



Evaluating EVA

Pursuing universal healthcare coverage with a personalised COVID-19 vaccine booking service

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Managing Director
Behavioural Economics Team of the Australian Government
Department of the Prime Minister and Cabinet
1 National Circuit
Barton ACT 2600
Email: beta@pmc.gov.au

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Research team

Current and former staff who contributed to the report were: Annalese Bolton, Rachelle Damm, Andrea Willis, Andrew Pfeiffer, Shae Ffrench, Bethany Jones, Nicholas Hilderson, and Scott Copley.

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Who?

Who are we?

We are the Behavioural Economics Team of the Australian Government, or BETA. We are the Australian Government's first central unit applying behavioural economics to improve public policy, programs and processes.

We use behavioural economics, science and psychology to improve policy outcomes. Our mission is to advance the wellbeing of Australians through the application and rigorous evaluation of behavioural insights to public policy and administration.

What is behavioural economics?

Economics has traditionally assumed people always make decisions in their best interests. Behavioural economics challenges this view by providing a more realistic model of human behaviour. It recognises we are systematically biased (for example, we tend to satisfy our present self rather than planning for the future) and can make decisions that conflict with our own interests.

What are behavioural insights and how are they useful for policy design?

Behavioural insights apply behavioural economics concepts to the real world by drawing on empirically-tested results. These new tools can inform the design of government interventions to improve the welfare of citizens.

Rather than expect citizens to be optimal decision makers, drawing on behavioural insights ensures policy makers will design policies that go with the grain of human behaviour. For example, citizens may struggle to make choices in their own best interests, such as saving more money. Policy makers can apply behavioural insights that preserve freedom, but encourage a different choice – by helping citizens to set a plan to save regularly.

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Executive summary

The Easy Vaccine Access service, known as EVA, was developed by the Department of Health and Aged Care (DoHAC) in partnership with Healthdirect Australia. The goal was to maximise uptake of COVID-19 vaccines across Australia, by considering vulnerable Australians at the core of its design. EVA was operational from 28 March 2022 to 4 December 2023. EVA was unique in that it was a personalised concierge call back service that aimed to minimise access barriers by providing a high level of tailored support to each customer to enable access to the right vaccination provider at the right time. Although designed with the vulnerable in mind, EVA was available to all.

BETA was commissioned by DoHAC and Healthdirect Australia to evaluate EVA by exploring who accessed EVA and why, and whether and how EVA was of help to its customers. BETA conducted two surveys with EVA customers (1,841 customers completed Survey 1 and 624 customers completed Survey 2) and analysed data from EVA's first year of operation (13,877 customers).

EVA was successful, with 89% of customers vaccinated

We found that EVA effectively created an enabling environment to support vaccination uptake. Ninety three per cent of customers found EVA easy to use, with many reporting that staff were helpful, professional and responsive to their unique requests. Ninety one per cent indicated that EVA had matched them to a vaccination provider that was able to meet their needs, and 89% of respondents were vaccinated as arranged by EVA.

EVA was easy to use and used most by the elderly

Our results demonstrate that a personalised call booking service can indeed successfully remove barriers and support people to access services at a time right for them. Prior to using EVA, 71% of customers unsuccessfully tried to obtain the vaccine or find information they needed before they contacted EVA. Many customers then found EVA online, or were directed to EVA by others. Customers reported that EVA appeared easy to use, and was an efficient use of their time. Customers also chose to use EVA because it was a government-run service with staff they felt would have the relevant specialist up-to-date knowledge.

EVA successfully reached some cohorts at risk of digital exclusion, in particular the elderly accessed EVA the most. However, EVA could have been leveraged further with other cohorts including those with limited English who accessed EVA the least.

Multiple pathways assist in providing equitable access to health services

This evaluation raises a number of implications for broader services. For example, customers do not always find health services as easy to find as assumed. To support equitable access, health services need to be accessible through multiple pathways, not just online. Call booking services like EVA are particularly useful to the elderly. Also, in addition to creating supportive services, the vulnerable cohorts who may benefit most from the service require thoughtful targeting to ensure they utilise the service.

Why was EVA needed?

The goal of leaving no Australian behind was the driving force behind EVA

Enabling public access to the right healthcare at the right time is important for the prevention, treatment and management of diseases. However, barriers within health systems can prevent timely or appropriate access. Access can be limited by a range of factors including a person's ability to find the service they need, access to interpreters, long wait-lists and requirements to hold a Medicare card (e.g. AIHW 2020; Angeles et al. 2023; Macri 2016; Calder et al. 2019).

Access to and navigation of the Australian health system increasingly requires the use of digital technology. Healthcare digitisation accelerated during the COVID-19 pandemic when healthcare rapidly moved online to accommodate lockdowns and concerns for vulnerable Australians (Good Things Foundation 2021).

