Sealed Air
Diversey Care

Sniffs and Sneezes can Spread Diseases: Year-Round Protection

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Objectives

Look at various viral respiratory illnesses

Discuss year-round protection for our clients and ourselves

Background

Many respiratory viruses initiate infection in the nasal cavity or infect the nasal cavity to cause ‘colds’ without infecting the lung (Foxman 2015)

Some viruses prefer the cooler temperature of the nasal mucosa

Regional Syndromic Surveillance Bi-Weekly Report

Wednesday March 30th, 2016 - Tuesday April 12th, 2016

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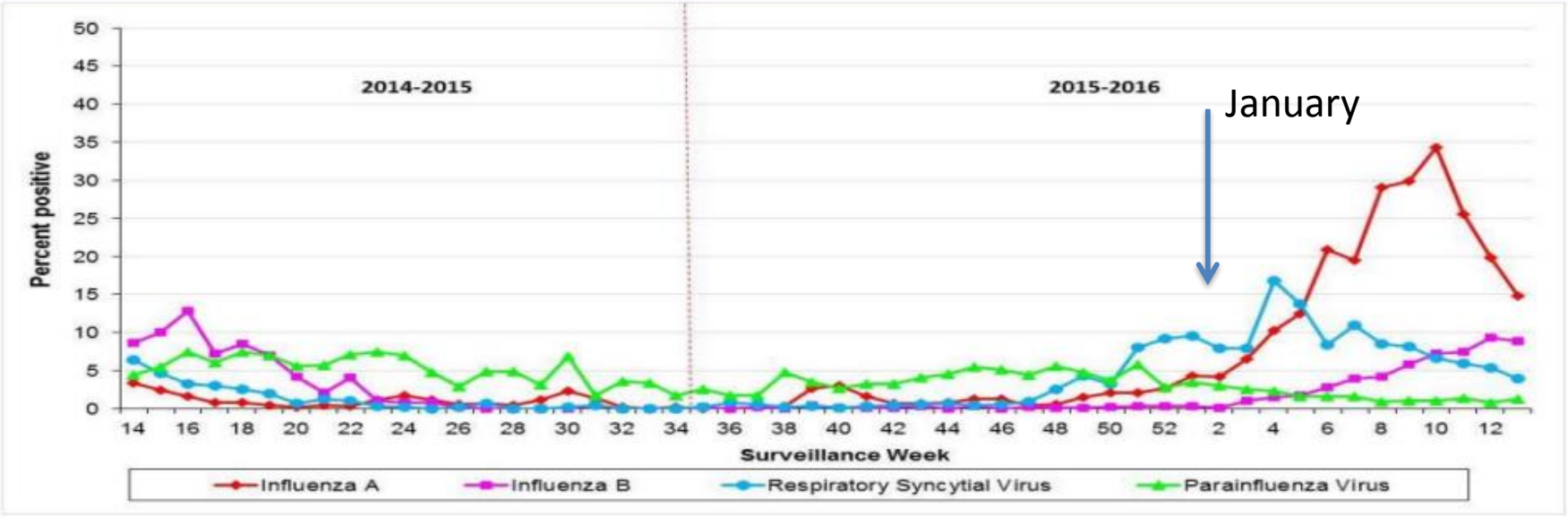
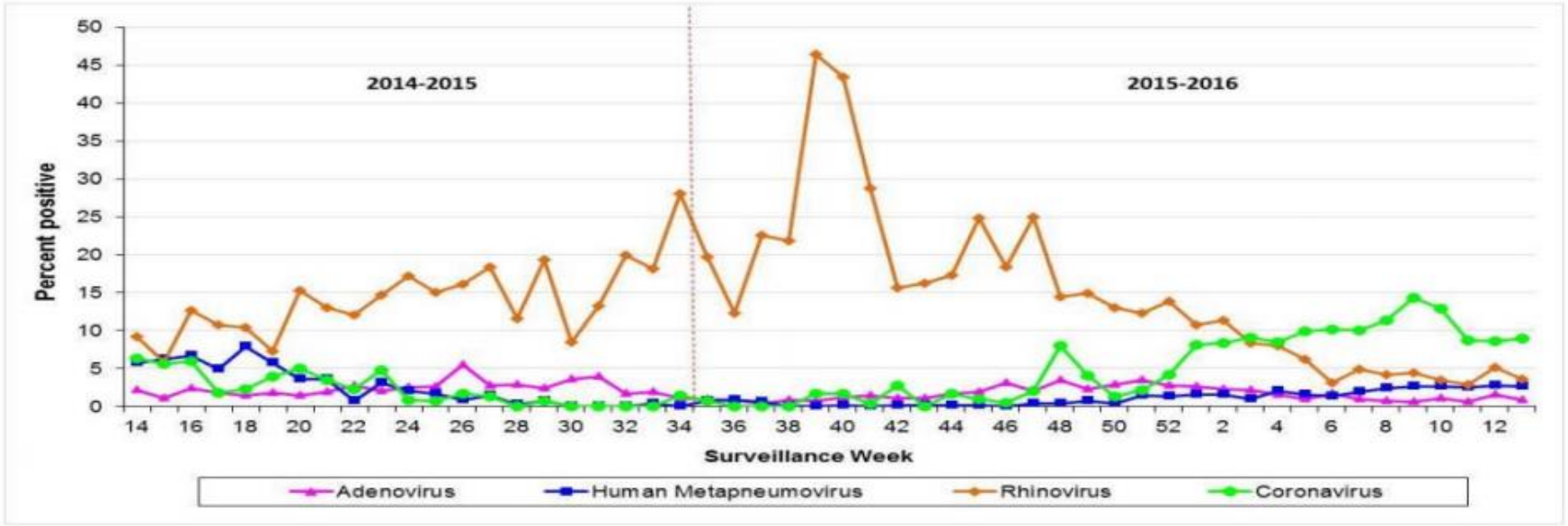




*Source: Ontario Respiratory Pathogen Bulletin, Public Health Ontario (with data obtained from the Public Health Agency of Canada's Respiratory Virus Detection tables)

Influenza

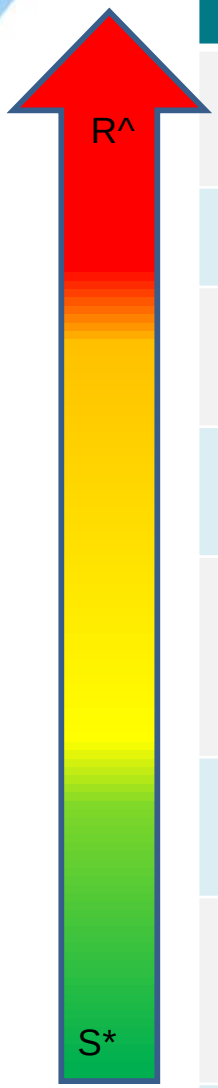
Need I say more?

