

Improving immunization rates in aging populations using digital technology

Kumanan Wilson

Senior Advisor, Digital Health, Bruyère

Senior Scientist, Ottawa Hospital

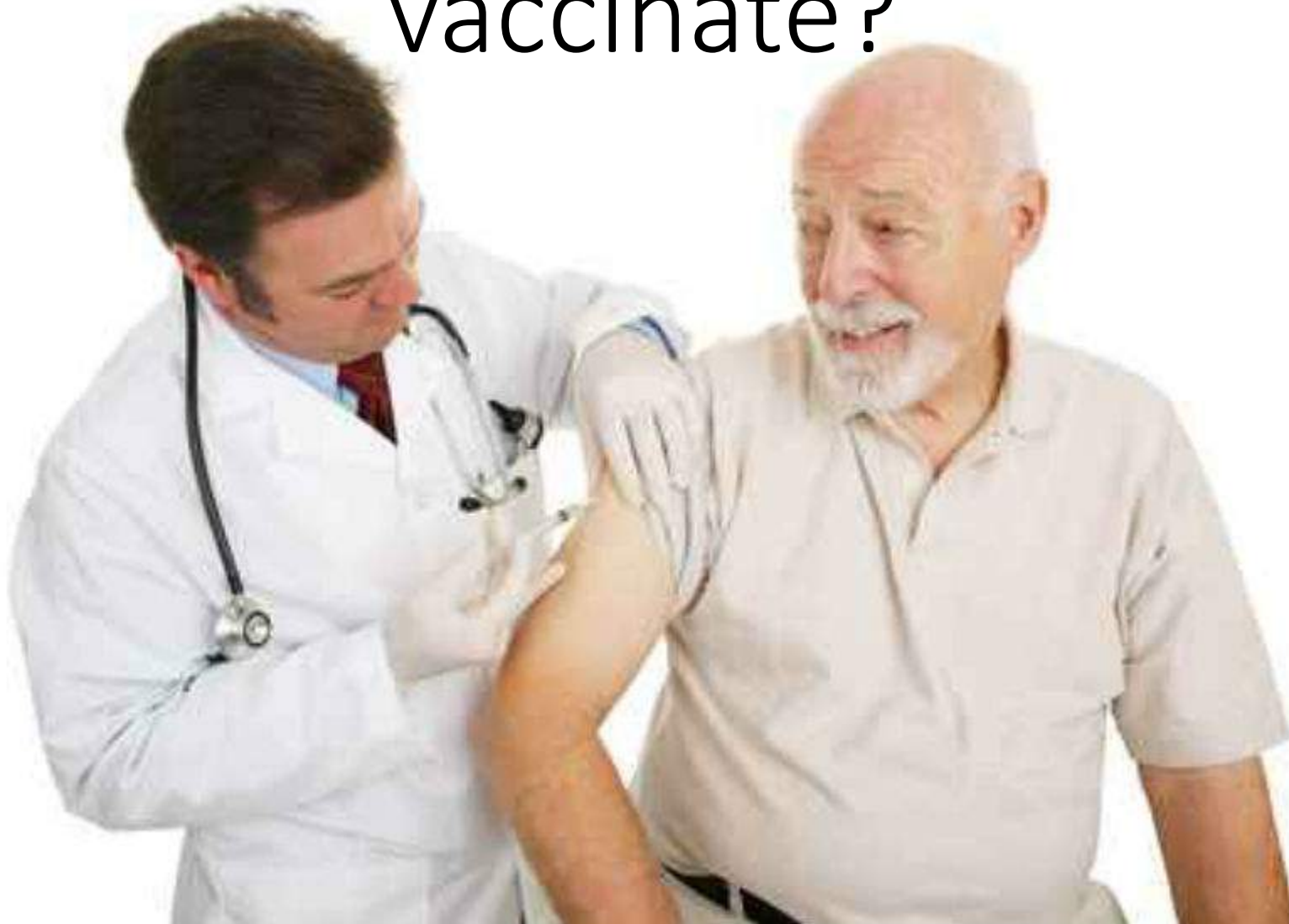
Professor, University of Ottawa

# Outline

- Why don't people vaccinate
- Using digital technologies to improve immunization rates
- How CANImmunize could help



Why don't people  
vaccinate?







**GREEN  
OUR  
VACCINES**

**GREEN  
OUR  
VACCINES**

Table 3  
Themes identified in studies

	Semistructured interviews [reference]										Focus groups [reference]					
Item	[31]	[17]	[18]	[30] <sup>a</sup>	[24]	[19]	[20]	[21]	[29] <sup>a</sup>	[22]	[23]	[25]	[26]	[27]	[28]	
Sample size, <i>n</i> =	13	45	23	40	47	20	13	28	67	12	13	41	50	84	48	
Believes vaccines are immunocompromising	–	+	–	–	+	–	+	–	+	–	–	–	–	–	–	
Believes vaccines cause diseases	–	+	–	–	+	–	+	+	–	+	–	–	+	–	–	
Risks of long-term, unknown adverse effects	+	+	–	–	+	–	+	–	+	+	–	–	+	–	–	
Risks of adverse effects	+	+	+	+	+	+	+	+	+	+	–	+	+	+	+	
Parents remembered their own or others' adverse experiences	+	–	–	–	+	+	+	+	–	+	–	–	–	–	–	
Exposed to pathogens in clinics	–	–	+	–	–	–	–	–	–	–	–	+	–	–	–	
Fear of needles	+	–	+	–	–	–	–	–	–	–	–	–	–	–	–	
Vaccines are provided at too young an age	–	+	–	–	+	–	–	–	+	–	–	–	–	–	–	
Painful	+	+	+	+	–	+	–	+	+	+	+	+	+	–	–	
Conspiracy theory or distrust of medical community	+	+	–	–	+	–	+	+	+	+	–	+	–	–	+	
Believes the diseases are not a problem	–	+	–	–	+	–	–	+	+	+	–	–	–	–	+	
Believes that medical community does not understand adverse events	+	+	–	–	+	–	+	–	–	+	–	–	–	–	–	
Ineffective	–	+	–	+	–	–	–	+	–	–	–	–	–	–	–	
Natural immunity	–	+	–	–	+	–	–	–	–	+	–	–	–	–	+	
Alternative methods of protection	–	+	–	–	+	–	+	–	–	–	–	–	–	–	–	
Can control pathogens child is exposed to	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	
Do not vaccinate when child has minor illness	–	+	+	–	–	+	–	+	–	+	+	+	+	+	+	
Costs (financial)	–	–	–	–	–	–	–	–	–	–	–	+	+	+	–	
Time	–	–	+	–	–	+	+	–	–	+	+	+	+	+	–	
Office hours or waiting time	–	–	+	+	–	–	–	–	–	+	+	+	+	+	–	
Transportation and location	–	–	–	–	–	–	–	–	–	+	+	+	+	+	+	
Additional children need to be looked after	–	–	–	–	–	–	–	–	–	+	+	+	+	–	–	
Staff are unpleasant or poor communication	–	+	+	+	–	–	+	–	+	–	+	+	+	–	–	
Don't know vaccination schedule	–	+	–	–	–	+	–	+	+	+	+	+	+	+	–	
Moral reasons or religion	–	–	–	–	+	–	+	–	–	+	–	–	–	–	–	
Lack of knowledge of diseases	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	
Reported barriers, total no.	7	15	8	5	12	6	11	11	11	17	8	12	12	7	6	

<sup>a</sup> This semistructured interview study also used focus group methods.

