First interim report of the COVID-19 Exposure Notification App Advisory Council

Canada

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ISED Citizen Services Centre
Innovation, Science and Economic Development Canada
C.D. Howe Building
235 Queen Street
Ottawa, ON K1A 0H5
Canada

Telephone (toll-free in Canada): 1-800-328-6189
Telephone (international): 613-954-5031
TTY (for hearing impaired): 1-866-694-8389
Business hours: 8:30 a.m. to 5:00 p.m. (Eastern Time)
Email: ISED@canada.ca

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Message from the co-chairs

As the COVID Alert exposure notification app was launched, the Government of Canada also created this Advisory Council to ensure that the app responds to and evolves to meet the needs of Canadians and public health authorities. We begin by thanking the members of the Council for their valued insights and dedication. Throughout the fall, our discussions at Council focused on understanding the barriers to inclusion and accessibility, by examining ways to drive further adoption of the app across the country.

While our first interim report focuses on improving the accessibility and uptake of the COVID Alert app for and by Canadians, two critical issues have emerged that impede the goals of pillar 1 and that are critical to the success of the app for reducing the spread of COVID-19: (1) the need for pan-Canadian participation, and (2) the efficient distribution and use of exposure notification codes, known as one-time keys, within participating provinces.

The success of similar tools in other countries is due, in part, to the collective recognition of leaders that a single tool, widely supported across internal borders, is vital to its impact. We therefore urge the Government of Canada and its partners across provinces and territories to continue to expand the availability of COVID Alert to residents so that they may benefit and protect others. At the outset of the pandemic, and before tools like this were available, Canadians demonstrated collective effort to limit the spread. As regions diverge in their approach to managing the pandemic, we call on Canadians to once again show the common resolve and download COVID Alert.

Let us come together as Canadians so that we can soon get together as Canadians.

One-time-keys are essential to the app's effectiveness. Individual governments, public health authorities, and individuals do so much, but a shared effort will not just flatten the curve, but eliminate it. We call for the following:

To public health authorities (PHAs): first, thank you for your sacrifice and commitment to keeping Canada as safe as possible. You have been on the frontlines of Canada's response to the pandemic since the outset and we remain forever grateful for your dedication. COVID Alert is designed to support you, working hand-in-hand with app users, in blunting the edge of COVID-19 transmission. We encourage all PHAs to speak out on the importance of providing one-time keys and to seek support from those who have the power to do so.

To governments: We appeal to all decision-makers to make the right choice by joining the pan-Canadian effort to slow the spread through the use of COVID Alert. Further, and of utmost importance, we appeal to governments to provide your public health officials the necessary support and guidance to distribute one-time keys to COVID-19-postive individuals, and guide them through proper use. The proper use of one-time keys will have an immediate and direct impact on lowering downstream infection and reducing demands on contact tracing officials and our front-line health care workers. Provincial and territorial governments that do not participate miss a significant opportunity to control the increase in COVID-19 cases that will be inevitable as the economy re-opens.

And finally, to Canadians: the COVID Alert app is a tool that, in the hands of all Canadians working together, can get us closer to the people we care about and to the public gatherings that bring us joy. Canadians who test positive are understandably stressed, often about the possibility of endangering friends and family. By using COVID Alert, by asking your governments for access, and by asking your public health officials for a one-time key when testing positive, you can protect those you care about.

Jean-François Gagné and Carole Piovesan
Co-Chairs, COVID-19 Exposure Notification App Advisory Council
February 2021

Executive summary

In July 2020, the Government of Canada launched the COVID Alert app, a national, voluntary mobile app designed to help notify users if they have been exposed to another user who has tested positive for COVID-19. The app has since become a tool used by nine provinces and territories across Canada. These are: Ontario, Newfoundland and Labrador, New-Brunswick, Saskatchewan, Manitoba, Quebec, Prince-Edward Island, Nova Scotia, and the Northwest Territories. COVID Alert has been downloaded over 6 million times, and 20,000 people have since entered a one-time key (OTK) following a positive COVID-19 test result, notifying other users that they may have been exposed to the virus. While these numbers have steadily increased, there is a gap between the number of positive cases and the number of one-time keys entered in the app.

At the same time, the Government of Canada created this expert external Advisory Council (the Council) to provide advice and guidance to the Government to help ensure that the app meets the highest standards in public health outcomes, privacy, and technology. The Council is composed of individuals with various expertise and perspectives including health, privacy, data governance, science, digital expertise, and innovation. Council members also reflect Canada's cultural and regional diversity. Following initial meetings in August and September 2020, a work plan was created by the Council with a focus on three pillars:

(1) Social and Economic Determinants of App Adoption, Retention and Use;
(2) COVID Alert as a Government Service; and
(3) COVID Alert as a Public Health Tool.

This interim report examines the first pillar, and details the Council's advice to the Government of Canada and the Government's actions on that advice. Special attention is given to the Council's advice on reducing barriers for vulnerable communities, the need to increase the use of the app through increase in downloads and one-time keys entered and to encouraging provinces and territories (Alberta, British Columbia, Nunavut and Yukon) that have not adopted the COVID Alert app to do so.

The Council will continue providing expert advice and guidance to the Government on its next phase of work as it examines COVID Alert as a government service, and will turn its attention to considering the system's potential for longer-term use as a tool for improving public health. This report highlights the Council's targeted discussions which has helped inform and guide the Government of Canada on the ongoing development and implementation of the COVID Alert app.

