Webinar #3 for LTC
Focus on Flu Prevention
October 11, 2018

Joan Hebden RN, MS, CIC, FAPIC
Peggy Pass RN, MS, CIC, FAPIC
Division of Infection Prevention & Control

MARYLAND
Department of Health

Teaching Objectives

- Be familiar with the epidemiology of the 2017-18 influenza season.
- Be familiar with CMS and Maryland regulations associated with influenza management in LTC.
- State why annual influenza vaccination is necessary.
- Recognize the signs and symptoms of influenza-like illness.
- Understand the impact of rapid diagnostic testing for viral respiratory pathogens on outbreak management.
- State the definition of an influenza outbreak in LTC and the recommendations for prevention and control of influenza outbreaks in LTC.
- Know when to report an outbreak to your local health department
- Understand the treatment for influenza and the need for early use of anti-viral medications.

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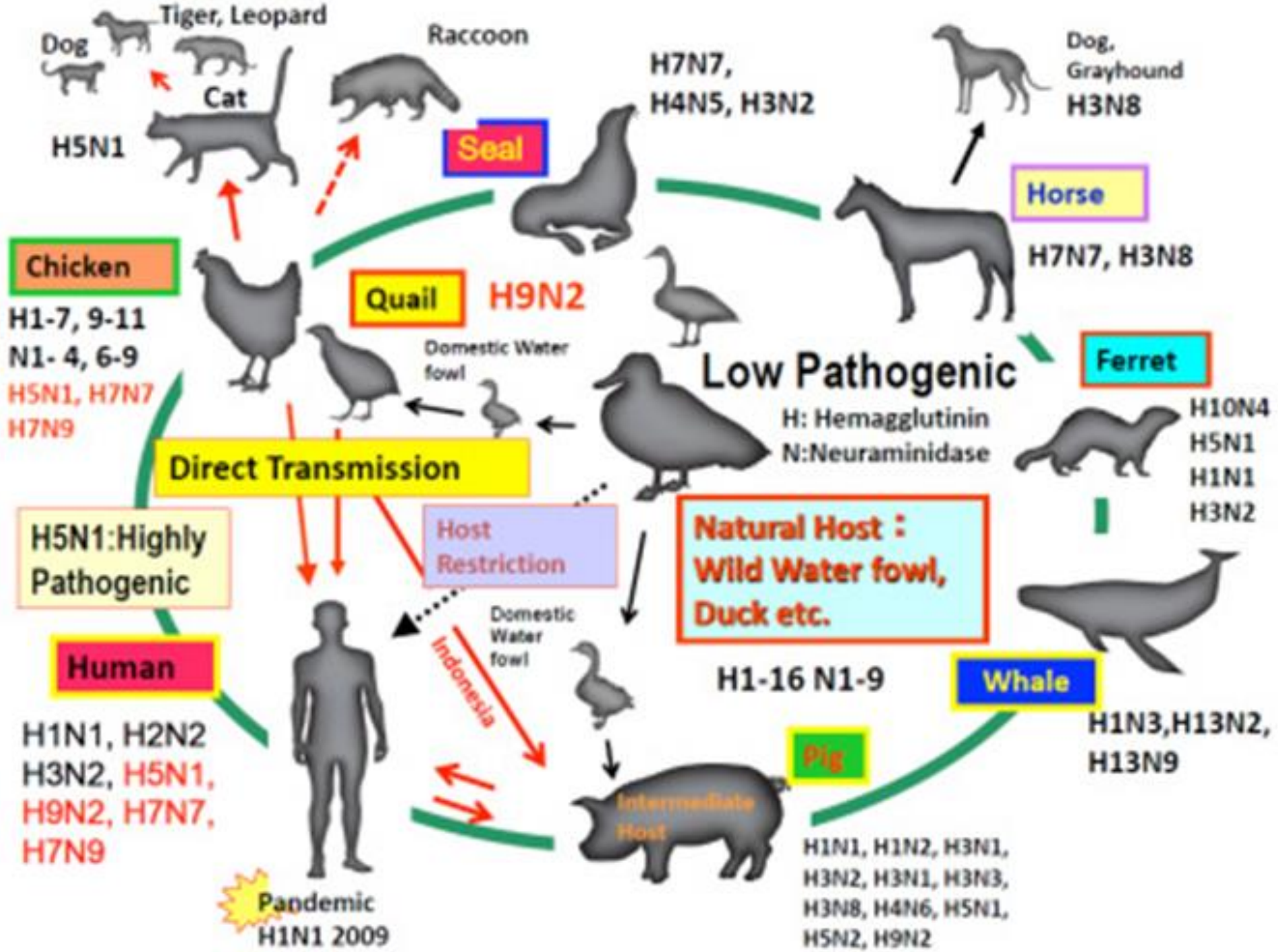
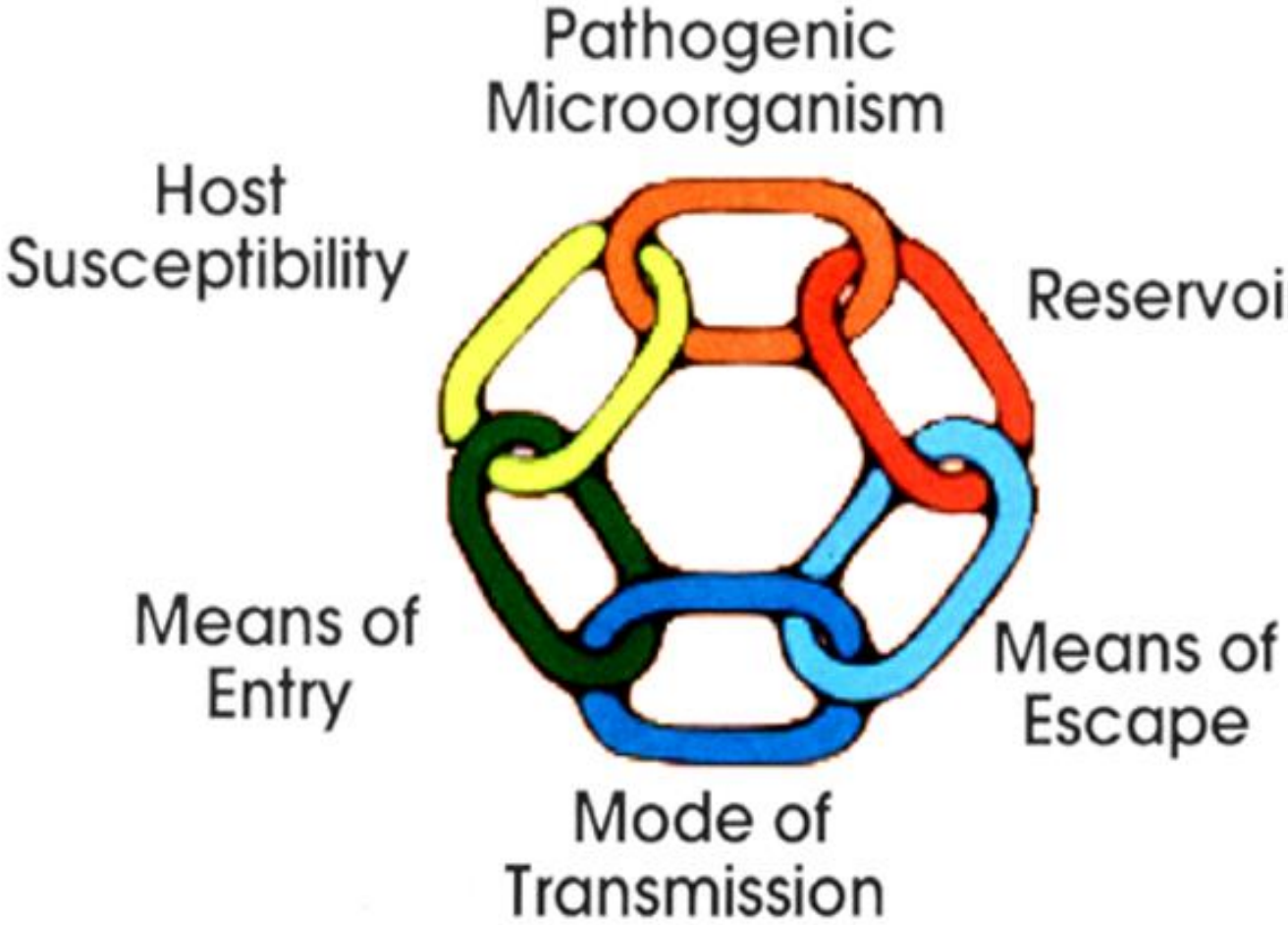
Influenza Review

- Wild waterfowl are the natural reservoir for influenza viruses.
- Many influenza strains circulate among birds.
- Influenza A and B viruses are predominant cause of human disease, with A causing the vast majority of disease.


Tiger, Leopard
Dog
Cat
H5N1
Raccoon
Seal
H7N7,
H4N5, H3N2
Dog,
Grayhound
H3N8
Horse
H7N7, H3N8
Chicken
H1-7, 9-11
N1- 4, 6-9
H5N1, H7N7
H7N9
Quail
H9N2
Domestic Water fowl
Low Pathogenic
H: Hemagglutinin
N:Neuraminidase
Ferret
H10N4
H5N1
H1N1
H3N2
Direct Transmission
Host Restriction
H5N1:Highly Pathogenic
Natural Host :
Wild Water fowl,
Duck etc.
H1-16 N1-9
Human
H1N1, H2N2
H3N2, H5N1,
H9N2, H7N7,
H7N9
Domestic Water fowl
Indonesia
Whale
H1N3,H13N2,
H13N9
Pig
Intermediate Host
H1N1, H1N2, H3N1,
H3N2, H3N1, H3N3,
H3N8, H4N6, H5N1,
H5N2, H9N2
Pandemic
H1N1 2009

Infectious Disease Process



How do these winter illnesses move to a new host?