1. Vaccines are not safe

2. Vaccines are not necessary

3. Logistical challenges

4. Conspiracy Theories



Cochrane  
Library

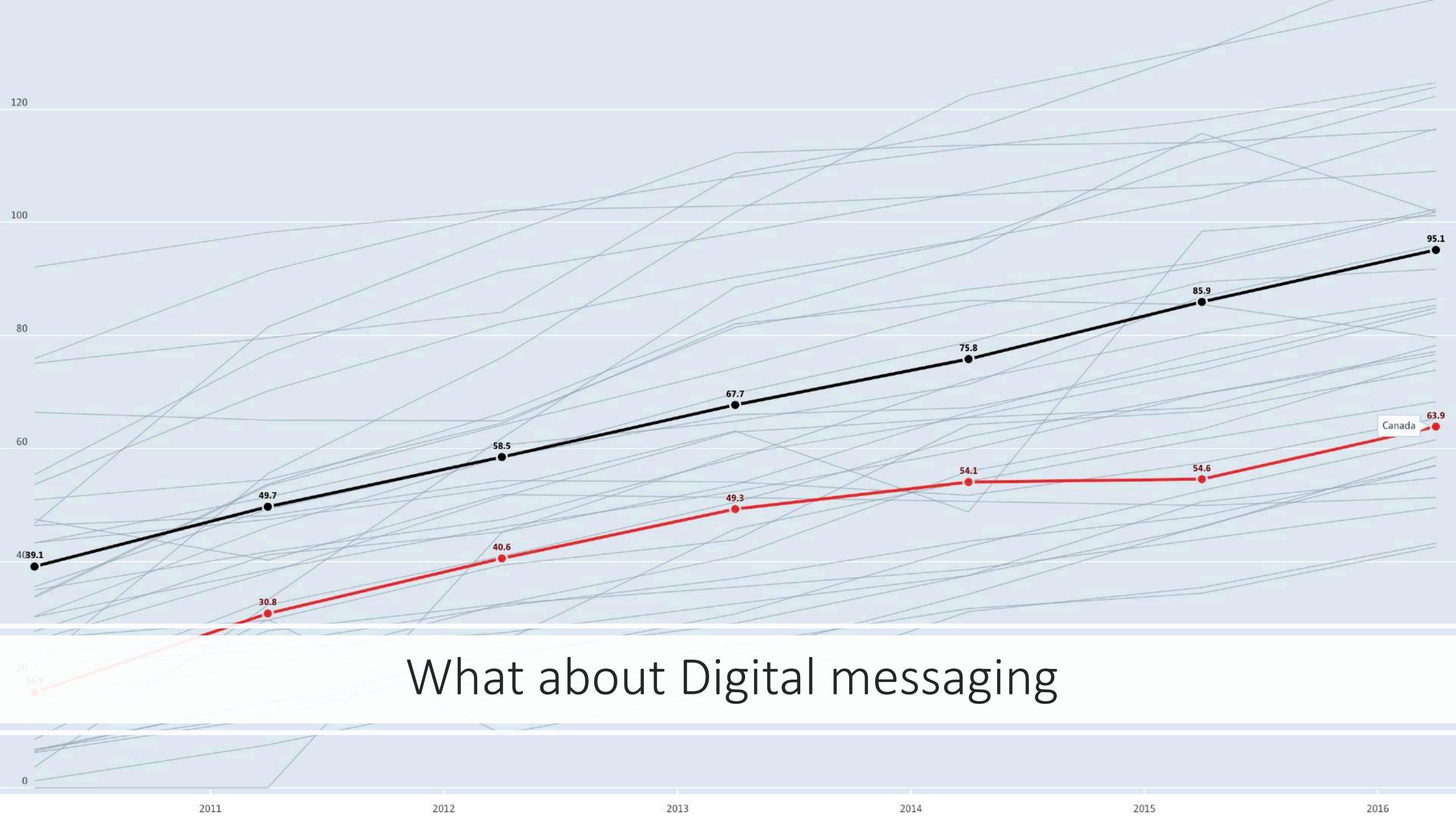
Cochrane Database of Systematic Reviews

Interventions to increase influenza vaccination rates of those  
60 years and older in the community (Review)

## Authors' conclusions:

We identified interventions that demonstrated significant positive effects of low (**postcards**), medium (**personalised phone calls**), and high (**home visits, facilitators**) intensity that increase community demand for vaccination, enhance access, and improve provider/system response.





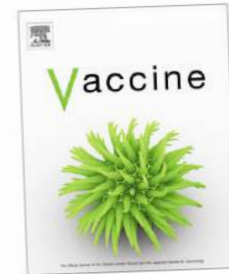
What about Digital messaging



Contents lists available at [ScienceDirect](#)

# Vaccine

journal homepage: [www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)



## Review

### Effectiveness of digital technologies at improving vaccine uptake and series completion – A systematic review and meta-analysis of randomized controlled trials

Katherine M. Atkinson<sup>a,b</sup>, Kumanan Wilson<sup>b,c,\*</sup>, Malia S.Q. Murphy<sup>b</sup>, Soha El-Halabi<sup>d,e</sup>, Lara A. Kahale<sup>f</sup>,  
Lucie L. Laflamme<sup>a</sup>, Ziad El-Khatib<sup>a,g</sup>

<sup>a</sup> Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden

<sup>b</sup> Clinical Epidemiology Program, The Ottawa Hospital Research Institute, Ottawa, Canada

<sup>c</sup> Department of Medicine, University of Ottawa, Ottawa, Canada

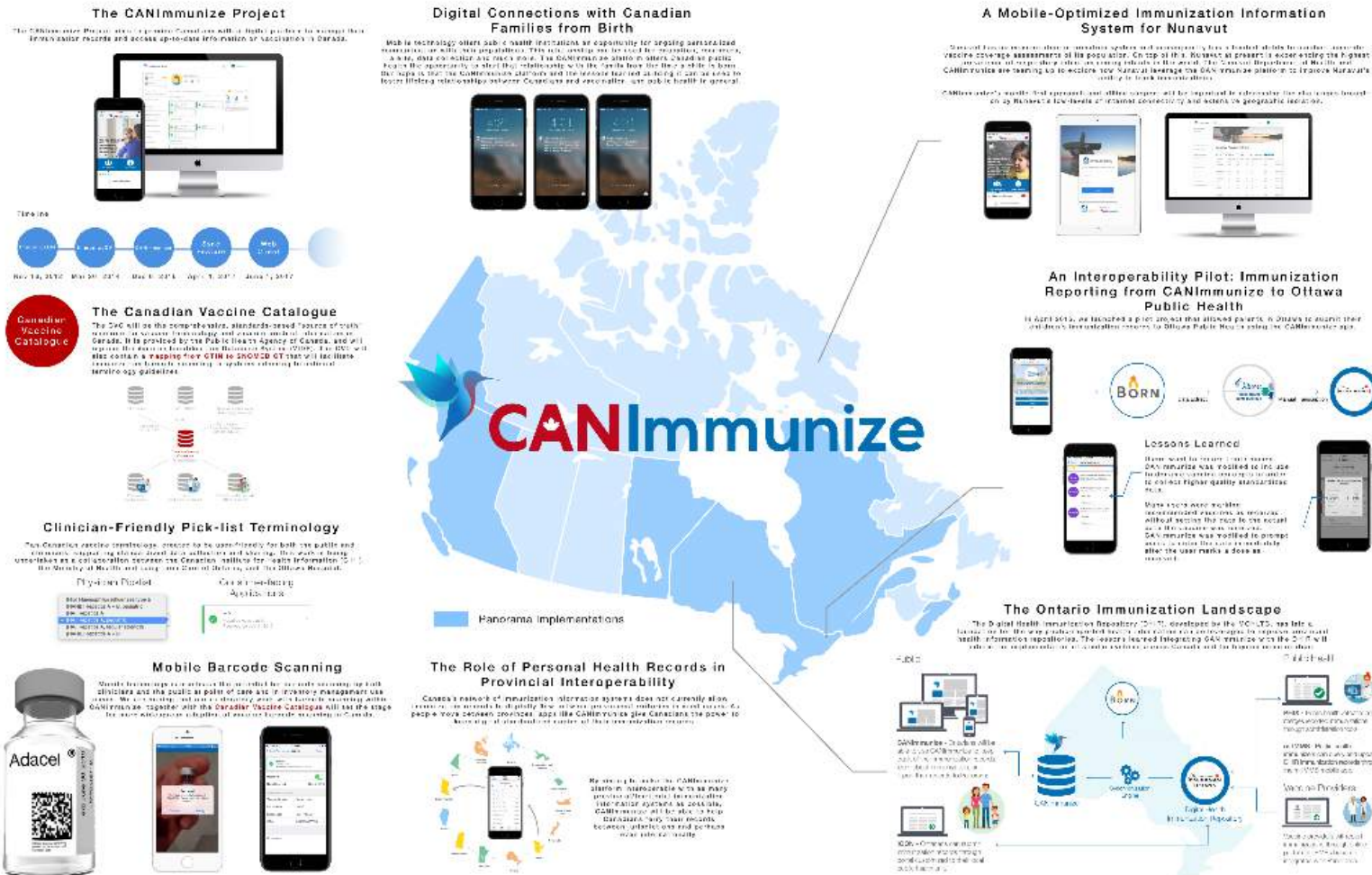




Approximately 20% increase in odds of receiving dose or series completion for those receiving digital messages

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# Can CANImmunize help?