Background

On July 31, 2020, Prime Minister Justin Trudeau announced the launch of the COVID Alert app. COVID Alert is a national exposure notification app that will alert users if they have been in close contact with other users who have tested positive for COVID-19. As part of the initial launch, the Government of Canada established the COVID-19 Exposure Notification App Advisory Council (the Council) to ensure the app meets the highest standards in public health outcomes, privacy, and technology. Members on the Council reflect Canada's regional and cultural diversity, and cover a wide range of expertise, including health, privacy, data governance, science, digital expertise and innovation. Council members have been asked to provide expert advice to the Government of Canada and inform the implementation and rollout of the app. The Council Secretariat (Secretariat), established to support the Council in its work, was formed under the co-leadership of Health Canada (HC) and Innovation Science and Economic Development Canada (ISED).

On August 5, 2020, the Council held its first formal meeting. This initial meeting focused on setting the stage, and Secretariat officials went through the design, security, and capabilities of the COVID Alert app. A series of technical briefings in August and September followed on the topics of digital solutions, privacy, security, public health and measurement. At the second formal meeting on September 22, 2020, Council members participated in drafting a work plan, which aimed to guide the Council's efforts to assist Council Members in providing reports informed by their expertise and related advice.

A framework for engagement

The Terms of Reference for the Council provide a public roadmap that frames the mandate of the Council. Referring to the Terms of Reference, Council members will provide advice on:

- Ongoing development of the app, including a review of the protocols that govern the operation of the app;
- Procedures or features to maintain high standards of citizen safety, security, privacy and public health;
- Maintaining robust privacy policy and protocols that align with the principles for digital applications set out by Federal, Provincial and Territorial Commissioners of Privacy, and reflect the results of the Government's ongoing engagement with the Privacy Commissioner of Canada;
- Achieving strong public health outcomes for the app, including effective exposure parameters, and other elements to help reduce the spread of COVID-19;
- Transparency of decision-making protocols related to the app and its operations;
- Design methodology and behavioural science to ensure appropriate uptake, compliance, and ongoing testing of the app's efficacy and impact;
- Providing advice for eventual wind-down of the app, including recommendations for the timely destruction of data.

Through engagement between the Council and the Secretariat, a work plan was created to help guide the Council in providing expert advice to the Government of Canada within the parameters of the Terms of Reference. Through consultations with the Council co-chairs and members, the Secretariat arrived at a work plan that focuses on three complementary pillars to guide the work of the Council:

(1) Social and Economic Determinants of App Adoption, Retention and Use;
(2) COVID Alert as a Government Service; and,
(3) COVID Alert as a Public Health Tool.

The Council will be addressing each pillar of the work separately across a series of discussions, with the aim to provide guidance to the Government of Canada in alignment with these pillars.

Pillar 1: Social and Economic Determinants of App Adoption, Retention and Use

- Increased Accessibility
- Reduced Barriers to adoption, retention and proper use

Pillar 2: COVID Alert as a Government Service

- Brand trust for Canadians nationwide
- Positive experience for app users
- Leveraging of emerging digital solutions

Pillar 3: COVID Alert as a Public Health Tool

- Integration of the app into the broader public health system
- Effectiveness of the app from a public uptake perspective
- Effectiveness of the app from a Provincial and Territorial perspective

This interim report reflects discussions and input from several meetings of the Council held from October – December 2020. It focuses on Pillar 1 (*Social and Economic Determinants of App Adoption, Retention and Use*), and identifies advice and actions specific to app accessibility and user adoption. The Council will continue to meet and discuss Pillars 2 and 3 of the work plan over the coming months, with targeted advice for each pillar to be summarized within subsequent interim reports in winter of 2021. A final and consolidated report will be produced in spring 2021.

Pillar 1: social and economic determinants of app adoption, retention and use

Pillar 1 seeks to examine the social and economic determinants that factor into the adoption, retention, and usage of the COVID Alert app. The targeted outcomes of Pillar 1 are: increased accessibility of the app for specific populations; reduced barriers to adoption; and, retention and proper use of the app for low-penetration populations.

More specifically, desired outcomes for Pillar 1 include: the inclusion of communities such as seniors, youth, Indigenous, racialized communities, people of diverse languages, and other vulnerable communities or other persons for whom the app is not readily accessible.

Pillar 1 is comprised of two sub-pillars: the identification of **strategies to increase accessibility for specific populations**; and the identification of **strategies to reduce barriers and increase adoption, retention and proper use of the app.** Both sub-pillars are discussed below.

Strategies to increase accessibility for specific populations

In October 2020, the Council was asked to comment and provide recommendations on accessibility considerations with four main areas of focus: persons not speaking Canada's official languages; persons with disabilities (vision, hearing, physical, cognitive, literacy); populations within vulnerable communities who may be at a higher risk of exposure; and persons with older mobiles, or who cannot use or carry mobile devices. The findings of these considerations are outlined below.

Accessibility is defined broadly as 1) the inclusive design of the app for those who choose to adopt it; and 2) the technical availability of the app, or of an alternate approach or tool, for those who are currently unable to adopt it.

The concept of accessibility is related to the principles of universal design, insofar as the COVID Alert app should be available to Canadians who experience additional barriers to adoption and use, easily usable and/or provide utility to the widest possible range of abilities and situations, and be visible to Canadians as an additional tool to help limit the spread of COVID-19. Increasing the level of accessibility for the app in each of these areas has been a critical objective identified by Council to drive further adoption across Canada, while noting increasing the efficacy of the app will require deeper analysis of other factors that may discourage the use of the app.

COVID Alert has been designed with a focus towards public health, technology, privacy, and accessibility for persons with disabilities as well as persons who speak Canada's two official languages. As the Government of Canada endeavours to make the app available to as many Canadians as possible through the participation of additional Provinces and Territories, there may be parallel opportunities to expand the reach of the app through greater accessibility.

