# South Dakota Department of Health

## Clinical Considerations in Respiratory Infections

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SOUTH DAKOTA DEPARTMENT OF HEALTH

# Objectives

1. Review epidemiology
2. Review viral epidemiology
3. Review diagnostic considerations
4. Review treatment considerations with respect to microbiome protection for colonization resistance
5. Case Studies

# Clinical Considerations in Respiratory Infections

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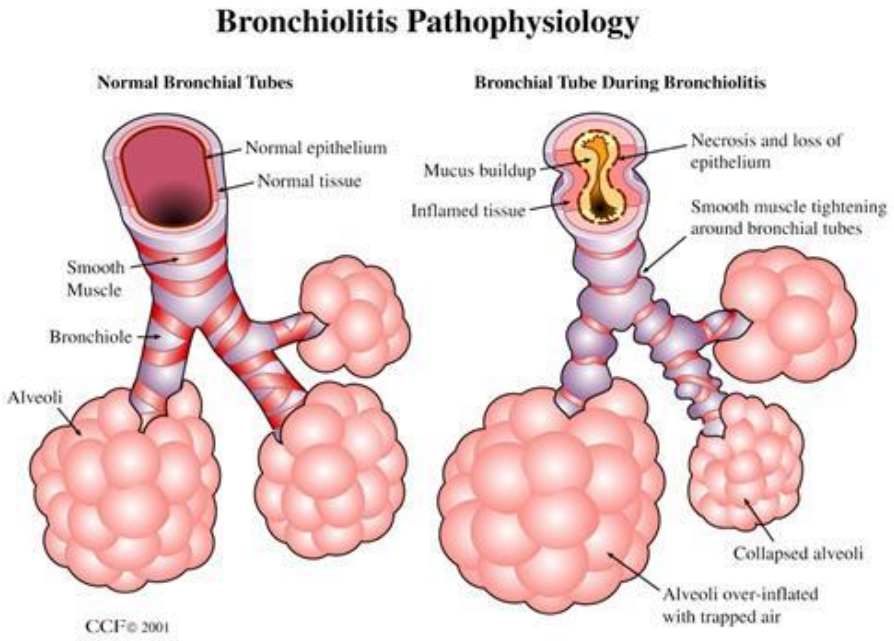
# Bronchiolitis