Contact and Droplet

Enveloped virus (Easy to kill)

Influenza A&B

Effect of Disinfectants on Microorganisms



Organism	Bucket	Examples
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Mycobacteria	Bacteria	*M. tuberculosis*
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^Resistant
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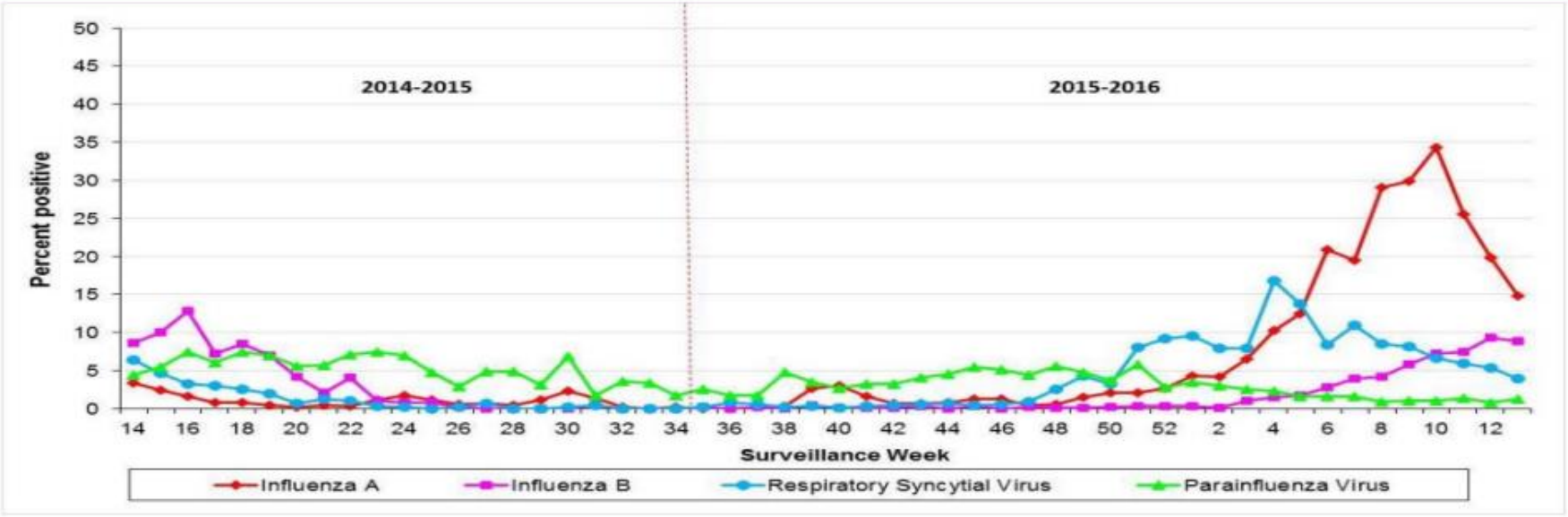

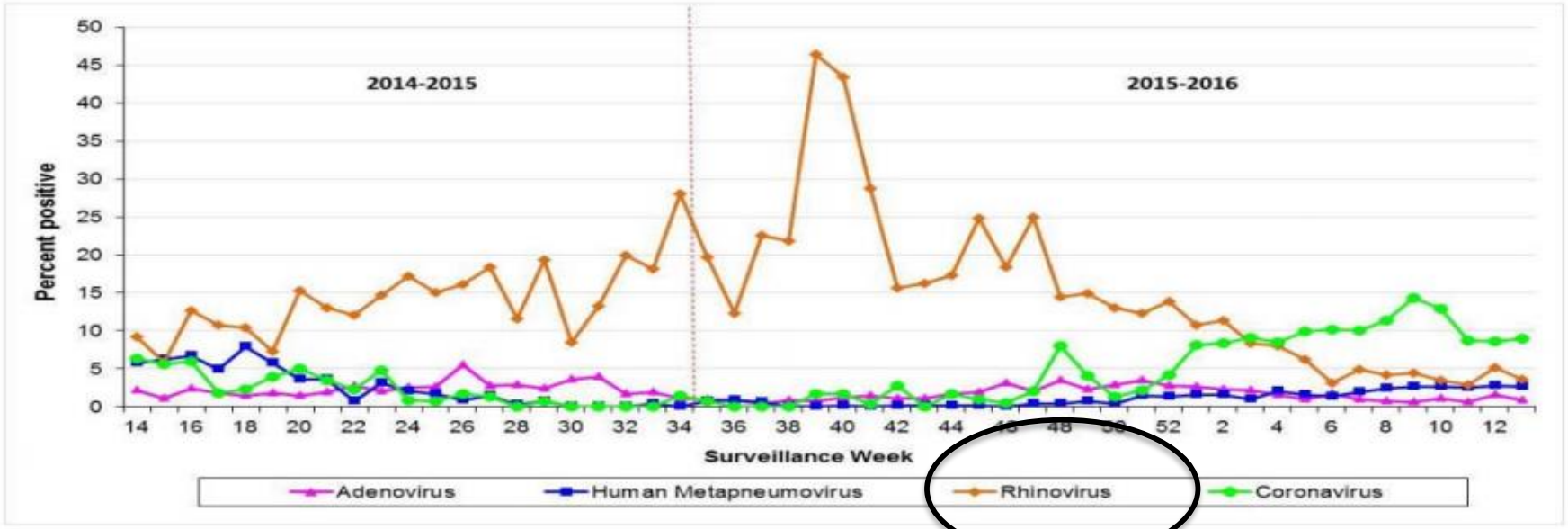

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Rhinovirus

Small, Non-Enveloped (Not Easy to kill)