Persons not speaking Canada's official languages

The elements of the app that involve public interface are designed to incorporate English and French in accordance with Canada's Official Languages regulations and guidelines.

In 2016, approximately 2% of the population reported that they were unable to have a conversation in either English or French.[1] According to the 2011 census, while the vast majority of Indigenous peoples (99.2%) reported they could conduct a conversation in English or French, a greater proportion of Inuit (8.5%) reported having no knowledge of either language.

Outside Canada, the majority of exposure notification and contact tracing apps are available in non-official national languages. For example, in the U.K., where 2% of the population reports being unable to speak English, the app is available in 12 languages. According to Statistics Canada, in 2016, the languages other than English and French that are most widely spoken in Canada were Mandarin (610,835), Cantonese (594,030), Punjabi (543,495) and Tagalog (510,425).[2] More than 213,000 people identified an Indigenous language as their mother tongue. Several provinces (e.g., Ontario and British Columbia), the public, and the media have expressed interest in the COVID Alert app being made available in additional languages.

Persons with disabilities (vision, hearing, physical, cognitive, literacy)

The app is designed to work with screen reader functionality and other accessibility best practices for mobile design. The Government of Canada has conducted two Inclusive Design Reviews, supported by user testing and feedback mechanisms that have led to the introduction of more than 90 improvements since launch of the app. The COVID Alert accessibility statement and accessibility report demonstrate that the app is 95% compliant with Web Content

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[1] Statistics Canada: Language Highlight Tables, 2016 Census, last updated March 7, 2018. Accessed via https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/lang/Table.cfm?Lang=E&T=21&Geo=00

[2] Statistics Canada: Catalogue no. 98-200-X2016010 *Linguistic diversity and multilingualism in Canadian homes*. Accessed via https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016010/98-200-x2016010-eng.cfm

Accessibility Guidelines (WCAG 2.1 AA). Further work to explore greater accessibility in this realm could be driven by the testing of new features and the identification of issues by users.

Vulnerable populations

In an October 2020 publication on COVID-19 impacts on vulnerable population[3], the Public Health Agency of Canada (PHAC), notes Canadians at greater risk of contracting COVID-19 can be identified by often overlapping or intersecting racial, gender, occupational, social, economic and other health and life circumstances. This includes individuals who are more at risk of severe outcomes, such as:

- Older adults (increasing risk with each decade, especially over the age of 60 years, some of whom rely on public transport to access goods and services required during pandemics);
- Racialized populations which, outside of cases occurring within long-term care facilities, have experienced higher rates of COVID-19 infection;
- People of any age with chronic medical conditions (e.g. lung disease, heart disease, high blood pressure, diabetes, kidney disease, liver disease, stroke or dementia);
- People of any age who are immunocompromised, including those with an underlying medical condition or taking medications which affect the immune system;
- People living with obesity (BMI of 40 or higher).

This also includes individuals who may be more likely to be exposed to COVID-19 because:

- Their jobs or occupations require them to be in contact with large numbers of people, which increases their chances of exposure;
- They live in group settings where the COVID-19 virus may transmit more easily, such as long-term care facilities, correctional facilities, shelters or group residences;
- They face barriers that limit their ability to access or implement effective public health measures (for example, individuals with disabilities who encounter non-accessible information, services and/or facilities).
- They may not have the financial resources to ensure self-distancing and self-isolation.

[3] Public Health Agency of Canada, *Vulnerable populations and COVID-19*, October 1, 2020. Accessed via https://www.canada.ca/en/public-health/services/publications/diseases-conditions/vulnerable-populations-covid-19.html

These categorizations are neither all-inclusive nor mutually exclusive. Individuals whose circumstances cross more than one category have greater risk of exposure, which can be further elevated when other identity factors are present.

Persons with older mobiles, or who cannot use or carry mobiles

The COVID Alert app, when launched, was available for Apple and Android phones released within the past five years, and running at least iOS 13.5 or Android version 6. This was based on the Google/Apple Exposure Notification (GAEN) framework available at the time, which captured the largest number of mobile devices in Canada running those operating systems. It was considered that privacy and security risks would be elevated for the app running on older iOS and Android versions. To operate as intended a device must be capable of supporting recent Bluetooth technology, which serves as the backbone of the GAEN framework, and an Internet connection is required at least once a day to transfer anonymous exposure data to the system. It should be noted, that following further analysis done by Google and Apple, the GAEN framework was updated to make GAEN available on iOS 12.5 version as well. Since January 5, 2021, the app is now available on iPhone 5s, 6 and 6 Plus allowing almost 98% of phones to run COVID Alert.

Phone-specific barriers to app use include: not possessing a smart phone; phones or operating systems that do not support the download of the app; workplace restrictions which limit smart phone use; multiple users per phone (for example, a family sharing a device); and a lack of affordable access to the Internet.

Although individuals experiencing these barriers are unable to use the app directly, they can still benefit from it if other people use it. For example, if someone with the app receives a notification, they may decide not to visit a medically vulnerable person. This action protects the vulnerable person from potential exposure, even if the vulnerable person does not have their own compatible phone.

Despite these barriers, there are emerging digital solutions that could help to complement and/or expand the reach and benefits of the exposure notification approach, such as custom wearables or other devices. When exploring these potential options in the future, it will be critical to recognize that many of them would require some form of connection to, or communication with, COVID Alert which would require changes to the app's underlying framework that could potentially alter the privacy features of the tool.

