Vaccines for adults: The time has come

Gemmill I^{1, 2*}

¹Chair, National Advisory Committee on Immunization

²Kingston, Frontenac and Lennox & Addington Public Health, Kingston, ON

*Correspondence: ian.gemmill@kflapublichealth.ca

Abstract

The benefits of vaccines for adults have been underappreciated because of the focus on childhood vaccines. However, precisely because of the success of immunization programs for children, most deaths from vaccine-preventable diseases now occur amongst adults. Tetanus boosters will help to maintain Canada's low tetanus rates and pertussis boosters for adults are now available. Human papilloma virus vaccine may be indicated in some older adults. Hepatitis A and B vaccines may be indicated if there is occupational, travel or lifestyle risk. Pneumococcal and zoster vaccines are recommended in those over 65 years of age, and all adults benefit from annual influenza vaccination. A systematic approach to immunizing adults would assist in ensuring that all who are eligible for specific vaccines are offered them. This approach would include promoting routine immunization as a fundamental part of every patient encounter and the use of tools, such as the Adult Immunization Questionnaire and the Adult Immunization Wallet Card. By investing in these strategies, the health of adults can be improved significantly.

Introduction

Vaccines have improved the lives of children immensely, reducing morbidity and mortality from many childhood infections. It is remarkable to think that there were hundreds of thousands of cases of measles in an epidemic year before this safe and effective vaccine was introduced, and that a handful of cases in Canada's largest city is now considered an outbreak of significant proportion. The health of children has benefited hugely from the development of safe and effective vaccines.

In this miraculous story, the benefit of vaccines for adults has been underappreciated. Immunization has benefited the lives and improved the health of adults as well. This important resource for the health of adults cannot be overstated, but needs to be stated repeatedly, since so many adults do not see immunization as part of their health care or understand its value. The objective of this article is to review the benefits of various vaccines for adults and to review how they may be promoted more effectively.

The case for vaccines for adults

There are many reasons for adults to be immunized. First, routine immunization of adults seems to be forgotten after they leave the school system, but there are still many benefits from ensuring that routine vaccines are given throughout life. We are lucky that tetanus, which still affects thousands of people globally each year (1), occurs so rarely in Canada, because of a safe and effective vaccine. If this routine immunization is not on the radar screen of individuals and their health care providers, however, its benefits will decrease over time. There is already evidence that serological protection amongst adults in Canada is waning (2). Pertussis vaccine is another routine immunization for children, but only in the last decade have we had a safe and effective vaccine for adults. Getting individuals and health care providers to think about pertussis vaccine, however, is another matter. Pertussis vaccine prevents illness in adults, and its use in some adults, such as pregnant women, has shown promise in reducing pertussis in the most vulnerable, namely, infants (3).

Next, there are vaccines that are recommended for adults with risk factors for certain infections. For example, 1,500 cases of cervical cancer are diagnosed each year, and 400 women die of this now preventable disease.

Vaccine against human papillomavirus (HPV), the primary cause of cervical cancer, has been licensed, not only for adolescents, but for adult women, and for men up to the age of 26. This vaccine prevents 70% or more of cervical cancer, several other anogenital cancers, and may prevent some cancers of the head and neck (4). The licensure and wide-scale use of the nonavalent vaccine, together with appropriate continued screening for cancer of the cervix, has the potential to eliminate this important health threat to women. Other vaccines, such as hepatitis A vaccine (HAV) and hepatitis B vaccine (HBV), reduce or eliminate the risk of these infections when there is an occupational, travel or lifestyle risk.

There are some vaccines that are intended exclusively for adults. Zoster vaccine provides individual protection against a painful and debilitating occurrence of herpes zoster. Influenza vaccine, until recently, has been recommended virtually exclusively for adults, to prevent hospitalizations and deaths in the elderly and medically compromised. Its use is now broader, preventing severe illness in pregnant women and some children, and a very nasty illness in otherwise healthy adults. Polysaccharide pneumococcal vaccine has also been recommended for the elderly for many years, protecting them from the 23 strains of this potentially fatal infection. Conjugated vaccine provides improved protection against 13 strains for high-risk adults.

