Te Tari Taiwhenua
Internal Affairs

Government Digital Services briefing

Hon Kris Faafoi
Minister for Government Digital Services

Title: **Cabinet paper: COVID-19 Contact Tracing Action Plan and report back on the implementation of technology options**

Date: 19 April 2020

Key issues

This briefing attaches a Cabinet paper from the Minister of Health titled: 'COVID-19 Contact Tracing Action Plan' as **Appendix A**. The Cabinet paper:

- sets out the Ministry of Health's response to recommendations arising from a review of its contact tracing service, and an action plan to further strengthen contact tracing;
- identifies Bluetooth-enabled cards as a possible alternative technology to support contact tracing and notes that a report back will be provided on this proposal by 6 May 2020;
- seeks agreement to $55 million in additional funding for 2019/20 to support the action plan;
- fulfils the direction of the COVID-19 Ministerial Group (CVD) for you and the Minister of Health to report back on progress with implementing technology options to respond to COVID-19; and
- notes that the Government Chief Digital Officer (GCDO) will report back to CVD on COVID-19 technology response oversight requirements from a whole of government perspective.

The GCDO was consulted on the contents of the Cabinet paper. The GCDO recommended:

- noting limitations associated with the use of smartphone apps for contact tracing;
- emphasising the critical importance of contact tracing for economic and social recovery;
- recommending that CVD provides in-principle support for the Bluetooth-enabled cards; and
- noting that using technology for contact tracing could represent a significant change to individual privacy and this needs appropriate oversight;
- not including Appendix C of the Cabinet paper: 'Technology and Data Plan' until further work is undertaken to align various technical and other solutions.

The draft Cabinet paper will be considered by CVD on 20 April 2020.

To support your appearance at CVD, talking points are attached as **Appendix B** and a table showing all known technology initiatives relevant to contact tracing is provided as **Appendix C.**

Action sought	Timeframe
Note the contents of the Cabinet paper and the talking points attached to this briefing.	By Monday 20 April 2020

Contact for telephone discussions (if required)

Name	Position	Direct phone line	After hours phone	Suggested 1st contact
Michael Woodside	Director, Policy	9(2)(a)	9(2)(a)	✓
Chris East	Chief Advisor, Office of the CE	9(2)(a)	9(2)(a)	

Return to	Janelle Eagleton, level 9, 45 Pipitea Street.
Cohesion reference	4UAZY7VS6QRJ-168030080-374
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Purpose

1. This briefing attaches a Cabinet paper from the Minister of Health, Hon Dr David Clark, titled: 'COVID-19 Contact Tracing Action Plan' that will be considered by the COVID-19 Ministerial Group (CVD) on Monday 20 April 2020 as **Appendix A**.

2. Talking points to support your discussion of this paper are attached as **Appendix B**.

Background

3. On 9 April 2020, CVD directed you and the Minister of Health to report back with an update on progress with implementing technology options to respond to COVID-19 [CAB-20-MIN-0130 refers]. At this meeting, CVD also agreed that priority should be given to technological enhancements to support contact tracing.

4. You met with the Minister of Health on 16 April and agreed that the report back on technology options would be provided as part of a Ministry of Health (MoH) Cabinet paper on contact tracing.

5. MoH commissioned Dr Ayesha Verrall, an infectious diseases specialist at Otago University, to undertake a rapid audit of the health sector's approach to contact tracing for COVID-19 cases.

6. Dr Verrall's report, attached to the Cabinet paper, recommends that when an individual receives a positive diagnosis, 80% of their close contacts should be contacted and placed in self-isolation within 24 hours. Her report also makes a series of recommendations to support delivery of rapid case detection and contact tracing.

Summary of the Cabinet paper

Update on MoH's COVID-19 Contact Tracing Action Plan

7. The Cabinet paper's primary purpose is to set out MoH's response to the recommendations made by Dr Verrall in her report. MoH's responses include:

    7.1 developing a COVID-19 outbreak preparedness plan in collaboration with Public Health Units (PHUs) by 24 April 2020;

    7.2 establishing a national contact tracing unit to coordinate and direct local and national resources to meet contact tracing timeframes;

    7.3 establishing a national monitoring framework to provide monitoring and oversight of contact tracing work carried out by PHUs;

    7.4 expanding the new National Contact Tracing Solution (NCTS) to improve support to PHUs and deliver real-time reporting on system performance;

9(2)(f)(iv)

8. To deliver these enhancements to the contact tracing function, MoH is seeking $55 million in additional funding for 2019/20.

Report back on progress with implementing technology options to respond to COVID-19

9. To support fulfilment of your report back requirement to CVD, the GDCO provided input on the technology components of the paper.

