CANImmunize: A digital tool to help patients manage their immunizations

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A PERSON'S IMMUNIZATION HISTORY IS ESSENTIAL to health care providers to determine whether they are protected against vaccine-preventable diseases and to public health officials to ensure adequate vaccine uptake. As pharmacists increasingly offer immunization services across Canada,¹ it is vital that they know an individual's immunization status and that all immunizations they provide be recorded. Pharmacists may have to rely on paper records, patient recall or available information retrieved from other care settings to determine a patient's current immunization status. New, digital technologies offer an opportunity to address the gaps in records. The Ottawa Hospital Research Institute and Dr. Kumanan Wilson have developed a free, bilingual digital immunization record for Canadians. CANImmunize can be used by pharmacists to help their patients manage their immunization records. Pharmacists can benefit by using CANImmunize to access expert-approved immunization information in each province and territory.

About CANImmunize

The CANImmunize app (formerly ImmunizeCA) was launched in April 2014 by the Ottawa Hospital Research Institute with the goal of addressing people's needs related to vaccine documentation, evidence-based information and on-time adherence to vaccine schedules. CANImmunize is available on iOS and Android devices and has been downloaded more than 175,000 times across Canada. CANImmunize does not require users to be connected to WiFi during use, which allows Canadians to easily access their records anytime, anywhere. This free and bilingual app provides a number of valuable tools to allow Canadians to self-manage their immunizations, including the following:

- Personalized immunization forecaster:** Users can create immunization records for all members of their family on their mobile devices (Figure 1). By specifying each member's date of birth, gender and province or territory of residence, routine and recommended immunizations are attributed to each member. This includes recommended dates and reminders for appointments to meet the schedule for initial and booster doses and recall reminders for upcoming appointments. Immunizations received can also be entered here, either retrospectively or at the time of administration. With both pediatric and adult schedules, everyone can be reminded to receive their annual flu vaccine, and adults aged 50 years or older can receive reminders about considering the shingles vaccine.
- Patient information:** In addition to recommending immunizations according to provincial and territorial immunization schedules, CANImmunize also provides evidence-based information on vaccination at a grade 7 reading level. For example, the information section includes vaccine-specific fact sheets and easy-to-understand articles on communicable disease prevention, immunization during pregnancy and other popular topics. As immunization providers, pharmacists can also rely on this content to guide their patients and help them stay up to date.
- Information specific to children:** CANImmunize recently added a section dedicated to teaching children about vaccines and features links to websites, videos and games that explain immunizations in a kid-friendly and interactive manner.

FIGURE 1 Screenshots of CANImmunize app

This includes the newly unveiled digital motion comic book, titled *Immunity Warriors: Invasion of the Alien Zombies*, which teaches kids about science and the importance of immunizations. This project was developed by students from Algonquin College in Ottawa and is accessible via the app and on www.CANImmunize.ca.

- **Information for travellers:** CANImmunize contains a section for travel vaccinations, which encourages the completion of a pretravel assessment with a health professional and information on vaccine-preventable diseases affecting various countries.
- **Pain management strategies:** Videos demonstrating pain reduction strategies are presented in CANImmunize by age category—for children younger than 3 years, kids and teens, and adults—including both pharmacologic and nonpharmacologic recommendations. Users can also access videos and written content on different ways to help soothe their children after their immunizations.

CANImmunize is available in English and French, with translation to other languages in progress.

Version 3.0 of the app, currently under development, will offer the following:

- Enhanced capabilities for secure storage of records, regardless of how you access CANImmunize
- A web-based platform to allow access via computers in addition to smartphones
- Customizable information and recommendations for individuals with special health conditions
- Immunization information tailored for newcomers to Canada, including refugees

The CANImmunize team has partnered with Ottawa Public Health to offer parents in Ottawa the ability to securely transmit their child's immunization records to public health using the app. This helps parents report their child's vaccine status for school attendance and allows for better record keeping before school entry. The plan is for this functionality to become available across Canada in the near future.

How pharmacists can become involved

As health professionals and, in many cases, immunizers, pharmacists are increasingly playing

a role in educating patients on immunizations and the importance of adhering to on-time recommended vaccines. Systematic review evidence has found that multicomponent and dialogue-based interventions are most effective to address vaccine hesitancy²; therefore, in addition to tailored face-to-face education, pharmacists can refer patients with hesitancy or questions to download CANImmunize and access evidence-based information on vaccines and the diseases they prevent, as well as their safety and effectiveness. Furthermore, the effectiveness of recall/reminder systems on immunizations has also been established, and pharmacists can encourage the use of this function to schedule future immunizations.^{3,4}

CANImmunize can also be integrated into other patient care activities provided by pharmacists. Patients who have received vaccines from the pharmacist can be made aware of the app and encouraged to document their immunization(s) here for their personal records, in addition to facilitate the sharing of this information with their primary care provider. When conducting medication reviews or pretravel consultations,

pharmacists performing these services can encourage their patients with computer or smartphone access to use the app to document past and new immunizations received and can use the app to easily determine the patient's eligibility for immunizations under their provincial and territorial routine immunization schedule. Pharmacists providing care for patients who are already using CANImmunize (or the former ImmunizeCA app) can refer to the app during consultations as part of their history-taking efforts. Finally, the ability of CANImmunize to provide notifications on local outbreaks can equip pharmacists with knowledge of recent outbreaks of vaccine-preventable illness in their region to assist with answering patient questions and, when within their scope, participate in vaccination efforts.

Additional information

Pharmacists wishing to obtain more information on the app and its functions are encouraged to visit the CANImmunize website at www.CANImmunize.ca or to download the app through the App Store⁵ or Google Play.⁶ ■

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