- Respiratory illnesses like influenza, respiratory syncytial virus, and whooping cough are all spread by large “mucous droplets” that travel to the next host by:
  - Coughing
  - Sneezing
  - Landing on the surface of the eye, in the mouth or other mucous membrane

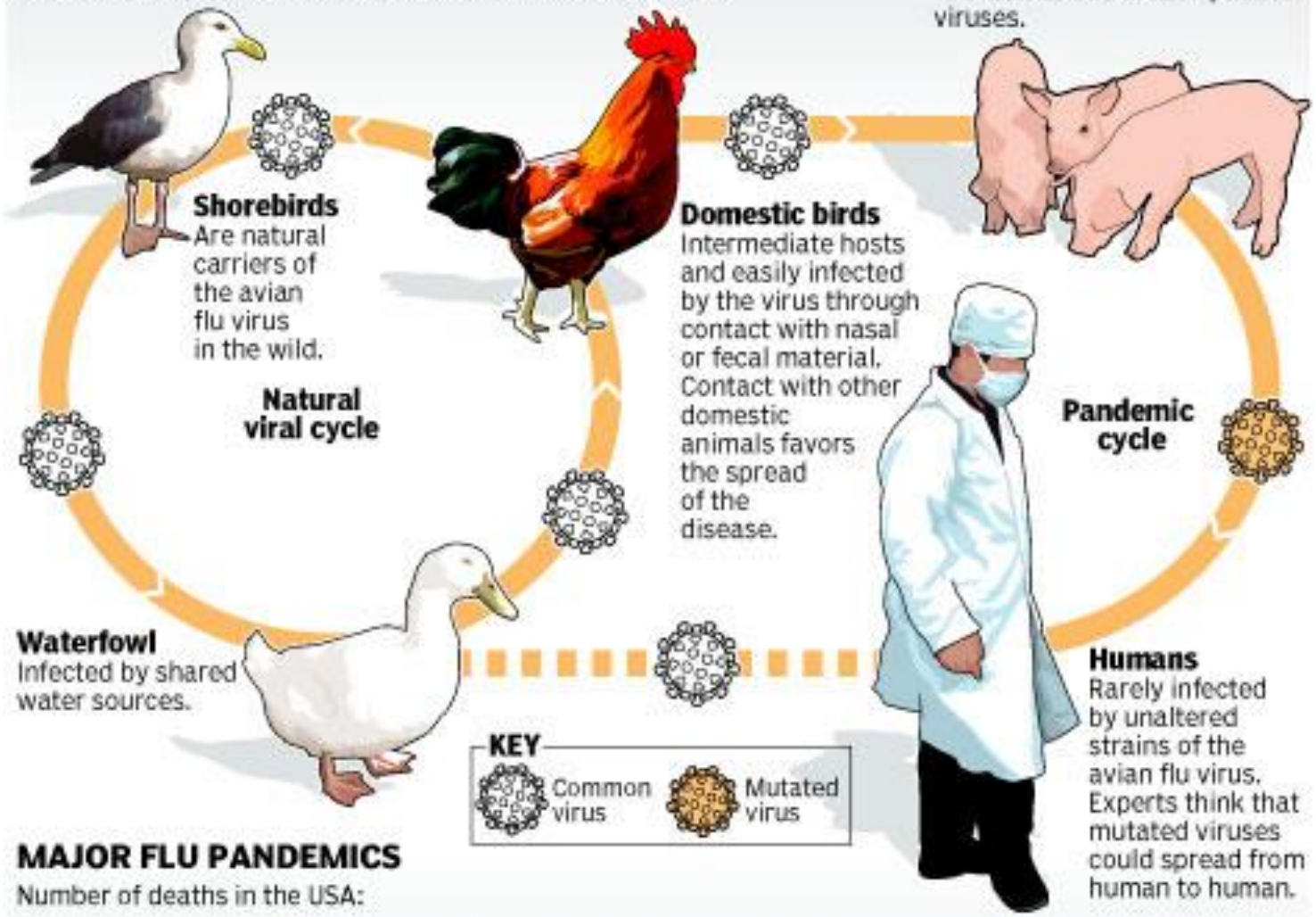
Influenza Pandemics in the 20th Century

Years	Flu	Virus	Mortality
1918-19	"Spanish"	Type A (H1N1)	20 million worldwide 550,000 US
1957-58	"Asian"	Type A (H2N2)	70,000 US
1968-69	"Hong Kong"	Type A (H3N2)	34,000 US

Glezen WP. *Epidemiol Rev*. 1996;18:65.
Centers for Disease Control and Prevention. Influenza Prevention and Control. Influenza. Available at: http://www.cdc.gov/cidod/diseases/flu/fluinfo.htm.

THE NEXT PANDEMIC?

Although the H5N1 virus, known as the avian flu virus, does not usually infect humans, new mutated forms of this virus could represent a realistic risk of a flu pandemic, experts say.



MAJOR FLU PANDEMICS

Number of deaths in the USA:

Global killer: The [A(H1N1)] strain of the flu virus, comomly known as the "Spanish Influenza" killed more than 50 millon people worldwide.

Influenza 2017-2018 season: Public Health Impact

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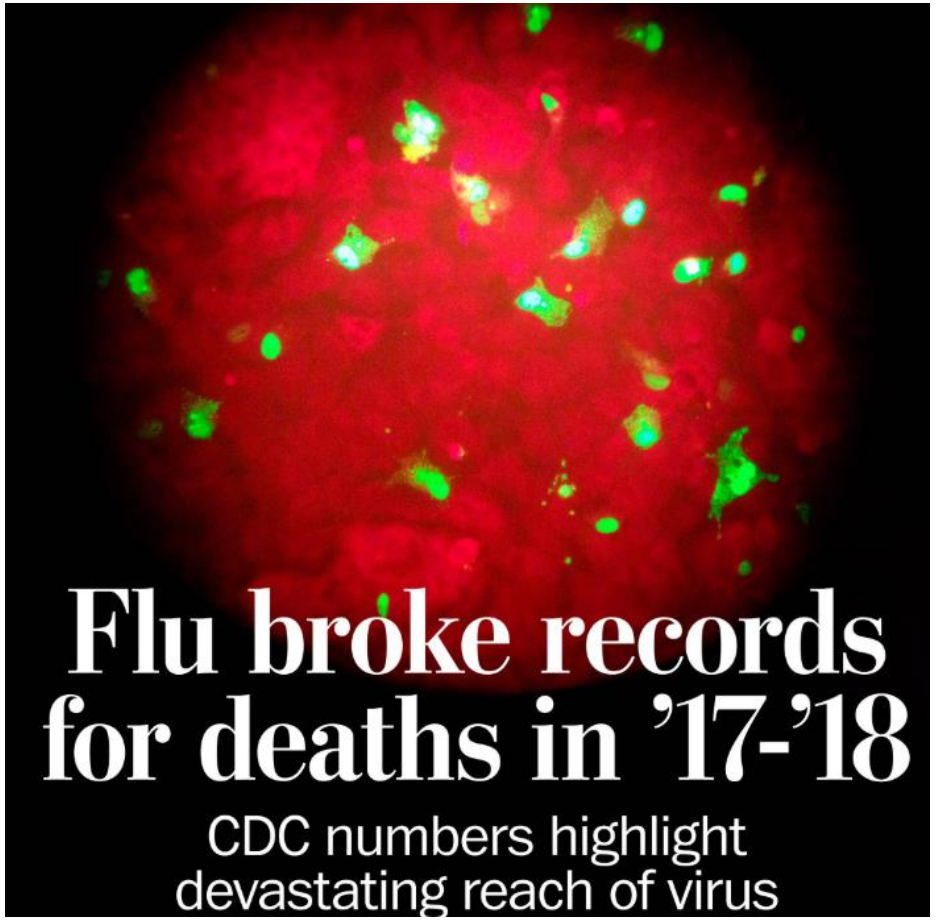
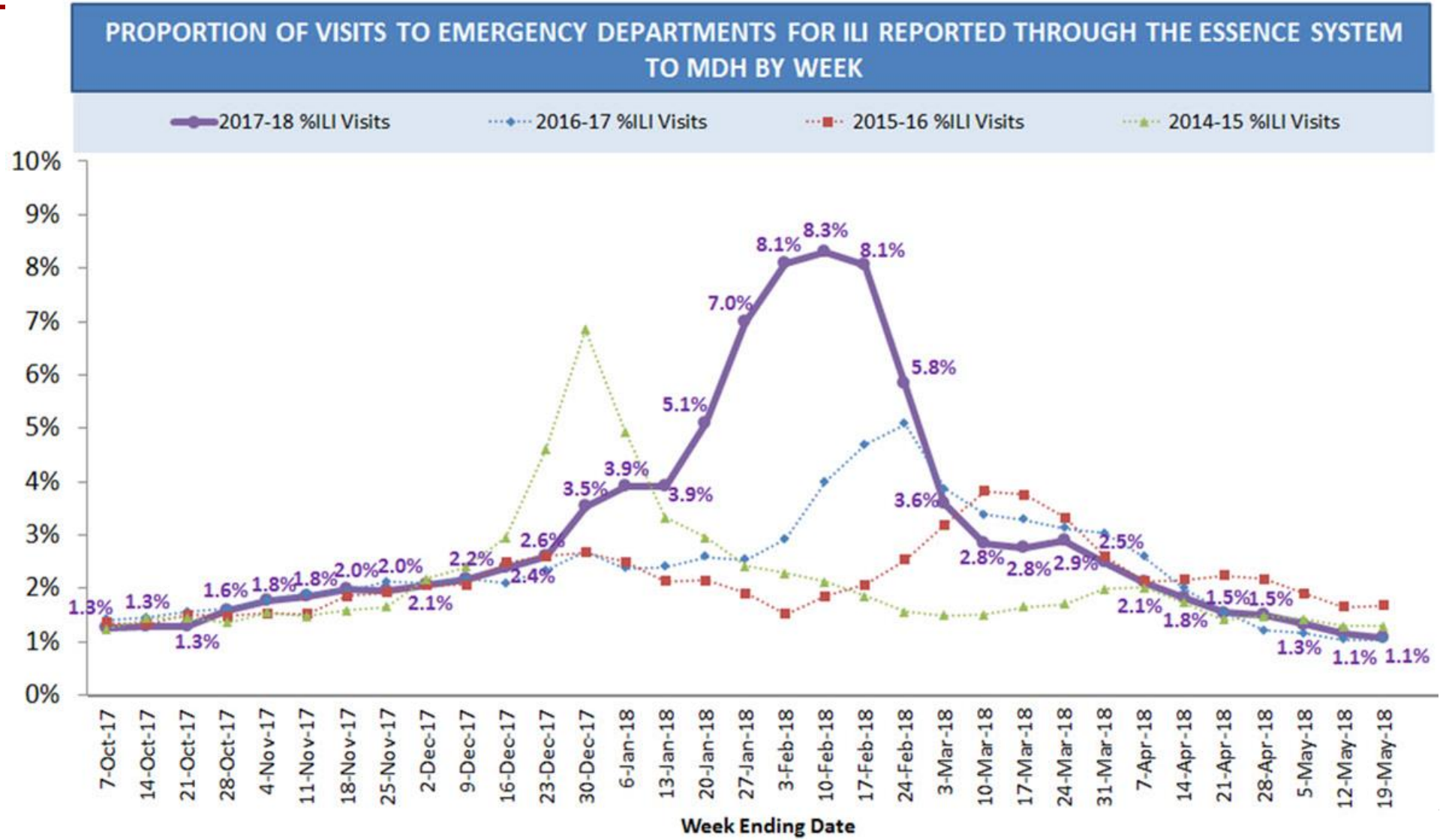
Influenza 2017-2018 season: Public Health Impact