Causes ~60-80% of common colds symptoms between August and November

Can cause rhinitis, pharyngitis, cough, fever, otitis media, sinusitis, acute disease or exacerbation of chronic pulmonary diseases

Treatment: Symptomatic

Prevention: Hygiene, disinfection

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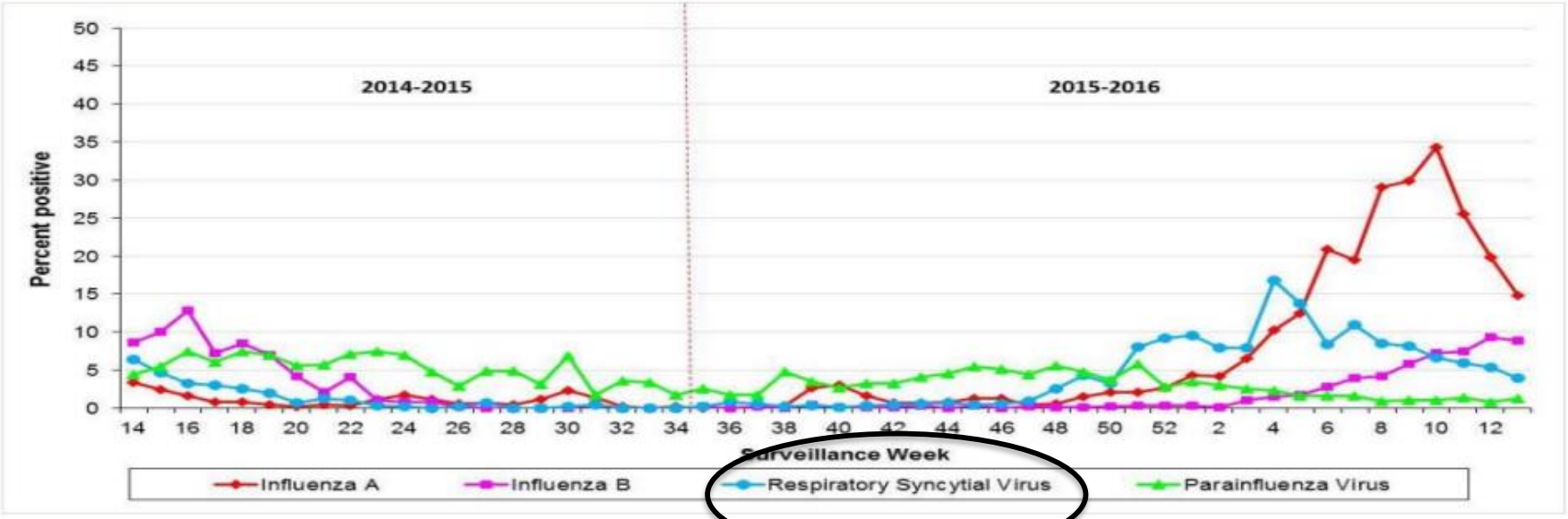

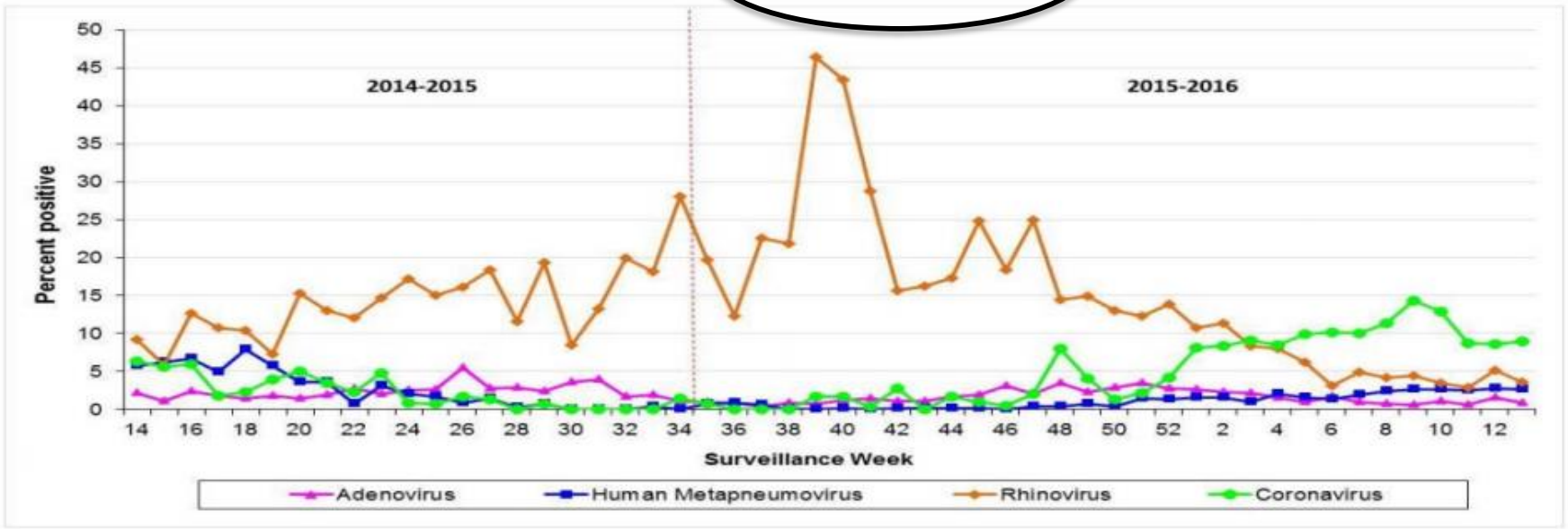

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Respiratory Syncytial Virus

Enveloped Virus

Causes 64 million infections and 160,000 deaths annually, winter/early spring

Causes rhinitis, pharyngitis, cough, bronchiolitis, pneumonia, complications in patients with immunodeficiency or underlying conditions like CF, chronic heart disease