Although there are many benefits to healthcare digitisation, there is a risk that some Australians will not be able to access healthcare when needed (Good Things Foundation 2021). While the rate of Australians who were not accessing the internet at all fell from 10% to 1% during the COVID-19 pandemic, over 60% of Australians feel they are unable to keep up with the rapid pace of changing technology in order to feel safe or confident online (Good Things Foundation 2021). A lack of skills, confidence, and sense of unease online puts certain people at risk of digital exclusion. Australian cohorts at higher risk of digital exclusion include people aged over 65 years, those living in rural and remote areas, those of low income, First Nations people, and new migrants and refugees (Good Things Foundation 2021).

As a United Nation's (UN) signatory, Australia has committed to leaving no Australian behind, and this involves achieving universal health coverage (goal 3.8; UN 2015). The 2020-25 National Health Reform Agreement (NHRA) states '*All Australians should have equitable access to high quality healthcare*' and that healthcare should be delivered '*in the right place at the right time*' (NHRA 2020). However, the barriers that some Australians experience may impede such goals.

Call services may be a key mechanism for achieving equity of healthcare access

Call services have been proposed as solutions to reduce access issues posed by digital exclusion. For instance, the World Health Organisation (WHO) proposed that call services could be a key mechanism for achieving universal healthcare coverage. The WHO argue that this is because phone and mobile technologies have greater coverage than internet-based technologies, and are therefore more accessible to the wider public (WHO 2016). In addition, the 60% of Australians who do not feel safe or confident online (Good Things Foundation 2021) may feel more comfortable using phone technologies.

Despite many health services moving online, in a series of surveys, the WHO found an increase in the number of governments launching health-related call services (WHO 2016). By 2015, of the 125 countries surveyed by the WHO, 72% of governments had launched a health-related call service.

There is a need to support vulnerable Australians to access COVID-19 vaccines

The need to support equitable access to healthcare and limit detrimental effects of access barriers became particularly prominent during the COVID-19 vaccine roll-out. In 2020, the World Health Organisation (WHO) recommended that countries across the globe aim to achieve 'herd immunity' for COVID-19 through vaccination (WHO 2020a). Herd immunity refers to the indirect protection that occurs against an infectious disease when the amount of the virus that can be spread is limited (WHO 2020a). A key consideration for this recommendation was to protect those unable to be vaccinated (e.g. due to health conditions such as allergic reactions to the vaccine), and those particularly vulnerable to the virus. The exact proportion of the population that needed to be vaccinated to achieve herd immunity for COVID-19 was unclear, as thresholds vary by disease. For COVID-19, the WHO recommended that '*a substantial proportion*' of the population be vaccinated (WHO 2020a). Within Australia, a target of greater than 80% vaccination was set (DHAC 2021).

To reach this lofty target, global discussions focused on maximising acceptance and uptake of COVID-19 vaccines. The key driver for encouraging vaccine uptake was identified as creating an enabling environment (e.g. Andreas et al. 2022; COSSI and NCIRS 2022; Dai et al. 2021; WHO 2020b).

Creating an enabling environment involved reducing barriers and making it as easy as possible for people to engage in the desired behaviour (e.g. to access a vaccine). This meant ensuring that the process of finding, booking, travelling to, and receiving the vaccine was not too time-consuming or burdensome. Crucial elements of enabling environments also involve ensuring that people feel they are treated with kindness, understanding and respect, and that healthcare workers were well-informed and could accurately answer questions about COVID-19 and the vaccines.

The Australian Department of Health and Aged Care also identified the need to rapidly develop and implement a service that could cater for the needs of the vulnerable and those at risk of digital exclusion. This need was particularly prominent in 2022, when large-scale government-run infrastructure, such as mass vaccination hubs, were no longer in operation.

EVA was rapidly developed and implemented

To support access to COVID-19 vaccines, DoHAC in partnership with Healthdirect Australia, rapidly developed and launched EVA on the 28 March 2022. EVA was a specialised sub-service within the National Coronavirus Helpline contact centre (NCH).

EVA's purpose was to maximise uptake of COVID-19 vaccines across Australia. Although EVA was available to all, Australia's vulnerable were considered at the core of its design. Creating an enabling environment for those at risk of digital exclusion was central to EVA's operation.

EVA was a unique service, in that it provided a high level of tailored support to each customer for finding and booking health appointments. The idea was to enable access to the right vaccination provider at a suitable time for the customer. EVA was a personalised concierge call back service that assisted the general public with COVID-19 vaccine information, finding an appropriate vaccination provider, and booking a vaccination appointment for the customer. The EVA process and customer journey is outlined in Figure 1.