Despite the significant benefits to health, vaccines are not top of mind for either patients or providers (5,6). Rightly, there are other important priorities for adult health, such as healthy eating, active living, optimum weights, and prevention of diabetes and hypertension. Because of the success of immunization programs for children, however, most deaths from vaccine-preventable diseases now occur amongst adults (7). Immunization of adults deserves to have higher priority. It should be on the mind of every provider during every visit, and, as providers, we should be helping patients to understand the value of immunization for them, and engaging them as partners in optimizing its benefits. Because vaccines are routinely offered to all children, their immunization has been immensely successful in the prevention of diseases. The immunization of adults, however, has often been targeted, and has enjoyed less success as a result. For example, when influenza vaccine became a universal program in Ontario in 2000, some patients for whom this vaccine was indicated medically finally presented for the vaccine—not because they had a medical indication, but because the vaccine was now offered free of charge to all residents of the province.

Promoting vaccines for adults

How can immunization be made a higher priority in health programs for adults? First, there needs to be recognition of the benefit, both to patients and within the health system. For many years, for example, immunization with polysaccharide pneumococcal vaccine has been assessed to be a cost-effective measure for people over the age of 65 (8, 9, 10). Immunization with zoster vaccine can reduce not only suffering, but also health costs (11). A systematic approach to immunizing adults would assist in ensuring that all who are eligible for specific vaccines are offered them. The first strategy is to change our thinking about vaccines for adults, so that routine immunization is a fundamental part of every encounter, in the same way that it is for children. It would be considered poor practice if immunization were not a part of a well-child visit. Yet no one criticizes a provider for not asking about the immunization status of an adult, in an episodic visit, let alone in a routine checkup.

Promotion of this important part of primary care is essential to ensure that it is a universal part of every practice and that its benefits are realized.

The second initiative is to assist primary care providers with tools to identify and assess patients who may be eligible for immunization on a targeted basis, to ensure that they have full benefit of these vaccines. This strategy would emphasize identification of eligibility as a first step, by asking the right questions to every patient, and assessing the specific eligibility for a targeted immunization program as a second. This approach implies an awareness of all of the various vaccines for which a patient may be eligible, and an ability to determine more specifically which ones are indicated. Tools that provide information at one's fingertips, outlining the [routine and high-risk vaccine schedule for adults](#) (12) and the [catch-up schedule for adults with no record or unclear immunization history](#) (13) by province and territory are available from the Public Agency of Canada and provincial ministries of health. They need to be used routinely.

Specific strategies can assist providers of primary care. For example, a strategy for each visit by patients that can be implemented in all primary care settings should include an assessment of the immunization status, facilitated by stamped reminders in each patient's chart or automatic reminders in electronic medical records. Improved

record-keeping can be facilitated through the inclusion of adults' records on each province's immunization registry and working towards allowing remote entry to this database in every primary care office. It should be routine that every adult whose immunization status has been reviewed and brought up-to-date by providing the vaccines indicated, receive documentation of their immunization. There are several tools already developed and available to assist providers of primary care, such as the [Adult Immunization Wallet Card](#) that is available through [Immunize Canada](#) (14). These tools also have the benefits of engaging patients to become more involved in their own care and more knowledgeable about their immunization needs and status (15). Immunize Canada's Adult Immunization Questionnaire, which is completed by patients at scheduled appointments, improves both documentation and patients' awareness their own immunization status.

Also critically important in engaging adults in taking ownership of their own immunization is a strong focus on communications with patients. Taking the time to provide clear explanations of the value of immunization—and of the risks and benefits of the various vaccines—can only help to enhance uptake. Appropriate remuneration for providers needs to be in place to improve their engagement, to realize what we all know about the role of providers in improving immunization rates: that effective communication by health care providers has an important influence on people's decisions about whether or not to proceed with immunization (5).