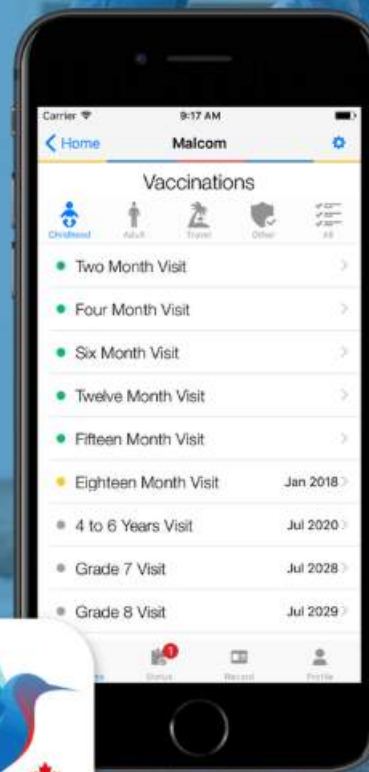


## A digital vaccination record for Canadians

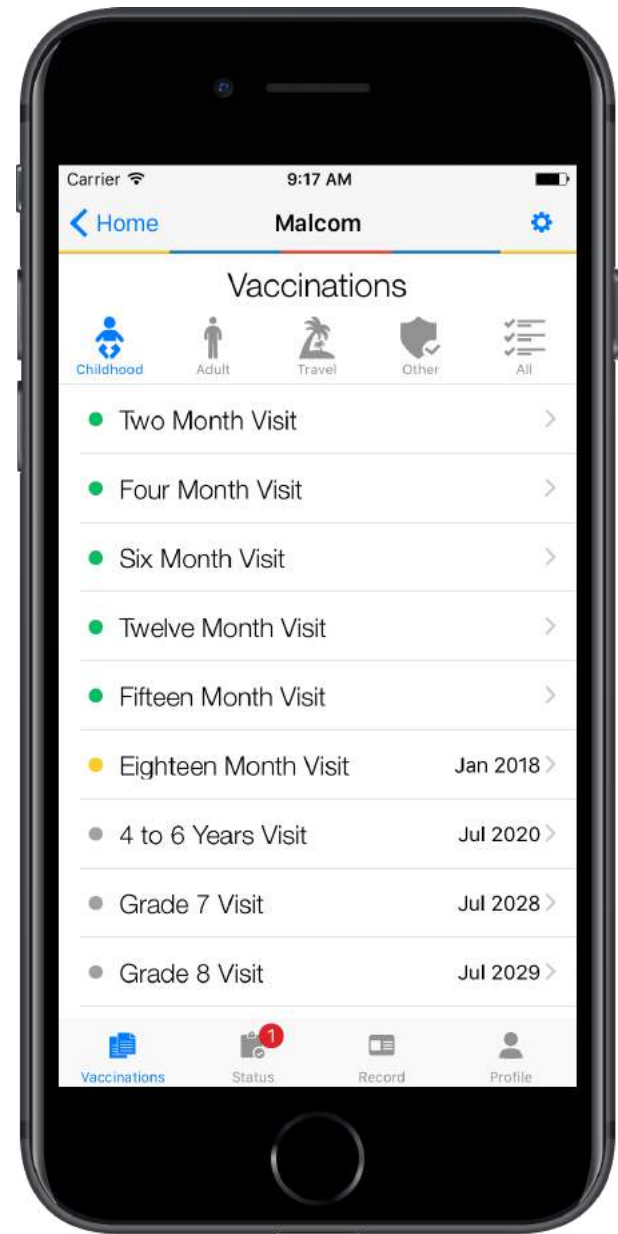
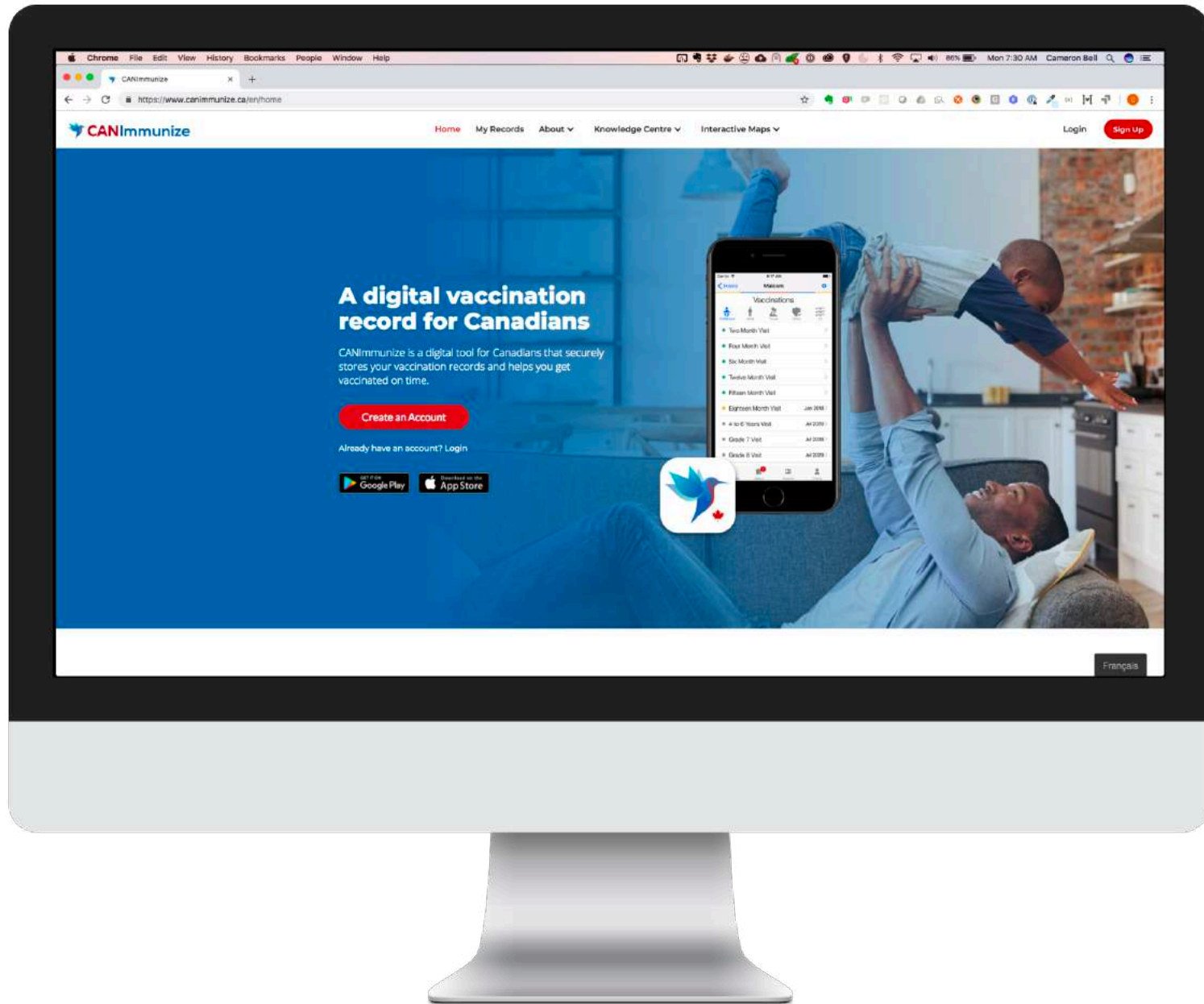
CANImmunize is a free digital tool for Canadians that securely stores your vaccination records and helps you get vaccinated on time.