Figure 1. The EVA customer journey

A number of EVA's key features were specifically designed to create an enabling environment for users. Firstly, EVA call handlers had relevant and up-to-date knowledge about COVID-19 vaccines, and their role was to identify vaccine providers that meet unique needs the customer might have (e.g. a vaccination provider closest to the customer's location, a provider that does not require a Medicare card, can handle group bookings, provides a culturally sensitive service, experienced with providing children with vaccines, can meet the needs of those with a disability). This was to take the burden off the customer in regards to finding the right vaccine provider and booking an appointment. In addition, EVA also provided a translation service for customers who need information in a language other than English. Customers were able to ask questions at their own pace during the EVA call, and information was provided in a flexible format (e.g. appointment information could be texted to the customer if requested). A critical feature of EVA was that the information collected from the customer was kept to a minimum, and was only essential to the service being offered. This allowed customers to remain anonymous, and they were able to decline to answer certain questions and still proceed with the service.

Unlike most call services, EVA placed no time limit on a call. Key performance indicators for EVA call handlers did *not* include expected boundaries for the number or length of calls. Instead, call handlers were encouraged to take the time needed to respond to the customer's enquiries and needs so that they could identify a suitable vaccination provider and appointment time for the customer. The idea behind this was to support EVA to be customer focused, in acknowledgement that customers have diverse and varied needs.

Why evaluate EVA?

There is a lack of evidence regarding the effectiveness of call services

Although services such as EVA were designed to overcome access barriers, there is a lack of knowledge about the effectiveness of such initiatives, of what works well in this space, and what lessons have been learned. Of the 175 countries that had launched a health-related call service, only 14% had evaluated the initiative in any form (WHO 2016).

Unanswered questions regarding services like EVA may have important implications for other health areas. Key questions include:

1. Why do people use call health booking services like EVA?
2. Do services like EVA provide benefits over internet-based (or other) solutions in a post COVID-19 world, when so many people are online?
3. Did EVA successfully create an enabling environment?
4. Did EVA reach the cohorts at risk of digital exclusion?

The need to evaluate policy initiatives is also highlighted within Australia's 2020-25 National Health Reform Agreement (NHRA). Specifically, it states that reforms '*should be tested in a range of circumstances to ensure they meet the needs of all Australians, including rural and remote areas, as well as vulnerable populations*' (NHRA 2020).

What we did

BETA was commissioned by DoHAC to evaluate EVA to better understand why customers chose to use EVA, what the customer experience of EVA was, who EVA reached (with the aim of highlighting cohorts at risk of digital exclusion), and finally, EVA's success rate for matching customers to the right provider and enabling vaccination.

We surveyed EVA customers and utilised existing data

We drew on two source of data to inform this evaluation:

1. **Survey of EVA customers.** To investigate *why* customers chose to use EVA, their *experiences* of EVA, and EVA's *success* rates, we conducted two opt-in surveys with all EVA customers from 1 February to 14 May 2023 at the time points in the customer journey as displayed in Figure 2. Customer demographics during this period were similar to data from EVAs first year of operation.¹

Of the 2,131 customers asked to participate in Survey 1, 86% (n= 1,841 customers) consented and participated. Of the 1,301 eligible customers asked to participate in Survey 2, 83% (n= 1,077 customers) consented, although only 48% of those asked (n = 624 customers) were successfully contacted.

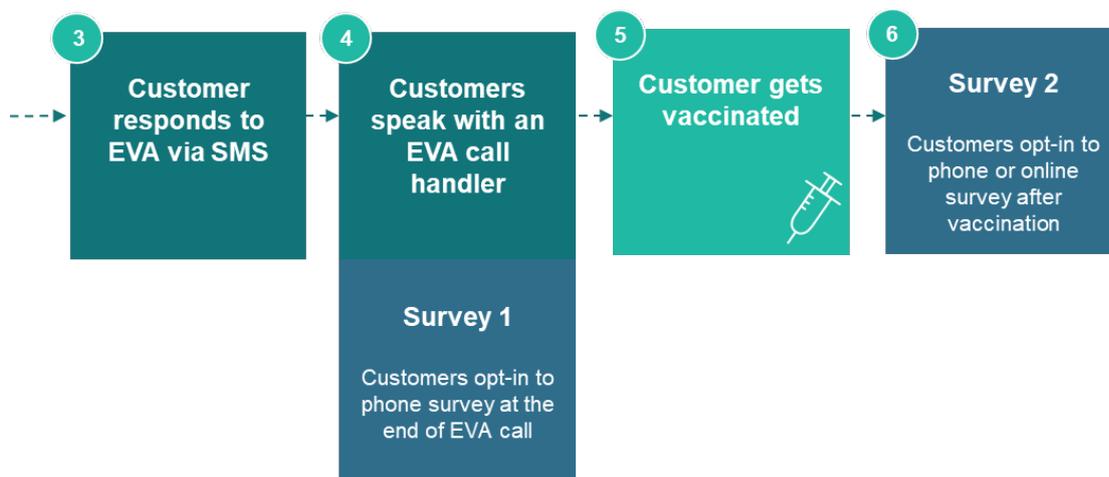


Figure 2. Survey additions to the EVA customer journey

2. **Data from EVA's first year of operation.** To investigate *who* was utilising EVA, we examined and analysed demographic data for the 13,877 customers for whom an EVA call was scheduled during EVA's first year of operation (28 March 2022 to 28 March 2023).