More likely to cause epidemic outbreaks

Treatment: Immunoglobulin, ribavirin

Prevention: Vaccines in development

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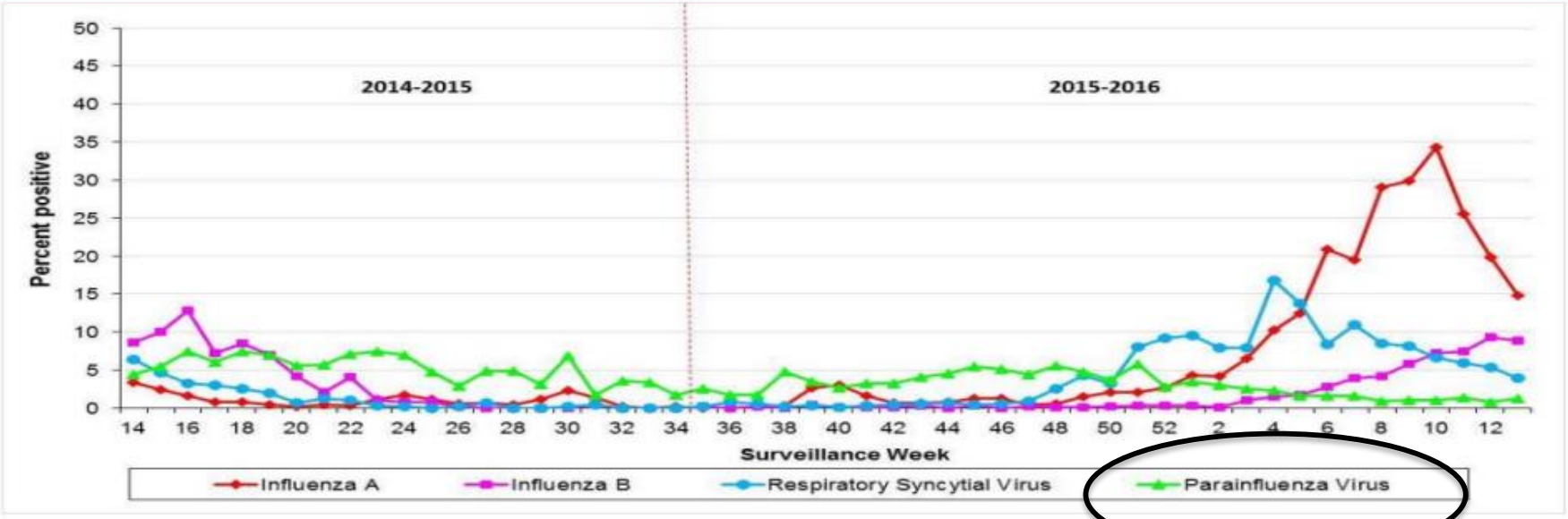

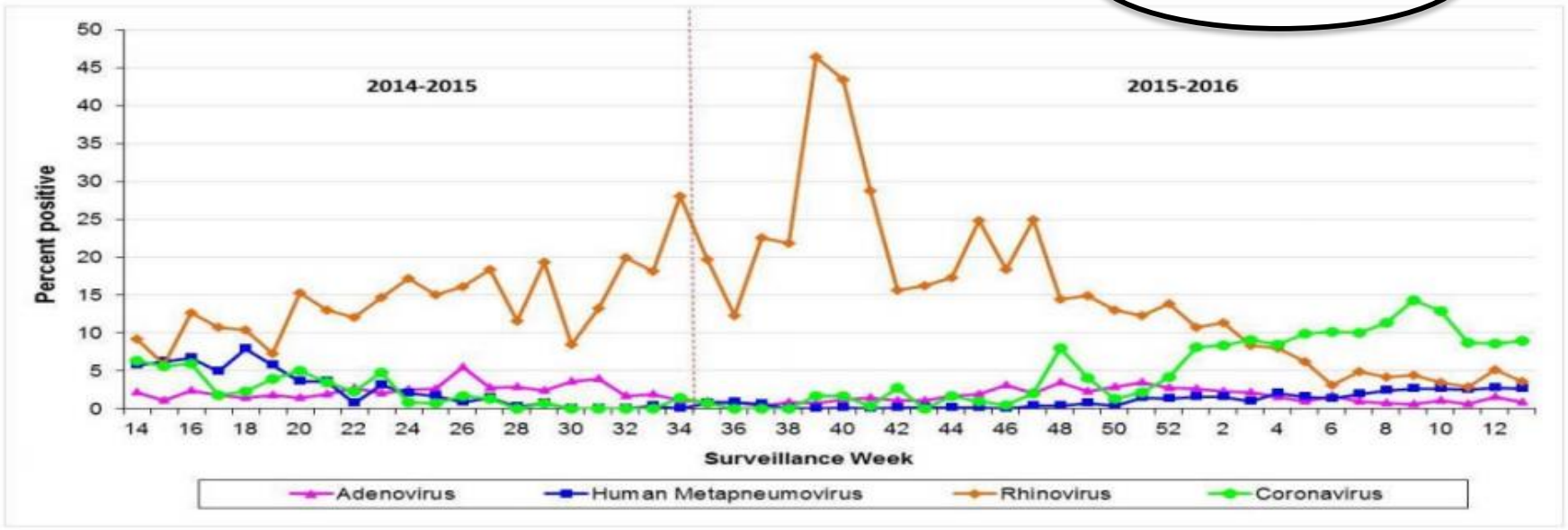

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Parainfluenza Virus

Enveloped virus

PIV 1 – Epidemics in fall, PIV 3 – Epidemics in early spring, PIV 2 – Epidemics mainly in autumn

Causes rhinitis, pharyngitis, cough, hoarseness, fever, croup, bronchiolitis, pneumonia

