High-dose influenza vaccination

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1 High-dose influenza vaccine contains 4 times the amount of antigen of standard-dose vaccines

High-dose trivalent inactivated influenza vaccine (HD-TIV) contains 60 μg of hemagglutinin per strain, whereas standard-dose vaccines (SD-TIV) contain 15 μg. Given the burden of influenza A subtype H3N2 in older adults and evidence of better efficacy of HD-TIV relative to SD-TIV (Box 1),[1–4] Canada's National Advisory Committee on Immunization recommends HD-TIV over SD-TIV for adults aged 65 years and older; however, the comparative effectiveness of HD-TIV over other options (MF59-adjuvanted TIV or standard-dose quadrivalent influenza vaccine) is uncertain.[5] The HD-TIV is publicly funded for adults aged 65 and older in Ontario and for long-term care residents aged 65 and older in Saskatchewan, Manitoba and Prince Edward Island.

2 In older adults, HD-TIV is more efficacious than SD-TIV

A clinical trial involving 31 989 adults 65 years of age and older found that HD-TIV was 24% (95% confidence interval [CI] 10% to 37%) more efficacious than SD-TIV in preventing laboratory-confirmed influenza, with 23% higher efficacy (95% CI 6% to 38%) against influenza A subtype H3N2.[1] Influenza A subtype H3N2 accounts for most severe illnesses among older adults. To prevent 1 additional case of influenza, 200 individuals need to receive HD-TIV instead of SD-TIV.[1]

3 HD-TIV is associated with reduced hospital admissions and emergency department visits in older adults

A cohort study including adults 65 years and older found that those who had received HD-TIV (n = 929 730) had a 22% (95% CI 16% to 27%) reduction in influenza-coded hospital admissions and emergency department visits compared with those who received SD-TIV (n = 1 615 545).[2]

4 HD-TIV is associated with reduced post-influenza deaths among older adults

A cohort study including 2 722 909 adults aged 65 years and older found that HD-TIV was associated with a 36% (95% CI 9% to 56%) reduction in post-influenza deaths compared with SD-TIV during the 2012/13 season, but no reduction during the 2013/14 season.[3]

5 Mild adverse events occur more often with HD-TIV than with SD-TIV

Short-term data from clinical trials showed higher rates of mild systemic reactions (e.g., fever) among individuals receiving HD-TIV than among those receiving SD-TIV (relative risk 1.2, 95% CI 1.1 to 1.3), but not serious adverse events (relative risk 0.92; 95% CI 0.85 to 0.99).[1,4]

Box 1: Absolute outcome comparisons among adults aged 65 years and older receiving SD-TIV and HD-TIV

Outcome	SD-TIV	HD-TIV
Laboratory-confirmed influenza[1]	1.9%	1.4%
Hospital admissions for laboratory-confirmed influenza[2]	1.10 per 10 000 person-weeks	0.86 per 10 000 person-weeks
Post-influenza death[3]	0.038 per 10 000 person-weeks	0.028 per 10 000 person-weeks
Mild adverse events*[4]	29.4%	34.3%

Note: HD-TIV = high-dose trivalent inactivated influenza vaccine, SD-TIV = standard-dose trivalent inactivated influenza vaccine.
*For example, fever, headache, malaise and myalgia.

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