In particular, we examined data of cohorts who were identifiable from existing EVA data *and* who were at risk of digital exclusion, such as the elderly, those living in rural and

¹ Survey questions and customer demographics are presented in the [appendix](#).
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remote areas, those of low income, and migrant/refugees (Good Things Foundation 2021). Captured within EVA data were customers age, translation service use (used to identify those with limited or no English skills), and customer postcodes. Customer postcodes were matched with the ABS remoteness by postcode data (ABS 2018) and the ABS Index of Relative Socio-economic Advantage and Disadvantage ([IRSD](#); ABS 2023b).

Where possible, we then used 2021 ABS Census data to identify the size of the cohorts of interest within Australia (ABS 2022a; ABS 2022b; AIHW 2022a), and calculated the rate of EVA customers per 100,000 persons within each cohort. This provided a useful point of reference to understand the proportion of the total population of various cohorts who were using EVA.

The data used for this analyses was based on administrative data designed to enable the delivery of EVA. This means the data was not collected for the purpose of evaluation and as a result, there was ambiguity in some fields, and some data could not be reliably matched to customers. We used decision rules to define the dataset, and all results should be understood as estimates rather than precise counts.² While this presented significant challenges in terms of identifying the characteristics of EVA customers and linking the complete EVA customer journey from an evaluation perspective, operationally (for the customer) this wasn't a limitation.

² For more information, see the [technical appendix](#).
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What we found

EVA was successful at creating an enabling environment

Consistent with EVA's design intention, most customers found EVA easy to use

Ninety three per cent of customers who participated in Survey 1 found EVA 'easy' or 'very easy' to use (or n= 1,688 customers, see Figure 3). These customers elaborated that EVA was easy to use because EVA staff were helpful, professional and responsive to requests, the service was convenient and timesaving, and the text prompts were simple and easy to follow, even for first time users. In addition, customers valued the ability to talk to a person rather than deal with an automated message system. Some customers offered that they appreciated EVA as they lacked the necessary skills to navigate online environments.

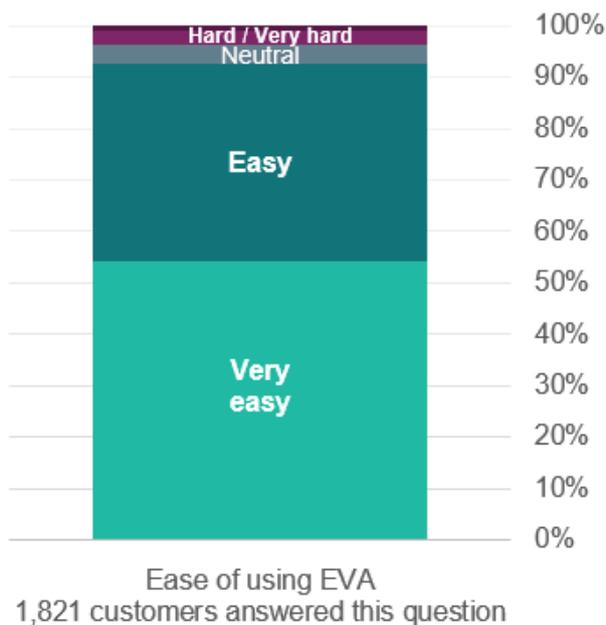


Figure 3. Customer ease ratings: Using EVA

We note that customers may have been biased towards more readily complimenting EVA staff given that the call handlers who provided the EVA service also asked the survey questions. However, the level of detail and specificity provided in the feedback suggests that customers were genuinely happy with the service provided by EVA call handlers. For example, one customer, who completed Survey 2 via the online survey option, wrote:

'... your customer service officer who answered my call did a very good job and I did mention that to her supervisor and participated in the survey after the call.' – EVA customer

The 4% of EVA customers who found EVA 'very hard' or 'hard' to use, did so because they found it difficult to find the EVA service in the first place, had difficulty with the text prompts, or experienced phone connectivity issues.