Strategies to reduce barriers and increase adoption, retention and proper use of the app

The second sub-pillar focuses on strategies to reduce barriers and increase adoption, retention and proper use of the app. While substantial efforts have been invested by the Government of Canada and its partners to promote the availability and benefits of the app both nationally and within participating provinces, some Canadians remain unaware of the existence of the app or of its primary benefits. Some who have downloaded the app have chosen to uninstall it, or are not receiving or entering one-time keys after testing positive for Covid-19. Increasing awareness of the app's availability, benefits, and functionality will be key in driving its further adoption and proper use by as many people in Canada as possible. This is critical in achieving the desired public health benefits.

In November 2020, the Council was asked to comment and provide recommendations on issues related to on barriers to adoption, retention, and proper use of the app. These issues are outlined below.

Adoption of the app

Since the launch of COVID Alert in July 2020, the number of people downloading the app steadily increased.

In October 2020, Manitoba, Quebec, Prince Edward Island and Nova Scotia adopted the app joining Ontario, Newfoundland and Labrador, New-Brunswick and Saskatchewan as provinces agreeing to provide one-time keys to users who test positive for COVID-19. The Northwest Territories followed on November 26, becoming the first territory to make the service available to its residents.

Currently, British Columbia, Alberta, Nunavut and the Yukon have not adopted the COVID Alert app. These provinces and territories have expressed a variety of reservations to the Government of Canada on using the COVID Alert app, including requirements for additional functionalities such as contract-tracing, or the availability of an already existing jurisdictionally-developed app. The Secretariat reports that discussions with these provinces and territories continues, and the Government will continue to encourage that all jurisdictions adopt the app.

The Council <u>strongly</u> supports the Government of Canada's efforts to urge the governments of Alberta, British Columbia, Nunavut and the Yukon to adopt COVID Alert and provide one-time keys to users who test positive for COVID-19 so they can notify other users that they have been exposed.

Doing so will support public health authorities by providing rapid, anonymous notifications to high-risk exposures, encouraging immediate self-isolation until health authorities advise otherwise, and enabling safer restoration of inter-regional movement of Canadians as vaccines continue to be administered.

Some subgroups within Canada's population may also be less inclined, able or willing to download the COVID Alert app than the broader Canadian public. Low-uptake populations include, but may not be limited to:

- Youth and younger Canadians;
- Older adults (only 60% of whom carry smartphones with them on a regular basis, compared to 98% of the adult population 18-34[4]);
- Persons with privacy protection concerns;
- Persons with older mobile devices that cannot run the app;
- Persons who cannot carry a mobile device (e.g., in their workplace);
- Individuals at lower income levels who use smartphone apps less in general (71% of Canadians with income of $20K or less use apps on a regular basis, scaling up a linear fashion to 94% for those making $100K or more[5]);
- Persons whose primary language is neither English nor French;
- Persons in jobs where they come in contact with many people (e.g., health care workers) or those who may face additional barriers to self-isolation related to employment conditions or personal circumstances;
- Persons or families who share a cellular device; and

[4] Statistics Canada. Table 22-10-0115-01 Smartphone use and smartphone habits by gender and age group. Accessed via https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2210011501

[5] Paré, G. et al. Diffusion of Smart Devices for Health in Canada, CEFRIO, Montreal, Quebec, Canada, 55 pp. September 18, 2017. Accessed via https://www.infoway-inforoute.ca/en/mhealthstudy

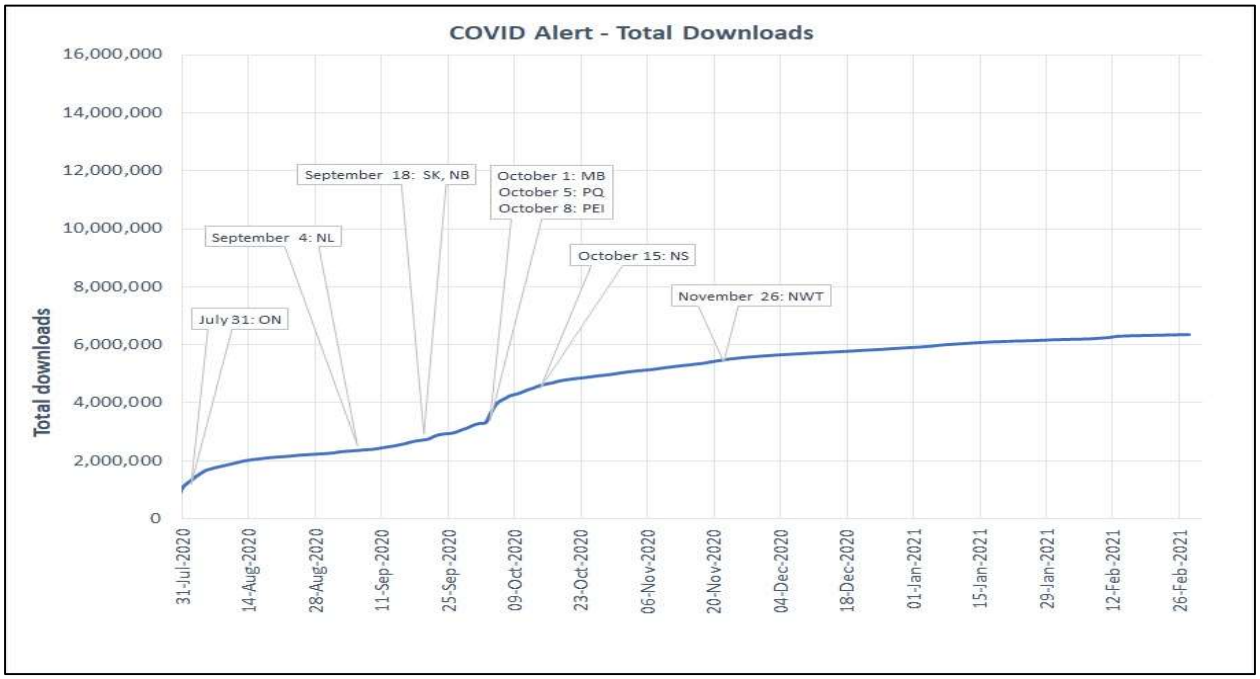
- First Nations and Indigenous communities, and racialized and marginalized communities face additional structural barriers (e.g., systemic racism) that may inhibit their ability to access and use app effectively.