Treatment: Symptomatic

Prevention: Hygiene, disinfection, no effective vaccines available

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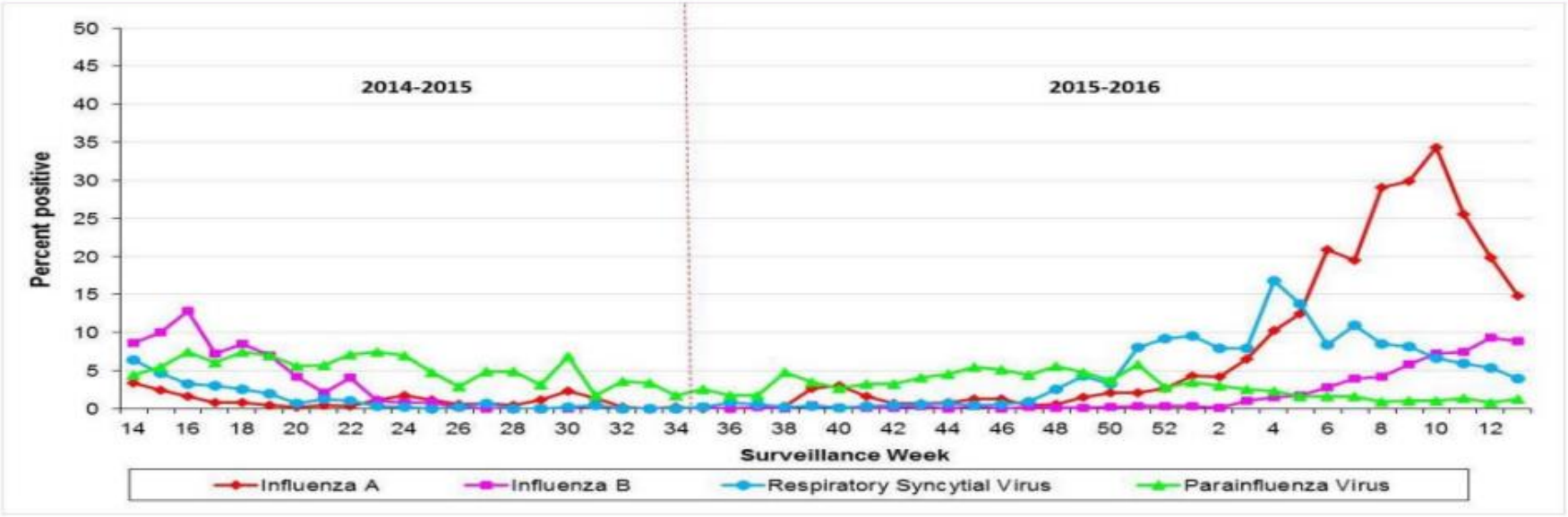

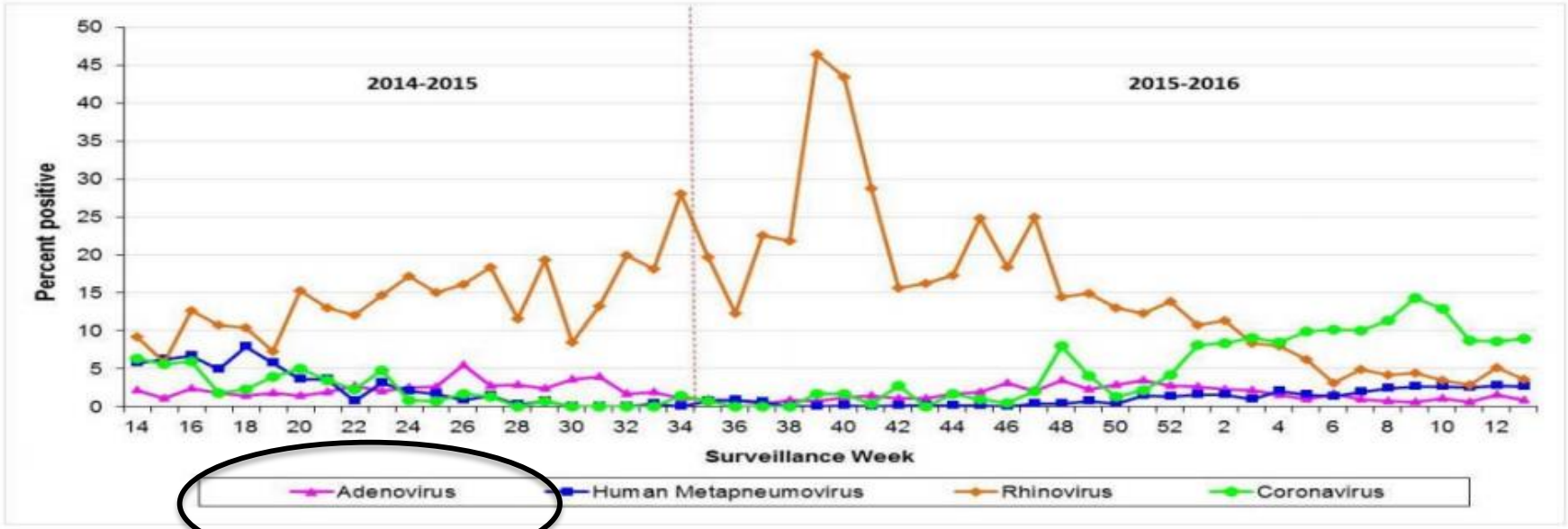

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Adenovirus

Large, non-enveloped virus (easier to kill than small non-enveloped)

Causes 5% URTI in children, institutional infections. Up to 10% pneumonia in children, mainly late winter to early summer

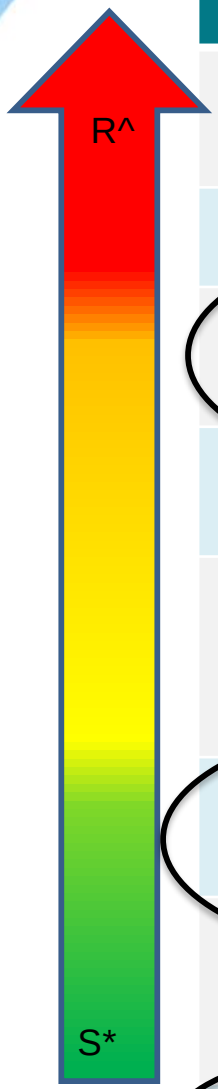
Contact and droplet, fecal-oral spread also

Causes upper respiratory tract infections, rhinitis, conjunctivitis, tonsillitis (gastroenteritis)