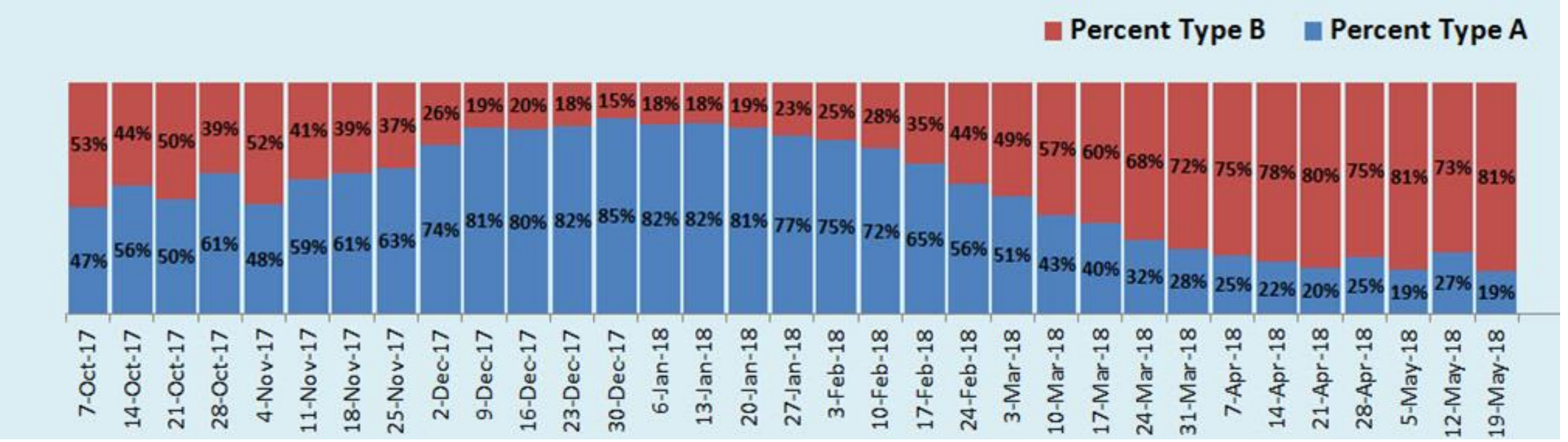


- 1st season classified as high severity season across all age groups; Influenza A(H3N2) viruses predominated
  - activity began to increase in November, an extended period of high activity during January and February nationally, and remained elevated through March.
  - Influenza-like illness (ILI) one of the longest in duration; at or above the national baseline for 19 weeks.
  - Highest # of flu-associated deaths in children-180 as of Aug. 2018 – with 80% non-vaccinated.
  - 30,453 laboratory-confirmed influenza-related hospitalizations; approx. 9% of US population; people 65 years and older accounted for approximately 58% of hospitalizations.

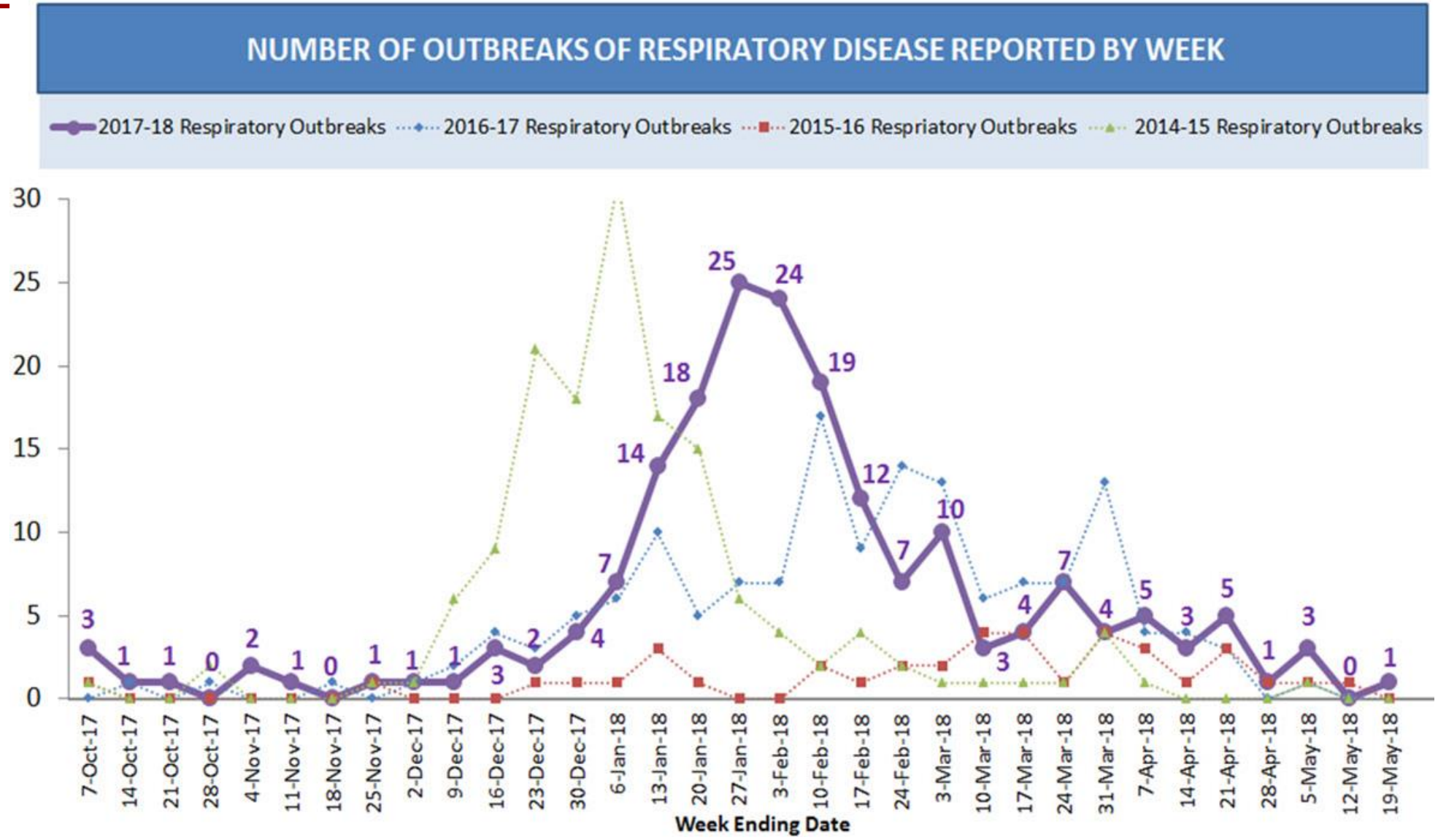
ESSENCE


PROPORTION OF VISITS TO EMERGENCY DEPARTMENTS FOR ILI REPORTED THROUGH THE ESSENCE SYSTEM TO MDH BY WEEK
2017-18 %ILI Visits
2016-17 %ILI Visits
2015-16 %ILI Visits
2014-15 %ILI Visits
10%
9%
8%
7%
6%
5%
4%
3%
2%
1%
0%
1.3% 1.3% 1.3% 1.6% 1.8% 1.8% 2.0% 2.0% 2.1% 2.2% 2.4% 2.6% 3.5% 3.9% 3.9% 5.1% 7.0% 8.1% 8.3% 8.1% 5.8% 3.6% 2.8% 2.8% 2.9% 2.5% 2.1% 1.8% 1.5% 1.5% 1.3% 1.1% 1.1%
7-Oct-17
14-Oct-17
21-Oct-17
28-Oct-17
4-Nov-17
11-Nov-17
18-Nov-17
25-Nov-17
2-Dec-17
9-Dec-17
16-Dec-17
23-Dec-17
30-Dec-17
6-Jan-18
13-Jan-18
20-Jan-18
27-Jan-18
3-Feb-18
10-Feb-18
17-Feb-18
24-Feb-18
3-Mar-18
10-Mar-18
17-Mar-18
24-Mar-18
31-Mar-18
7-Apr-18
14-Apr-18
21-Apr-18
28-Apr-18
5-May-18
12-May-18
19-May-18
Week Ending Date