EVA prevented customers from giving up trying to find a vaccine

In Survey 1, we asked customers what they would have done if EVA was not available to them. While some would have persisted in trying to get a vaccine by other means, others told us they would simply have given up. Thematic coding of customers' responses to this question revealed three types of EVA customers based on the reported action they would take:

Those who would have kept trying to get the vaccine. For example, one customer commented:

***'Probably said a couple of rude words and probably gone back to the GP or something. Started to get very frustrated.'** – EVA customer*

Those at risk of not getting the vaccine, because they either had to wait too long or had paralysis in deciding how to proceed. For example, one customer commented:

***'Got really annoyed, I would have put it off and forgot about it.'** – EVA customer*

Those who would give up. For example, one customer commented:

***'[I] would have had to fly off un-boosted I guess on an urgent trip, which I would have been nervous about.'** – EVA customer*

Many customers responded with strong emotional language, indicating that without EVA, they felt they would likely continue to experience barriers. For example, one customer commented:

***'Thrown phone against wall, jump up and down, and ask[ed] partner to find [an] appointment.'** – EVA customer*

Some customers even told us that they would write to their local Member of Parliament if they could not find a vaccine provider, showing their level of frustration with the barriers they had faced.

In summary, the survey revealed that EVA prevented customers from wasting time, feeling further frustration, and giving up trying to find a vaccine.

Most survey respondents were vaccinated as arranged by EVA

Of the customers who participated in Survey 2, 89% were vaccinated as arranged. This indicates the EVA service had been successful at supporting people to find suitable vaccine appointments, both overall and among vulnerable cohorts.

Although positive, this may represent a biased sample as those who got vaccinated may have been more likely to participate in Survey 2. A more reliable estimate of vaccination follow through could be obtained by linking EVA customer data with the Australian Immunisation Register (AIR) data.

The 11% of customers who reported that they did not get vaccinated indicated that this was because of either personal reasons (e.g. changes in personal schedules), issues associated with the vaccination provider (e.g. booking errors), or subsequent advice from medical professionals.

Most survey respondents felt the vaccine provider EVA booked for them met their needs

Ninety one per cent of customers who participated in Survey 2 reported that the vaccination provider that EVA had booked for them met their needs. The few customers who felt their needs were not met indicated that this was because the specific vaccine they wanted was not available or there were issues at the provider site (e.g. the service was disorganised).

Most survey respondents felt there was nothing EVA could have improved on

Seventy six per cent of customers who participated in Survey 2 indicated that there was nothing EVA could do to make the process easier or better for them, with many speaking very highly of EVA:

‘EVA was extremely helpful and courteous and respectful. The service was exceptional and the vaccination provider was also exceptional. I could not have asked for better assistance. Many thanks.’ – EVA customer

‘[EVA] was pretty effective, I rang up and 20 minutes later I was jabbed, so I don’t think you can improve too much on that.’ – EVA customer

‘EVA staff very helpful, and staff went beyond to find information which was very helpful. Overall I am happy with the service that has been provided by EVA.’ – EVA customer

Customers suggested EVA should be expanded

Some customers suggested EVA should be more widely available, including:

Advertising EVA more widely, so more people were aware of the service. For example, one customer said:

‘10/10, very, very happy. Only thing I can say, is to make it easier to find EVA...’ – EVA customer

Expanding EVA for other types of vaccinations, medical appointments or health services. For example, one customer said:

‘...One thing that did cross my mind, it has only one service available. That was it. I would like more options to be honest’ – EVA customer

While most survey respondents could not think of any improvements to the EVA’s service, a small number of customers made suggestions including streamlining the administrative process so they did not have to provide the vaccination provider with the same information that they had provided to EVA. Other suggestions included building appointment reminders into the service and having an option to call EVA directly without having to first send a text.

Customers had used EVA for multiple reasons

Before contacting EVA, 71% of customers had unsuccessfully tried alternative avenues

Prior to contacting EVA, 71% of EVA customers had unsuccessfully tried alternative avenues to get the information they needed or to book a vaccination appointment (n= 1,279 customers). This included contacting health services (e.g. Medical centres, GPs, pharmacies, hospitals) either by phone or by visiting the premises. Customers also noted they had conducted online searches, contacted government services or departments (both state and federal), called the NCH, and asked their social networks. Feedback from customers included:

***'Rang the doctors, they hadn't heard anything, didn't know if they were getting it or not, rang 3 different chemists, rang the head offices and branches and they all said 'we don't know, we are waiting [for a] call back, [which] won't be till March, call back then. And this happened with the third booster dose.'* – EVA customer**

***'This battle has been going [on] for a couple of days. I have been calling around to all the surgeries and places for the last couple of days, ... as a health professional it's been hard for me, I can't imagine how hard it has been for other people.'* – EVA customer**

***'GP[s] are not bulk billing, then went to the pharmacy and they are not doing it anymore, and then I tried looking for [a] vaccination hub and then EVA. Most people would have given up.'* – EVA customer**