Treatment: Symptomatic, cidofovir in immunosuppressed patients

Prevention: Hygiene

Effect of Disinfectants on Microorganisms



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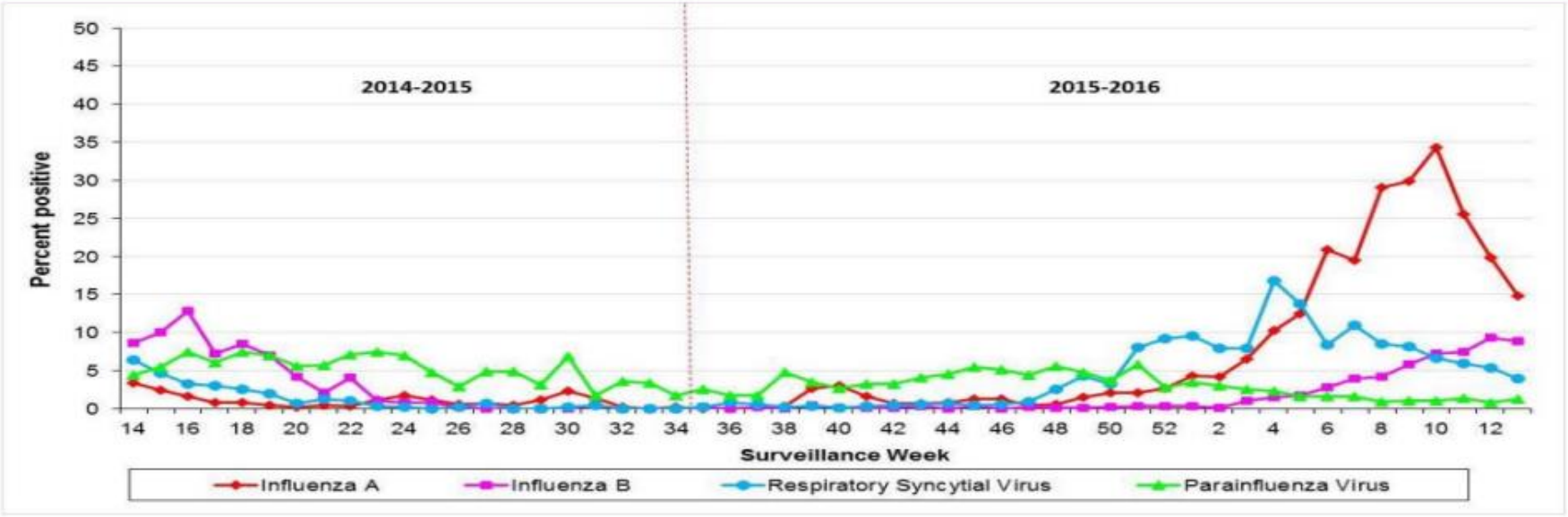

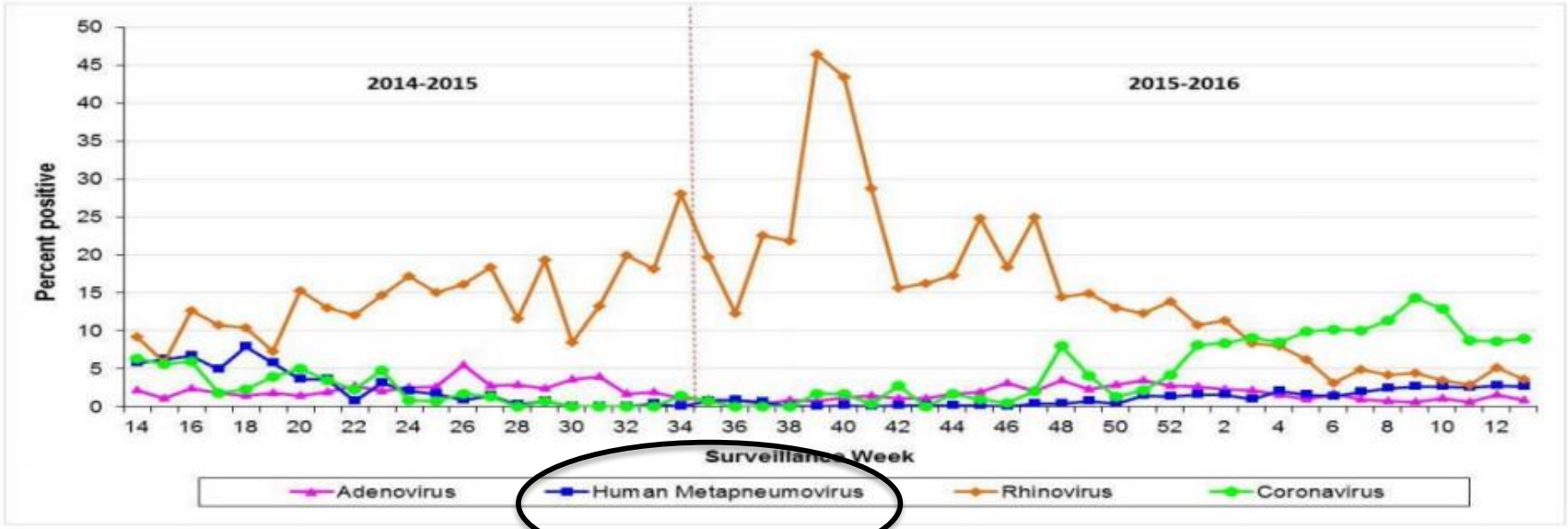

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Metapneumovirus

Enveloped virus

Third leading cause of ARTI in humans, seasonal distribution in temperate regions (late winter, spring)

Causes cough, wheezing, coryza, fever, diarrhea, vomiting, bronchiolitis, pneumonia, complications in patients with immunodeficiency or underlying conditions such as asthma, COPD