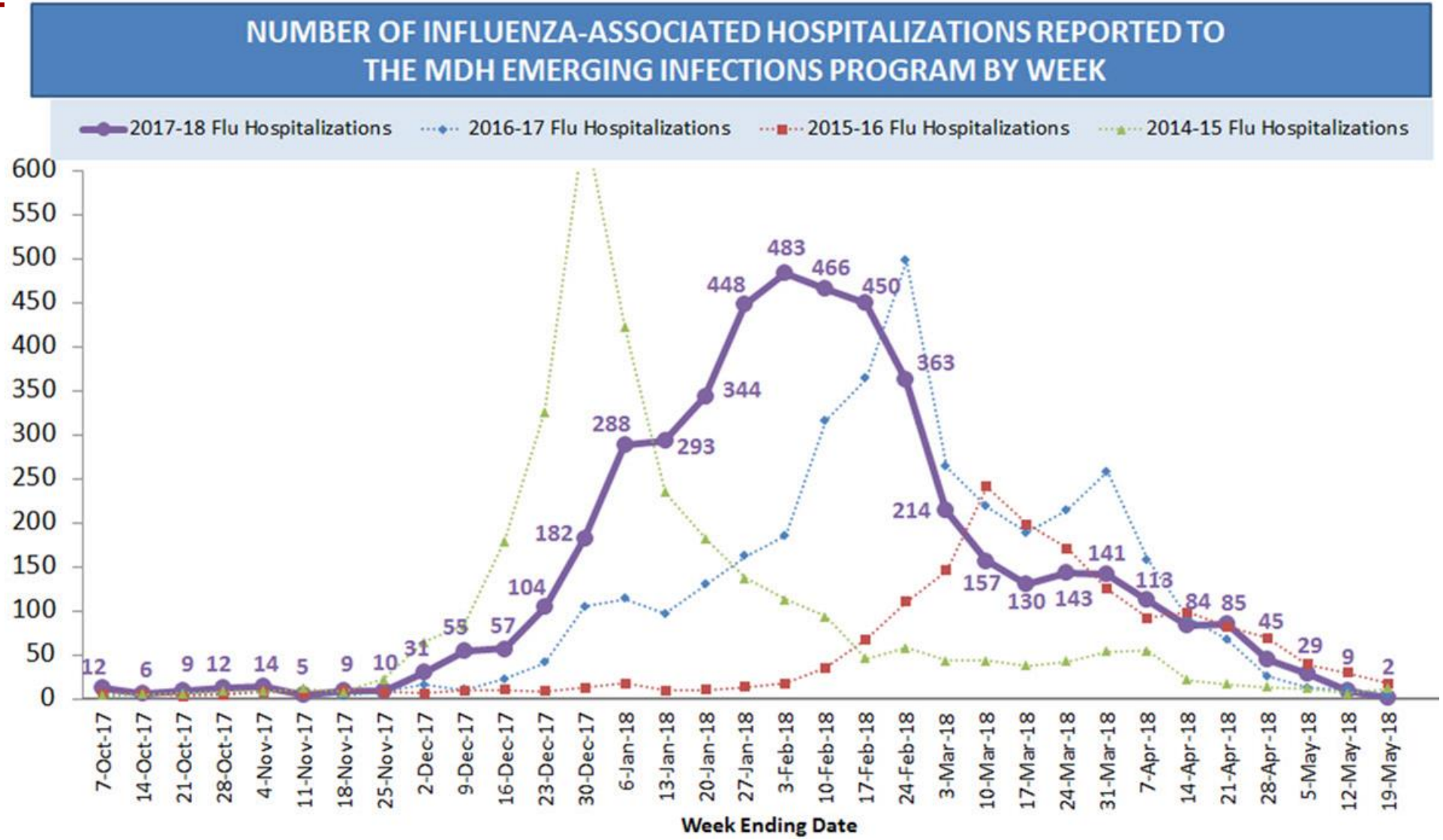
Clinical Laboratories



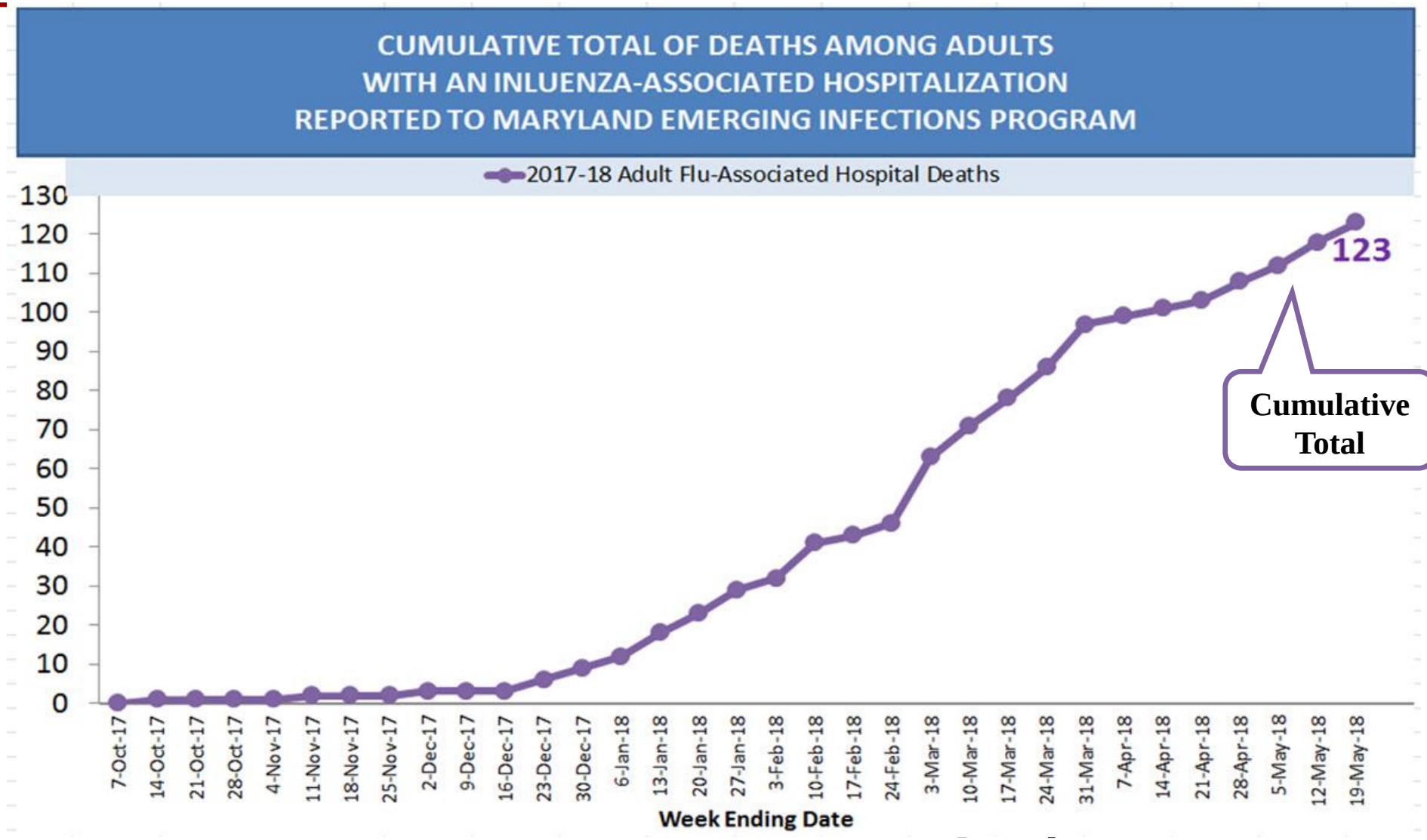
Outbreaks


NUMBER OF OUTBREAKS OF RESPIRATORY DISEASE REPORTED BY WEEK
2017-18 Respiratory Outbreaks
2016-17 Respiratory Outbreaks
2015-16 Respriatory Outbreaks
2014-15 Respiratory Outbreaks
30
25
20
15
10
5
0
3 1 1 0 2 1 0 1 1 1 3 2 4 7 14 18 25 24 19 12 7 10 3 4 7 4 5 3 5 1 3 0 1
7-Oct-17
14-Oct-17
21-Oct-17
28-Oct-17
4-Nov-17
11-Nov-17
18-Nov-17
25-Nov-17
2-Dec-17
9-Dec-17
16-Dec-17
23-Dec-17
30-Dec-17
6-Jan-18
13-Jan-18
20-Jan-18
27-Jan-18
3-Feb-18
10-Feb-18
17-Feb-18
24-Feb-18
3-Mar-18
10-Mar-18
17-Mar-18
24-Mar-18
31-Mar-18
7-Apr-18
14-Apr-18
21-Apr-18
28-Apr-18
5-May-18
12-May-18
19-May-18
Week Ending Date

Hospitalizations



Influenza-Associated Adult Hospitalized Deaths



Total cases, hospitalizations, and deaths associated with respiratory outbreaks reported to MDH (all settings) by agent, 2017-2018 Influenza season (10/1/2017-5/19/2018)

	Influenza A	Influenza B	Influenza, unspecified	Parainfluenza Type 3	Unknown	Grand Total
Total outbreaks	**91**	**26**	**48**	**1**	**26**	**192**
Total number of cases	**1098**	**223**	**475**	**20**	**313**	**2129**
number of cases per outbreak	12.1	8.6	9.9	20.0	12.0	11.1
Total hospitalizations	**112**	**17**	**41**	**2**	**17**	**189**
number of hospitalizations per outbreak	1.23	0.65	0.85	2.00	0.65	0.98
number of hospitalizations per 100 cases	10.2	7.6	8.6	10.0	5.4	8.9
Total deaths	**9**	**0**	**3**	**0**	**2**	**14**
number of deaths per outbreak	0.10	0.00	0.06	0.00	0.08	0.07
number of deaths per 100 cases	0.82	0.00	0.63	0.00	0.64	0.66

Number of Outbreaks by Setting and Illness, 2017-2018 Influenza Season (10/1/2017-5/19/2019)

	Influenza and Influenza/pneumonia	Influenza-like Illness	Influenza-like Illness/Pneumonia	Pneumonia	Grand Total
Nursing Home	81	0	4	10	**95**
Assisted Living	38	0	4	2	**44**
Hospital	5	0	0	0	**5**
School and Daycar	31	6	0	0	**37**
All Other Settings*	10	0	1	0	**11**
Grand Total	**165**	**6**	**9**	**12**	**192**

Other settings include adult medical day care centers, vocational or day programs, prisons or jails, residential and substance abuse treatment centers

CMS Regulations - Phase #2 Implemented by November 28, 2017

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42 CFR 483.80 – Infection Control

§483.80 Infection Control

- **Infection prevention and control program** – The facility must establish an infection prevention and control program (IPCP) that must include at a minimum, the following elements:
- (1) A **system for preventing, identifying, reporting, investigating, and controlling infections** and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to §483.70(e) – refers to "facility assessment" and following accepted national standards;

42 CFR 483.80 – Infection Control

- (2) **Written standards, policies, and procedures** for the program, which must include, but are not limited to:
- (i) A **system of surveillance** designed to identify possible communicable diseases or infections before they can spread to other persons in the facility;
- (ii) **When and to whom possible incidents of communicable disease or infections should be reported**;
- (iii) **Standard and transmission-based precautions** to be followed to prevent spread of infections;
- (iv) **When and how isolation should be used** for a resident; including, but not limited to:
- (A) The **type and duration of the isolation**, depending upon the infectious agent or organism involved – least restrictive possible

42 CFR 483.80 – Infection Control

- (1) Influenza – the facility must develop policies and procedures to ensure that –
- (i) Before offering the influenza immunization, each **resident** or the resident's representative receives **education regarding the benefits and potential side effects** of the immunization; (ii) Each resident is **offered** an influenza immunization **October 1 through March 31 annually**, unless the immunization is medically contraindicated or the resident has already been immunized during this time period; (iii) The **resident** or the resident's representative **has the opportunity to refuse** immunization; and (iv) The resident's **medical record includes documentation** that indicates, at a minimum, the following:
  - (A) That the resident or resident's representative was provided education regarding the benefits and potential side effects of influenza immunization.
  - (B) That the resident either received the influenza immunization or did not receive the influenza immunization due to medical contraindications or refusal

Maryland Specific Regulations

COMAR 10.07.02

MARYLAND Department of Health

.21 Infection Control Program

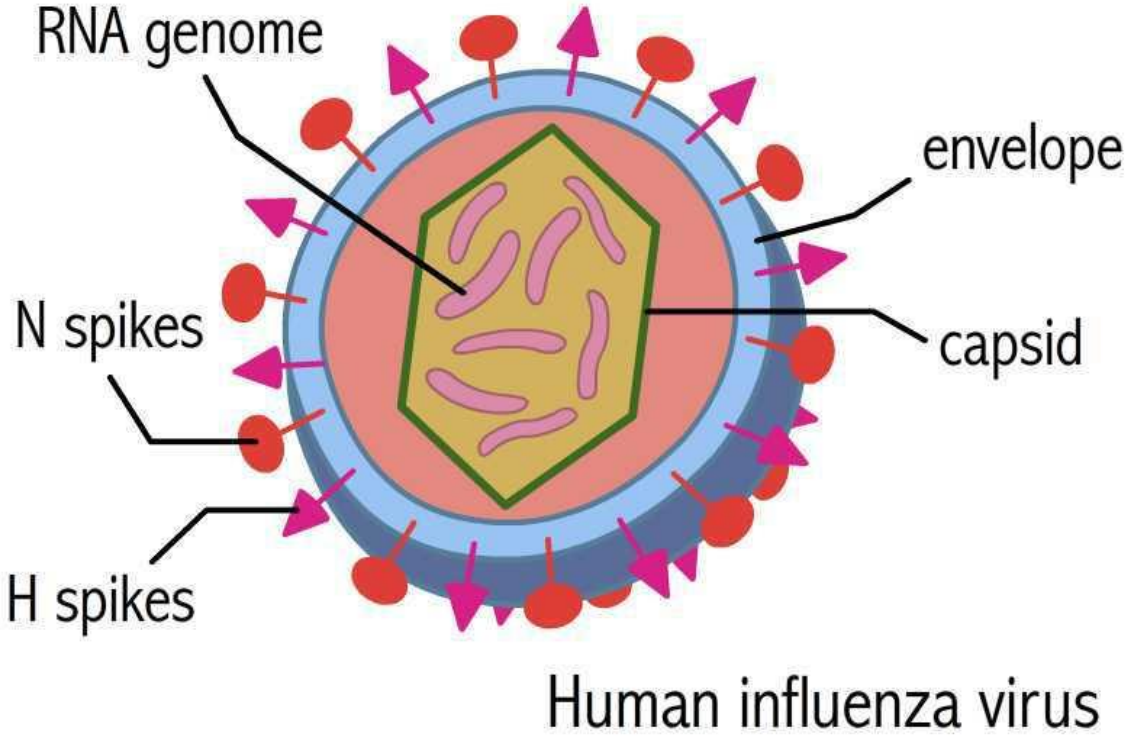
- G. **Preventing Spread of Infection**
- **(1) The facility shall assess any residents with signs and symptoms of an infectious illness for the possibility of transmission to another resident or employee**
- **(2) The facility shall take appropriate infection control steps to prevent the transmission of a communicable disease to residents, employees, and visitors as outlined in the following guidelines:**
- (a) Guideline for Isolation Precautions in Hospitals; and
- (b) Guidelines for Infection Control in Health Care Personnel.