Conclusion

Immunization of adults has been a neglected part of immunization programs, and a neglected part of health care for adults. Let us all share a vision about a comprehensive immunization program for adults, one in which: immunization of adults is given as much importance as other preventive programs; new, effective vaccines for adults are given priority, like childhood vaccines; safe and effective vaccines that are recommended for adults are made available in all provinces and territories; there is excellent and comprehensive promotion of vaccines for adults; and, finally, these efforts lead to optimum uptake and broad coverage of immunizations for adults, including both needed boosters and new vaccines. With the right emphasis and with the right investment, the health of adults can be improved significantly through attention to their immunization, just as has happened to the health of children.

Conflict of interest

None

Funding

None

References

- (1) World Health Organization (WHO). Vaccine-Preventable Disease Monitoring System, 2014 Global Summary. Global and regional immunization profile. http://www.who.int/immunization/monitoring_surveillance/data/gs_gloprofile.pdf
- (2) Public Health Agency of Canada. Vaccine coverage amongst adult Canadians: Results from the 2012 adult National Immunization Coverage (aNIC) Survey. 2014 Apr 10. <http://www.phac-aspc.gc.ca/im/nics-enva/vcac-cvac-eng.php>.
- (3) Healy CM, Baker CJ. Infant pertussis: What to do next? *Clinical Infectious Diseases*. 2012;54(3):328–30.
- (4) National Advisory Committee on Immunization (NACI). Update on Human Papillomavirus (HPV) Vaccines: An Advisory Committee Statement (ACS). *CCDR*. 2012 Jan;38 ACS-1.
- (5) Johnson DR, Nichol KL, Lipczynski K. Barriers to adult immunization. *Am J Med*. 2008 Jul;121(7) Suppl 2:S28–35.
- (6) Szilagyi PG, Shone LP, Barth R, Kouides RW, Long C, Humiston SG, Jennings J, Bennett NM. Physician practices and attitudes regarding adult immunizations. *Preventive Medicine*. 2005 Feb;40(2):152–61.
- (7) Parkins MD, McNeil SA, Laupland KB. Routine immunization of adults in Canada: Review of the epidemiology of vaccine-preventable diseases and current recommendations for primary prevention. *Can J Infect Dis Med Microbiol*. 2009 Fall;20(3):e81–90.
- (8) Patrick KM, Woolley FR. A cost-benefit analysis of immunization for pneumococcal pneumonia. *JAMA*. 1981;245(5):473–7.

- (9) Mangtani P, Roberts JA, Hall AJ, Cutts FT. An economic analysis of a pneumococcal vaccine programme in people aged over 64 years in a developed country setting. *Int J Epidemiol*. 2005 Jun;34(3):565–74. Epub 2005 Mar 11.
- (10) Castañeda-Orjuela C, Alvis-Guzmán N, Paternina AJ, De la Hoz-Restrepo F. Cost-effectiveness of the introduction of the pneumococcal polysaccharide vaccine in elderly Colombian population. *Vaccine*. 2011 Oct 13;29(44):7644–50. Epub 2011 Aug 18.
- (11) Najafzadeh M, Marra CA, Galanis E, Patrick DM. Cost effectiveness of herpes zoster vaccine in Canada. *Pharmacoeconomics*. 2009;27(12):991–1004.
- (12) Public Health Agency of Canada. Publicly-Funded Immunization Programs in the Provinces and Territories of Canada: Routine and High Risk (HR) Schedule for Adults). 2014 Sep 24.
<http://www.phac-aspc.gc.ca/im/ptimprog-progimpt/table-3-eng..>
- (13) Public Health Agency of Canada. Publicly-Funded Immunization Programs in the Provinces and Territories of Canada: Catch-Up Schedule for Adults with No Record or Unclear History of Immunization 2014 Sep 24.
<http://www.phac-aspc.gc.ca/im/ptimprog-progimpt/table-6-eng..>
- (14) Immunization Canada. Adult Immunization Record. 2012 May.
<http://resources.cpha.ca/immunize.ca/data/0104e.pdf>
- (15) Dubey V, Mathew R, Iglar K, Moineddin R, Glazier R. Improving preventive service delivery at adult complete health check-ups: The Preventive health Evidence-based Recommendation Form (PERFORM) cluster randomized controlled trial. *BMC Family Practice*. 2006;7:44.