Treatment: Symptomatic, ribavirin

Prevention: Hygiene

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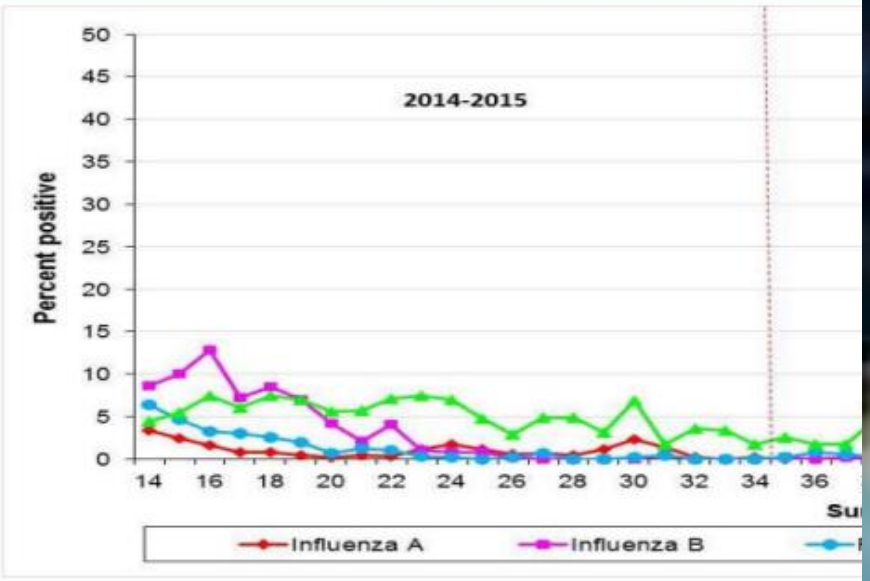
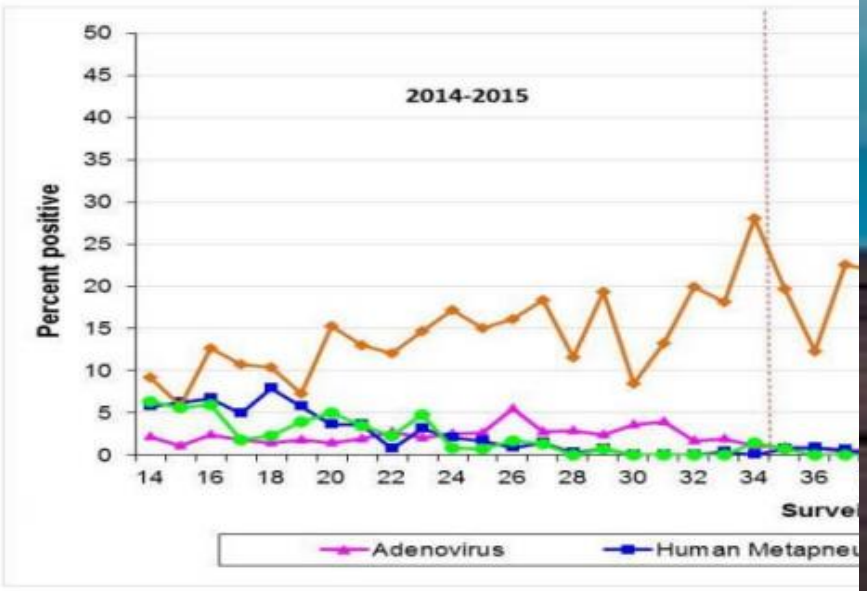




*Source: Ontario Respiratory Pathogen Bulletin, Public Health Ontario (with data obtained from th

Coronavirus

Enveloped virus

Up to 25% of common cold cases

Causes rhinitis, pharyngitis, cough, otitis media

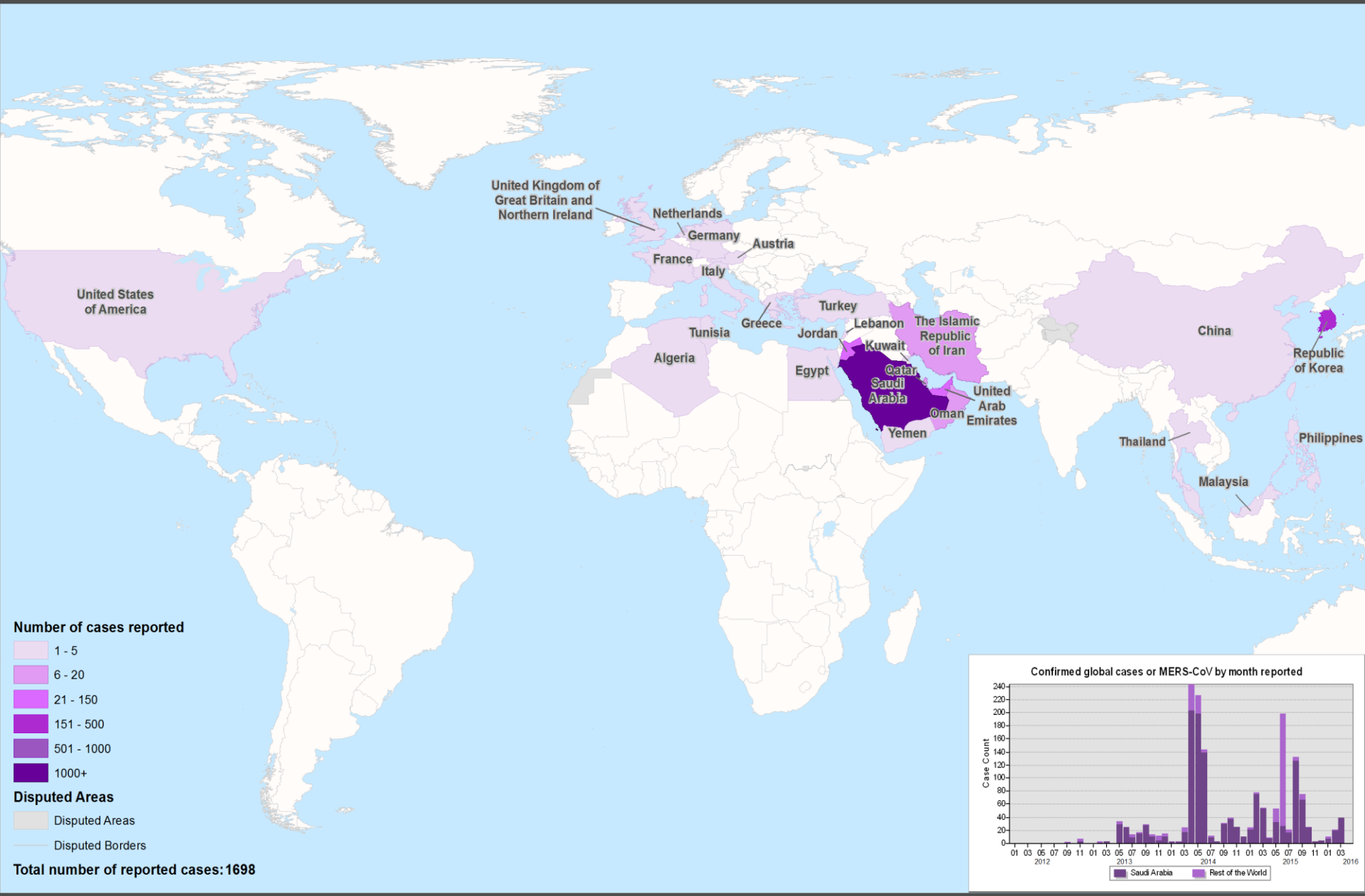
Treatment: Symptomatic

Prevention: Hygiene

Middle East Respiratory Syndrome (MERS) Coronavirus

www.sitesatlas.com

CONFIRMED GLOBAL CASES OF MERS-COV 2012 - 2016



Map Scale (A3): 1:1,109,175,783
1 cm = 11,092 km
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization

Map date:08/04/2016

World Health Organization

MERS-CoV

As of 23 Apr 2016 (ProMed) there have been a total of 1378 laboratory-confirmed cases of MERS-CoV infection including:

587 deaths [reported case fatality rate 42.6 per cent]
779 recoveries, and
12 currently active cases including 1 asymptomatic infection

For comparison, SARS mortality was 9%!