.21 Infection Control Program

- (3) The facility shall **prohibit employees with communicable disease** or with infected skin lesions **from direct contract with residents** or their food if direct control could transmit the disease.
- (4) The facility shall **require employees to perform hand hygiene after each direct resident contact** for which hand hygiene is indicated by accepted professional practice.
- (5) The facility shall handle, store, process, and transport linens so as to prevent the spread of infection.

COMAR 10.06.01 Outbreak Definition

- (c) **An increase in the number of infections** in a facility, such as a hospital, long-term care facility, assisted living facility, school, or child care center**, over the baseline rate usually found in that facility**
- **Know what your baseline was in the 2017-2018 influenza season**

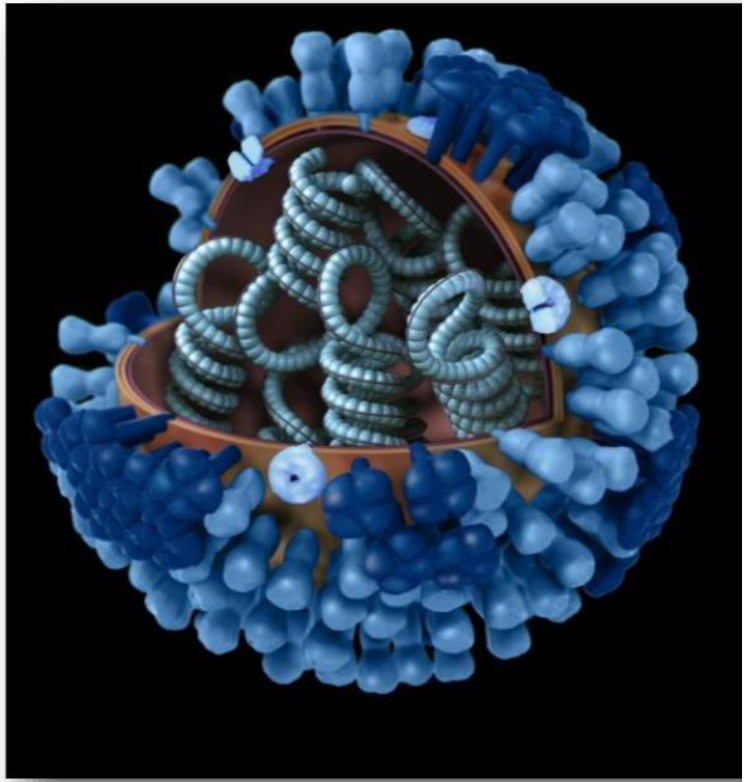


Influenza Virus

Influenza virus: Background

- **Current influenza viruses of humans**
  - Influenza A(H3N2)
  - Influenza A(H1N1)pdm09
  - Influenza B/Yamagata
  - Influenza B/Victoria

- **Important outer surface proteins**
  - Hemagglutinin – Vaccines induce antibodies to block this protein
  - Neuraminidase – Antiviral drugs inhibit this protein



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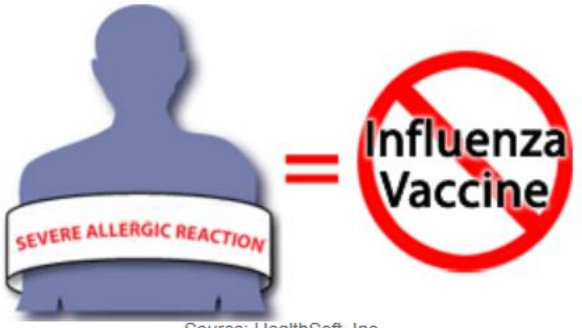
Background

- Antigenic shift – abrupt, major change in the influenza A viruses; resulting in new hemagglutinin and/or new hemagglutinin and neuraminidase proteins in influenza viruses that infect humans. Shift results in:
  - a new influenza A subtype or
  - a virus with a hemagglutinin or a hemagglutinin and neuraminidase combination that has emerged from an animal population that is so different from the same subtype in humans that most people do not have immunity to the novel virus.
  - most people have little or no protection against the new virus – occurred in 2009 with an H1N1 virus emerged causing a pandemic.
- Influenza type B viruses change only by the more gradual process of antigenic drift.

Indications for Influenza Vaccination

- Recommendations of the Advisory Committee on Immunization Practices (ACIP)
  - Annual influenza vaccination for all persons 6 months of age or older* UNLESS there is a medication contraindication
    - *No influenza vaccination approved for use in infants <6 months old
  - Only permanent contraindication is a severe allergic reaction to prior vaccine or a vaccine component
    - Anaphylaxis – serious, life-threatening allergic reaction; immune system releases chemicals that result in allergy symptoms
    - Allergy to eggs
    - Allergy to thimerosal



Source: HealthSoft, Inc.

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ACIP (Advisory Committee of immunization Practices) Recommendations for the 2018-2019 Influenza Seasons

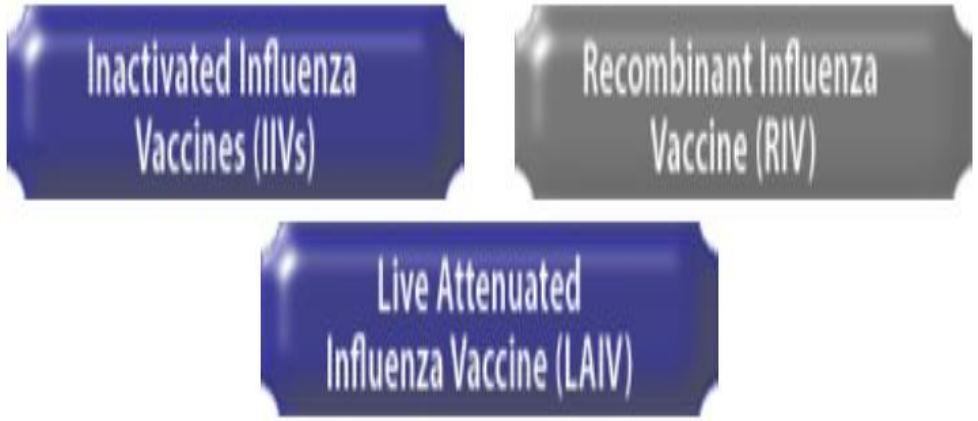
- Trivalent (three-component) vaccines are recommended to contain:
  - A/Michigan/45/2015 (H1N1)pdm09-like virus
  - A/Singapore/INFIMH-16-0019/2016 A(H3N2)-like virus (updated)
  - B/Colorado/06/2017-like (Victoria lineage) virus (updated)
- Quadrivalent (four-component) vaccines, which protect against a second lineage of B viruses, are recommended to contain:
  - the three recommended viruses above, plus B/Phuket/3073/2013-like (Yamagata lineage) virus

- Inactivated influenza vaccines and recombinant influenza vaccines will be available in trivalent and quadrivalent formulation. Also an additional recommendation-FLUAD-containing an adjuvant substance to stimulate the immune response-specifically for the elderly population

- Live-attenuated influenza vaccines, such as those found in Flumist nasal spray, are again recommended for use during this season – The nasal spray is approved for use in non-pregnant individuals, 2 years through 49 years of age. There is a precaution against the use of LAIV for people with certain underlying medical conditions. All LAIV will be quadrivalent (four-component).

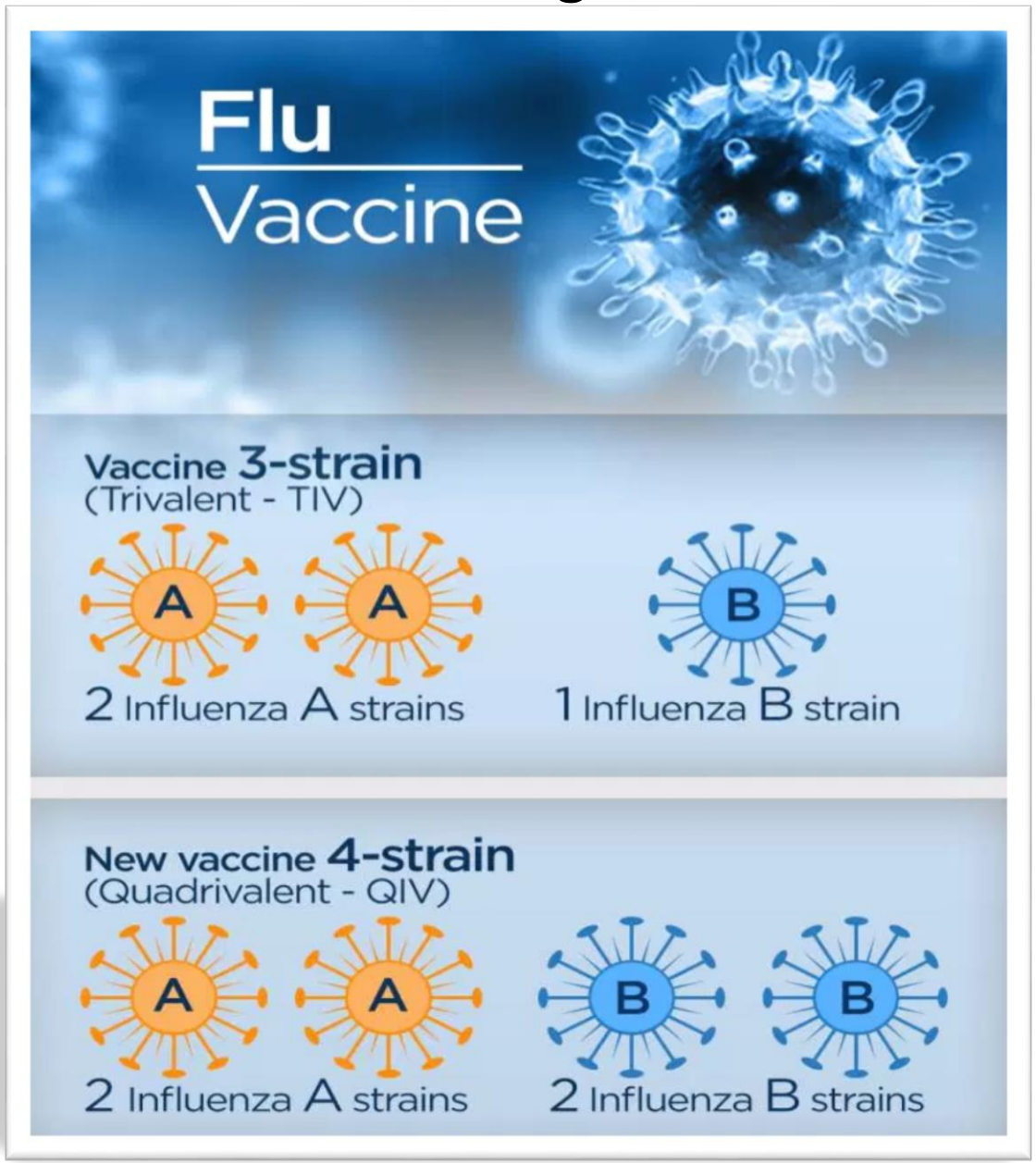
- Pregnant women may receive any licensed, recommended, age-appropriate influenza vaccine.

