Systematic review of the cost-effectiveness of influenza immunization programs: a Canadian perspective

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Authors' conclusions
From the societal perspective and in many cases the health care system perspective as well, seasonal influenza vaccination was generally found to be a cost-effective strategy. Vaccinating all pregnant and postpartum women against seasonal influenza compared to only vaccinating high risk pregnant and postpartum women was generally cost-effective. If indirect protection from mother to neonate was considered in the analysis, vaccination was especially cost-effective or in some cases, a dominant strategy. Similarly, vaccinating all children and adolescents against seasonal influenza was generally cost effective, with robust evidence for infants, toddlers, and adolescents. If indirect protection from children to parents, caregivers, and households was considered in the analysis, vaccination was especially cost-effective or in many cases, a dominant strategy. School-based mass vaccination programs which reduced time off work for parents and caregivers to take their children to be vaccinated were found to be beneficial in reducing lost productivity and contributed to cost-effectiveness of the program. The cost-effective evidence for vaccinating healthy working age adults (18 to 64 years old) was mixed and sensitive to inputs based on geographic location, vaccine efficacy, and valuation of lost productivity. This result reflects the diverse nature of this large age subgroup. Indirect protection was generally not considered in the studies for healthy working age adults and could have impacted results. Vaccinating high risk adults with other co-morbidities, such as cancer and diabetes, against seasonal influenza was found to be cost-effective. Vaccinating health care workers against seasonal influenza was found to be cost-effective even without considering indirect protection; if indirect protection was incorporated into the model, the results were cost saving and dominant. Vaccinating elderly adults (>65 years old) was cost-effective. Overall, universal mass immunization programs were favoured as a cost-effective strategy. Programmatic considerations such as administration, and incremental uptake rates were important to the sensitivity of the results. As of June 2015, influenza immunization policies differ across Canada, with six provinces (AB, SK, MB, ON, NS, NL) and all three territories offering universal influenza immunization programs and three provinces (BC, QC, NB) providing targeted influenza immunization programs. Differences also exist with regard to the groups offered vaccine in provinces that offer a universal program. Additional research and reviews into new influenza vaccine formulations such as quadrivalent vaccines and the inclusion of new technologies and programmatic strategies would provide more insight regarding immunization policy decisions.

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