Health Sciences North Research Institute
Institut de recherches d'Horizon Santé-Nord

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VITALiTY
Vaccine Initiative To Add Life To Years

Communicating Importance of Influenza Vaccination for Older Adults

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Presenter Disclosure

- I have relationships with commercial interests
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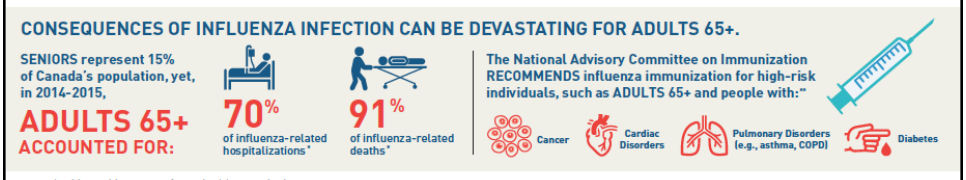
FLU & VACCINES



Researcher says influenza prevention can add 'life to years'

Experts rank immunization among key measures for preventing adverse health outcomes.

Case Scenario: influenza outcomes

1) 75 yo man active and independent in the community

- Adheres to a healthy diet and exercises daily
- Believes that he is healthy and does not need influenza vaccination
- Dies from influenza illness contracted on a cruise ship

2) 75 yo man active and independent in the community

- Healthy diet and has two chronic diseases but does not exercise daily
- Receives annual influenza vaccination.
- Develops medically attended influenza illness while on a cruise ship
- His wife who was vaccinated is an "asymptomatic seroconverter"

Case Scenario: influenza disabling complications

75 yo woman previously active and independent in the community

- Had received annual influenza vaccination but missed the current seasonal vaccination.
- In late January, she developed sudden onset of muscle aches, feverishness and cough - 24 hours later intubated in the ICU
- Lifelong non-smoker who had been independent in her home. She has hypertension stable on medications and stable heart disease.
- 10-day hospitalization including 3 days in ICU - discharged to rehab facility with diagnosis of exacerbation of chronic lung disease.
- On admission to geriatric rehabilitation, required assistance for transfers and difficulty walking.
- *Her question:* Will I ever be able to go back to my home?

Case Scenario - Pneumonia

80 yo woman active and independent in community, enjoys walk several times a week and going on cruises with neighbours

- Develops atrial fibrillation and becomes quite sedentary because of concerns about her heart – palpitations with exercise and ultimately requires pacemaker for heart rate control
- Rarely cooks meals and relies on daughter to bring groceries but with encouragement to resume regular exercise, function improves
- Hospitalized with pneumonia and further loss of independence and now unable to bathe independently
- Recovery to functional baseline by hospital discharge: 67% chance of remaining independent one year later
- Discharged with continued dependence for bathing: 40% 1-year mortality rate

Boyd CM et al. JAGS 56:2171-9, 2008

The Immune System Weakens with Age

Incidence of serious outcomes of influenza ↑

90% of influenza deaths occur in older people

For every influenza death, there are 3–4 influenza hospitalization

greatest impact when A/H3N2 strains circulate

Response to vaccination ↓

CURRENT INFLUENZA VACCINE

Efficacy is 70–90% in preventing respiratory illness in healthy adults and only 30–40% in older people **particularly for H3N2 strains**

BUT are cost-saving –

mainly due to the prevention of A/H3N2 hospitalization

indicates a clear margin for improvement

in protection against A/H3N2

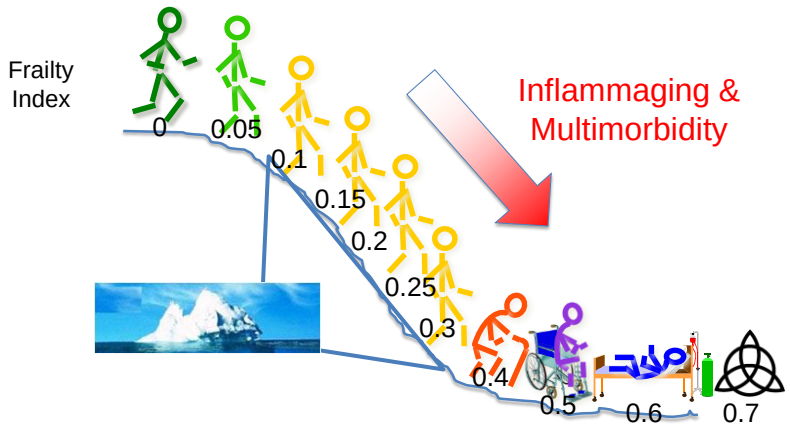
Influenza and Pneumonia:
Predictors of Hospitalization and Death

Hospitalization due to influenza and pneumonia, and death to any cause

Age, years	Score	
<70	0	Age
70-74	14	
75-79	28	
80-89	42	
≥90	56	
Male	9	
Outpatient visits in previous year		
0	0	OP Visits
1-6	11	
7-12	22	
≥13	33	
Previous hospitalization for pneumonia or influenza	63	Hospitalization
Comorbidity		
Pulmonary disease	18	Multiple (≥2) Chronic Conditions
Heart disease	6	
Renal disease/transplant	12	
Dementia or stroke	22	
Nonhematological and hematological cancer	48	

Hak et al. JID 189:450, 2004

Resilience to Influenza with Aging

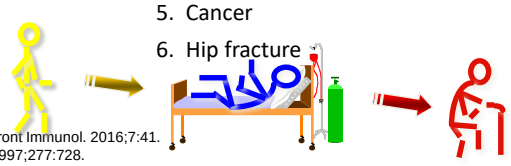


Vaccine Preventable Disability[1]

Catastrophic disability

- Defined as a loss of independence in **≥ 3 basic** Activities of Daily Living[2]
- **14.6%** of older adults hospitalized with influenza **experience catastrophic disability**[3]
- Disability due to influenza hospitalization[4,5] is also linked to **leading causes of catastrophic disability**[2]

1. Strokes
2. CHF
3. Pneumonia and influenza
4. Ischemic heart disease
5. Cancer
6. Hip fracture



[1] McElhaney JE et al. Front Immunol. 2016;7:41.
[2] Ferrucci et al. JAMA 1997;277:728.
[3] Andrews MK et al. Canadian Immunization Conference. December 7, 2016.
[4] Barker et al. Arch Int Med 1998;158:645.
[5] Falsey et al. *N Engl J Med*. 2005;352:1749.

VITALiTY

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Keeping your glass half full!
Exercise, diet, smoking cessation and vaccination

Are you willing to risk your independence this winter?