Oropharyngeal swabs
  - Brain
  - Trachea
  - Lung
  - Intestine
  - Caecal tonsils
- **APMV-1 not detected**



# Genotyping

- Virus isolate
- Full length F-gene PCR
- Sequence by NGS (Illumina)
- Phylogenetic analysis according to Dimitrov et al., 2019
  - **Genotype XXI.1.1**





# Discussion

- Two recent outbreaks in captive pigeons mixed with other birds species in Denmark
- Typical pigeon genotype viruses
- Chicken from the epi units were apparantly not infected
- Susceptibility of chicken for the ND viruses from pigeons?
- Cases with pigeon NDV in chicken have been reported
  - E.g. Switzerland 2022





# Acknowledgements

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## Danish Veterinary and food Administration





Thank you for  
your attention