Customers identified that the alternative avenues were ultimately unsuccessful because their local services were not offering the vaccine, their healthcare providers did not have the required information, they found navigating online platforms difficult, information on websites was not detailed enough, wrong, or outdated, and there were inconsistencies across information sources. Adding to the confusion was that Vaccination Hubs, where many had received their previous COVID-19 vaccines, were no longer an option. For example, one customer commented:

***'Last vaccine is done in Hornsby vaccine centre, and then I was told it is closed now, then I tried Olympic Park, ... it's also [closed], then I called NCH and they asked me to call EVA.'* – EVA customer**

Customers reported that they chose EVA (after unsuccessfully trying alternative avenues) because EVA had either been recommended to them or they had found it online, and EVA appeared as an easy and efficient use of their time. Customers noted that EVA was a government service with staff who they felt would likely have the most relevant up-to-date specialist knowledge about the COVID-19 vaccine. The ability to speak directly to a 'real person' also held strong appeal for customers who struggled to access information online.

EVA was used at higher rates by the elderly and by those who found the health system difficult to navigate

Those who found it difficult to navigate the Australian health system utilised EVA

We hypothesised that the subset of Australians who found the health system difficult to navigate may have been attracted to EVA. The Australian Bureau of Statistic's 2018 National Health Literacy Survey of 5,790 adults revealed that 14% of Australians - though only 8% of those aged over 65 years - found the Australian healthcare system difficult to navigate (ABS 2019). We predicted that a greater proportion of EVA users would report difficulties compared to this national average.

In Survey 1, we asked customers about their experience navigating the Australian health system in general. As predicted, we found that 20% of EVA customers had difficulty navigating the Australian healthcare system (see Figure 4), notably higher than the national average.

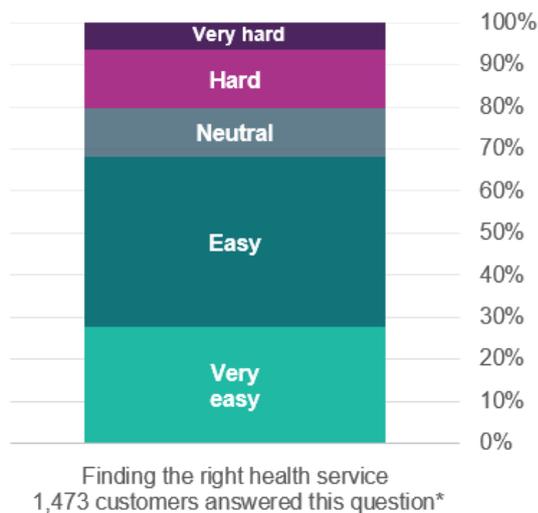


Figure 4. Customer ease ratings: Finding the right health service

* See the technical appendix for further details.

EVA customers who generally found the Australian health system 'very hard' or 'hard' to navigate, reported that this was because there were limited services available to them, or that bulk-billing services were difficult to find, they had limited skills or trust in technology, were unfamiliar with the healthcare system and services in their area, or had limited English skills.

The elderly used EVA at higher rates

During EVA's first year of operation, an EVA call was scheduled for an estimated 55 out of every 100,000 persons living in Australia. However, the rate of scheduled EVA calls was much higher among those aged over 60 years. In fact, the rate of scheduled EVA calls for persons aged 70 to 79 years was over double the national rate, with an EVA call scheduled for 118 out of every 100,000 persons aged 70-79 years.

EVA, or an EVA-like service, could be leveraged further with other cohorts at risk of digital exclusion

More could have been done to ensure cohorts at risk of digital exclusion were aware of and took advantage of EVA, or an EVA-like, service. While EVA was reaching the elderly and people who find the health system difficult to navigate, other cohorts who may have benefited are underutilising EVA. For instance:

People with limited English.

Despite EVA's translation service, only 8 out of every 100,000 persons with limited or no English skills had a scheduled EVA call. It remains unknown why EVA was used less by this cohort. Those with limited English may not have been aware that EVA had a translation service, or potentially, the text-message component of EVA, which was only in English, may have been a barrier.

People living in very remote areas.

The number of EVA customers per 100,000 was lower for those living in very remote areas (26 per 100,000) and outer regional areas (39 per 100,000). This was despite the fact that these cohorts often face additional healthcare access barriers associated with the challenges of geographic spread, limited infrastructure due to low population density, and a higher cost of rural and remote healthcare delivery (AIHW 2022c).

First Nations people.

EVA successfully reached a number of First Nation peoples with 41 per 100,000 First Nation persons using EVA. However, consistent with the broader pattern of First Nation peoples' access to preventative healthcare (AIHW 2023), the rate of EVA use was still below the national rate of 55 out of 100,000 persons.