Proper use of the app

For COVID Alert to send exposure notifications to users, it requires another user – one who has received a positive COVID-19 test result – to enter a one-time key (OTK) in the app. Currently, the OTK is obtained by the user who has tested positive through their provincial public health authority. Once that user enters the OTK, the app will send exposure notifications to other app users who had previously been within 2 metres of the individual for a period of 15 minutes or more.

Not all people who test positive have downloaded the app or are capable of doing so (e.g., children, people without a mobile device, people with an incompatible mobile device, or people in households that share a mobile device). Furthermore, those provinces and territories that do offer OTKs to users who test positive have different processes for doing so and the process for acquiring and using a OTK is not necessarily intuitive for many users. While both the number of downloads and the number of OTKs generated continues to increase (see **Error! Reference source not found.** and Table 1), there is a gap between the number of positive cases and OTKs generated.

Figure 1: Number of COVID Alert downloads and one-time keys generated



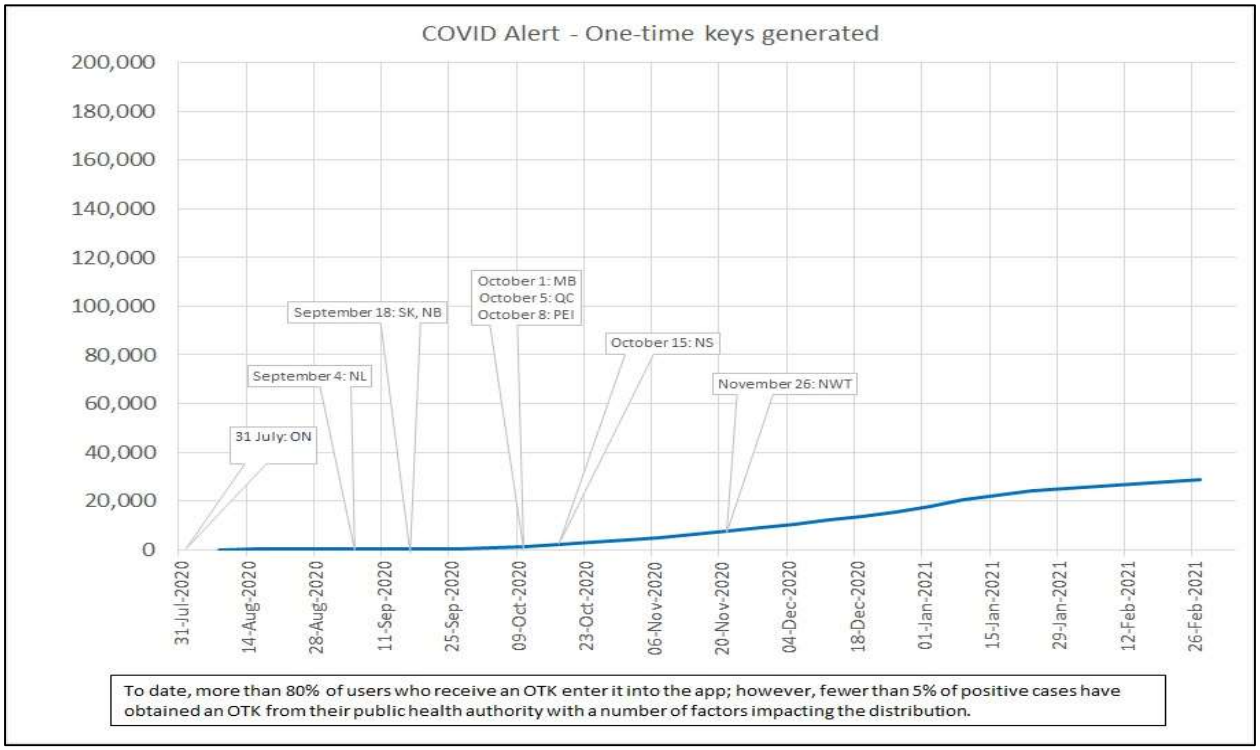


Table 1 identifies the near-term trends of downloads and one-time keys since mid-October:

Table 1: Number of COVID Alert downloads and one-time keys generated

Date	Total downloads	Total one-time keys generated
2020-08-02	1,316,559	24
2020-08-09	1,826,072	60
2020-08-16	2,052,789	101
2020-08-23	2,153,305	136
2020-08-30	2,236,340	179
2020-09-06	2,346,508	199
2020-09-13	2,486,060	199
2020-09-20	2,710,933	199
2020-09-27	2,995,723	314
2020-10-04	3,613,814	619
2020-10-11	4,378,220	1277
2020-10-18	4,721,307	1955
2020-10-25	4,881,850	2770
2020-11-01	5,031,427	3496
2020-11-08	5,156,955	4336
2020-11-15	5,296,740	5546
2020-11-22	5,463,164	6748
2020-11-29	5,583,173	8015
2020-12-06	5,659,707	9345
2020-12-13	5,720,190	10,666
2020-12-20	5,781,732	12,183
2020-12-27	5,847,907	13,825
2021-01-03	5,915,517	16,021
2021-01-10	6,012,599	18,152
2021-01-17	6,081,936	19,887
2021-01-24	6,119,129	21,223
2021-02-03	6,172,810	22,266
2021-02-10	6,222,675	23,097
2021-02-17	6,301,129	23,905
2021-02-24	6,324,552	24,695

