

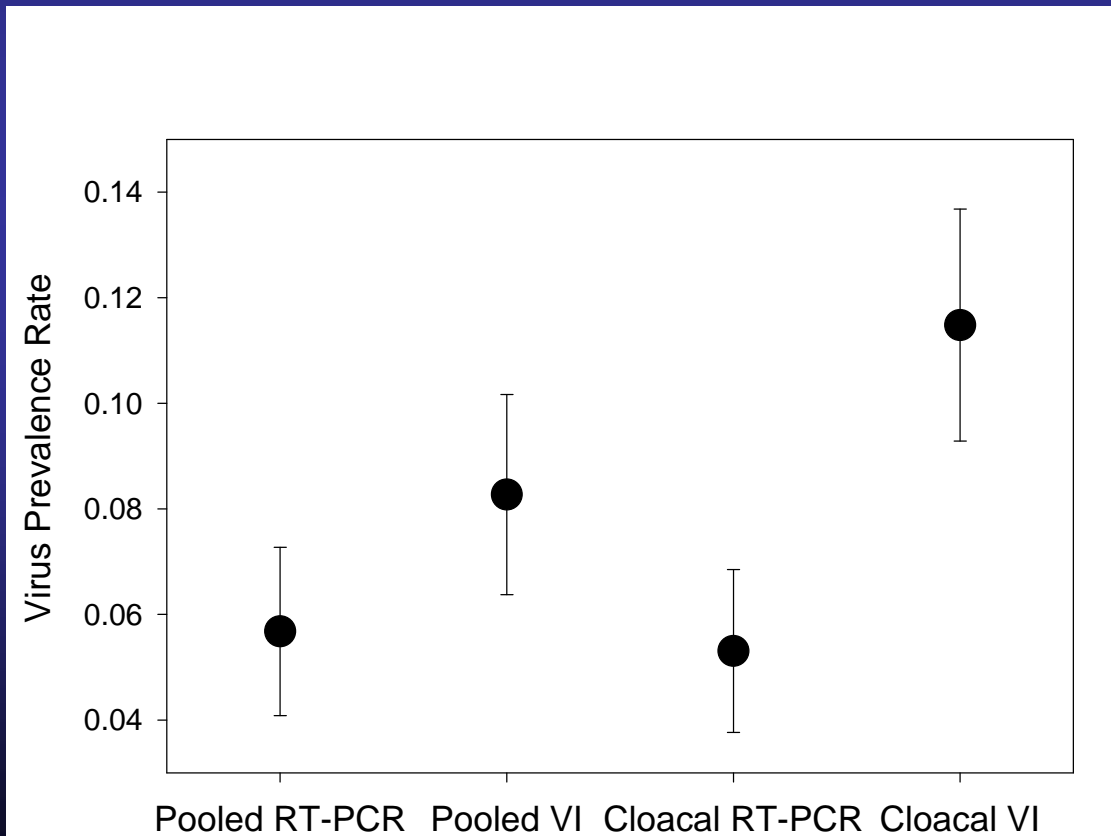
# Multiple sample types

- Cloacal samples collected in 2006 and 2007
- Oral swabs collected only in 2007
- For analyses, the cloacal samples are run separately
- Then the cloacal and oral swab are combined and run as well
- No oral only samples were analyzed

