An Environmental Scan of Australian Government and Health Organisation Messages on QR Code Check-in Compliance Behaviour in the COVID-19 Pandemic using the Theory of Planned Behaviour

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Abstract

Compliance with COVID-19 preventive behaviours together with the urgency to contain the virus underscored the need for rapid yet effective public health massaging. While messages aimed to inform and protect the public, the evolving situation often precluded the use of theoretically-based and empirically-informed approaches. This study aimed to analyse the presence and prevalence of belief-based constructs and strategies known to foster behaviour change embedded within Australian Government communications regarding compliance with QR code check-in behaviour during the COVID-19

pandemic using the Theory of Planned Behaviour as a guiding framework. Six belief codes and five behaviour change techniques were identified in 17 communication messages. Findings highlight the use of potentially effective strategies in the messages to change behaviour; for example, drawing on attitudinal and self-efficacy beliefs. Yet, results identified gaps, such as a lack of strategies to highlight normative influences and build habits that can inform future messaging and pandemic preparedness.
Keywords: Covid-19, environmental scan, QR code check-in, public health campaigns, compliance behaviour, beliefs, attitude, self-efficacy, behaviour change techniques

1. Introduction

The coronavirus disease 2019 (COVID-19), declared a worldwide pandemic on 11th March 2020, has had profound and far-reaching impacts on global health, economies, and daily life (Barai & Dhar, 2021). As the virus spread rapidly across countries and continents, governments and health organizations faced unprecedented challenges in mitigating its effects (Abodunrin et al., 2020). Widescale promotion of compliance with COVID-19 preventive behaviours, such as vaccination, social distancing, face mask-wearing, hand hygiene, and QR code check-in (a contact tracing system) (Burns, 2023), were the linchpin strategies of health agencies worldwide to bring COVID-19 infection rates under control. Compliance with these preventive behaviours together with the urgency to contain the virus and prevent further transmission, underscored the need for rapid yet effective public health massaging (Filip et al., 2022).

Public health campaigns can play an important role in promoting health-related practices and influencing individuals' behaviours, employing various strategies to disseminate information, shape attitudes, and encourage the adoption of compliance behaviours (Kelly & Barker, 2016). Diffusion of information has often included methods such as mass media campaigns (Robinson et al., 2014), targeted social media messages (Pagoto et al., 2016), community outreach programs (Luque et al., 2014), and policy measures (Sallis et al., 1998). Despite the multiple outlets to broadcast information to mitigate further COVID-19 infection and bolster COVID-19 preventive behaviours, determining the effectiveness of public health campaigns and assessing the strategies used within the messaging, is paramount. This often involves evaluating the ability of the message to engage the public through

using clear and understandable communication, persuasive and motivational messaging techniques, and leveraging psychological principles of behaviour change (Bonell et al., 2020).

During the COVID-19 pandemic, the development of public health messages had to keep pace with the rapidly increasing rate of infection (Nan et al., 2022). As a result, many messages were created and disseminated based on existing knowledge, often without the benefit of extensive empirical evidence (Gesser-Edelsburg, 2021; Simonovic & Taber, 2022). While these messages were aimed to inform and protect the public, the urgency of the pandemic situation often precluded the use of theoretically-based and empirically-informed approaches. This is important as campaigns rooted in established theories of behaviour change have been shown to be more effective in promoting health behaviours compared to atheoretical campaigns (Davies, 2012; Glanz & Bishop, 2010; Hagger & Weed, 2019).

Theories of behaviour provide a framework to inform intervention development, offering insights into the mechanisms and processes that foster behaviour change (Hagger et al., 2020). Commonly used are models of social cognition, a prototypical model being the Theory of Planned Behaviour (TPB). The TPB posits behavioural intentions as the proximal predictor of behaviour, with intentions shaped by attitudes (the degree to which an individual believes the behaviour will result in positive or negative outcomes or affective states), subjective norms (the perceptions of significant others approval or disapproval of undertaking the behaviour), and perceived behavioural control (the perceived ability to perform or overcome barriers to performing a behaviour) (Ajzen, 1991). The parsimony of model constructs and meta-analytic support for explaining behaviour (Cooke et al., 2016; Hagger & Hamilton, 2024;

McEachan et al., 2011) has allowed the TPB to be used as a framework for the systematic assessment of interventions, examining alignment of message content and embedded behavioural strategies with the TPB psychological determinants. Previous research has successfully used the TPB to design, implement, and evaluate of health interventions (Armitage & Talibudeen, 2010; Darker et al., 2010; Gratton et al., 2007; Hamilton et al., 2018; Hardeman et al., 2002; Kothe et al., 2012; Mullan & Wong, 2010; Steinmetz et al., 2016; White et al., 2019).

As the world transitions from the pandemic to endemic phase of COVID-19 infection management, ongoing compliance with COVID-19 preventive behaviours remain a priority, and, alongside this, continued messaging to encourage compliance (Australian Government Department of Health and Aged Care, 2023; World Health Organization, 2023). Thus, an assessment of public health messages used during the pandemic is a valuable step in determining their potential effectiveness and identifying the strategies used within. This process will signpost the use or lack of theory and empirically supported behaviour change strategies applied to messages in this context, thereby informing future efforts. Specifically, the aim of the current study was to analyse the presence and prevalence of belief-based constructs and strategies known to foster behaviour change embedded within Australian Government communications regarding QR code check-in and compliance behaviour during the COVID-19 pandemic using the TPB as a guiding framework. Knowledge gained from this study and the systematic protocol to assess message content can be applied in future message development aimed at improving compliance behaviours in general.