Influenza vaccines – Inactivated (IIV)



- Inactivated influenza vaccines (IIVs) available since the 1940s.
  - All IIVs except one formulation are administered by the intramuscular route; one formulation administered by the intradermal route.
  - Trivalent and quadrivalent influenza vaccines are available for the 2018-19 season
  - Manufacturers use a variety of compounds to inactivate influenza viruses and add antibiotics to prevent bacterial growth
  - Thimerosal, a mercury-containing antibacterial compound, is used in multidose vial preparations of IIV to reduce the likelihood of bacterial growth

Standard versus High Dose Flu Vaccines

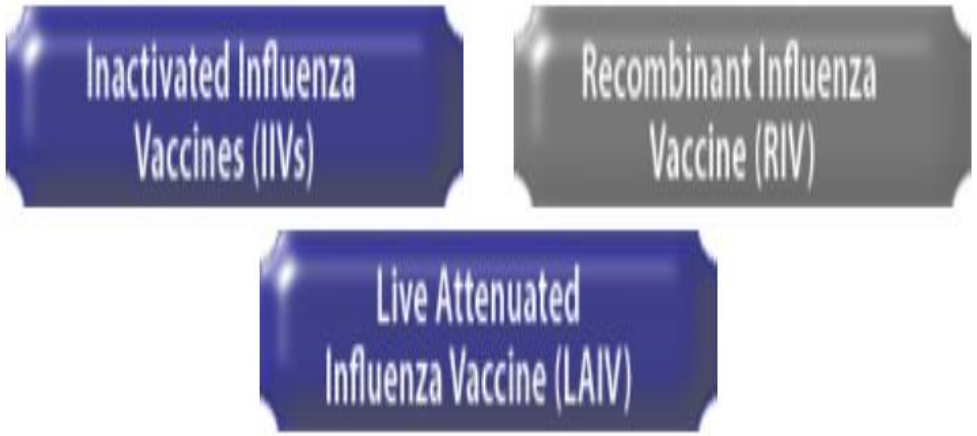


Other options:
Nasal – age 2 to 49 recently not recommended
Egg-Free – for egg allergies
Needless injector – fearful age 18 - 64

Trivalent – Standard dose; recommended for infants, healthy adults and pregnant women

Quadrivalent – high dose; recommended for over age 65 high risk adults, and HCW

Influenza vaccines – Recombinant (RIV)



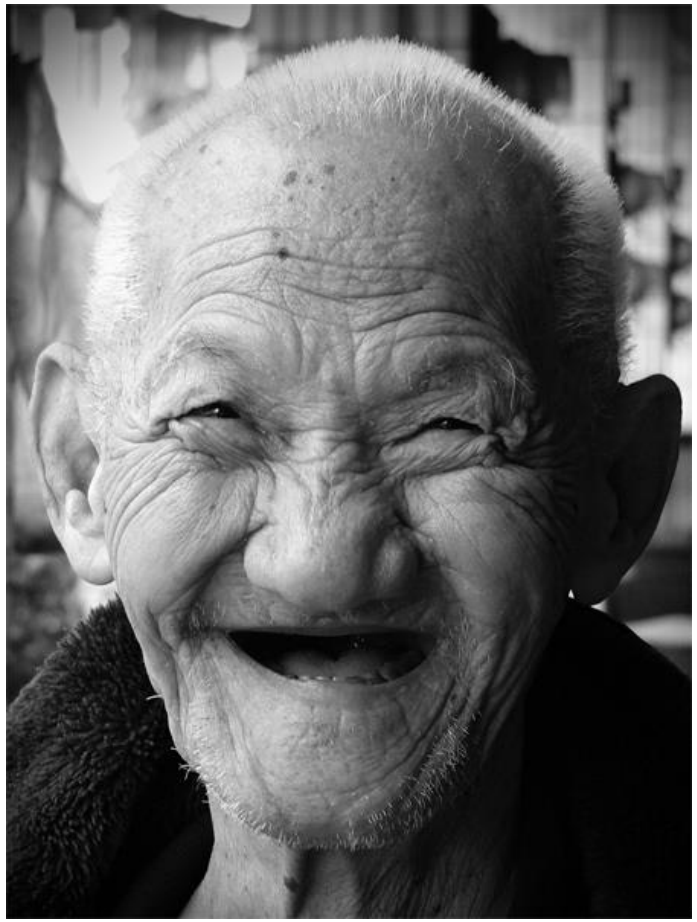
Recombinant influenza vaccine (RIV)

Two formulations of recombinant influenza vaccine, Flublok Quadrivalent (RIV4) and trivalent Flublok (RIV3), are available. These vaccines contain only recombinant hemagglutinin (HA). Neither live influenza viruses nor eggs are used to produce recombinant influenza vaccine. These vaccines do not contain any antibiotics or preservatives. RIV3 and RIV4 are administered by the intramuscular route.

Preventing the Introduction of Influenza into LTCF's

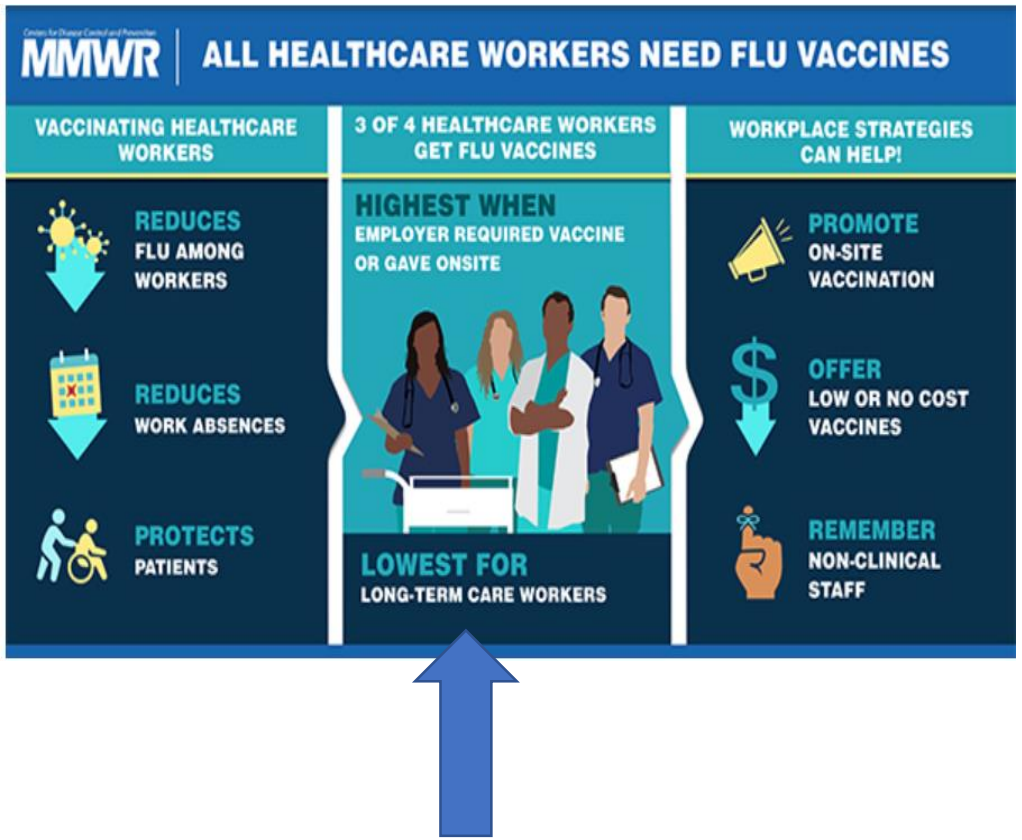
Annual vaccination of residents and staff

Influenza Vaccination of LTC Residents



- Reduces:
  - Illness and pneumonia due to influenza
  - Cardiopulmonary exacerbation
  - Hospitalization: approx. >1% of adults >65 yrs. of age in North America annually
  - Death: case-fatality as high as 50%
- Try to vaccinate all residents
  - Consider offering vaccine to family members
  - Consider dedicating a week to do all vaccinations, except for new admissions during flu season
  - Consider large “clinics” to cover both staff and residents OR go by units