10. The GCDO recommends that Ministers note that collecting data proactively could represent a significant change to individual privacy. Existing contact tracing processes are retrospective. After a person tests positive for COVID-19, their close contacts are identified, contacted and directed to self-isolate. Some technology solutions propose altering this approach by collecting data on a person's close contacts before they receive a positive diagnosis. This accelerates the process of contacting and isolating these close contacts later on.

11. Privacy implications will mean that people are likely to seek Government assurance on the security of any technology solution. To build public trust and confidence, and encourage uptake, proposed solutions will need to be rigorously tested against the Government's agreed principles of public health efficacy; respect for privacy; freedom of movement; and technical feasibility. The GCDO has a functional leadership mandate to provide due diligence and assurance for this purpose and to drive a cohesive approach to digital inclusion across government.

12. The Cabinet paper provides an update on two key technology options: a smartphone app that is being developed by MoH and a proposal for Bluetooth-enabled cards to support contact tracing.

Update on MoH smartphone app

13. In addition to the initiatives outlined in their Contact Tracing Action Plan, MoH has developed a smartphone app that will enable individuals to record their contact details. These details can then be provided to the contact tracing service if that individual is identified as a close contact of a confirmed COVID-19 case.

14. MoH's app is scheduled for release on 20 April 2020. Later versions of the app may include additional functionality including enabling users to link their profile to their National Health Index number, manually record their location and close contacts, and check and report symptoms.

15. There are limitations associated with the use of smartphone apps for contact tracing. Research from the University of Oxford in the UK, published on 16 April 2020, indicates that for an app to be effective in suppressing the COVID-19 pandemic in the UK, extremely high levels of uptake (56% of the total population of the UK), would be required.

16. Experience in New Zealand and overseas, including Singapore, suggests that a voluntary smartphone app, on its own, will not reach enough of the population to provide effective contact tracing. In Singapore, the TraceTogether app has less than 20% uptake.

Bluetooth-enabled card technology option

17. An alternative technology option being explored includes a proposal for Bluetooth-enabled cards to be issued to all New Zealanders. The card will record when a cardholder has come into close contact with another cardholder.

18. Using Bluetooth-enabled cards for contact tracing is likely to have reduced privacy and security concerns for users when compared to other technologies. This is because the cards will not record personal or location data and will only store anonymised contact

data until needed. This may make people more willing to use a Bluetooth-enabled card.

19. The effectiveness of Bluetooth technology for contact tracing in smartphones has been found to be limited because the range can vary greatly depending on how people hold their phones, and whether they are indoors or outdoors. Further work is required to determine if such factors also impact the effectiveness of Bluetooth-enabled cards.

20. MoH, GCDO and the COVID-19 Public Private Partnership team (PPP) are considering what would be required for successful implementation, how risks would be managed, privacy and security implications, timing and cost. Initial estimates indicate that delivery of this option would cost up to $100 million. The PPP is seeking $2 million in immediate funding to undertake prototyping.

21. The GCDO will provide oversight and assurance, with the lead delivery agency to be determined. Officials will report back to Ministers on this by 6 May 2020.

Oversight of COVID-19 Technology Solutions

22. The Cabinet paper outlines the need for oversight of technology options being developed across the public sector to support the COVID-19 response. This will provide a common operating picture for Ministers and other stakeholders to support long-term strategic decision-making. Continuing with the current approach of agencies making independent decisions presents significant risks to effective implementation.

23. The paper recommends that the GCDO reports back to CVD with an analysis of COVID-19 technology response oversight requirements from a whole of government perspective, including a COVID-19 technology response plan, and a proposed governance structure.

24. The GCDO will also continue to deliver provide due diligence and assurance for enabling COVID-19 technology solutions. This includes assuring Ministers and New Zealanders that technology solutions will be effective on public health grounds, while also on maintaining public trust and confidence by ensuring issues of privacy, security and digital inclusion are recognised and protected.

Summary of technology initiatives relevant to contact tracing

25. To support your attendance at CVD, on 17 April 2020 your office requested a table showing all the technology initiatives that the GCDO is aware of relevant to contact tracing. This table is provided as **Appendix C**.

26. The table sets out a broad range of initiatives, some of which have a similar purpose. This demonstrates the need for oversight across the span of work underway.

27. It is envisaged that the COVID-19 technology response plan referenced in para. 23 will provide Ministers will a comprehensive picture of all projects proposed and underway. This will inform decision-making on priorities and investment. It will also support effective interfacing between technologies (across central government, local government and the private sector), coherence and inter-operability.

28. The perspective of the private sector is vital in developing a technology response plan. Businesses are likely to seek to leverage technology to implement their own contact tracing processes when they resume operations. This may support public uptake, but guidance will be needed to ensure such systems complement existing government actions and maintain privacy, security and digital inclusion principles.