2. Materials and methods

This study employed an environmental scan methodology (Charlton et al., 2019) to systematically review online material within Australian Government communications regarding QR code check-in compliance behaviour during the COVID-19 pandemic. Specifically, QR codes were implemented as an efficient method of contact tracing in Australia, enabling timely notifications of individuals who had come into close contact with someone who tested positive for COVID-19 (Nakamoto et al., 2020). This study aimed to analyse the presence and prevalence of belief-based constructs and strategies known to foster behaviour change (Hagger et al., 2020) for this novel COVID-19 preventive behaviour. Two primary search strings (S1 and S2) were developed: S1 focused on the terms "Covid-19" AND "QR code" while S2 targeted the specific application "Covidsafe". Searches were conducted using the Google search (www.google.com.au) and social media platforms (Facebook, YouTube, X/Twitter). In addition, searches were performed on the websites of the Australian Federal Government, Queensland State Government, and Victoria State Government. This approach considered the differences in extreme experiences of COVID-19 in Australia, as the state of Victoria had experienced seven lockdowns, and the state capital, Melbourne, had the longest cumulative time in lockdown in the world (Stobart & Duckett, 2022), while the state of Queensland experienced relatively few lockdowns and thus less disruptions to everyday life (Edwards et al., 2022). The search strategy navigated to page sites, and relevant PDF and video resources were downloaded between October and December 2023. Only messages published in English and delivered by an Australian government or healthcare authority website and addressing QR code check-in compliance behaviour were

considered. All collected files were securely stored on Google Drive, with restricted access through password protection available to the research team.

3. Data analysis

Two members of the research team independently assessed all the identified material against the inclusion criteria. The first author then extracted data into a comprehensive data abstraction table developed by the research team. The extracted information and study characteristics incorporated the file name, corresponding to the files saved on Google Drive, the meaning unit, condensed meaning unit, and belief code. Data were analysed using narrative synthesis methods to extract and distil discrete messages and categorise messages into their targeted psychological constructs (Hagger et al. 2020) and adopted behaviour change techniques (BCTs) (Michie et al., 2013). Data organisation, coding, and analysis were informed by a content analysis approach (Bengtsson, 2016) and SPSS v. 29 software was used to calculate frequencies of the belief-based constructs and BCTs. Any conflicts in the identification of belief codes were resolved through team consensus. Due to the use of publicly accessible information, human research ethics approval was not required for this study.

4. Results

Six belief codes of knowledge, attitude, norm, risk perception, self-efficacy, and intention/motivation were identified in 17 communication messages delivered by the Australian Federal Government, Victoria State Government, and Queensland State Government. Within these 17 messages, five BCTs were identified: comparison of outcomes (credible source) (CR), shaping knowledge (instructions on how to perform a behaviour) (INS), natural consequences (information about health consequences) (HLT),

comparison of behaviour (information about others' approval) (APP), and goal setting (GS). The prevalence of these belief codes and identified BCTs across the communication messages is illustrated in Figure 1, highlighting the majority and minority of occurrences. Table 1 presents the belief codes and BCTs identified through the environmental scan.

4.1 Belief codes

In identifying the embedded belief codes in the communications, 13 out of the 17 communication messages adopted attitude statements, specifically highlighting the advantages of QR code check-ins. These advantages were emphasised through statements such as: "a successful way to help stop or slow the spread of COVID-19" (1), "hospitalization numbers and community transmission decreasing, restrictions can be safely eased" (3), "ensure the focus continues to be on helping businesses follow the rules" (4), and "contact tracing information can only be used or disclosed if there is a public health purpose or other scenarios" (6).

Twelve out of 17 exhibited self-efficacy statements, for example: outlining the steps for scanning QR codes for the general public (1) and providing instructions for businesses to register, print posters, and display them at venues (5). Also, messages guided visitors on downloading the app (8,11), scanning with their phone camera (10,11), linking their digital vaccination certificate to the Check-In app (12), and performing group check-ins (13). Further instructions included using the Check-in app to add the COVID-19 digital certificate (14), utilising a Medicare account to add the certificate to the Check-In Qld app (16), and using an Individual Healthcare Identifier to add the COVID-19 certificate to the Check-In Qld app (17). Communications also highlighted that the QR code check-in app is new, free,

easy to use, and secure, bolstering self-efficacy by assuring users of their potential capability to use it (8, 9, 11, 15).

Eleven out of the 17 communication messages delivered knowledge provision related to various aspects of QR code usage. These included: defining QR codes (1); providing instructions for businesses and customers, Kiosk Check-in, and workplaces associated with QR code check-in (2); information about the removal of venue restrictions and re-openings (3); details on fines, enforcement notices, verbal warnings, improvement notices, and court prosecutions (4); and specifying that contact tracing information can only be used or disclosed for public health purposes or other specific scenarios (6), with Victoria Police not having access to this information (6). Additionally, the messages covered the use of a downloaded picture from a smartphone (7), privacy information (10), group check-in procedures (13), how to use a Medicare account to add a COVID-19 digital certificate to the Check-In Qld app (16), and how to use an Individual Healthcare Identifier to add a COVID-19 certificate to the Check-In Qld app (17).