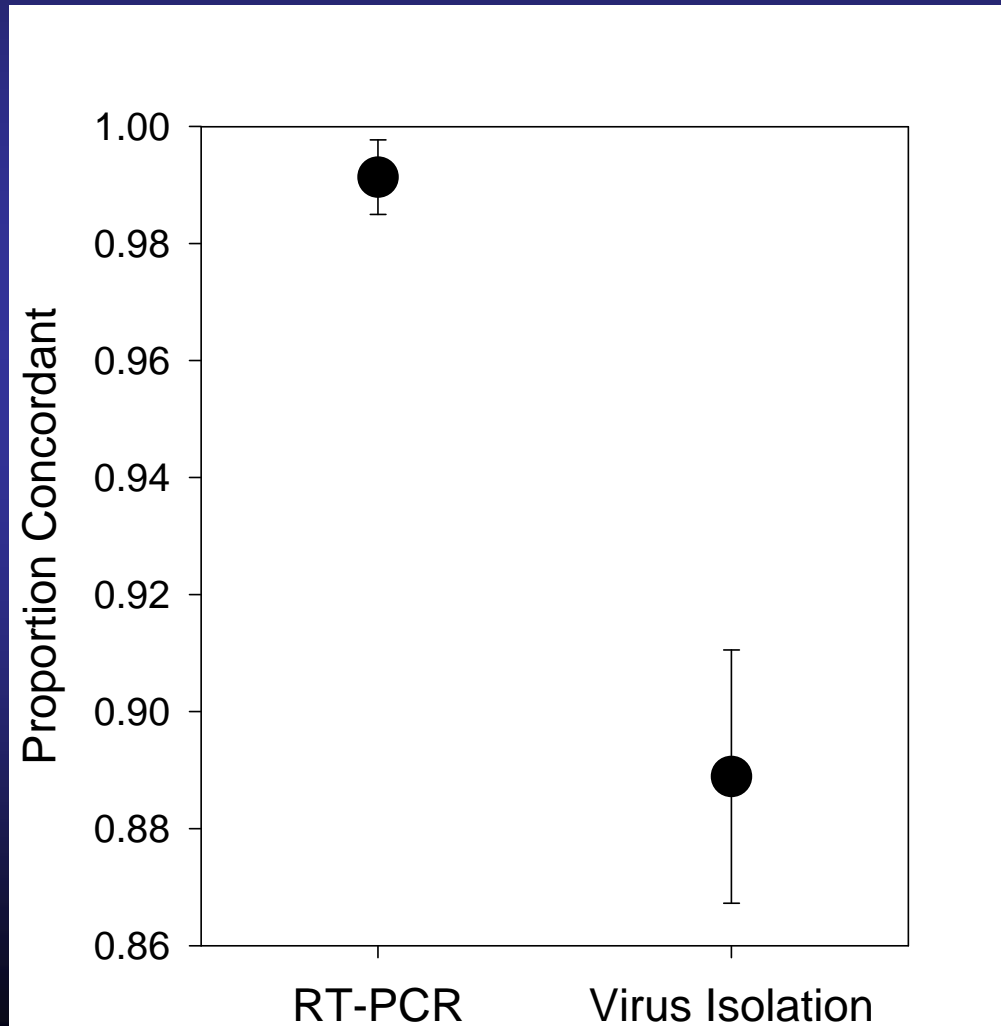
# Multiple analyses approaches

- rRT-PCR
  - Tests for the presence of AI genes
  - Can detect ‘dead’ viruses
- Virus Isolation
  - Egg inoculation to grow virus
  - Only detects live viruses
  - Can grow unlimited quantities for further analyses
  - Considered the ‘Gold’ standard for virus detection
- Sub-sample of NOPI from California (VI from 2007 AK samples not yet completed)