[Create Account](#)

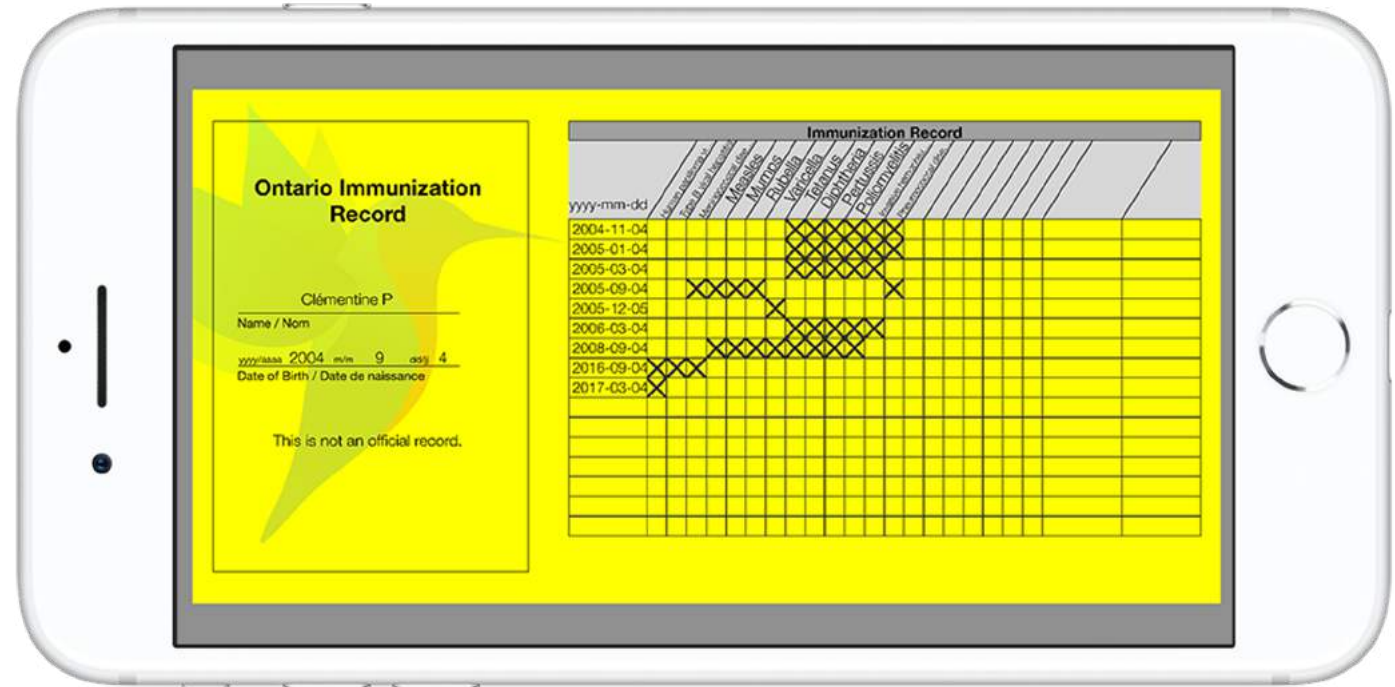
Already have an account? [Login](#)

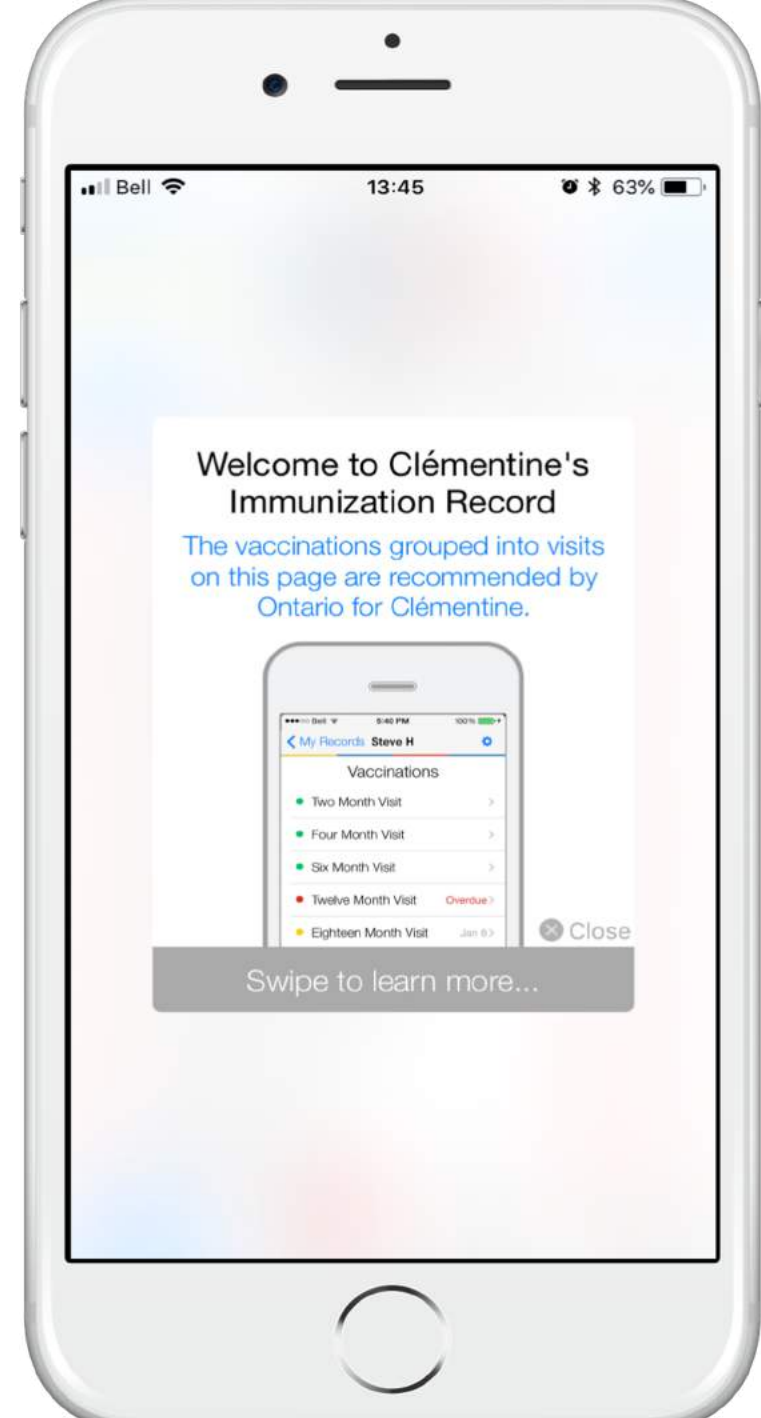
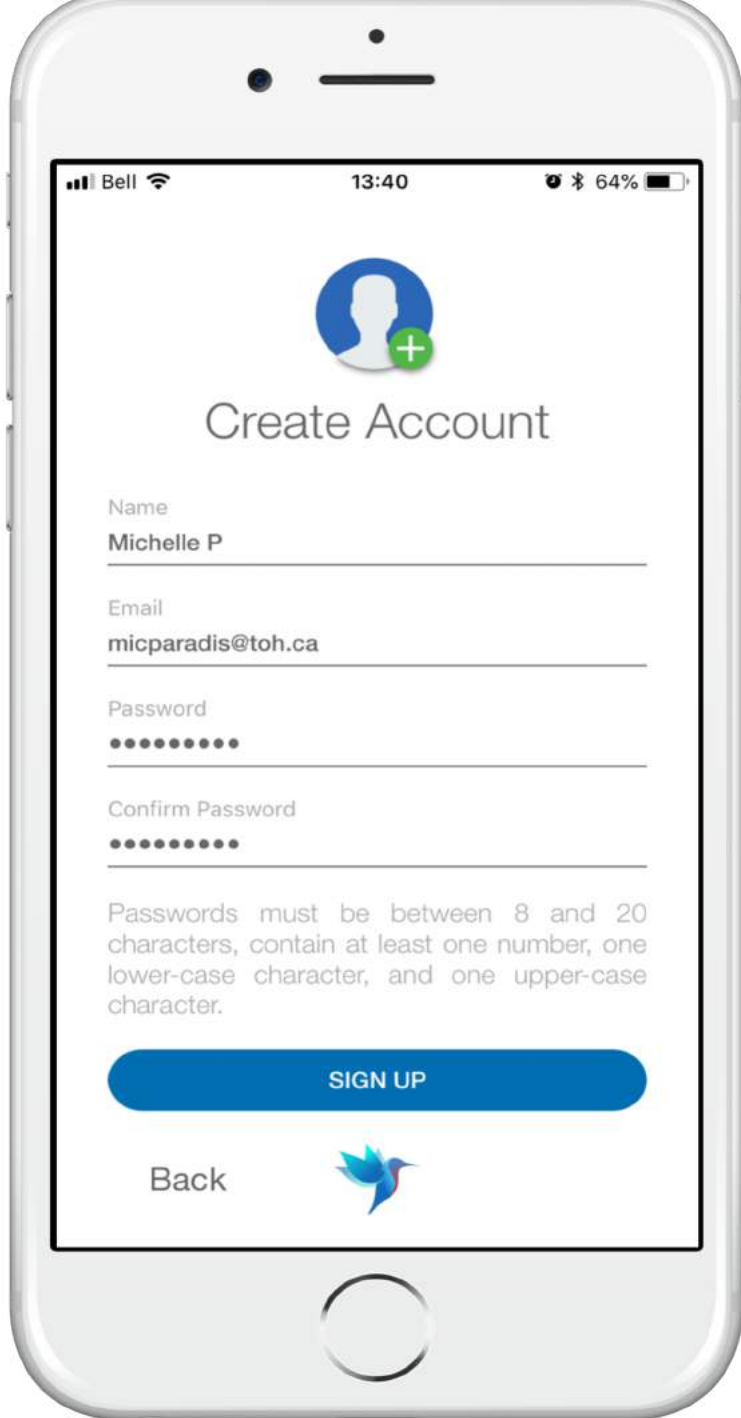