Three out of 17 messages contained normative statements, highlighting the approval and desire from others to comply with QR code check-in practices, such as: The Victorian Government has today launched a new campaign calling on all Victorians to check-in everywhere, every time (2); To help keep Queensland COVID safe, we all need to check in at businesses electronically (8), and To help keep Queensland COVID safe, businesses must check in customers electronically (9). Similarly, three out of 17 communications conveyed intention/motivation statements, illustrating the degree of effort, planning, preparedness, or willingness to comply with QR code check-in behaviour. Statements like: With the pressure on the health

system easing and third dose vaccination coverage climbing, the Minister will consider if it is appropriate to remove the recommendation that Victorians work from home (3); Victorian government will ask residents isolating at home to participate in a trial of a check-in app (7); and The more businesses that sign up, the better it will be for all of us (11). Only one out of 17 messages exhibited risk perception statements: A new $1,652 on-the-spot fine, where there are repeated breaches, a further $9,913 fine can be issued and businesses may be prosecuted in court for continued, blatant, or wilful non-compliance with the rules (4), emphasizing the penalty associated with non-compliance with QR code check-ins. Overall, these three belief-based statements constituted a minority of the messages.

4.2 BCTs

In identifying the BCTs used within the communications, the majority of communications, 12 out of 17, used INS technique, such as: instructions on how to scan QR codes (1); information on registering the business, printing a poster, visitors scan the QR code and download the app, data collection and storage (5); instructions on how to scan the QR code with your phone camera (10) and how to use a Medicare account to add a COVID-19 digital certificate to the Check In Qld app (16). Nine out of 17 communications contained HLT technique, including: contact tracing has proven to be a successful way to help stop or slow the spread of COVID-19 (1); QR code data is a key source of intelligence for Victoria’s contact tracers (2); the Victorian Government’s QR code service can be used by businesses and venues to keep records of visitors to help us stay safe and stay open (5). Seven out of 17 messages generated CR technique, such as: Victorian businesses found intentionally flouting the Chief Health Officer’s rules - such as the requirement to use QR code systems - will

be slapped with a new $1,652 on-the-spot fine (4); Health Minister Martin Foley says the Victorian Government will ask residents isolating at home to participate in a trial of a check-in app that notifies health authorities individuals are in fact isolating at home (7); and privacy information (10). The minority of messages, three out of 17, used APP technique, for example: the Victorian Government has today launched a new campaign calling on all Victorians to check-in everywhere, every time (2); we all need to check in at businesses electronically (8); businesses must check in customers electronically (9). Two out of 17 messages employed GS technique, such as: the Minister will consider if it is appropriate to remove the recommendation that Victorians work from home (3); the more businesses sign up, the better it will be for all of us (11).

5. Discussion

Evidence has supported the use of QR code check-ins as a means of contact tracing to mitigate the spread of COVID-19 (Biala et al., 2022); however, the success of this strategy relies on people's compliance. Although COVID-19 is no longer considered a Public Health Emergency of International Concern (World Health Organization, 2023), reflecting on messaging for the compliance of COVID-19 preventive behaviours is important for future pandemic preparedness, especially given the emergence of novel coronavirus variants or outbreaks (Otto et al., 2021). This research aimed to address this need by analysing the presence and prevalence of belief-based constructs and BCTs used within Australian Government communications regarding QR code check-in during COVID-19 using the TPB as a guiding framework.

Campaigns from Australian health authorities aimed to increase compliance with QR code check-in behaviour were predominately delivered

through message campaigns, such as media releases, posters, mass media, social media, and digital channels (Department of Health and Aged Care, 2022). However, research evaluating the efficacy of these messaging campaigns in promoting compliance is limited. Research on the efficacy of health messages used in other domains have highlighted the importance of ensuring messages are theoretically-based and empirically-informed (Hamilton et al., 2020; Hrisos et al., 2008; Irvine et al., 2023). Previous research has identified a range of TPB-based beliefs that predict individuals' intentions and self-reported behaviour to scan the QR code when entering physical venues (Mac, Phipps, Parkinson, Cassimatis, et al., 2024; Mac, Phipps, Parkinson, & Hamilton, 2024; Nakamoto et al., 2020). These identified beliefs provide potential targets for messages in the aim of improving compliance rates. However, it is unknown to what extent message content for QR code check-in behaviour captured these beliefs or used known strategies to change behaviour.

Our analysis identified that knowledge, attitude, and self-efficacy beliefs are prominently embedded in the majority of QR code check-in related messages delivered by Australian government authorities during the Covid-19 pandemic. These messages frequently emphasised the importance of understanding the QR code check-in process (knowledge), the positive outcomes associated with compliance (attitude), and the ease with which individuals could complete the check-in process (self-efficacy). This alignment with empirical research underscores the effectiveness of these beliefs in promoting health behaviours. Studies have shown that knowledge about health behaviours enhances motivation (de Melo Ghisi et al., 2014), positive attitudes towards these behaviours increases the likelihood of compliance

(Mac, Phipps, Parkinson, Cassimatis, et al., 2024), and higher self-efficacy boosts individuals' confidence in their ability to perform the behaviours (Sheeran et al., 2016). However, a recent meta-analysis indicates varied outcomes, suggesting that while these beliefs are potentially important, their impact may differ across contexts and populations (McAnally & Hagger, 2023). Thus, the value of these three beliefs lies in their combined ability to foster an informed, motivated, and confident public, essential for the successful implementation of public health interventions, such as QR code check-ins.