Influenza Vaccination among HCW'ers: 2017-2018 season



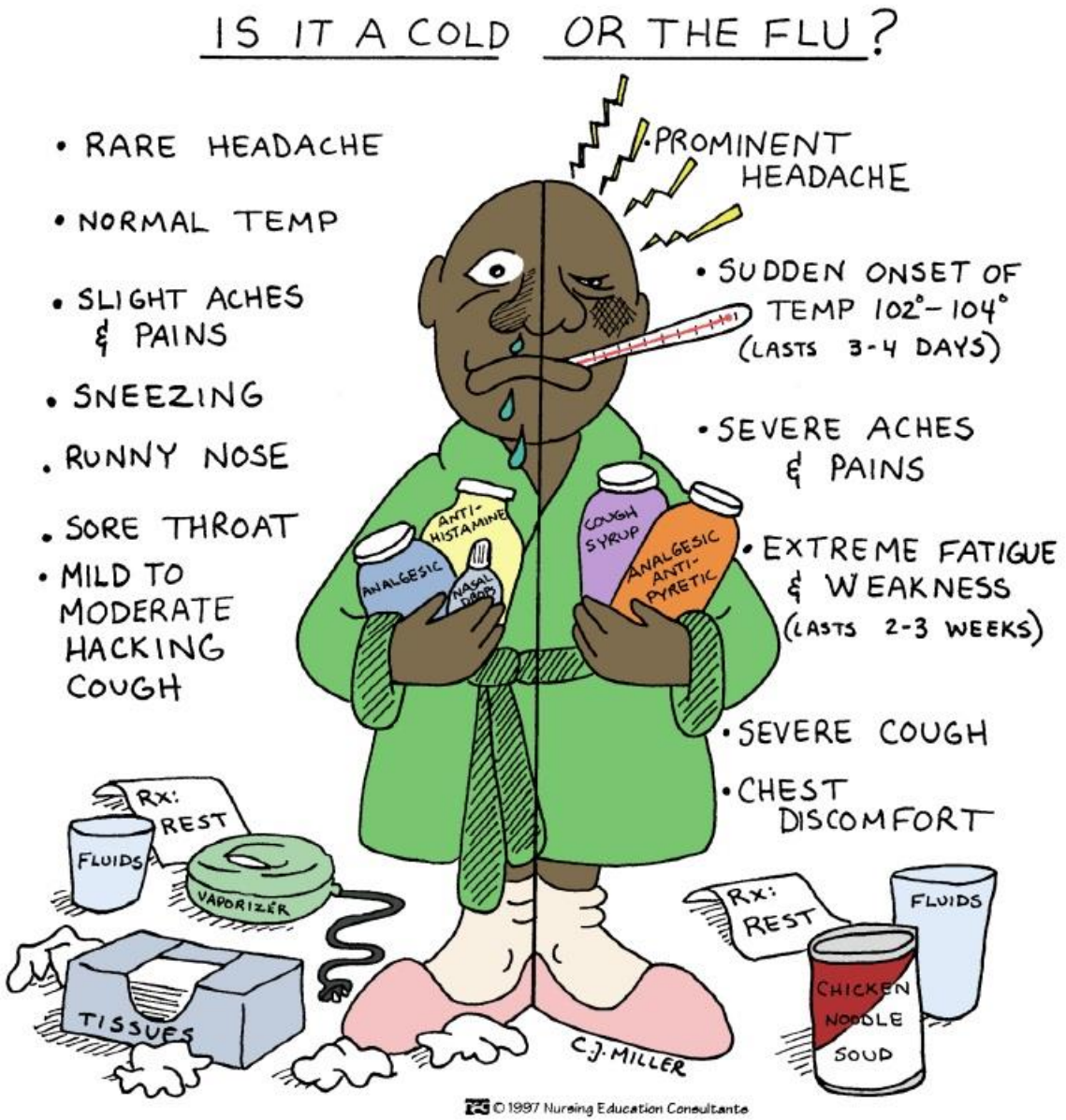
- CDC opt-in Internet panel survey of 2,265 U.S. health care personnel: 78.4%
  - Similar to previous four influenza seasons
  - **Lowest rate for LTC workers**; putting elderly in long-term settings at increased risk for severe complications for influenza
  - Consider a unit contest for residents and for staff-incentives do work

Influenza Vaccine administration

- Offered in October
- Vaccination efforts should continue throughout the season
  - Duration of season varies
  - Influenza may not appear until February or March
  - Vaccine is likely to be beneficial even if given after influenza activity has begun
- Adverse reactions of intramuscular and intradermal injections
  - Soreness/pain, redness, swelling at the site
  - Generally lasts 1-2 days; occurs in 15-20% of recipients
  - Reported more frequently after intradermal injection; self-limited

Healthcare Workers

- Three reasons why vaccination of HCW should be a priority
  - Reduce the risk that the patients get flu from exposure to infected HCW as most of the patients at highest risk from influenza have a lot of contact with the healthcare system
  - Maintain normal function of institutions during the influenza season
  - Healthy HCW respond very well to vaccine


IS IT A COLD OR THE FLU?
• RARE HEADACHE
• NORMAL TEMP
• SLIGHT ACHES & PAINS
• SNEEZING
• RUNNY NOSE
• SORE THROAT
• MILD TO MODERATE HACKING COUGH
• PROMINENT HEADACHE
• SUDDEN ONSET OF TEMP 102°–104° (LASTS 3-4 DAYS)
• SEVERE ACHES & PAINS
• EXTREME FATIGUE & WEAKNESS (LASTS 2-3 WEEKS)
• SEVERE COUGH
• CHEST DISCOMFORT
ANALGESIC
ANTI-HISTAMINE
NASAL DROPS
COUGH SYRUP
ANALGESIC ANTI-PYRETIC
RX: REST
FLUIDS
VAPORIZER
TISSUES
RX: REST
FLUIDS
CHICKEN NOODLE SOUP
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Signs and Symptoms of Flu

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Influenza virus transmission

- Typical incubation period: 1-4 days (avg. 2 days)
- Shedding of virus: day before symptoms begin through 5-10 days after illness onset; peak viral shedding on day 1 of illness
  - Infectivity decreases rapidly by 3-5 days with shedding completed by most persons by 5-7 days
  - Young children shed virus several days before illness onset and may be infectious $\geq$ 10 days

Influenza-like Illness (ILI) Surveillance: Case definitions

- ILI (Influenza-like illness) a temperature of at least 100°F (37.7°C) PLUS cough OR sore throat in the absence of a known cause other than influenza. Older adults, >=65 years, may have an atypical presentation: no fever, coryza, sneezing or rhinorrhea (refer to McGeer LTC definitions, revised 2012)
- Check with your microbiology/virology lab to see what type of testing they do and the turnaround time so you know how to order and can train others

Getting a positive Influenza diagnostic test:

- Can inform clinical management in your facility
  - Decision-making regarding use of antiviral medications (Tamiflu)
  - Performing other diagnostic testing
  - Implementing infection control measures e.g. isolation
  - Can help meet the definition of an outbreak which allows you to direct other prevention measures to decrease cases
- Recommended for at least the initial LTC patients with suspected influenza
- Testing methods include molecular assays, antigen detection & culture
  - Rapid molecular assays detect influenza virus nucleic acids in respiratory specimens with high sensitivity and can produce results in 15-30 minutes
  - Viral culture does not produce timely results for clinical management-takes too long

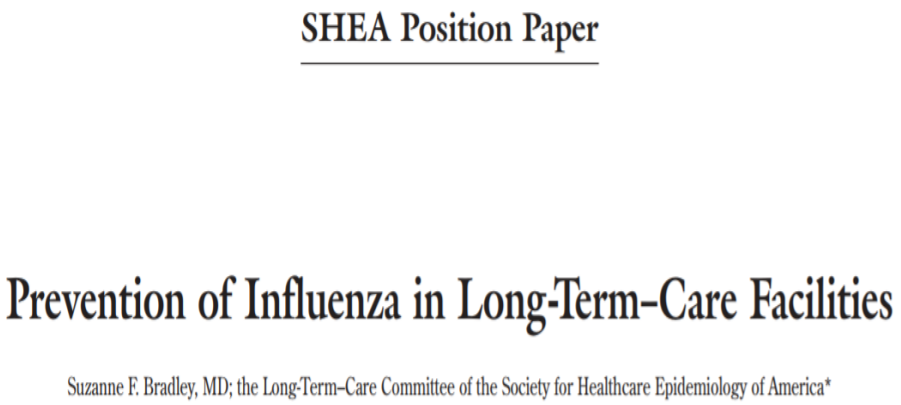
Prevention of LTC Outbreaks

- Standard and Droplet precautions should be implemented for patients with suspected or confirmed influenza for 7 days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer
- Utilize a sign that informs staff and visitors about PPE and other steps needed to go into that particular room.

To prevent transmission of respiratory viruses:

- Use Respiratory Etiquette!! Cover your mouth and nose with a tissue when you cough or sneeze. Post the signs throughout the facility
- Put your used tissue in the waste basket next to the point of entry(s) into your facility
- If you don't have a tissue, cough or sneeze into your upper sleeve, not your hands!!
- Clean your hands after coughing or sneezing with soap and water or an alcohol-based hand rub (ABHR). ABHR will be at points of entry into your facilities.
- You may be asked to put on a surgical mask to protect others while visiting friends or family in a health care setting such as a hospital or nursing home – best for everyone to NOT VISIT when symptomatic-no matter what virus you could have!

Prevention of LTC Outbreaks


SHEA Position Paper

Prevention of Influenza in Long-Term-Care Facilities

Suzanne F. Bradley, MD; the Long-Term-Care Committee of the Society for Healthcare Epidemiology of America*

LongTerm-Care Committee of the Society for Healthcare Epidemiology of America. Infect Control Hosp Epidemiol 1999; 20:629–637.

- Recommendations:
  - mass vaccination of unvaccinated residents and staff;
  - use of prophylactic treatment with adamantanes – updated by CDC 2011 to include neuraminidase inhibitors (oseltamivir or zanamivir) Tamiflu
  - decreasing contact between residents, re-emphasis on compliance with handwashing;
  - furlough of sick staff; and
  - cohorting of residents.

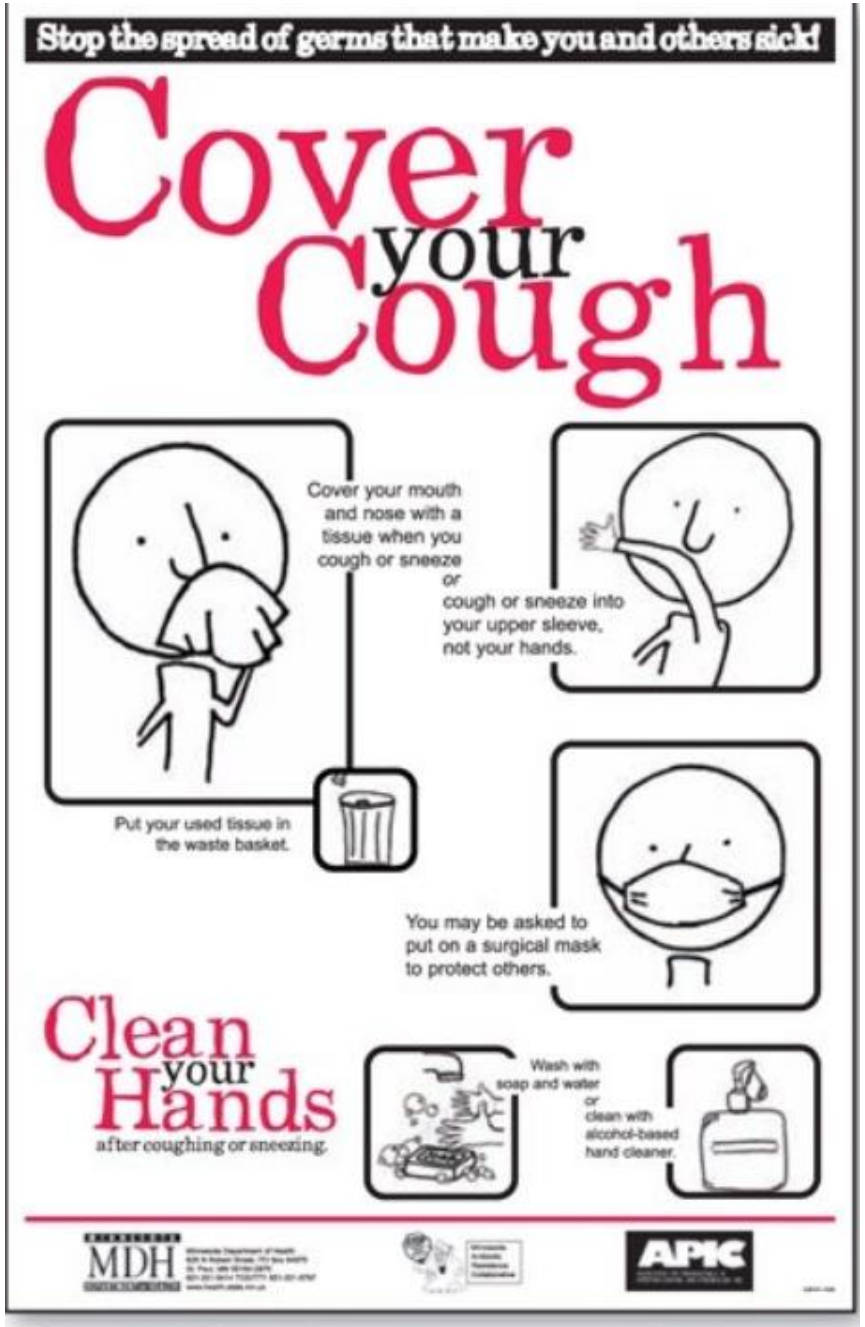


Figure 1. CDC's complimentary poster on cough etiquette designed for use in health care settings.