Recommendations

29.   We recommend that you:

a)   **Note** the contents of the Cabinet paper and its attachments   **Yes/No**
attached to this briefing as **Appendix A**;

b)   **Note** the talking points attached to this briefing as **Appendix B**;   **Yes/No**

c)   **Note** the table showing all known technology initiatives that are   **Yes/No**
relevant to contact tracing attached to this briefing as **Appendix C.**

Michael Woodside
Director, Policy

Hon Kris Faafoi
Minister for Government Digital Services

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Appendix A: COVID-19 Contact Tracing Action Plan Cabinet paper and attachments

Appendix C: Close Contact Tracing, COVID-19

The below table sets out all the technology initiatives that the GCDO is aware of relevant to contact tracing. It is possible that some initiatives are missing if the responsible agency has not yet notified the GCDO. Indicative costs, timelines for delivery, and high-level commentary are provided although further analysis is required.

Technology Solution:	Timeline for Delivery:	Functionality:	Advantages:	Risks:	Estimated Cost:[1]	Privacy Concerns	Estimated take up
MoH core platforms: • **contact tracing** • **data platform** • **immunisation** • **enabling environment**	• **Contact tracing Platform delivered; real time reporting: 25 May** • **Data platform in early delivery, data sources being added incrementally (eg lab results, ICU/HDU data)** • **Immunisation status – later 2020** • **Enabling environment in early delivery (digital identity, standards, security, privacy and governance, release of APIs)**	• Case management system for rapid contact tracing • Data accessibility • Digital identity • Interoperability, privacy, security • Outbound cloud telephony and SMS. • It also manages Self Isolation daily follow ups. • Integration with other government (IRD) and health data sources (eg. NHI) • Functionality for managing immunisation status and case status	• Proven, scalable, secure platforms • Integrated with other data sources and systems • Supports consistent contact tracing nationally • Supports market innovation and interoperability • Data protection and use	• Funding • Loss of social license • Achieving equity across non-digital processes	9(2)(j) TBD	Low	National – already 60% of people are easy to find for contact tracing with this system All additional options will be targeted at the 40% of people who are harder to find
MoH App (Rush Digital Consumer Application)	1. Release 1: 20 April 2. Release 2: 1 May 3. Release 3: 15 May	1. Manual recording of self-registration data (updated phone numbers, emails and addresses), news feed 2. Manual collection of close contacts and QR code scanner for locations you visit (work, shops etc.) 3. Bluetooth tracing (see the additional row further down)	• Opt in • User authenticated and can be NHI linked (eg. For immunisation status and test results) • Can zero-rate data for users • User control of data / privacy • Existing consumer channel (phone) • Is being built to allow functions to be delivered	• Requires user intervention • Only available to those with access to a phone • Could have low uptake: Singapore – TraceTogether achieving 18% uptake; GP patient portals achieving 25-35% uptake	9(2)(j)	Medium to low	**Release 1** Only requires phone number and person details, this could have a significant impact on the above national system. Releases 2 and 3 speed up the process of contact

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[1] Costs provided are estimates only and have not yet been validated by the GCDO. Some costs indicated incorporate elements such as promotion and ongoing costs.

Technology Solution:	Timeline for Delivery:	Functionality:	Advantages:	Risks:	Estimated Cost:[1]	Privacy Concerns	Estimated take up
			by other apps • Ability to add QR codes for businesses or locations, can be a requirement of businesses operating (fits within Section 70 notices)				tracing.
Market innovation (eg patient portals, mental health and wellbeing apps, symptom checkers)	Various, determined by the market. Enabled by MoH environment for privacy, security and interoperability	Various – the market has numerous existing and emerging solutions that can be leveraged	• Opt in, user choice • Complements other initiatives • Encourages innovation and NZ Inc • Leverages existing channels • Government as co-investor	• Requires strong standards and certification processes to provide assurance • Only available to those with access to technology – although these services are being zero-rated for data use	TBD	Medium	Dependant on each solution. Cumulative uptake could be significant (for example GP patient portals already have up to 35% uptake).
Smartphone Bluetooth capabilities • **TraceTogether** Records nearby devices to a central database. If someone is confirmed as infected they can consent to their data being shared and used as part of contact tracing. • **Apple/Google** Records nearby devices on the individual's mobile phone. If someone is confirmed as infected they can consent to notifying their contacts and their data being shared with contact tracing.	Being evaluated for inclusion in MoH app release 3 Being evaluated as an option to be supported in multiple apps. Initial release of the Apple API is mid-May (requires an app). Apple has offered MoH pre-release access. GCSB has advised on security risks related to this.	Uses Bluetooth to capture encrypted identifiers that an individual can consent to releasing to other members of the public for contact tracing if they are a confirmed case. This creates a call back request to contact tracing	• Opt in • User control of data / privacy • Can be used in existing consumer channel (phone • Can be used in multiple apps • Requires very little user intervention • Allows the public to be alerted quickly	• **Cannot** be operated without a connection to an app platform and or integration with MoH core platforms • TraceTogether has known tech issues with operating on IOS phones. • Only available to those with access to a phone • There are complicated technical security and alerting requirements with these to preserve privacy and integrate with contact tracing • Up ends the contact tracing method we have (outbound calling) to being alerted users making inbound calls based on a notification of risk	9(2)(j)	Medium to low	Dependant on apps and market innovation uptake