In contrast, norms, risk perception, and intention/motivation only accounted for a minority presence in the Australian government communications. Norms represent the societal and peer expectations that influence individuals' compliance with QR code check-ins, while risk perception pertains to the potential fines and legal consequences of non-compliance. Intention/motivation reflects the individual's personal commitment and willingness to adhere to the check-in requirements. These findings from the environmental scan, however, do not capitalise on empirical research which shows that norms, such as perceived peer approval and social conformity, significantly enhance compliance with public health measures (Bokemper et al., 2021; Young & Goldstein, 2021). Similarly, research on risk perception demonstrates that while it may influence people's decisions, effects are often maximised when the perceived threat is immediate and severe (Alegria et al., 2021), as was the case in COVID-19, albeit this was mostly relevant to the elderly and those immunocompromised. Thus, caution is needed in designing message content that taps into risk perceptions. Intention is also a significant predictor of compliance behaviour in empirical studies,

including QR code check-in (Mac, Phipps, Parkinson, Cassimatis, et al., 2024). In precis, although norms, risk perceptions, and intention/motivation identified minimal prevalence compared to knowledge, attitude, and self-efficacy in messages promoting QR code check-in compliance, they are nonetheless potential candidates for message content, underscoring the need for considering a range of factors that might influence compliance behaviour in future communication strategies.

Across the 17 government communications analysed, a consistent pattern emerged despite varied expression methods in that these communications typically combined two to three beliefs to positively frame their messages. The most common combination included knowledge provision, attitudes - advantages associated with QR code check-in compliance, and self-efficacy - beliefs about personal confidence in, control over, or difficulty in performing the behaviour. Norms and intentions/motivation were sometimes included to reinforce perceptions of approval, disapproval, cultural and moral norms, and the effort or willingness required for QR code check-in compliance. Notably, only one communication addressed risk perception, which introduced negativity into the message. Overall, the messages delivered by the Australian government predominantly emphasised the positive aspects of compliance behaviour. This supports the literature where beliefs in positive outcomes for QR code check-in exhibited stronger associations with intention and behaviour than reported negative outcomes (Mac, Phipps, Parkinson, & Hamilton, 2024). Also, research has shown that messages framed to emphasise the positive consequences of performing the desired behaviour tend to be more effective than messages that highlight the negatives (O'Keefe & Jensen, 2008).

Analysis of the 17 communication messages also showed the use of various BCTs to promote QR code check-in compliance during the COVID-19 pandemic. A predominant use of the "Shaping Knowledge" (INS) technique, identified in 12 out of the 17 messages, underscores the emphasis on educating the public about the practical steps required for compliance, such as how to scan QR codes and manage digital certificates. This suggests a recognition of the need to build procedural knowledge to bolster self-efficacy and facilitate behaviour change. The "Natural Consequences" (HLT) technique, utilised in nine messages, highlights the need of conveying the health benefits of compliance, reinforcing the role of QR code check-ins in effective contact tracing and public safety. The use of "Comparison of Outcomes" (CR) in seven messages, often involving credible sources and enforcement measures, illustrates an effort to enhance the perceived legitimacy and urgency of the mandated behaviours. Interestingly, the relatively lower frequency of "Comparison of Behaviour" (APP) and "Goal Setting" (GS) techniques, observed in only three and two messages respectively, indicates that while social norms and goal-oriented strategies are present, they are less emphasised.

This distribution of BCTs suggests a focused approach on informative, attitudinal, and instructional messaging, with potential areas for enhancement including the increased use of normative influences and goal-setting strategies to foster a more comprehensive behaviour change communication framework. This is important given knowledge and attitudes often do not translate well into behavioural action (Heeren et al., 2016; Juvan & Dolnicar, 2014). Also, although the majority focus on providing concrete behavioural instruction in the messaging is to be commended, given self-efficacy beliefs have

consistently been shown to impact behaviour change (Sheeran et al., 2016), previous research on QR code check-in has shown a lack of support for perceived behavioural control (akin to self-efficacy) (Mac, Phipps, Parkinson, Cassimatis, et al., 2024). The perceived ease or simplicity of the behaviour might explain this finding, as might the global measurement of this construct. For example, when examining specific barriers to QR code-in behaviour, time has been identified (Mac, Phipps, Parkinson, & Hamilton, 2024).

4.1. Implications for health marketing

This environmental scan identified six beliefs and five BCTs embedded in QR code check-in communications delivered by the Australian government during the COVID-19 pandemic, offering an opportunity to examine how this information is conveyed and practically implemented. Building on previous research, government messages related to health compliance behaviours and health marketing can develop content based on psychological beliefs and BCTs known to influence individuals' compliance intentions and behaviour. These strategies include leveraging attitudes through interventions such as information provision, communication persuasion, or cognitive dissonance (Hamilton et al., 2020). Furthermore, in alignment with knowledge provision, policymakers could consider augmenting educational approaches with reinforced policy measures. These measures could include increased enforcement of non-compliance penalties and implementation of punitive sanctions (Murphy, 2008). Other strategies, such as preparing for setbacks (like overcoming the barrier of time to check in) and issuing self-talk statements (like "you can do it") (Warner & French, 2020) alongside instructional messages, might further enhance perceived control over behavioural performance, so building self-efficacy.