With Canada's health care systems, the federal government's roles include setting and administering national principles and standards, while the provinces and territories administer and deliver most of Canada's health care services. In the context of the app, the federal

government is overseeing the national app to ensure interoperability across jurisdictions. It is up to each jurisdiction to decide whether to integrate COVID Alert within their health systems and to determine what approach is best within their individual jurisdiction to distribute the OTKs as they are the ones authorized to affirm a positive test result.

Discussions with the provinces and territories have focused on the user's experience in receiving and using an OTK, and on timing of the OTK delivery and communications about its use. In many cases, the onus is placed on the individual who has received a positive test result to take an active role in requesting an OTK. This may require the user to call a separate government agency or to register with and log into a separate platform to obtain the OTK.

Early notification is key to the success of the COVID Alert app in breaking the chain of infection by encouraging self-isolation until direction from public heath authorities can be sought. For this reason, any efforts to simplify the distribution and use of OTKs (e.g., through process efficiencies and/or technology solutions) must be a priority for all partners. At the same time, it is critical to ensure that only people who test positive are able to claim an OTK, so as not to unnecessarily overburden already busy health care systems. To date, more than 80% of users who receive an OTK enter it into the app; however, fewer than 5% of positive cases have obtained an OTK from their public health authority. The Government of Canada is working closely with provincial and territorial partners to find opportunities to ensure that all positive cases receive a one-time key in an easy and timely manner, through streamlined processes and increased communications.

Retention of the app

Based on currently available data[6], there are indications that some users are choosing to uninstall the app. There are several reasons for this behaviour, including where the user:

- Perceives that the app is not user-friendly;
- Believes that the app will not be substantially effective without broader public uptake;
- Does not receive any exposure notifications and therefore assumes that the app is not performing as designed;
- Lacks understanding or is confused by on how the app works (e.g., contact-based and not location-based);

[6] Aitken, N, Tucotte, M. and Yang, F. *Willingness of Canadians to use a contact tracing application.* July 31, 2020. Statistics Canada. Accessed via https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00059-eng.htm

- Experiences anxiety related to receiving a notification and possible consequences (e.g., isolating, testing); or
- Experiences technical issues such as battery life on some phone models.

Council advice and government response

The Council has been providing advice to the government on an ongoing basis. The substance of the Council's advice aligns with the efforts already taken, currently being assessed, or at the stage of being implemented by the Government of Canada.

Initial efforts of the Government in respond to the Council's advice are acknowledged, with ongoing responses under consideration. The Council is supportive of new features that were added to the app since October. These include:

- narrowing the exposure notification window to periods when a COVID-positive user was the most infectious, by allowing the user to voluntarily enter their symptom onset or test date;
- allowing users, specifically for health care workers, to manually turn the app off when wearing the appropriate personal protective equipment in areas with high likelihood of being near COVID-positive persons (e.g. test centres, long-term care facilities); and
- allowing users to clear the exposed state following a negative test result, in order to permit users to receive new exposure notifications.

The Council also notes Apple's efforts to make their exposure notification framework available on iOS 12.5. On January 5, 2021, the Government released an update to COVID Alert allowing for the app to be used on the iOS 12.5 operating system allowing the app to be compatible with iPhone 5s, 6 and 6 Plus models bringing the total availability to 97.5% of mobile devices. This permits even more Canadians to download and benefit from COVID Alert.

Increasing awareness of the app's availability, benefits, functionality as well as streamlining the process of OTK distribution will be key in driving its further adoption and proper use by as many Canadians as possible. Accessibility, adoption and proper use of COVID Alert are critical in achieving the desired public health benefits.

The Council advises the following for each of the noted topics of discussion under Pillar 1 (Social & Economic Determinants of App Adoption, Retention and Use), while noting the responsive and ongoing efforts of the Government of Canada:

Strategies to increase accessibility for specific populations

1. **Develop strategies for communities that cannot easily access COVID Alert with a specific focus on racialized communities, low-income communities, First Nations, Metis and Inuit communities, and communities in geographic regions experiencing**

clusters of positive cases, **with emphasis on seeking the assistance of influencers/ animators and other partners such as low-income housing organizations.**

The Council notes the Government of Canada's engagement with Indigenous social media influencers to promote the COVID Alert app within their respective communities and encourages continual outreach. The Council is hopeful that these efforts will contribute to driving uptake and proper use of the app, and help to reduce the spread of the virus in Indigenous communities.

The Council has advised that the Government of Canada consider launching a Community Animator[7] pilot in communities in Ontario that have been inequitably impacted by significant COVID-19 outbreaks." The Council identified two hot spot communities consisting of high numbers of racialized people, in the Greater Toronto Area, as ideal locations to pilot an outreach project that would aim to encourage adoption, retention and proper use of the app in those areas. The Government of Canada has since initiated conversations with community leaders in these two specific communities and shared material to help them raise awareness of the app. The Government of Canada is also looking at a more inclusive approach to reaching a broader range of racialized and marginalized communities.