# Comparison of prevalence rates by sample type

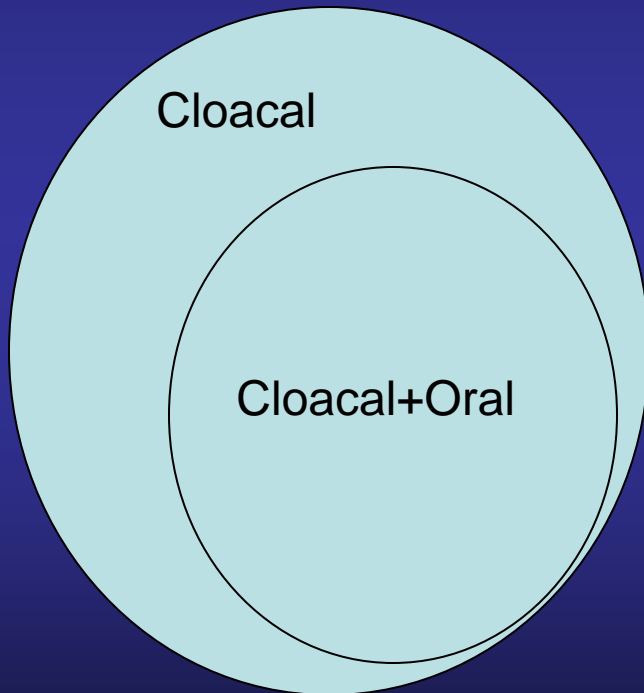


# Concordance between pooled and cloacal only samples within analytical methods

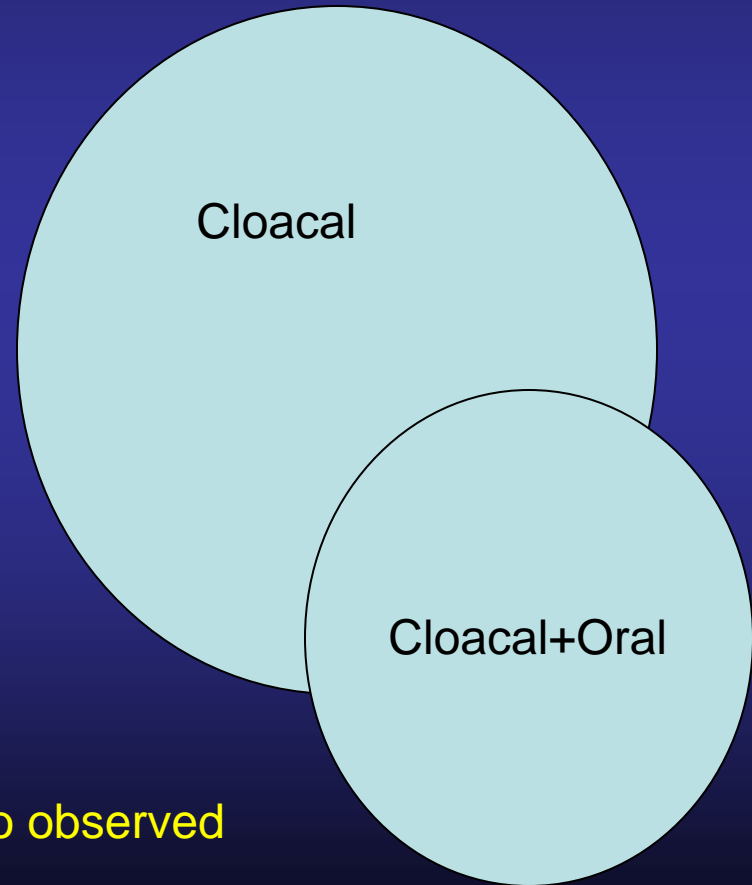


# Various explanations based on detected virus populations

Complete overlap in detected populations



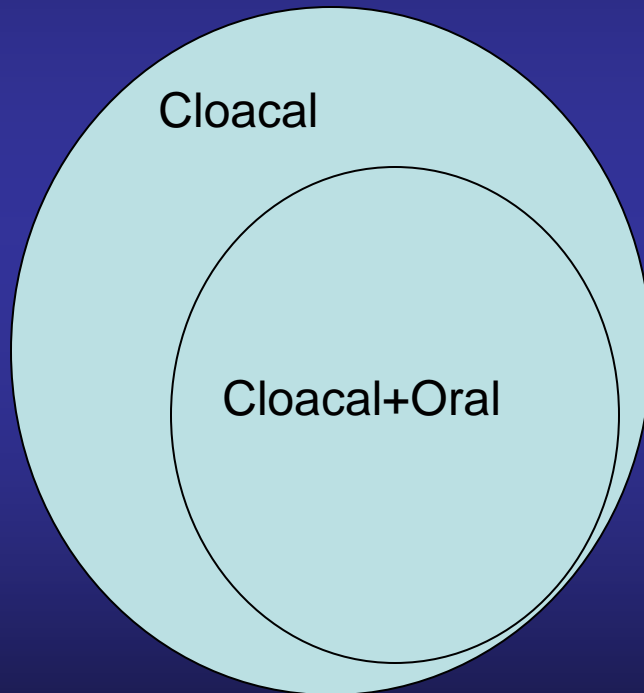
Partial overlap in detected populations



Either of these scenarios could lead to observed levels of discordance

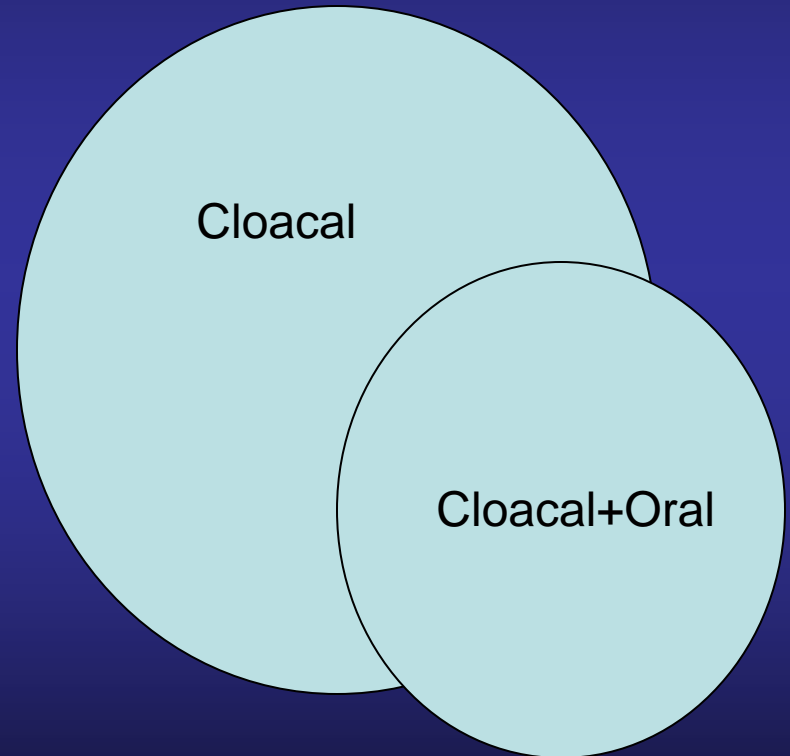
# If we recalculate exposure rates under an either or scenario, then predicted exposure rates will vary by model