People living in areas of greatest socio-economic disadvantage.

Those living in areas of greater socio-economic disadvantage (IRSAD decile³ ≤ 5) had used EVA less than those living in areas of greater socio-economic advantage (IRSAD deciles 9 and 10). For example while only 5% of EVA customers lived in areas of the greatest disadvantage (e.g. IRSAD decile = 1), 15% of EVA customers lived in areas of the greatest advantage (i.e. IRSAD decile = 10). This was despite the fact that those living with greater socio-economic disadvantage have additional barriers for accessing healthcare (e.g.

³ The Index of Relative Socio-economic Advantage and Disadvantage summarises information about the economic and social conditions of people and households in an area. This score is broken into 10 deciles, with lower scores indicating relatively greater disadvantage and a lack of advantage overall. A higher score indicates a relative lack of disadvantage and greater advantage in general (ABS 2023b).
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McMaughan 2020) and are at greater risk of poor health, have higher rates of illness, disability and death, and live shorter lives (AIHW 2022b).

That those living in areas of the greatest disadvantage were using EVA at a reduced rate is consistent with what appears to be broader patterns within the Australian healthcare system. For example, although the Extended Medicare Safety Net (EMSN) reduces out-of-pocket costs for Medicare-eligible non-hospital services, this scheme appears to primarily benefit those in wealthier metropolitan areas and does not necessarily reduce the financial burden on people living with socio-economic disadvantage (Angeles et al. 2023). Less than 4% of benefits from the EMSN are given to the poorest 20% of areas, yet the wealthiest 20% of Australians receive more than 50% of benefits (Calder et al. 2019).

Why certain vulnerable cohorts at risk of digital exclusion used EVA at lower rates remains unknown. Further exploring the barriers and enablers that these cohorts experience in terms of using EVA (or like service) may aid in decisions about how best to support these cohorts.

Implications, limitations and conclusion

In evaluating EVA, we sought to answer the following questions:

- Did EVA create an enabling environment?
- Why do people use call health booking services like EVA?
- Did EVA reach vulnerable cohorts?

EVA delivered on its aim to create an enabling environment

Customers appreciated the ability to explain their circumstance to a 'real person' rather than an automated system, and felt that they were treated with kindness, understanding and respect, and that call handlers were well-informed and could address their unique needs.

Customers indicated that EVA had reduced:

- **Barriers.** EVA reduced the barriers customers faced, making it as easy as possible for them to access a vaccine.
- **Burdens.** EVA reduced customer time and effort burdens associated with finding relevant up-to-date information and vaccination providers that best meet their needs.
- **Frustration.** EVA reduced customer frustration caused by the barriers they had faced trying to find a vaccine.
- **Defeat.** Customer comments indicated that EVA prevented them from giving up trying to access a vaccine.

EVA successfully resulted in customers receiving the right service at the right time with 91% of respondents matched to providers that met their needs, and 89% receiving a vaccine.

People used EVA for multiple reasons

There were a range of reasons customers reported using EVA. For many, finding and booking the right service at the right time was not always easy, and EVA helped ease the complexity of locating the right service. Many customers were referred to EVA after alternative avenues had failed, and overall, customers found EVA was easy to use and found it an efficient and effective use of their time. EVA staff were seen to have relevant specialist and up-to-date knowledge which was reassuring to customers. Finally, for those who lacked confidence in their ability to navigate online platforms effectively, EVA provided an accessible way to obtain information about the vaccine and book an appointment.

There is room to leverage a program like EVA further with cohorts at risk of digital exclusion.

While EVA was accessed by the elderly and those who find it difficult to navigate the Australian health system, EVA was underutilised by those with limited English (despite EVA

having a translation service), living in very remote areas, living in areas of greater socio-economic disadvantage.

There are other cohorts at risk of digital exclusion that we were unable to examine their uptake of EVA (Good Things Foundation 2021). These cohorts include those with a disability, with mobile-only connection, who are not in the labour force, and those experiencing or at risk of family and domestic violence.

Given EVA's many strengths, its service delivery and capabilities could have been leveraged further so that more Australians experiencing healthcare access barriers are enabled to access the right service at the right time for them.

Considering evaluation alongside service design is critical

A core feature of EVA was to limit unnecessary questions asked of customers and allow customers to limit disclosure of personal information without preventing access to the service. This resulted in the systems used to capture EVA data being designed to facilitate EVA's flexible operational functioning, rather than to collect data for the purpose of evaluation.

The challenges experienced in evaluating EVA provide a case for evaluation to be considered early in the design phase. Consideration of data capture and usage, key outcomes and evaluation more broadly should ideally be an important part of program design, and doesn't need to be inconsistent with the foundational principle of limiting barriers to access.

Implications for other healthcare areas

This evaluation revealed the following implications for other health services.