Moreover, given the influential role of normative influences and habits for compliance behaviours in general (Fornara et al., 2011; Martín et al., 2014; Nord et al., 2020), and in particular for QR code-in (Mac, Phipps, Parkinson, Cassimatis, et al., 2024), there exists an opportunity to improve current messaging, drawing on strategies to enhance these factors. Such strategies were lacking in the QR code check-in messaging during COVID-19. For example, strategies to improve normative influences could include promoting positive role models who embody the desired behaviours and creating social norms that reward compliance. In addition, highlighting the moral and ethical importance of actions can motivate individuals to align their behaviour with group expectations (Mollen et al., 2013; Nguyen et al., 2019). Further, creating a new habit demands ongoing motivation and the capability to start and sustain changes as new associations develop. For individuals eager to change, behaviour modification methods that encourage action control, such as action planning, goal setting, and using prompts and cues, can significantly support habit formation (Gardner et al., 2022). By integrating these strategies, the efficacy of health compliance behaviour promotion can be substantially improved.

4.2. Strengths and limitations

To the author’s knowledge, this is the first study to conduct an environmental scan of Australian Government and health organization announcements, providing a comprehensive examination of the communication landscape regarding QR code check-in compliance behaviour during the Covid-19 pandemic. A rigorous and systematic approach was employed to identify the beliefs embedded in these messages, thereby pinpointing knowledge gaps and opportunities for improvement in the content

and delivery of the information provided. The search terms were meticulously structured to capture all relevant beliefs pertinent to the study's aim. However, the study findings should be considered in light of certain limitations. Despite the thorough document search conducted, some relevant materials may have been overlooked as COVID-19 receded, although this is considered unlikely given the nature of these documents. Additionally, the focus on QR code check-in compliance behaviour is particularly relevant to the Australian context. Future research would benefit from extending the environmental scan to other compliance behaviours in broader contexts. This research represents a preliminary step in identifying the beliefs communicated by the Australian Government during the COVID-19 pandemic. Future research could also focus on enhancing the content and delivery of information, drawing on evidence-based risk factors and empirically established psychological factors. These factors underpin behavioural prompts for compliance and avoidance of financial penalties associated with non-compliance behaviours.

5. Conclusion

Given research indicating the importance of QR code check-in compliance behaviour during the COVID-19 pandemic, it is essential that effective messages, which are theoretically-based and empirically-informed, are developed. Current findings highlight the use of potentially effective strategies in the messages to change behaviour; for example, drawing on attitudinal and self-efficacy beliefs. Yet, results also identified gaps, such as a lack of strategies to highlight normative influences and build habits, that can inform future messaging and pandemic preparedness, Improving the quality of information regarding compliance behaviours is vital for effective public

health campaigns and may significantly contribute to fostering compliance behaviours in broader contexts.

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Figure 1 Presence of belief codes and BCTs in Australian Government Communications

		Belief codes						**BCTs**				
		Knowledge	Attitude	Norm	Risk Perception	Self-efficacy	Intetion/Motivation	Credible Source	Shaping Knowledge	Natural Consequences	Others' Approval	Goal Setting
No.	File name	KN	ATT	NM	RP	SE	INT	CR	INS	HLT	APP	GS
1	Onlinearticle1_aus.gov_11.12.2022											
2	Mediarelease1_vic.gov_17.06.2021											
3	Mediarelease2_vic.gov_17.02.2022											
4	Mediarelease3_vic.gov_13.05.2021											
5	Mediarelease4_vic.gov_30.11.2020											
6	Document1_aus.gov_12.2021											
7	Video1_aus.gov_28.09.2021											
8	Video1_qld.gov_26.02.2021											
9	Video2_qld.gov_26.02.2021											
10	Poster1_qld.gov_13.10.2020											
11	Mediarelease1_qld.gov_28.02.2021											
12	Poster2_qld.gov_05.10.2021											
13	Onlinearticle1_qld.gov_30.06.2022											
14	Video3_qld.gov_25.11.2021											
15	Video4_qld.gov_25.11.2021											
16	Video5_qld.gov_25.11.2021											
17	Video6_qld.gov_25.11.2021											

	Present
	Non-present

Colour code	
	Minority
	Majority

Table 1 Beliefs and BCTs identified through an environmental scan

No.	File name	Meaning unit	Condensed meaning unit	Belief code	BCTs
1	Onlinearticle1_aus.gov_11.12.2022	Contact tracing has proven to be a successful way to help stop or slow the spread of COVID-19, but its success relies on the accurate collection of community members' contact details. QR codes are being used as a contactless and effective way of collecting community members' details so that you can be contacted if you have come into close contact with somebody who has tested positive for COVID-19. In this guide we take a look at QR codes: what they are, how to scan them and things to look out for. What is a QR code? How to scan QR codes If a link doesn't appear at the top of your screen What if I don't have a smartphone? Why checking-in is important. Advantages of using QR codes for checking-in How will my data be managed? Things to look out for	A successful way to help stop or slow the spread of COVID-19; A contactless and effective way of collecting community members' details; What is a QR code How to scan them and things to look out for	ATT KN SE	HLT CR INS