Complete overlap in detected populations



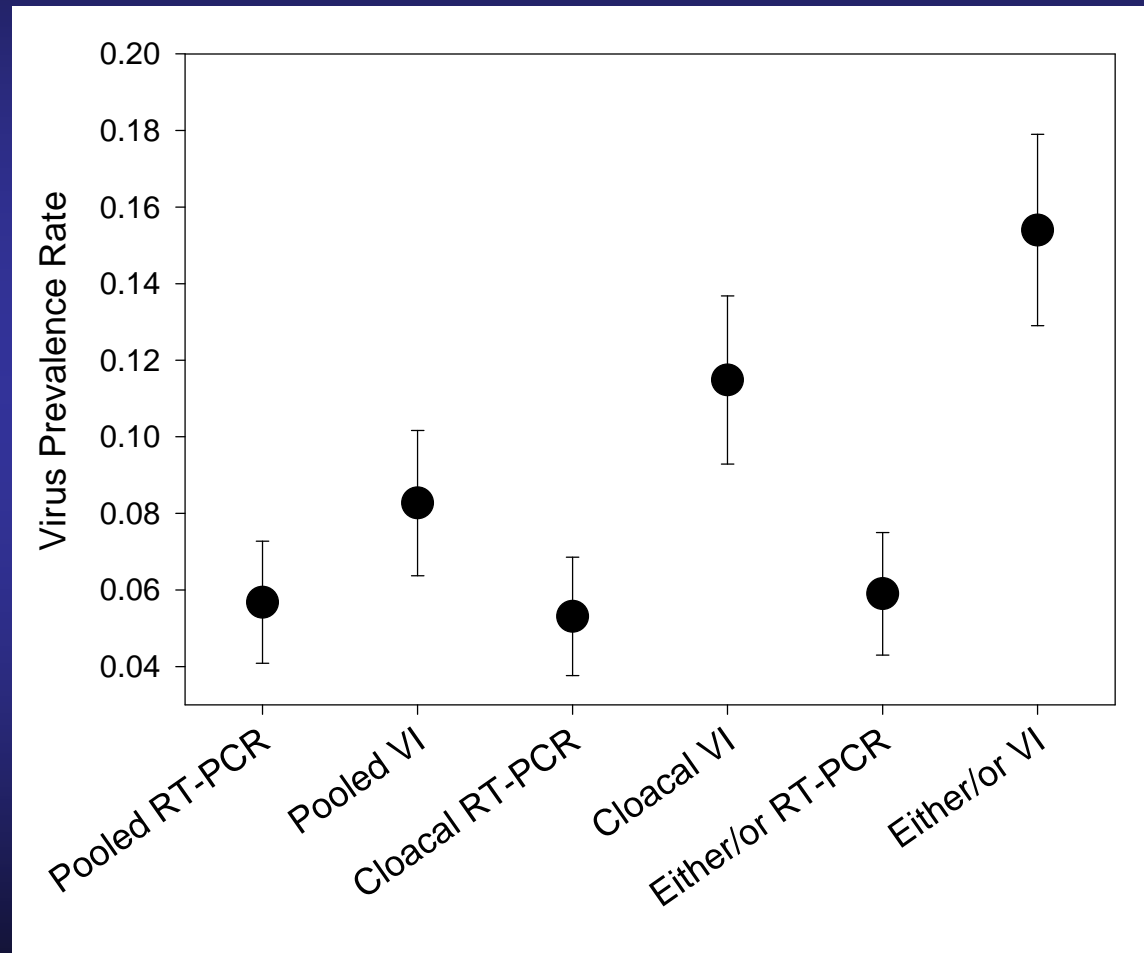
No change in prevalence rate

Partial overlap in detected populations



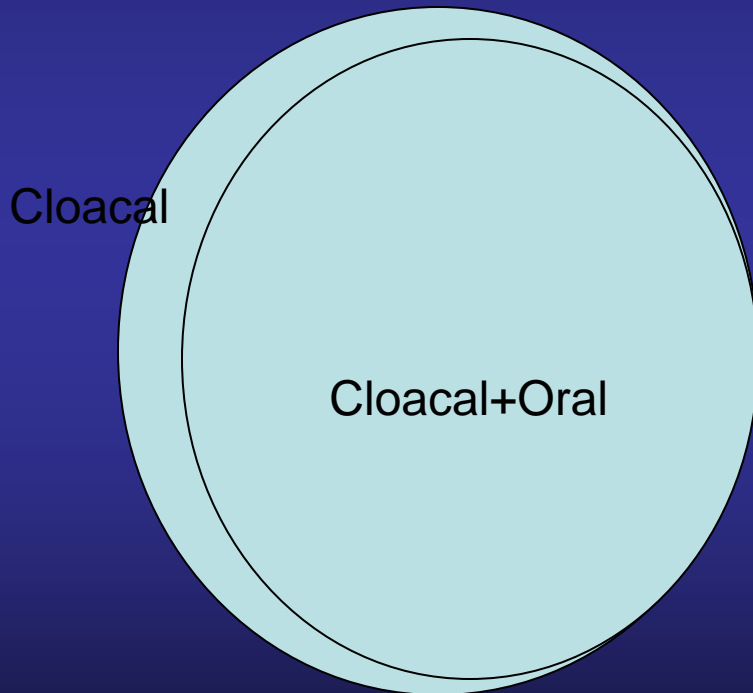
Predicted increase in prevalence rate

# Exposure rates calculated under the either/or scenario



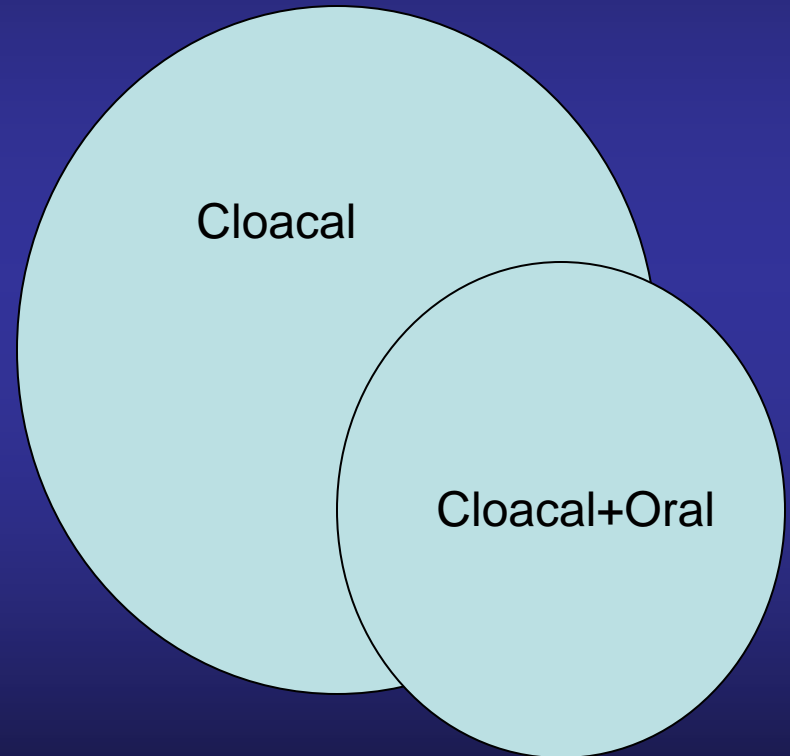
# Model fits vary by analytical technique

Complete overlap in  
detected populations



RT-PCR results fit this model

Partial overlap in  
detected populations



VI results fit this model



# Comparison of concordance between RT-PCR and VI

- 2006 data only (2007 results not yet completed)
- n=12495
- Two test agreed 98.4% of time
- Negative on RT-PCR, 0.49% were positive on VI
- Positive on RT-PCR, 57.6% were negative on VI
- Overall exposure rate from RT-PCR was 1.88%
- Overall exposure rate from Vi was 1.28%
- Either/or exposure rate was 2.37%
- Supports the hypothesis that the 2 analytical techniques are detecting somewhat different populations of viruses.

# Conclusions

- Further work is needed to determine differences between analytical methods
- Further work is needed to determine differences between swab types.
- The most viruses were detected using cloacal only swabs via virus isolation
- Swab types are not directly comparable
- Comparable data across years will require continued separation of collected swabs.