The Council advises that the Government of Canada consider the utility of the Community Animator model in preparing and mobilizing at-risk communities for the possibility of future epidemics. The Council also highlighted the importance of identifying partnership models and funding mechanisms which could be deployed rapidly in the future when engaging with these vulnerable communities.

2. **Increase accessibility of the app for specific populations who speak other languages than those currently offered (English and French).**

The Government of Canada has already developed COVID Alert posters in 22 different languages which can easily be accessed on the website. Additional outreach options and ads in additional languages are also being developed.

[7] A community animator is generally a member of the identified community/neighbourhood, and has lived experience within the communities for which they are working. They reflect the diversity of the communities and are established leaders that can quickly develop trust and rapport with community members.

The Council advises that the Government of Canada investigate rolling out support for additional languages in subsequent updates to the COVID Alert app in order to increase the accessibility and potential uptake with persons who do not primarily converse in either English or French. The Government of Canada is already in the process of increasing accessibility through the addition of new languages within the app.

Languages are being prioritized based on public health need used the following criteria:

- Recent newcomers to Canada (e.g., new permanent residents, refugees);
- Living and working conditions (e.g., multigenerational households, agriculture);
- Knowledge of English and French;
- Identified high-risk communities; and
- Access to existing Government of Canada COVID-19 resources.

As such, seven languages have been identified, based on this public health criteria: Arabic, Simplified Chinese, Inuktitut, Plaines Cree, Punjabi, Spanish, and Tagalog.

Strategies to reduce barriers and increase adoption, retention and proper use of the app

1. **Expand the collection of data to build a better understanding of the reasons why Canadians are not adopting, retaining or properly using the app**.

   The Council acknowledges that the Government of Canada has consulted Statistics Canada regarding any data of value they may be collecting (e.g., number of mobiles in Canada), and best methodologies and practices for the calculation of data that could be applied to the Government of Canada's current approach (e.g., app downloads).

   The Council wants to continue to be engaged in discussions on collection of data, particularly the viability of data collection given privacy considerations. The Council has indicated that the Government of Canada must continue to carefully consider the risks of public perception and trust from a privacy perspective when considering additional data collection. The expected outcomes associated with additional data collection should be clearly articulated to ensure it outweighs these risks.

2. **Align Federal, Provincial and Territorial efforts in optimizing the distribution of OTKs**.

   The Council acknowledges that the Government of Canada, along with provinces and territories, are currently looking at ways to make it easier for users who test positive to

obtain a OTK in a timely fashion. The Council also acknowledges that options will continue to be discussed and assessed under the second pillar of the work plan.

The Council strongly supports the Government's efforts in urging all outlying provinces and territories that have not currently adopted COVID Alert app to join in order to offer a unified approach across all jurisdictions. To this end, the Council will continue to advise the Government on how the COVID Alert app can be further enhanced to both increase the app's effectiveness, reduce the burden on the healthcare system, and ensure all provinces and territories are satisfied with its capabilities.

The Council advises the Government of Canada, along with the provinces and territories who have accountability on the OTK distribution, to re-assess current models for OTK distribution and find improved means of distributing OTKs to COVID Alert users as soon as possible in order to simplify the process of entering their codes into the app.

The Government regularly meets with participating provinces and territories to collect best practices and discuss challenges with app implementation and to identify best practices. In general, participating provinces and territories are satisfied with the tool, and are seeking additional metrics to assist them in benchmarking their current downloads and OTK statistics. Jurisdictional particularities in the distribution of OTK are currently being discussed in depth, in order to help improve processes in all participating areas. The Government should increase its current efforts in working with provincial and territorial governments in order to find common approaches to overcome the low distribution of OTKs. To aid the Government in these efforts, the Council will turn its focus to the issue of OTKs as a substantive part of its work on Pillar 2: COVID Alert app as a government service.

3. **Discuss with provincial and territorial partners how to provide more value-added information to users who may receive a notification of exposure or test positive to alleviate associated anxiety of need to self-isolate without income**

The Council notes that since the onset of COVID-19, the Government of Canada has introduced measures and amended existing policies to enable Canadians to self-isolate and return to work when faced with potential exposure to the virus or a positive test result.

The Council advises that the Government of Canada better link messaging around the COVID Alert app with available programs announced through COVID-19 economic response plan such as Employment Insurance, Canada Recovery Benefit, and the Canada

Recovery Sickness Benefit among others. The Council was happy to learn that the Government of Canada quickly reacted and have aligned existing social media messaging accordingly.

The Council advises that the Government of Canada continues to engage with provincial and territorial partners on tailoring information available in the COVID Alert app to best reflect regional considerations. Additionally, the Council advises that the Government of Canada also encourage provincial and territorial partners ensure information regarding support measures available to individuals required to self-isolate are well-publicized as part of localized app promotion efforts.

4. **Undertake a case study targeted at jurisdiction(s) where the management and delivery of First Nations health programming have been transferred to other federal jurisdiction or to independent organizations**

   The Council discussed whether a province/territory that has currently adopted COVID Alert may create impediments for First Nations to fully participate if they so choose, and whether the Government of Canada could provide Indigenous communities with the ability to receive one-time keys independently of the province/territory within which they are located.

   Follow-up discussions have been held with the First Nations Health Authority in British Columbia (B.C.) and the First Nations and Inuit Health Branch (FNIHB), under Indigenous Services Canada in Alberta.

   In the case of B.C., the First Nations Health Authority has indicated it will be following the direction of the B.C. government with respect to the implementation of COVID Alert. In Alberta, Indigenous Services Canada confirmed that the majority of Alberta's Indigenous communities are handled and served by the Alberta Public Health system, thus limiting the reach and impact of any case study contemplated in the province.