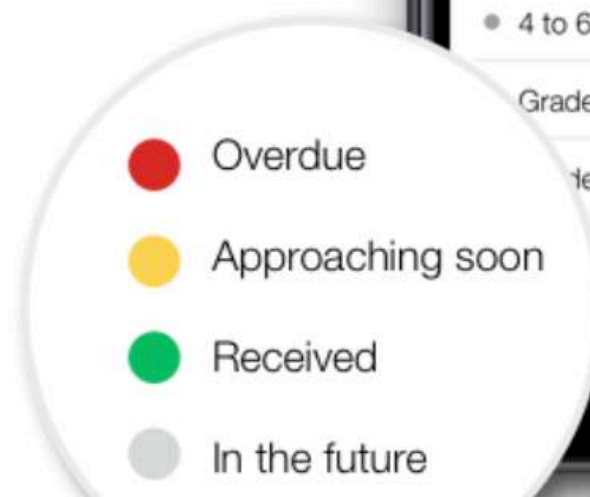
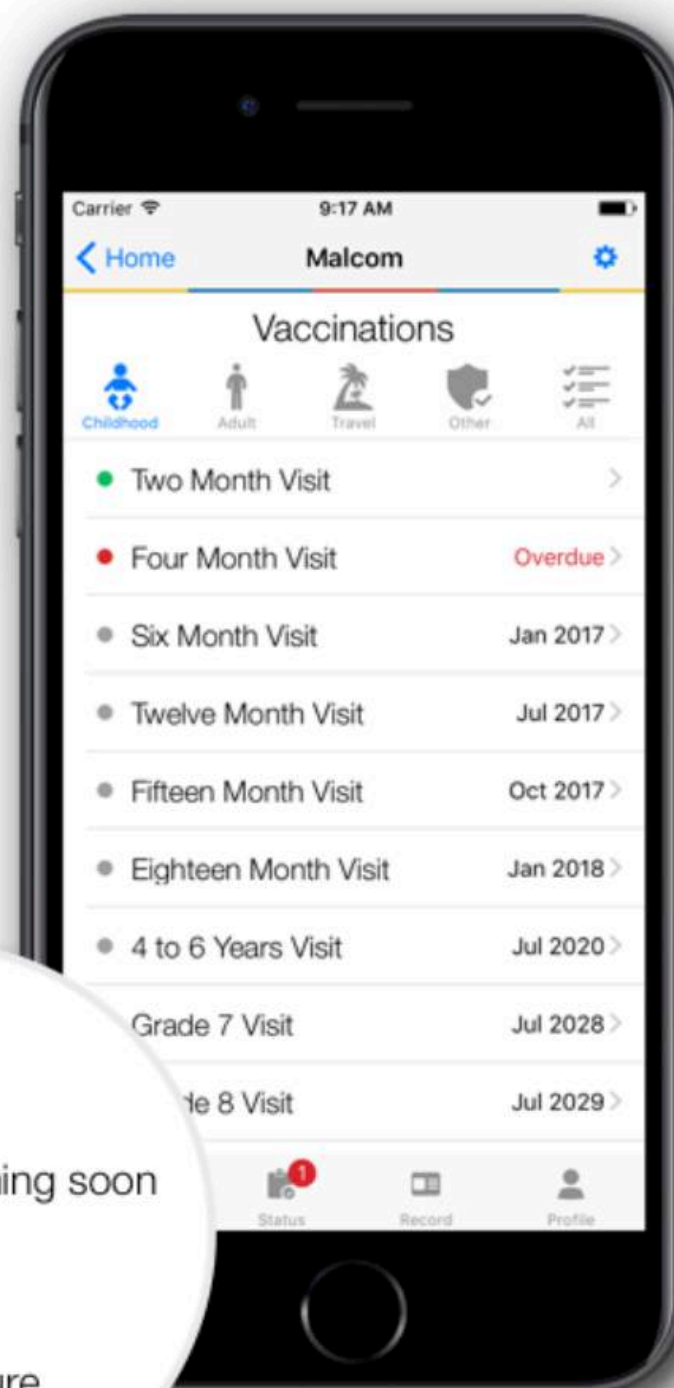
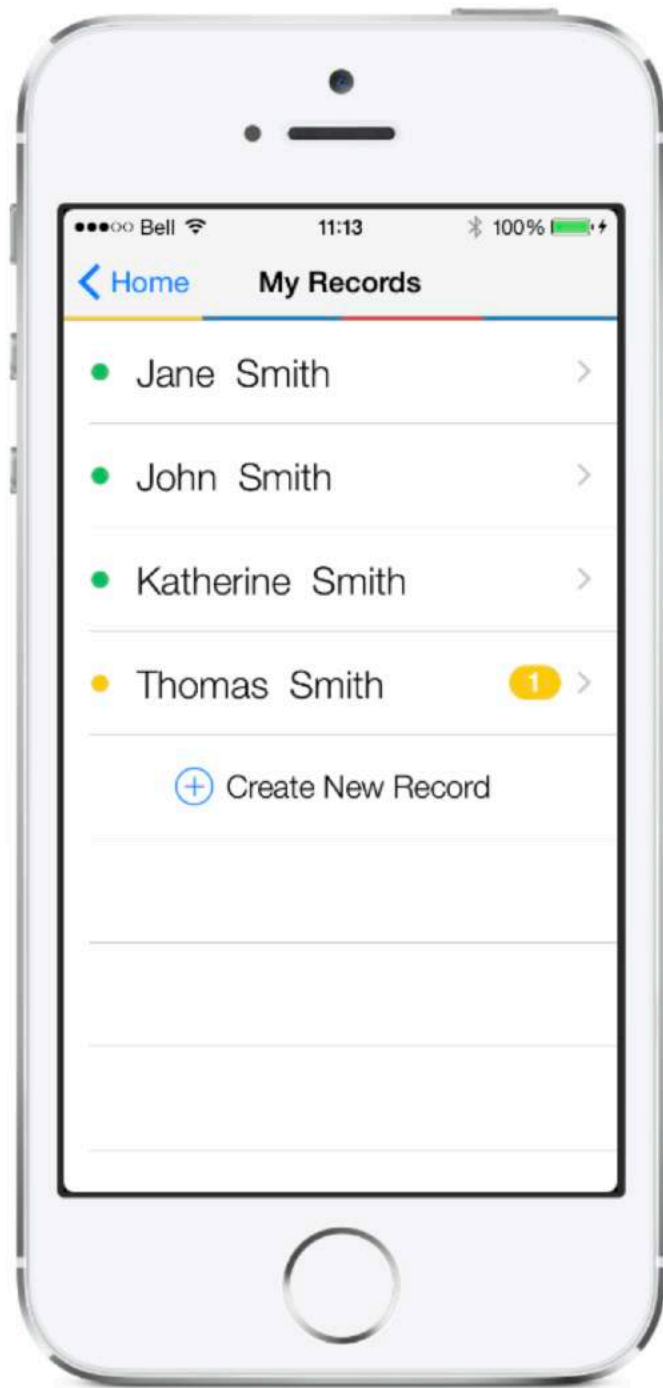