IF YOU'RE COUGHING OR SNEEZING, PLEASE ASK FOR A MASK

You may be asked to wear a surgical mask to protect others from your cough or sneeze.

Wearing a surgical mask when you have a cough or sneeze will help protect our patients, staff, and visitors from your illness, as well as help to protect you from other illnesses.

Our staff will be happy to help you with the mask.

Infection: Don't Pass It On

www.publichealth.va.gov/InfectionDontPassItOn

Department of Veterans Affairs

Respiratory 2 - All

Recommendations for Application of Standard Precautions for the Care of All Patients in All Healthcare Settings

Component	Recommendations
Hand hygiene	After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between patient contacts.
Personal protective equipment (PPE) Gloves	For touching blood, body fluids, secretions, excretions, contaminated items; for touching mucous membranes and nonintact skin
Personal protective equipment (PPE) Gown	During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated.
Personal protective equipment (PPE) Mask, eye protection (goggles), face shield	During procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation. During aerosol-generating procedures on patients with suspected or proven infections transmitted by respiratory aerosols wear a fit-tested N95 or higher respirator in addition to gloves, gown and face/eye protection.
Soiled patient-care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; perform hand hygiene.
Environmental control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces, especially frequently touched surfaces in patient-care areas.
Textiles and laundry	Handle in a manner that prevents transfer of microorganisms to others and to the environment
Needles and other sharps	Do not recap, bend, break, or hand-manipulate used needles; if recapping is required, use a one-handed scoop technique only; use safety features when available; place used sharps in puncture-resistant container
Patient resuscitation	Use mouthpiece, resuscitation bag, other ventilation devices to prevent contact with mouth and oral secretions
Patient placement	Prioritize for single-patient room if patient is at increased risk of transmission, is likely to contaminate the environment, does not maintain appropriate hygiene, or is at increased risk of acquiring infection or developing adverse outcome following infection.
Respiratory hygiene/cough etiquette (source containment of infectious respiratory secretions in symptomatic patients, beginning at initial point of encounter e.g., triage and reception areas in emergency departments and physician offices)	Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, >3 feet if possible.

(See Sections II.D.-II.J. and III.A.1)

Droplet Precautions

Mucous droplets propelled from the mouth, heavy enough so they move from mouth to about 3 feet and fall… Hence the name “droplet”

Use of Personal Protective Equipment (PPE)

Apply: Gown, Mask, & Gloves

Practice Droplet Precautions

Step 1

App  vn

Mus at top & waist

Step 2

Must cover nose at all times

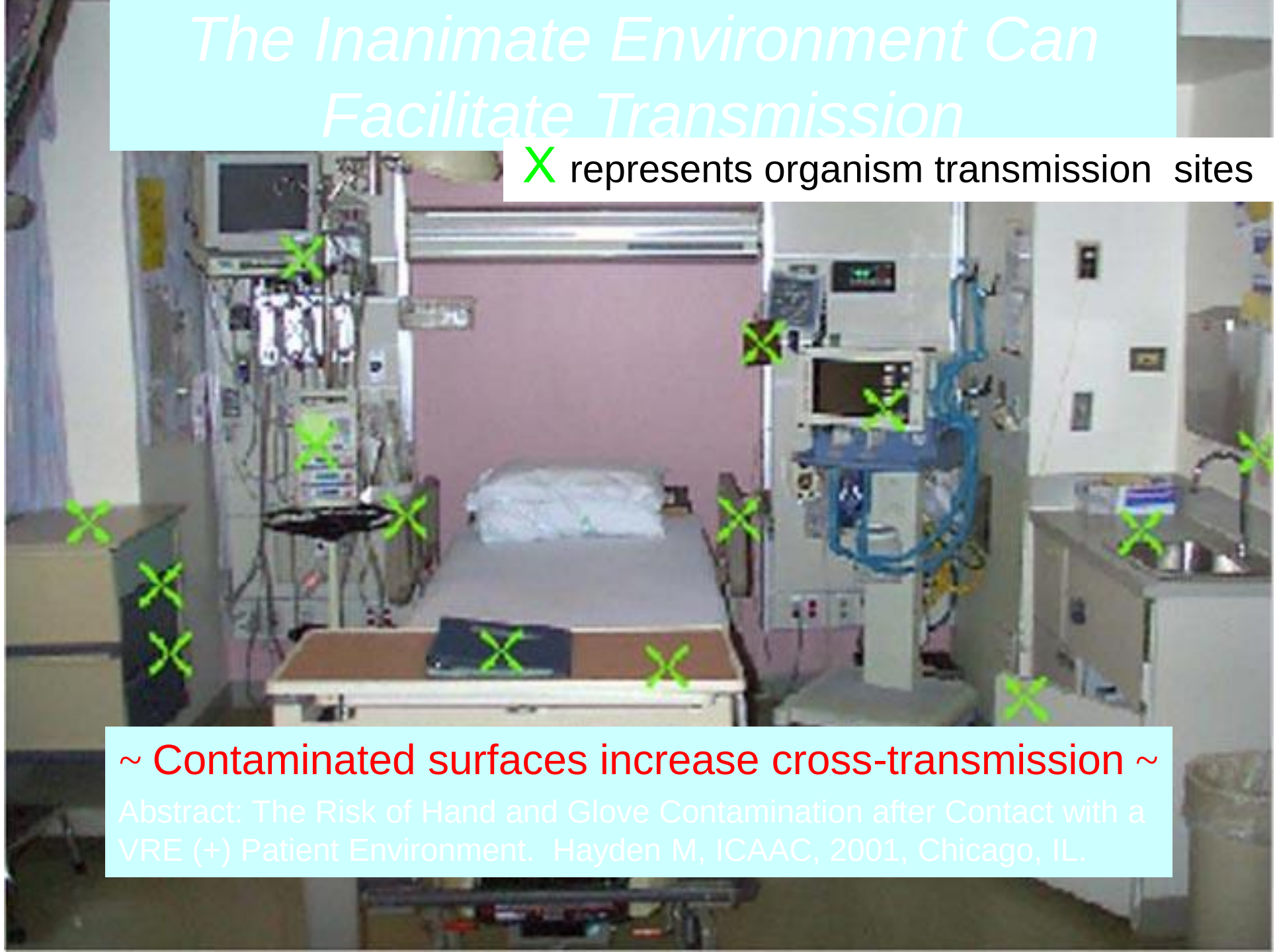
Step 3

Apply Gloves

Wash hands before & after use of gloves

The Inanimate Environment Can Facilitate Transmission

X represents organism transmission sites



~ Contaminated surfaces increase cross-transmission ~

Abstract: The Risk of Hand and Glove Contamination after Contact with a VRE (+) Patient Environment. Hayden M, ICAAC, 2001, Chicago, IL.

Antiviral Medications

- Important adjunct to influenza vaccine in the control of influenza
- Can be used to **treat** influenza or to **prevent** influenza (for prophylaxis of non-immunized individuals)
- Three medications approved by the FDA – neuraminidase inhibitors with activity against both Influenza A and B viruses
- Oseltamivir (Tamiflu) –oral
  - Zanamivir (Relenza) – inhaled
  - Peramivir (Rapivab) – intravenous
  - Current antiviral resistance among circulating viruses is low

MARYLAND Department of Health

Antiviral Medication - Tamiflu

- Early treatment:
  - Can shorten the duration of fever and illness symptoms
  - May reduce the risk of influenza complications e.g otitis media in young children, pneumonia and respiratory failure
  - Greatest clinical benefit when administered within 48 hours of illness onset
- Consider the following for treatment:
  - Give for a minimum of 2 weeks, and continue for at least 7-10 days after the last onset of illness
  - Can be offered to unvaccinated staff during all outbreaks and can be offered to all staff when the outbreak flu strain is suspected not to be a good match to the vaccine strain.
  - All well residents in the entire facility, not just the impacted current unit), regardless of vaccination status, should receive Tamiflu immediately when at least 2 residents are ill within 72 hours of each other and at least 1 resident has tested positive for influenza by any test. It should also be given when flu is suspected, but testing cannot be done right away.

Antiviral Medication - Tamiflu

- Recommended for patient with confirmed/suspected influenza who
- Is hospitalized or is isolated in your facility
- Has severe, complicated or progressive illness
- Is at higher risk for influenza complications; children <2 yrs, adults > 65yrs, pregnant or postpartum women, immunosuppressed persons, extreme obesity, nursing home or chronic care residents, American Indians/Alaska natives, persons with chronic illness (pulmonary, cardiac, renal, hepatic, hematological, metabolic disorders, neurologic), persons < 19yrs on long-term aspirin therapy
- Duration of treatment – typically 5 days; chemoprophylaxis – 7 days after last exposure
- Combination therapy not generally recommended

Management of Healthcare Worker's with Fever and Respiratory Symptoms

- Instruct not to report to work, or if at work, to stop patient-care activities, don a facemask, and promptly notify their supervisor and infection control personnel/occupational health before leaving work.
- Policies and procedures should enhance exclusion of HCW'ers who develop a fever and respiratory symptoms from work for at least 24 hours after they no longer have a fever, without the use of fever-reducing medicines.
- Remind that adherence to respiratory hygiene and cough etiquette after returning to work is always important.

MARYLAND Department of Health

Fundamental Elements to Prevent Flu Transmission

- Get vaccinated! Both residents and staff!
- Frequent hand hygiene with either soap and water or alcohol-based hand sanitizers
- Avoid touching your eyes, nose or mouth
- Avoid close contact with people who are sick
- Stay home when you are sick
- Clean, then disinfect surfaces and shared objects
- Practice standard and droplet precautions

MARYLAND Department of Health

Questions