3	Media release 3 - 06.12.2022	With hospitalisation numbers and community transmission decreasing and more than half of Victorians aged over 16 now vaccinated with three doses, a number of common-sense restrictions and recommendations in place during the state's Omicron surge can be safely eased. From 6pm Friday, 18 February as part of new pandemic orders to be signed by the Minister for Health, density quotients of one person per two square meters in place at hospitality and entertainment venues will be removed. Indoor dancefloors at these venues can also re-open. Under the orders, QR code check-in requirements will no longer be in place at retail venues, schools (including childcare and early childhood) and for employees at many workplaces. QR code check-in and vaccination check requirements will remain in all 'vaccinated economy' settings such as hospitality and entertainment venues. Currently, key industries including meat processing observe mandatory surveillance testing requirements. These mandates will be become recommended-only, reflecting declining community transmission. Requirements for hospital worker 'bubbles' will also be removed, but health services may still implement them at their discretion. Small and proportionate adjustments will also occur to border settings for international arrivals, who will no longer be required to obtain an international arrivals permit through Service Victoria. The 14-day hotel quarantine period for international visitors and aircrew who aren't fully vaccinated or medically exempt will reduce to 7 days. With the pressure on the health system easing and third dose vaccination coverage climbing, the Minister will consider if it is appropriate to remove the recommendation that Victorians work from home.	Hospitalisation numbers and community	ATT	HLT
2	Media release 2 - 07.12.2022	QR code data is a key source of intelligence for Victoria's contact tracers. The more Victorians that check in, the faster the team can address outbreaks and ease any restrictions in the future. Businesses, including supermarkets, take-away shops and other retail settings are now required to use the Government's QR code through the Service Victoria app and to ensure their customers check-in upon arrival, even if they visit the venue for only a few minutes. For customers who are unable to check-in themselves, the Government has also developed a Kiosk Check-in service that allows businesses to check-in their customers via the Service Vic App. More than 4,800 locations across Victoria have the Kiosk Check-in service up and running with some venues setting up multiple devices. Over 94,000 check-ins have been made using the service in the past week. Workplaces are also expected to ensure their employees check in via the Service Victoria app when working on site. The Victorian Government has today launched a new campaign calling on all Victorians to check-in everywhere, every time. The campaign will be live across TV, radio, print, social, digital and out-of-home media, and will be translated and tailored to culturally and linguistically diverse communities.	A key source of transmission intelligence for decreasing, Victoria's restrictions can be safely eased. Instructions for businesses about venues customers restrictions Kiosk Check-in workplaces; open! A new campaign The Minister calling on all will consider to Victorians to remove the check-in recommendatio everywhere. n that Victorians every time work from home.	ATT KN KN INT NM	HLT CR CR GS APP

4	Mediarelease3_vic.gov_13.05.2021	Victorian businesses found intentionally flouting the Chief Health Officer's rules – such as the requirement to use QR Code systems – will be slapped with a new $1,652 on-the-spot fine. More than 165 enforcement notices were issued throughout the operation and a further 300 verbal warnings – with common issues including failure to use QR codes, no COVIDSafe Plan and no density quotient signage. Authorised officers will be out and about throughout May and June, targeting compliance with record-keeping and QR code requirements. Businesses not doing the right thing will be issued with the $1,652 fine, along with an Improvement Notice which triggers a follow up visit. Where there are repeated breaches, a further $9,913 fine can be issued and businesses may be prosecuted in court for continued, blatant or wilful non-compliance with the rules. This approach will ensure the focus continues to be on helping businesses to follow the rules, while still enforcing fines on blatant breaches. The new fine bolsters the mandatory switch to the free Victorian Government QR Code Service through the Service Victoria app from 28 May 2021.	Information about fines, enforcement notices, verbal warnings, improvement notices, prosecuted in court. Ensure the focus continues to be on helping businesses to follow the rules	KN RP ATT	CR CR CR

5	Mediarelease4_vic.gov_30.11.2020	The Victorian Government's QR Code Service can be used by businesses and venues to keep records of visitors to help us stay safe and stay open. It's as simple as registering your business, downloading and printing a poster with the Victorian Government QR Code and displaying it prominently in your business. Businesses or venues with multiple outlets or spaces can register for multiple QR codes. Visitors simply need to scan the QR code using their smartphone camera. For those with up-to-date smartphone software, a pop-up will appear asking for a first name and contact number. For other users, they will be directed to download the Service Victoria mobile App from the Apple or Google Play app stores to complete the check-in. A unique six letter code entered on a web site will be on each QR code poster, for visitors to check-in also. All data collected through the Victorian Government QR code is securely stored, protecting customers from on selling of contact details. Data will be deleted after 28 days unless it is specifically requested by the Department of Health and Human Services for contact tracing purposes. For businesses or venues that are currently using an existing market-led QR code solution, the Government is working with the sector to develop an Application Programming Interface to allow these systems to link directly into DHHS Contact Tracing systems when check-in data is required.	To keep records of visitors to help us stay safe and stay open. Information on registering the business, printing a poster, visitors scan the QR code and download the app, data collection and storage	ATT SE	HLT INS
6	Document1_aus.gov_12.2_021	Contact tracing information can only be used or disclosed if there is a public health purpose or: You give consent for your information to be used or disclosed In the performing functions or exercising powers under the new pandemic framework To address an immediate risk to someone's life, safety, health or wellbeing To undertake enforcement action against you for providing false or misleading information under the Act or against a person who has used or disclosed the information where not permitted to do so. Can Victoria Police access the information I have provided? No, Victoria Police will not have access to this information unless they are required to take any of the actions outlined above.	Contact tracing information can only be used or disclosed if there is a public health purpose or other scenarios Victoria Police will not have access to this information	KN ATT	CR CR