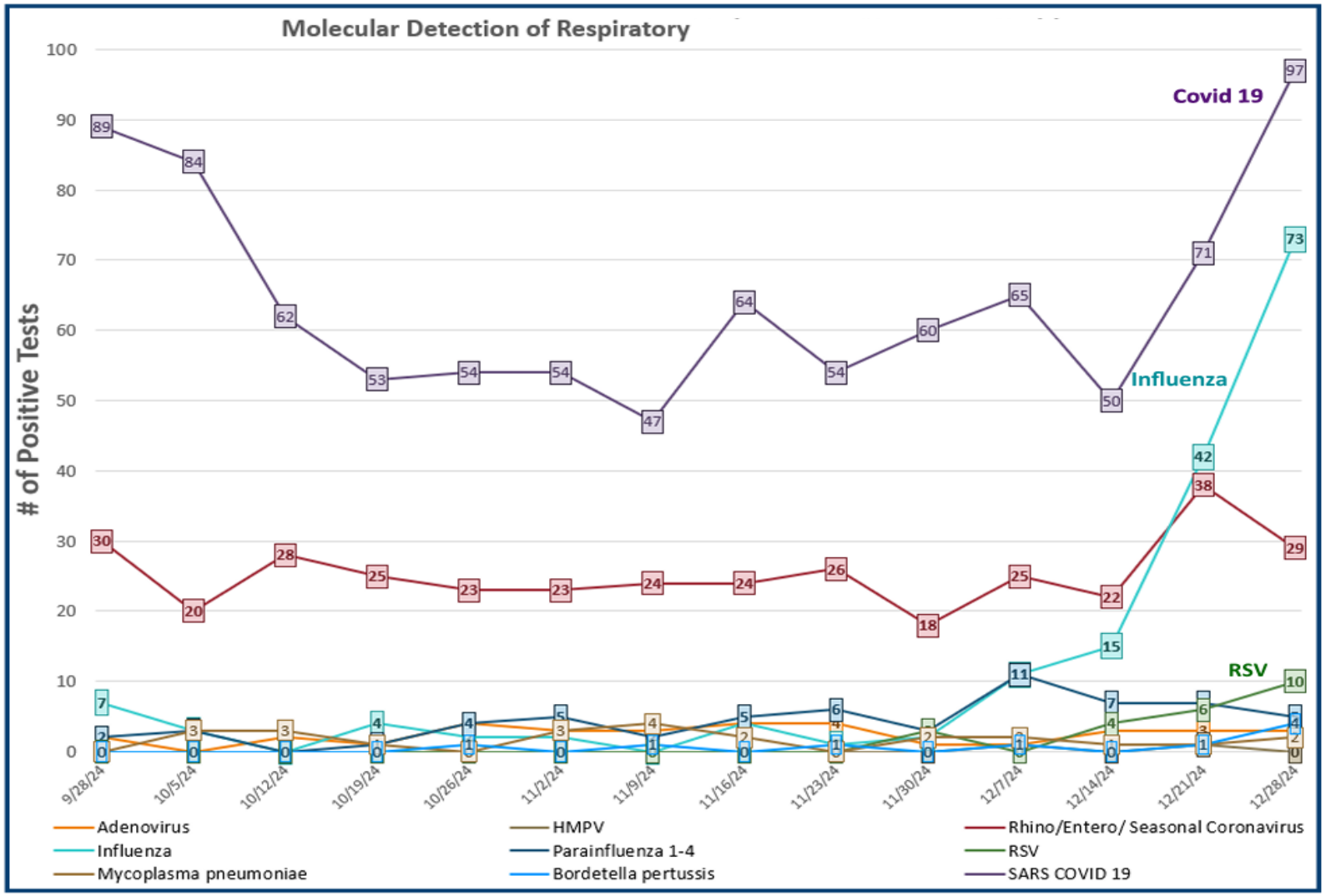
A virus causes a bronchiolitis infection. Viruses that can lead to bronchiolitis include:

- Respiratory Syncytial Virus (RSV).
- Influenza (flu) virus.
- Adenovirus
- Parainfluenza
- Metapneumovirus
- SARS-Cov-2 (COVID)