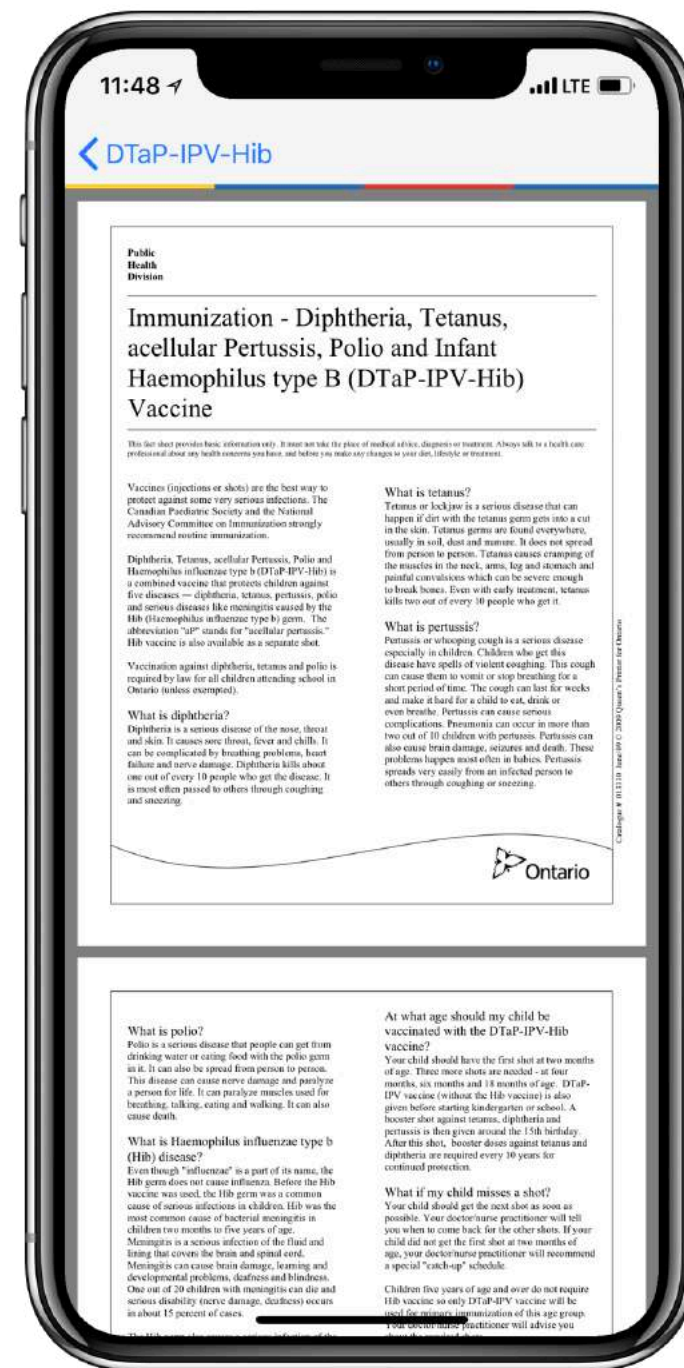
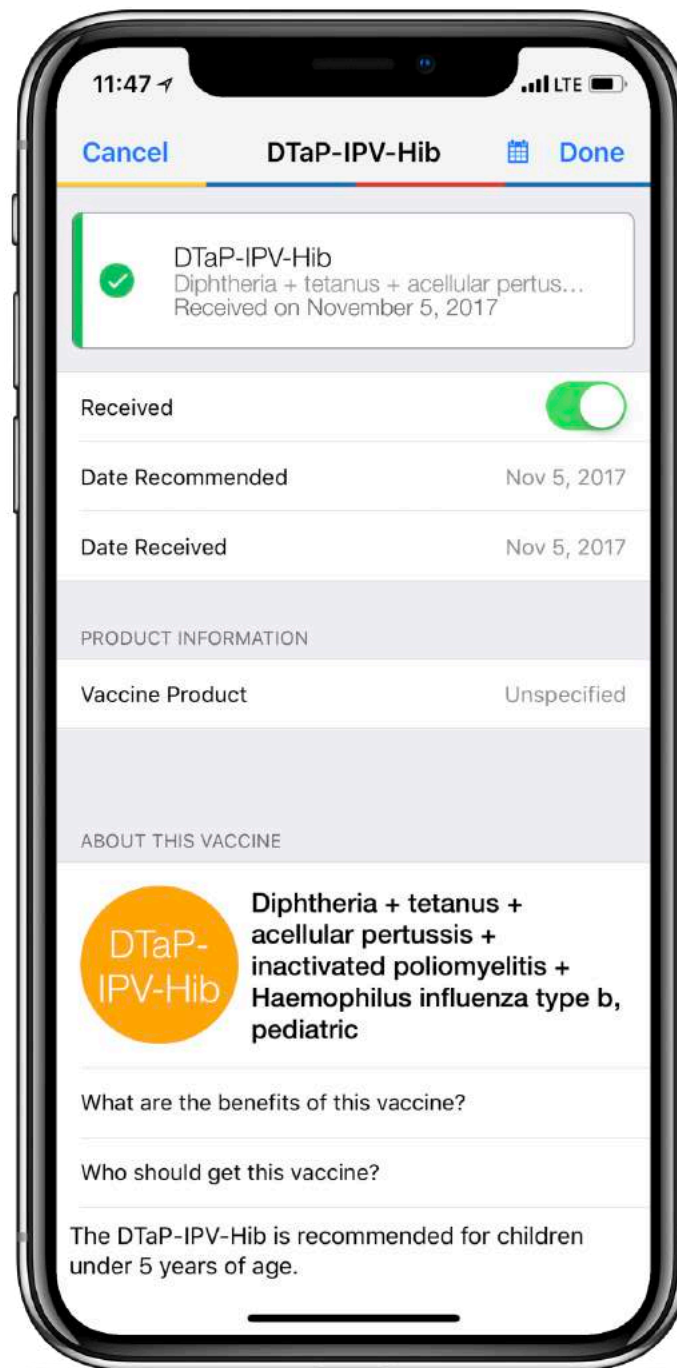
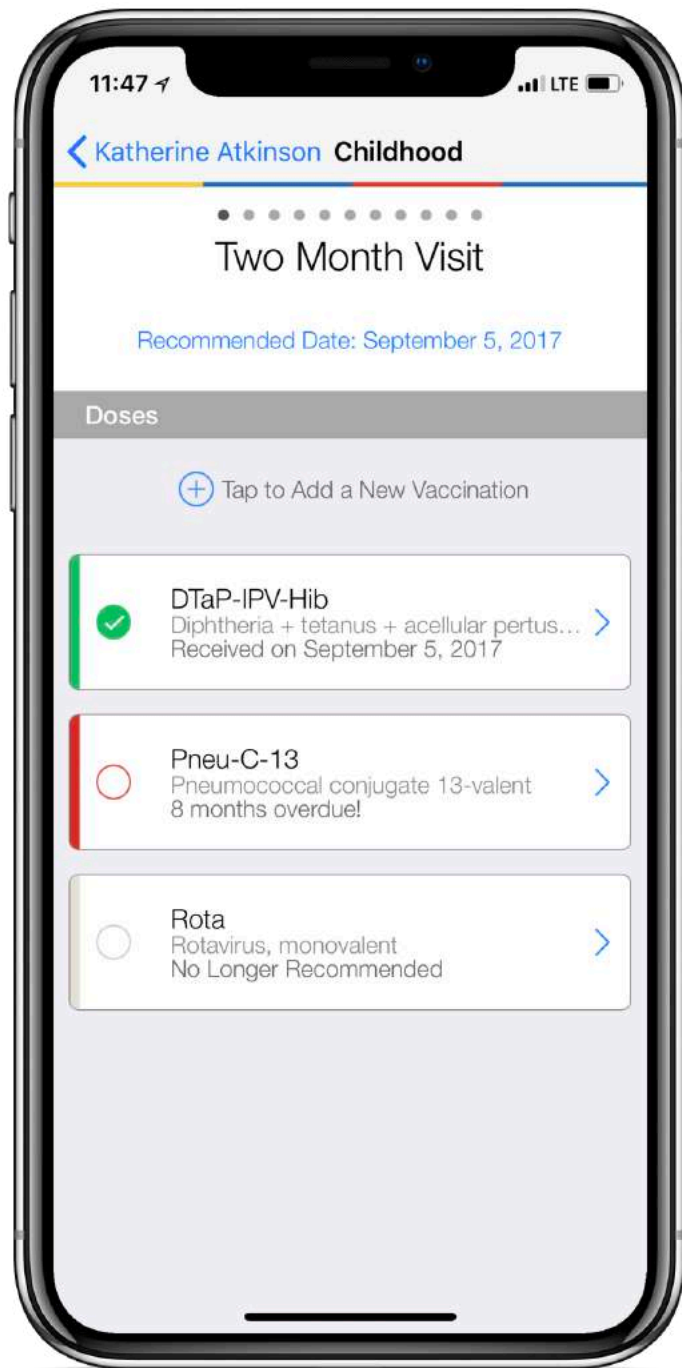
# Paper Immunization records... on your phone