7	Video1_aus.gov_28.09.2021	Health Minister Martin Foley says the Victorian government will ask residents isolating at home to participate in a trial of a check-in app that notifies health authorities individuals are in fact isolating at home. Mr Foley said the pilot will take effect starting from today. "This will assist Victorians coming back from both overseas and internationally sooner rather than later as part of the national plan," Mr Foley said. " This app uses a downloaded picture from a smartphone, a selfie, to check in where you are meant to be when you are meant to be there . "It links back to location-based technology to confirm both the place you are and your identity at the time of the alert.	Victorian government will ask residents isolating at home. This will assist Victorians coming back from both overseas and internationally. This app uses a downloaded picture from a smartphone.	ATT INT ATT KN	CR GS CR CR
8	Video1_qld.gov_26.02.2021	To help keep Queensland COVID safe, we all need to check in at businesses electronically. The Check In Qld app is a free, secure and easy way to check in. You can provide your details at venues with a Check In Qld QR code and they'll go directly to the Queensland Government for contact tracing if required. You can get up and running with the app in just a few steps. First, download the app from the Google Play or Apple App Store. Then, register your contact details. The app will store this information securely so you won't need to enter it each time you visit a venue. When you arrive, simply open the app and select 'Check in now.' Scan the Check In Qld QR code displayed at the venue, show your successful check in screen to staff and you're good to go. Thanks for helping to keep our community safe.	To help keep Queensland COVID safe We all need to check in at businesses electronically A free, secure and easy way to check in Steps to check-in process	ATT NM SE	HLT APP INS

9	Video2_qld.gov_26.02.2021	To help keep Queensland COVID safe, businesses must check in customers electronically. The Check In Qld app is a free, secure and easy way for customers to check in and it's easy for you too as your customer's details go directly to the Queensland Government for contact tracing if required. As a business owner, you can get up and running with the app in just a few steps. First, register each of your business locations to use the app on this website. A business starter kit will then be sent with your unique QR code. Display the QR code for your customers to scan with the Check In Qld app on their mobile phone. You can safely welcome customers who displayed a successful check-in screen. Thanks for helping to keep Queenslanders safe.	To help keep Queensland COVID safe; The Check In Qld app is a free, secure and easy Businesses must check in customers electronically. Information about steps	ATT SE NM	HLT INS APP
10	Poster1_qld.gov_1 3.10.2020	Scan the QR Code with your phone camera or visit https://my.evacheckin.com/9626xtzo to sign in. Privacy Information COVID-19 SIGN IN Patients and Visitors scan this code to sign in Metro South Health is collecting information on this form to record hospital visitors (including patients and hospital visitors). Some information may be given to the Public Health Unit upon request for contact tracing. Your data is stored securely and is deleted after 56 days.	Scan the QR Code with phone camera Privacy Information	SE KN/ ATT	INS CR

11	Mediarelease1_qld.gov_28.02.2021	A new, free, check-in app which makes it much easier for Queensland's hospitality businesses and their customers to stay COVID safe rolls out statewide from today. It simplifies compliance with Public Health Directions for all hospitality venues, with patrons and customers able to self-check-in and have their information stored securely. Once people have used the Check In Qld app at one business, it remembers your details, saving you time in the future and providing easy on-going, check-in across all participating venues. The more businesses sign up, the better it will be for all of us. Having a safe and consistent check-in app has been a top priority, as we embrace the 'new normal' of a COVID safer environment. Importantly, the app removes some of the everyday burdens of COVID-19 restrictions for licenced venues, cafes. and their customers. It's everyone's responsibility to help keep our community safe, and effective contact tracing still remains at the heart of our public health response. The new Check In Qld app is free, contactless, secure and convenient and I know it will be embraced by venues and people right across the state. Testing and trials of the new app began in January at selected venues from Cairns to Ipswich with venue operators giving it an enthusiastic thumbs up. Rolling out this app is a massive step forward for Queensland in maintaining a COVID safe environment. For customers, it's as simple as downloading the app from Google Play or Apple App Stores and entering their details once. At participating venues, customers can then 'Check in Now' by opening the app and using venue's Check In Qld QR code. Customers can add the names of the other people in their party, show venue staff their successful check-in screen, and then enjoy their time out knowing they have helped keep Queenslanders safe, the app had been endorsed by Queensland Health and would play a critical role in the state's contact tracing efforts. The new Check In Qld app will help Queensland Health's hard-working contact tracing team to quickly identify and assist anyone who may have been exposed to COVID-19 Acceptance of the app will strengthen our efforts to unite and recover from COVID-19 by ensuring contact tracing can be quickly carried out in a time-critical situation. People can have confidence, knowing check in details will be stored securely by the Queensland Government for 30 to 56 days and will only be used if required for contact tracing purposes. Businesses outside the hospitality sector can also take up the app on a voluntary	A new, free, check-in app which makes it much easier; To stay COVID safe, remember details, save time; to quickly identify and assist anyone who may have been exposed to COVID-19 The more businesses sign up, the better it will be for all of us; it will be embraced by venues and people right across the state; Information about steps	SE ATT INT	INS HLT GS