Source: Cleveland Clinic

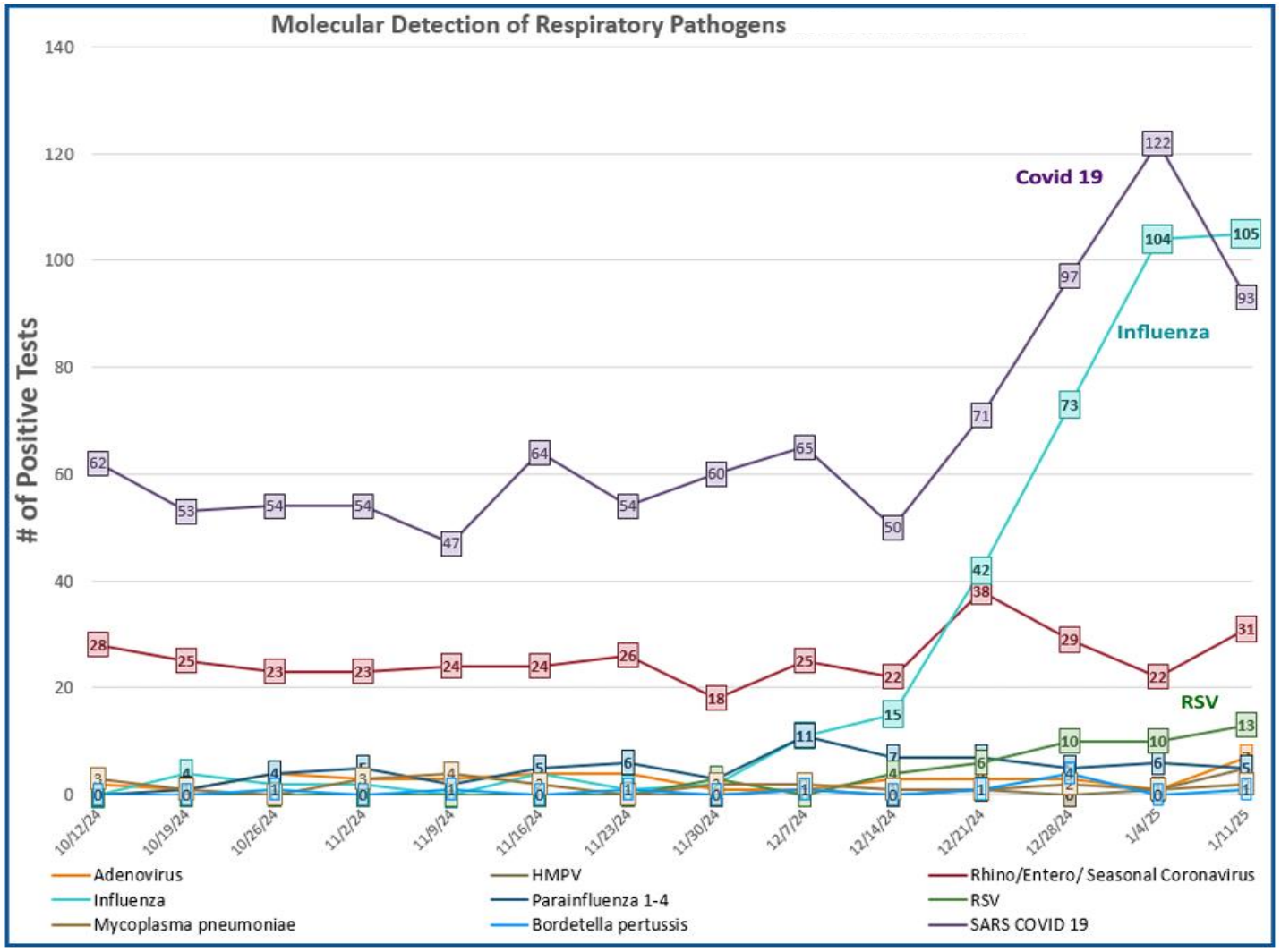
# Epidemiology



# Viral Epidemiology

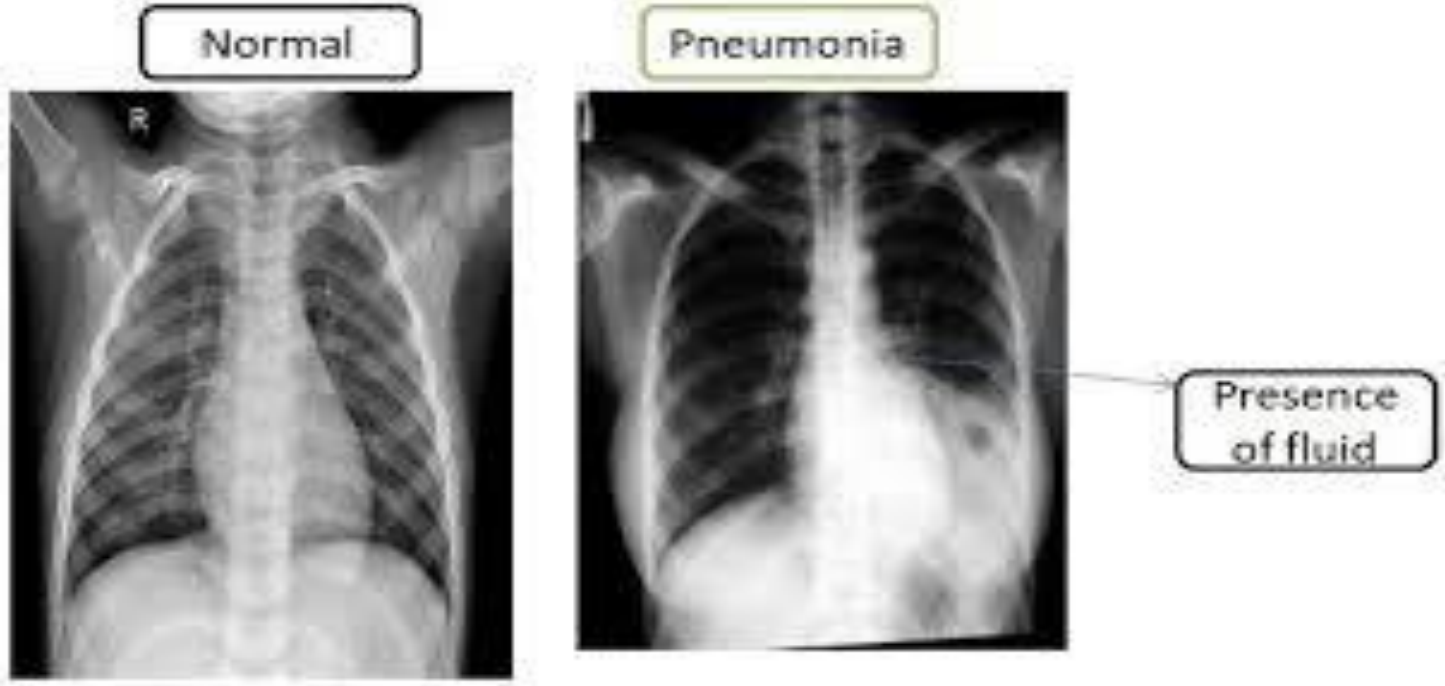
| Molecular Detection Rates of Respiratory Pathogens | | | | | |
|---|---|---|---|---|---|
| *Detection Rate based on positive results from all PCR testing performed at laboratories | | | | | |
| **High Activity (Detection >3%)** | | **Moderate Activity (Detection 1-3%)** | | **Low Activity (Detection <1%)** | |
| **SARS Covid 19** | **14.65%** | **RSV** | **2.24%** | **Influenza B** | **0.15%** |
| **Influenza A** | **11.09%** | Bordetella pertussis | 2.11% | Parainfluenza 3 | 0.53% |
| Rhino/Enterovirus | 8.42% | Coronavirus OC43 | 2.11% | | |
| Coronavirus NL63 | 4.74% | Adenovirus | 1.58% | | |
| | | Parainfluenza 1 | 1.05% | | |
| | | Parainfluenza 4 | 1.05% | | |
| | | Mycoplasma pneumoniae | 1.05% | | |

# Viral Epidemiology



# Diagnostic Consideration

"Aggressive Diagnostics, Conservative Therapeutics"



# Therapeutic Considerations

- Microbiome protection for colonization resistance
  - Influenza
  - SARS COV2
  - RSV

# Antibiotic Stewardship Aspects

- Infection occurs when a person is exposed and susceptible.
- Infection prevention decreases exposure.
- Antibiotic Stewardship and Vaccinations decrease susceptibility.

# Prevention

- Masks
- Additional PPE
- Vaccinations
- Alcohol gel/Handwashing

# Case Studies

- 51-year-old female on biologic immunosuppressants for psoriasis
- 74-year-old male presenting with skin lesion, cough, and fever
- 36-year-old male presenting with cough, fever, and shoulder pain

# Conclusion

- Questions?
- Further Discussion

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