Enterovirus D68

Small, non-enveloped virus

Causes mild to severe respiratory symptoms (cold-like to pneumonia)

Contact and Droplet

Harder on children with asthma, or a history of wheezing

In 2014, 2600 specimens examined: 1/3 tested positive for EV-D68, 1/3 other enterovirus or rhinovirus

Not definitely linked to acute flaccid paralysis

Prevention: Hygiene

Hand, Foot and Mouth Disease

Enterovirus: Usually Coxsackievirus A16

HFMD is highly contagious

Contact and droplet, fecal-oral spread also

Preventive measures include avoiding direct contact with infected individuals (including keeping infected children home from school), proper cleaning of shared utensils, disinfecting contaminated surfaces, and proper hand hygiene.

So?

Hygiene – Hands

Alcohol based hand rub

Soap and water (Rhinovirus?)

Alcohol wipes?

Hygiene - Disinfection

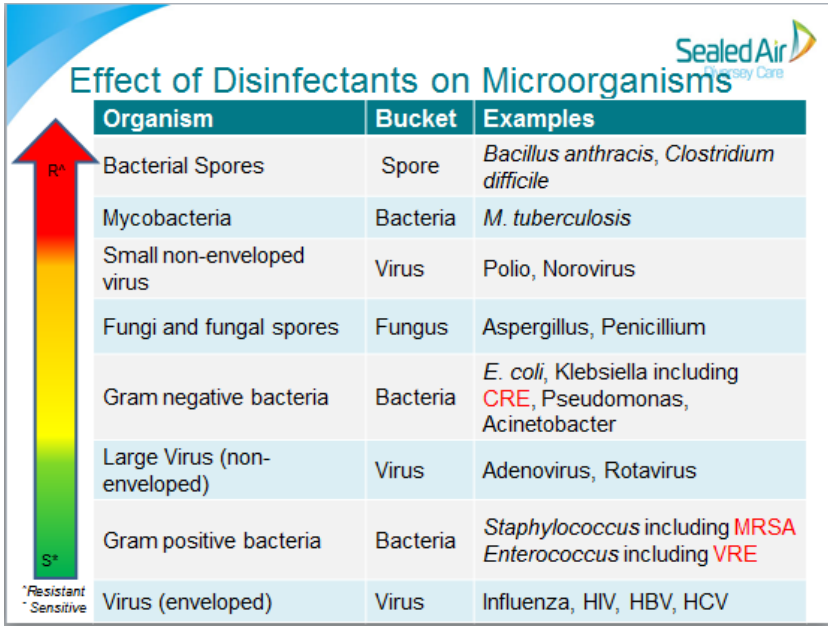
Clean

Disinfect

- Label claim for poliovirus or Norovirus

Contact times

Quat Binding (Boyce 2016)



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Hygiene – Symptomatic Folk

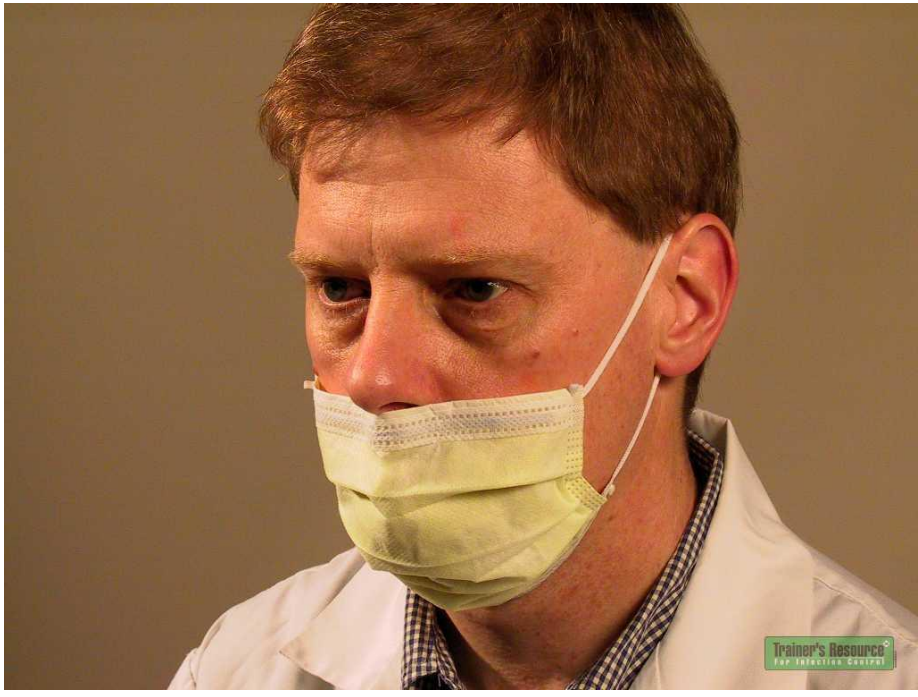
Isolate until asymptomatic?

- Not practical in many locations

Frequent cleaning/disinfection

Frequent hand hygiene

Masks in public areas?



Hygiene – Outsiders

Visitors/Families

Deliveries

Service Folk

Sales Folk (e.g. Vendermate)

Summary

Viral respiratory illnesses cause huge morbidity and some mortality each year

Prevention is key through hand hygiene, environmental disinfection and some restrictions

Questions / Comments?

References

Foxman EF, et al. Temperature-dependent innate defense against the common cold virus limits viral replication at warm temperature in mouse airway cells. Proc Nat Acad Sci USA 2015;112(3):827-32.

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