

Why expanding flu vaccination is good public policy

March 14 2014, by Matt Kennedy



Credit: Daniel Paquet

The elderly are often hit hardest during flu season, and their vulnerability means that they tend to be targeted by vaccination programs. But is this always the best strategy?

That's what Courtney J. Ward, assistant professor in the Department of Economics, wanted to find out. She recently published a paper in the *American Economic Journal: Applied*, which may encourage policy makers to rethink vaccination program strategies.

Dr. Ward's research found that expanding [flu](#) vaccine coverage to healthy young people, as well as the elderly, might be a better strategy of defense against flu and its associated medical costs.

Taking a different approach

Dr. Ward's research used data from the Ontario Universal Influenza Immunization Campaign (UIIC) that was implemented in 2000. It was one of the first programs in North America to both recommend and subsidize the [influenza vaccine](#) for all.

"This change provided years of evidence on [flu epidemics](#) under a policy of universal coverage—a history that can help us understand the impact of a universal approach to vaccination policy," says Dr. Ward.

When a vaccine provides a good match to circulating viruses in a [flu season](#), it's more likely to provide protection against influenza. Prior to 2000, vaccination policy recommendations included only high-risk groups, such as those over 65 and those with chronic conditions.

"I was able to show that higher vaccination rates in the young can actually lead to additional benefits to the old—benefits that arise because the young now spread the flu at a much lower rate. Overall, everyone gains from expanding coverage through lower medical costs and work absences from the flu."

Flu infection in older individuals will often lead to more costly medical care, which is why they have been considered a natural vaccine target. However, younger individuals may enjoy a higher degree of protection from the flu shot, and can leverage that protection over a larger network of people. This means that they can pass on more vaccine benefits than older groups, reducing infectiousness among the entire population.

"There are clear gains to expanding vaccination coverage to young people," says Dr. Ward. "You get infection rates down in a healthy population, which may not save you much in hospitalizations in this group, but does matter for health outcomes like work absenteeism. But additionally, you will also see knock-on effects for the old, and since the old are much more likely to end up in the hospital with complications from flu, here you will save on hospital visits too."

Staggering results

Dr. Ward explains that when Ontario expanded its [vaccination program](#), it delivered 2.1 million additional vaccines at a cost of \$31 million. The province saw a 9 percentage point increase in vaccinations, relative to other provinces, but the increase was mostly due to younger individuals; there was no relative increase for the old. And yet, Ontario's seniors enjoyed an additional 25 percent decline in hospital admissions for seasons that delivered a well-matched vaccine to the circulating viruses.

"Since the rates of hospitalization are highest among older adults, this represents a sizable effect in terms of numbers of hospitalizations averted," says Dr. Ward.

During the epidemic period, when the vaccine was well-matched, Dr. Ward estimates an overall 48 percent decrease in influenza-pneumonia admissions, a 14 percent decrease in work absenteeism and a decrease in the rate of influenza-pneumonia death of 9 per 100,000. This translates to an estimated cost savings of \$241 million in a high match season, or about \$171 million in an average match season.

The importance of a good match vaccine

Concerns over impending seasonal epidemics are justified: influenza is

the sixth leading cause of death among adults.

"Contingent on a good match [vaccine](#), my research shows expanding [flu vaccine](#) coverage to healthy young people can potentially decrease overall infection rates by more than 90 percent," says Dr. Ward

"The large benefits from universal coverage suggest advantages to developing well-matched vaccines and considering policy strategies that leverage both traditional cost effectiveness estimates and the degree of 'knock-on' protection offered by different groups.

"In the end you must decide if an ounce of prevention is worth a pound of cure."

Provided by Dalhousie University

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