Close

Dose - COVID-19

Save



### COVID-19

PFIZER-BIONTECH COVID-19 mRNA  
Received on February 7, 2021

Received



Date Received

Feb 7, 2021

Displayed on page: Other [Change](#)

Vaccine Product

PFIZER-BIONTECH COVID-19 mRNA

Lot Number

Expiry Date

### PROOF OF VACCINATION

Documents



Healthcare Provider Signature



[Home](#)

Kumanan



# Vaccinations

[SCHEDULE](#)

[TIMELINE](#)

[DOCUMENTS](#)

Ontario Adult Immunization Schedule



- Human Papillomavirus >
- Influenza (flu) Oct 1 >
- Pneumococcal Disease Dec 2033 >
- Shingles Dec 2033 >
- Tetanus and Diphtheria Feb 2026 >
- Tetanus, Diphtheria, and Pertussis >
- Other >



Vaccinations



Connect



## Menu

[Home](#)[Records](#)[Get the Android app](#)[Get the iOS app](#)

A Parent's Guide  
to *Vaccination*

[Create New Record](#)

## Records

● Alex Smith  
Alex has no upcoming vaccinations



● Charlie Smith  
Charlie has 1 upcoming vaccinations




● Jamie Smith  
Jamie has no upcoming vaccinations

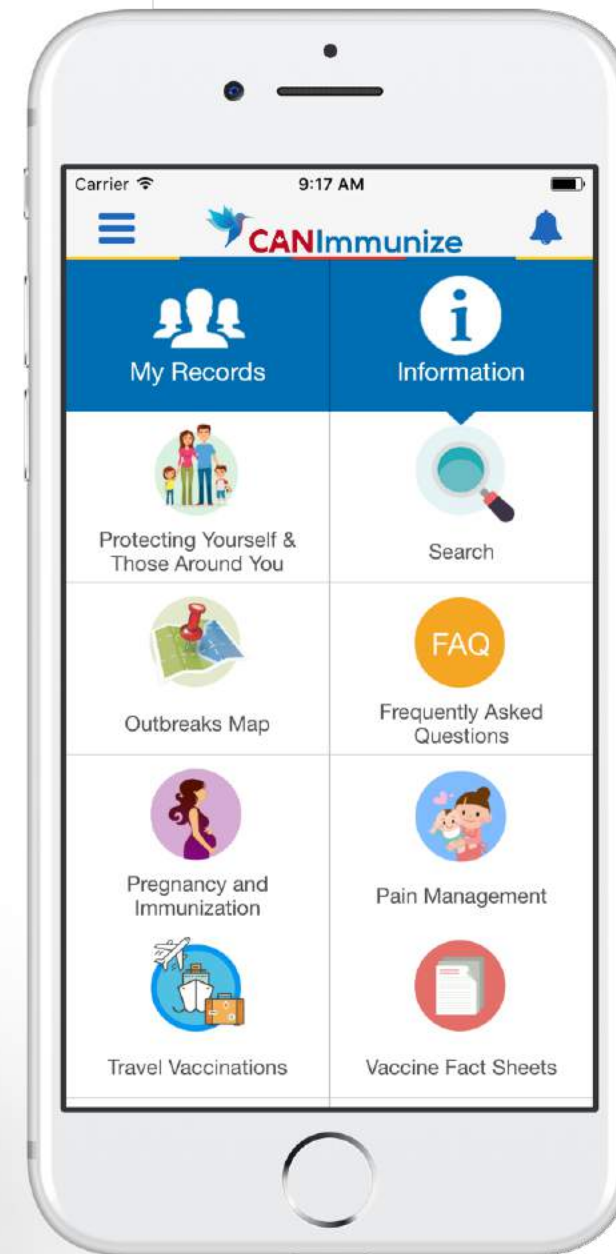
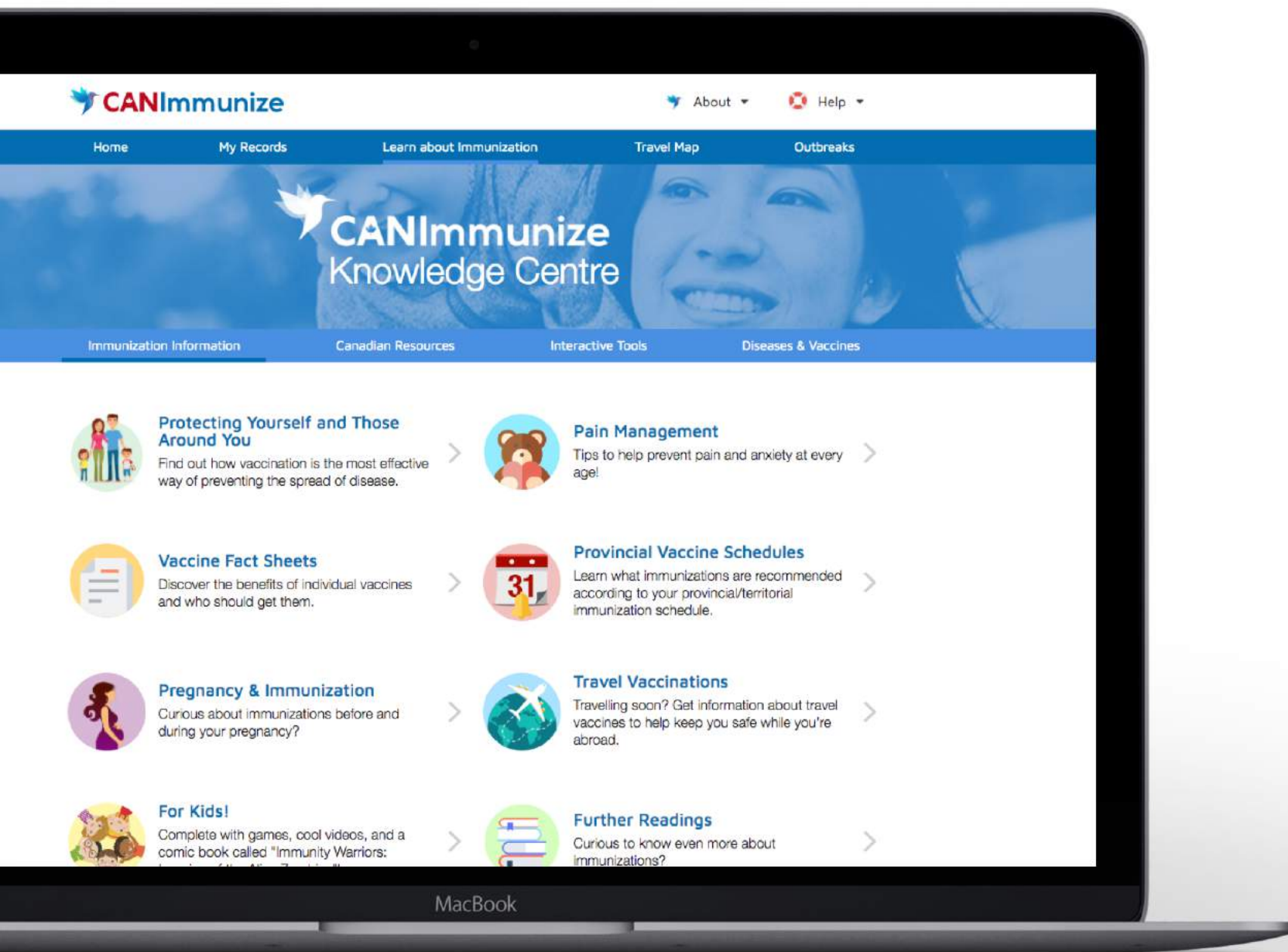


● Ashley Smith  
Ashley has 2 overdue vaccinations

[Have Another Question?](#)[Knowledge Centre](#)

 Have a question  
about immunization?