12	Poster2_qld.gov_05.10.2021	How to link your digital vaccination certificate to the Check in QLD app To keep our communities in Queensland safe you are required to show proof of COVID19 vaccination before entering the following locations: - Vulnerable settings, including hospitals, residential aged care, disability accommodation services, and prisons. This does not apply to residents and patients of these facilities, and there will be some exceptions for medical treatment, end-of-life visits, childbirth and emergency situations - Hospitality venues such as hotels, pubs, clubs, taverns, bars, restaurants or cafes - Indoor entertainment venues such as nightclubs, live music venues, karaoke bars, concerts, theatres or cinemas - Outdoor entertainment activities such as sporting stadiums, theme parks or tourism experience like reef excursions - Festivals – either indoor or outdoor – such as musical festivals, folk festivals or arts festivals - Queensland Government owned galleries, museums or libraries. The easiest way to show proof of your COVID-19 vaccination is to link your digital vaccination certificate to the Check in QLD app on your mobile phone. We have prepared some simple instructions on how to link your vaccination certificate to the Check in QLD app. If you need any further support during this process, you can contact the Services Australia Indigenous Access hotline on 1800 556 955. What you will need Before you start the linking process, make sure you have the following - Smartphone – Android or iPhone - Email address - MyGov Account (if you don’t have a MyGov account, check the document ‘Setting up a MyGov account’) - Medicare Card - Medicare service linked to your MyGov account (if you haven’t done this, check the document ‘Linking Medicare to your MyGov app’) Step 1: Download the Check in QLD App via the Google Play (Android) or the Apple App Store (Apple). Step 2: Open the drop-down menu located in the top left hand corner of the screen Step 3: Click on the menu item ‘COVID-19 Digital Certificate	Steps to link digital vaccination certificate To keep our communities in Queensland safe The easiest way to show proof of your COVID-19 vaccination	SE ATT	INS HLT

13	Onlinearticle1_qld.gov_30.06.2022	Minors (aged under 16 years) Unaccompanied minors (under the age of 16) are not required to check in. If a minor is with a parent/guardian, then it is the parent/guardian's responsibility to check them in as an 'additional person' using the Check in Qld app. School groups and excursions Primary or secondary school-aged children/young people visiting your museum or gallery as a part of an excursion are not required to provide contact information. Any adults accompanying the students on the excursion are still required to use the Check In Qld app. This does not apply to children attending an activity organised by a person acting in a private capacity. Remote communities If you can't collect contact information using the Check In Qld app due to unexpected issues with your internet service or because your business is located in a place that does not have mobile internet data connection, you can collect contact information using another method such as a spreadsheet or paper-based form. For each visitor, information must include: - Name - Phone number - Email address (residential address if unavailable) - Date and time period of the visit. Information collected must adhere to the relevant privacy law requirements.	Information on group check-in	KN/SE	INS
14	Video3_qld.gov_25.11._2021	How to use your Check in app to add your COVID-19 digital certificate You can add your Covid 19 digital certificate directly from your check-in Queensland app by following these steps: Make sure you've updated the check-in Queensland app, open the app and select the menu from the top left-hand side, select Covid 19 digital certificate, then tap add certificate via MyGov, log in to your MyGov account, scroll to proof of Covid 19 vaccination, then select go to Medicare, tap view history and choose share with check-in app, choose to share with check-in Queensland, tap accept and share, then accept, your certificate is now uploaded to the check-in Queensland app, now you're good to go.	How to use your Check in app to add your COVID-19 digital certificate	SE	INS

15	Video4_qld.gov_25.11.2021	From 17 December 2021 you'll need to carry proof of your vaccination status with you and be ready to show this upon request when you visit some Queensland businesses and locations. Adding your Covid 19 digital certificate to your check-in Queensland app is quick and easy enabling you to show your proof of vaccination and check in at the same time. Make sure you've updated the app before you start. There are a number of ways to add your certificate by using the express plus Medicare mobile app, your Medicare online account through MyGov using a browser on your device, the individual healthcare identifier, service through MyGov using a browser on your device. You can also add your certificate via the check in Queensland app ready to get started. View the video on the method you'd like to use for detailed steps. Thanks for helping to keep Queensland Covid safe.	Information on how to add Covid-19 certificate to the app; Quick and easy Helping to keep Queensland Covid safe	KN SE ATT	INS INS HLT
16	Video5_qld.gov_25.11.2021	How to use your Medicare account to add your COVID-19 digital certificate to your Check In Qld app You can add your Covid 19 digital certificate using your Medicare online account through MyGov by following these steps: make sure you've updated the check in Queensland app log in to your MyGov account scroll to proof of Covid 19 vaccination then go to Medicare tap view history and choose share with check-in app choose to share check in Queensland tap accept and share then accept your certificate is now uploaded to the check-in Queensland app now you're good to go	Use Medicare account to add your COVID-19 digital certificate to your Check In Qld app.	SE/KN	INS

17	Video6_qld.gov_25.11.2021	Use your Individual Healthcare Identifier to add your COVID-19 certificate to your Check In Qld app you can add your Covid 19 digital certificate using your individual healthcare identifier or by following these steps make sure you've updated the check in Queensland app log in to your MyGov account select the individual healthcare identifiers service then view immunisation history tap share with check-in app and choose check-in Queensland then follow the instructions now you're good to go	Use your Individual Healthcare Identifier to add your COVID-19 certificate to your Check In Qld app	SE/KN	INS

Note: Belief codes: KN = Knowledge; ATT= Attitude; NM = Norm; RP = Risk Perception; SE = Self-efficacy; INT = Intention/Motivation.
Note: BCTs = Behaviour Change Techniques; CR = Comparison of outcomes (credible source); INS = Shaping knowledge (instructions on how to perform a behaviour); HLT = Natural consequences (information about health consequences); APP = Comparison of behaviour (information about others' approval); GS = Goal setting