   As a result of this engagement, the Council advises that the Government of Canada continues engaging with provinces and territories that have not adopted the app in order to ensure that all residents can utilize the COVID Alert app across all provinces and territories.

5. **Establish a baseline number of app downloads that would be considered sufficient to appropriately measure the effectiveness of the app in reducing the spread of the virus;**

The Council appreciates that the Government of Canada has weighed the pros and cons of establishing a baseline and incremental adoption rate throughout the evolution of the pandemic. The Government of Canada has closely monitored international practices and lessons learned regarding the establishment of metrics/baselines. What has become clear, as observed by the World Health Organization in May 2020, is that there are "no established methods for assessing the effectiveness of digital proximity tracking." The Scientific Director of the Big Data Institute at the University of Oxford recently indicated that apps such as COVID Alert are having a positive impact, even in the absence of specific quantifying metrics and that the concept of a minimal adoption rate is less relevant to these apps because this type of tool is effective regardless of its level of up-take.[8]

While some countries have established a penetration rate for their exposure notification apps (e.g., United Kingdom), Canada's privacy protective design poses challenges in terms of comparing success against a pre-established adoption rate. The Government of Canada will continue to assess ways to determine an adoption rate as the app continues to be implemented across Canada.

The Council advises that the Government of Canada maintain its initial position upon launching COVID Alert – namely that every uptake can help—and continue to explore opportunities to promote success stories to Canadians with the objective of influencing individual decision-making following an exposure notification. The Council suggests that Government of Canada continue to identify the most useful metrics to measure uptake while continuously improving the functionality and reach of the app. Again, it is noted that any additional metrics collected would require a clear plan for communicating the benefits of participation, and would need to be carefully weighed against any actual or perceived diminution of privacy protections, or other perception risks that may prompt Canadians to delete the app.

The Government of Canada has begun to broadly consider how the COVID Alert app could potentially extend beyond a government service to Canadians and the public health system towards a tool that will also support Canadians and businesses in our economic, social and mental health recovery and restoration. To this end, it will be critical

[8] Buzzetti, H.. *Seulement 24% des Canadiens ont l'application Alerte COVID* Le Devoir. November 27, 2020. Accessed via https://www.ledevoir.com/politique/canada/590564/utile-ou-pas-alerte-covid

for individuals and businesses in Canada to have trust in the app's ability to support their safe return to worksites and universities, their reopening of businesses, and their use of modes of transportation including public transit (air, marine, and rail services) until the pandemic is declared over. The advice of the Council will help to inform the Government's next steps in all of these regards.

6. **Position COVID Alert as one additional tool at the disposal of Canadians, to better situate its position within the broader public health response to the COVID-19 pandemic and to highlight success stories that would resonate with Canadians;**

   The Council advises that the Government of Canada expand its marketing and outreach activities using various tools including social media messaging in order to promote the COVID Alert app as an additional tool in the fight against COVID-19. The Council has also expressed some concern that advertisements or notices about the COVID app could be more prominent, including at COVID assessment/testing centres, major banks, grocery stores, and other places where Canadians conduct their daily activities. By situating the use of the app as one important element within the broader public health response, the Council believes that the messaging will better resonate with current and potential app users and strengthen the case for the uptake of the app, including during the interim time where vaccines become available but physical distancing and risk reduction behaviours remain necessary.

   Council advises that the Government of Canada continue its messaging on the use of the app. This will be critical in achieving wider uptake, which will involve clear communications, ongoing engagement with diverse partners and communities; and continuous improvements to the app (e.g. new functionalities and emerging technologies that could help to re-open parts of the economy). In this regard, the Government of Canada will continue to receive the advice of Council to help inform its next steps, including any data generated for the effective operation of the COVID Alert app system, as well as how lessons learned from the use the COVID Alert app could be applied to future scenarios where the technology behind the app would be useful.

Conclusion

Through the deployment of the COVID Alert app, the Government of Canada has committed to deploying a technology-based solution that will assist Canada in flattening the curve and limiting the spread of COVID-19. Within the realms of app accessibility and user adoption, the Council aims to provide the Government of Canada with targeted and specific advice. The Council believes that, in addition to the ongoing work, the implementation of the strategies specified in this report will provide immediate and substantial benefits to increase both the accessibility and the user adoption of the COVID Alert app. Furthermore, the implementation of additional considerations would assist the Government of Canada in broadening its factors and considerations in deploying similar technology-based solutions in the future.

The Council will continue to meet and discuss Pillar 2 (COVID Alert app as a government service) and Pillar 3 (COVID Alert app as a public health tool) over the coming months, and provide targeted advice in order to ensure that the app continues to meet the highest standards with respect to public health outcomes, technology, and privacy. As with Pillar 1, Pillar 2 and 3 will be summarized within subsequent interim reports in the winter, followed by a final consolidated report in spring 2021.

COVID-19 Exposure Notification App Advisory Council

Co-Chairs

Jean-François Gagné, ServiceNow

Carole Piovesan, INQ Data Law

Members

Simone Atungo, Vibrant Healthcare Alliance

Dr. Jonathan Dewar, First Nations Information Governance Centre

Dr. Bunmi Fatoye, Winnipeg Regional Health Authority

Dr. Éloïse Gratton, Borden Ladner Gervais

Andrew Harrison, Verily Life Sciences

Dr. Brenda McPhail, Canadian Civil Liberties Association

Dr. Derek Ruths, McGill University

Dr. Margo Seltzer, University of British Columbia

Dr. Gaynor Watson-Creed, Nova Scotia Public Health