Technology Solution:	Timeline for Delivery:	Functionality:	Advantages:	Risks:	Estimated Cost:[1]	Privacy Concerns	Estimated take up
• **PEPP-PT** This is the EU solution similar to the Singapore option • **Prox Bio** This is a solution developed by a Christchurch business similar to the Singapore option	There is not yet a timeline for release two (phone level management of Bluetooth)						
CovidCard A card that is sent to everyone and placed in their wallet or purse	Prototype (2 wks) Rollout (est 6-8 weeks)	Emits Bluetooth and only registers interactions with other cards	• Broad distribution • Inclusivity – however this is to be determined, there is risk that this is seen as a "poor person marker" with "rich people" using their phone • Single use	• **Cannot** be operated without a connection to an app platform and or integration with MoH core platforms • Possible Bill of Rights Act concerns • Hardware not in wide circulation internationally and we are planning changes to the hardware required for range and signal detection. These will impacts on batter life • Difficult to ensure that people are carrying their cards • Privacy risk depending on how the encryption process is designed (see Bluetooth app above) • High level of ownership asserted by private sector developer.	9(2)(j)	Medium to low	Targeting between 60 to 80%
Digital inclusion	• Targeted funding provided to DHBs for	• Sponsored data	• Inclusivity • Complements other	TBD, dependent on	Low	Dependent on

Technology Solution:	Timeline for Delivery:	Functionality:	Advantages:	Risks:	Estimated Cost:[1]	Privacy Concerns	Estimated take up
	digital inclusion, Maori Health • Sponsored data websites live	• Free home internet • Phone/data package provided for vulnerable consumers • Language support • Disability support	initiatives • Community engagement, community led • Multiple approaches to address digital inclusion	• Inequitable success	targeted initiatives		targeted initiatives
Whatsapp	Whatsapp Phase 1 delivered	Enable easy digital response to citizen questions	• Simple and effective tools • Take pressure off other channels • high level of ownership asserted by private sector developer	• Poor user experience • Inconsistent messaging has been seen to have impacts on health system capacity (both locally and internationally) • High level of ownership asserted by private sector developer • Only available to those with access to technology	9(2)(j)	Low	48,000 users currently Very low penetration. Australia has the same tool as NZ in place, with higher uptake
Chatbot	Align with move to Alert Level 3	The proposed chatbot attached to the COVID-19 website (that is hosted on DIA's AoG Common Web Platform, supported by Silverstripe) is based on the Google suite, and uses Google's Artificial Intelligence tools.	The chatbot offers interactive questions and answers to the public.	This is a highly visible public tool so there is publicity risk,	TBD	Low	Aligned with the COVID-19 Website usage
Online self-diagnosis tool **For improved diagnosis**	Various	• Market innovation • Potential phase 2 of WhatsApp initiative	• Potential to take pressure off a stressed health system • Contributes more data for contact tracing	• Requires strong standards and certification processes to provide assurance on quality and clinical impacts or risk • Only available to those with access to technology	Low	Dependant on app	Dependant on app
Anonymised movement	Currently in use	Anonymised data from mobile phones is currently	Benefit through ambient/population level	Associating this with health risks those in vulnerable		Principle of transparency must	

Technology Solution:	Timeline for Delivery:	Functionality:	Advantages:	Risks:	Estimated Cost:[1]	Privacy Concerns	Estimated take up
tracking **for lockdown management**		being used by the National Crisis Management Centre (NCMC) to monitor the effectiveness of the lock down. It draws on data being gathered and processed by Statistics New Zealand	analysis to understand whether positive cases or close contacts have been near others	groups associating this with contact tracing and reducing the willingness to participate		be applied	
Individual isolation/quarantine management **For isolation management**	Currently in use	Police are currently using a location sharing system to check on people who have been overseas and are currently self-isolating	Benefit through ambient/population level analysis to understand whether positive cases or close contacts have been near others	Associating this with health risks those in vulnerable groups associating this with contact tracing and reducing the willingness to participate			
Health worker app Channel for targeted information to health workers. Future use for national and federated health worker applications and functions.	Release 1 – 1 May	• User login and personalised notifications • Iterative releases (mobile content) • Forms for collecting information	• Simple and effective tool • Take pressure off other channels • Reusable identity platform • Able to zero-rate data access	• Only available to those with access to a phone • Could have low uptake	9(2)(j)	Low	50% uptake of 236,000 workers