News

# App Could Help Seniors More Easily Manage Immunizations

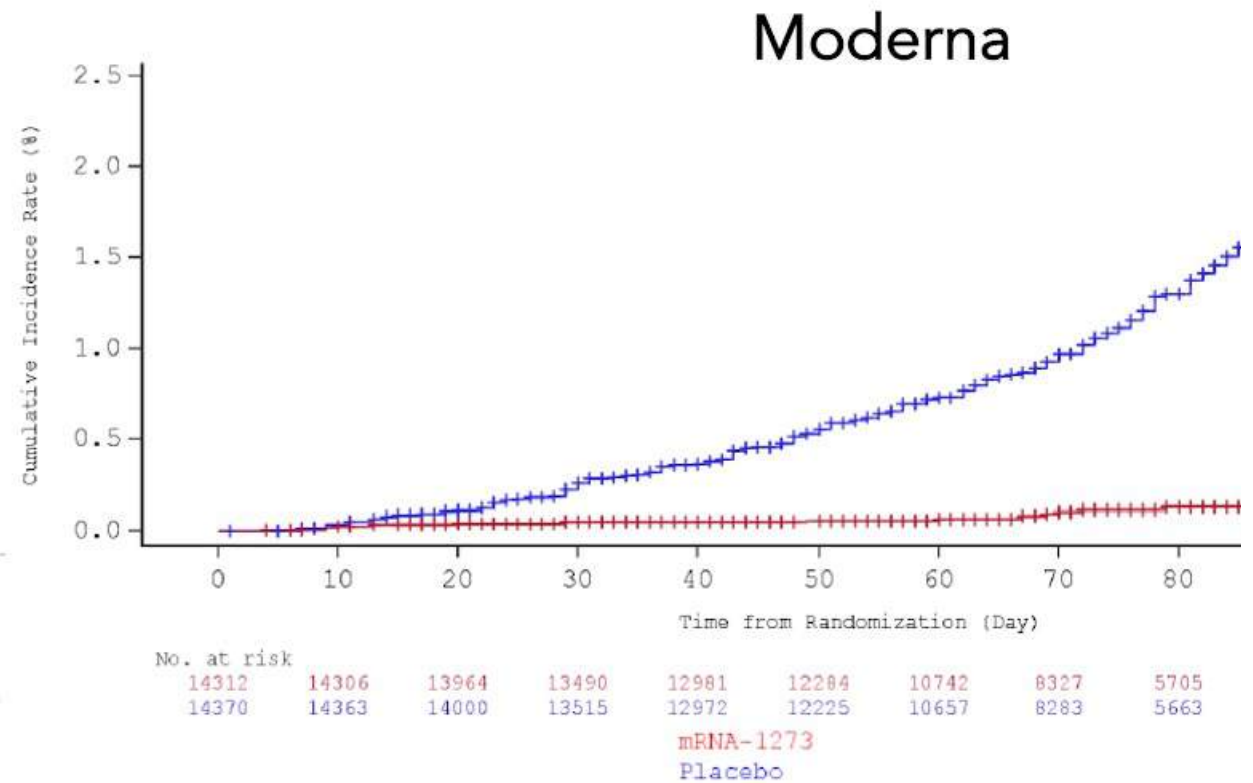
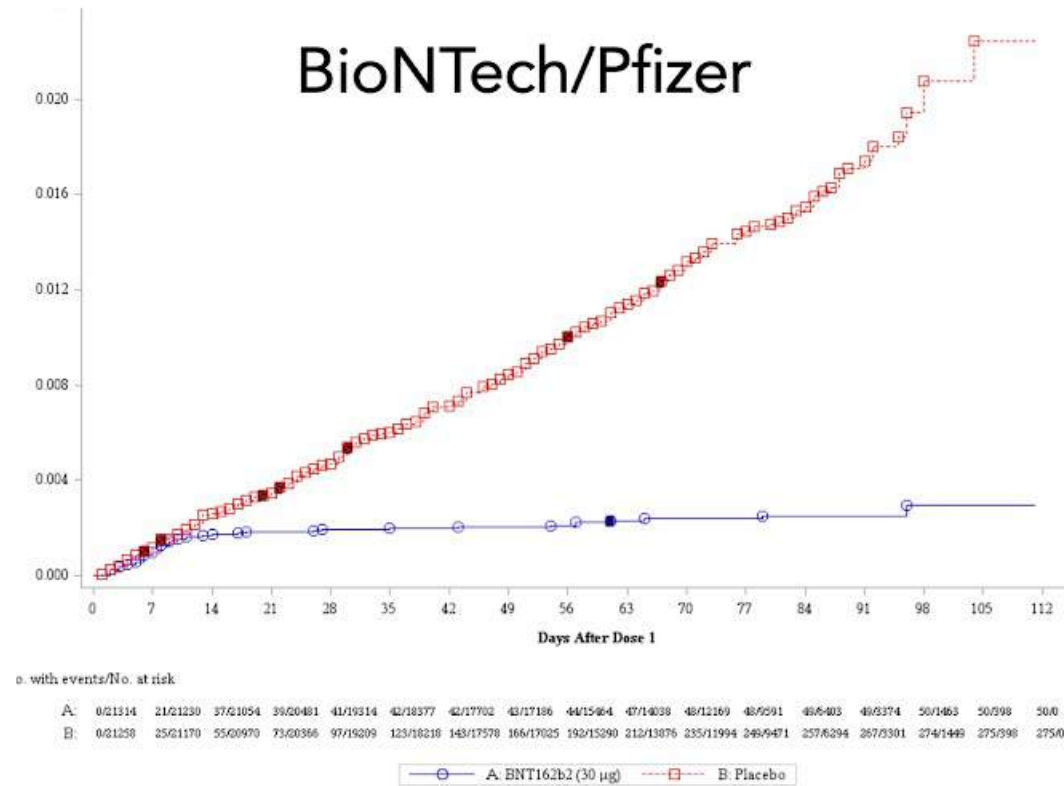
Jan 11, 2021 • by Liam Floyd



Kelsey Rusk (left) and Justine Henry (right).  
Image: Submitted.

FREDERICTON – The provincial government's [Healthy](#)

# An immunization moon landing



Not a single death from Covid  
in anyone who got any of these  
vaccines in a clinical trial.



# Challenges

Different rules on need for second dose and timing of second dose based on vaccine

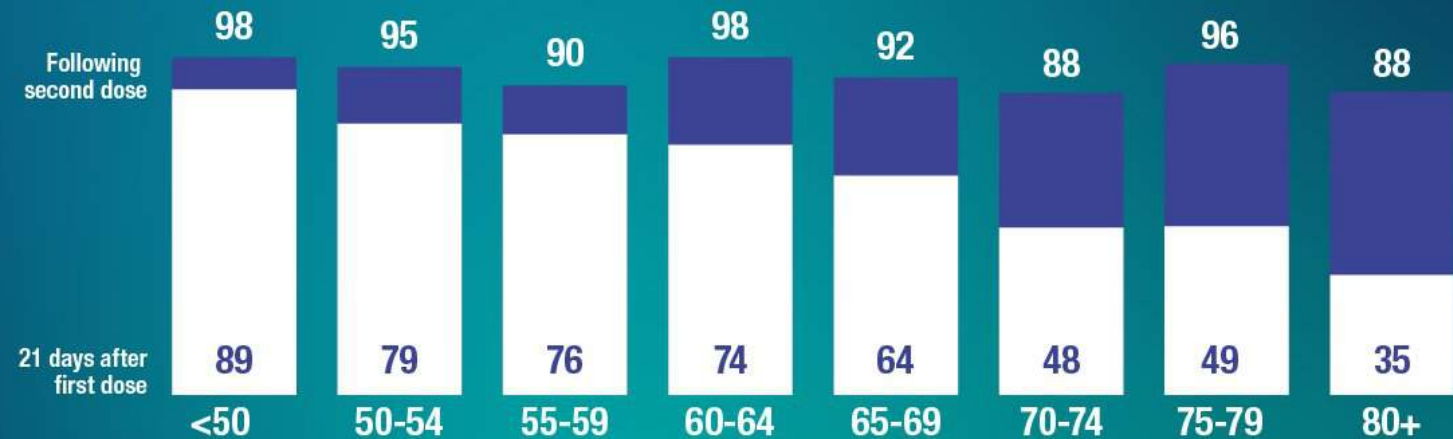
Rules may be different across the country

Rules are changing





# **% OF PEOPLE TESTING POSITIVE FOR ANTIBODIES\* FOLLOWING THE PFIZER-BIONTECH VACCINE\*\* BY AGE**



\*This report looks at the detection of antibodies post vaccination. It does not look at whether the vaccine prevents infection or serious illness

\*\*3,982 participants had the Pfizer vaccine at least three weeks before taking their antibody test



**Thank You (@canimmunize)**