1. Finding the right health services is not always as easy as assumed

The insights from this evaluation demonstrate it is not always easy for Australians to find the right health service at the right time, nor are suitable appointments always easy to book. This is true even when there is information available online and in the community.

2. To enable equitable access, health services need to be accessible through multiple pathways, not just online

Equitable access to health services in the right place at the right time is an Australian government priority. This evaluation provides evidence that demonstrate that options need to be available for people who struggle to navigate online health services.

3. Call services that locate and book health provider appointments are particularly useful to the elderly

The elderly, who are among the most digitally excluded, utilised EVA at high rates. Many customers unsuccessfully tried alternative avenues for booking a vaccine before finding and booking through EVA.

4. Vulnerable cohort may require thoughtful targeting to ensure they utilise supportive services

Despite EVA being designed with a range of vulnerable cohorts in mind, some cohorts, like those with limited English skills, underutilised EVA. This result suggests that targeted communications and outreach are required to ensure priority cohorts are aware of, and can appropriately access services that are designed with them in mind. Further research to inform initiatives targeted at specific vulnerable cohorts is necessary.

Supportive services that create an enabling environment are important

A crucial finding of our evaluation, is that supportive services that aim to create an enabling environment – like EVA – are an important element to ensure equitable access to healthcare. While self-serve digital solutions are increasingly prevalent, our evaluation demonstrates that personalised supportive call services increase equity of access to healthcare, particularly for people experiencing digital exclusion.

Appendices

Appendix 1: Detailed findings

Table 1. EVA utilisation by customer age bracket (years)

Age bracket	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
<19 years	1,105 (8%)	6,095,818 (24%)	25
20-29 years	629 (5%)	3,351,215 (13%)	26
30-39 years	1,311 (9%)	3,691,907 (15%)	49
40-49 years	1,261 (9%)	3,284,806 (13%)	52
50-59 years	1,466 (11%)	3,125,855 (12%)	64
60-69 years	2,035 (15%)	2,766,557 (11%)	100
70-79 years	1,711 (12%)	1,982,688 (8%)	118
80+ years	640 (5%)	1,096,940 (4%)	80
Unknown	3,719 (27%)	-	-
Total	13,877 (100%)	25,422,788 (100%)	55

* ABS (2022a). ** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 2. EVA utilisation by use of interpreter service

Interpreter used	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
Yes	67 (<1%)	864,375 (3%)	8
No	13,810 (99%)	24,558,423 (97%)	56
Total	13,877 (100%)	25,422,788 (100%)	55

* ABS (2022b). ** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 3. EVA utilisation by location: Level of remoteness*

Remoteness	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
Major Cities	8,415 (61%)	18,329,830 (72%)	52
Inner Regional	1,922 (14%)	4,576,102 (18%)	57
Outer Regional	644 (5%)	2,033,823 (8%)	39
Remote	110 (1%)	279,652 (1%)	49
Very Remote	42 (<1%)	203,382 (1%)	26
Unknown	2,744 (20%)	-	-
Total	13,877 (100%)	25,422,788 (100%)	55

* EVA customer postcodes were matched with ABS remoteness by postcode data to determine each customer's level of remoteness based on ABS remoteness classifications (ABS 2018). ** Target population sizes were obtained from AIHW (2022a). *** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 4. EVA utilisation by location: State

State or Territory	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
ACT	803 (6%)	454,499 (2%)	188
NSW	3,113 (22%)	8,072,163 (32%)	41
NT	131 (1%)	232,605 (1%)	60
QLD	1,937 (14%)	5,156,138 (20%)	40
SA	1,220 (9%)	1,781,516 (7%)	73
TAS	641 (5%)	557,571 (2%)	123
VIC	4,268 (31%)	6,503,491 (26%)	70
WA	894 (6%)	2,660,026 (10%)	36
Unknown	870 (6%)	-	-
Total	13,877 (100%)	25,422,788** (100%)	55

* ABS (2022a) **State/Territory data does not include Norfolk, Christmas, and Cocos Islands or Jervis Bay. *** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 5. EVA utilisation by location: Socioeconomic dis/advantage (IRSAD decile)*

IRSAD decile	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
1	753 (5%)	254,279 (10%)	37
2	911 (7%)	254,279 (10%)	45
3	522 (4%)	254,279 (10%)	26
4	821 (6%)	254,279 (10%)	40
5	804 (6%)	254,279 (10%)	39
6	1,153 (8%)	254,279 (10%)	57
7	929 (7%)	254,279 (10%)	46
8	1,388 (10%)	254,279 (10%)	68
9	1,799 (13%)	254,279 (10%)	88
10	2,052 (15%)	254,279 (10%)	101
Unknown	2,745 (20%)	-	-
Total	13,877 (100%)	25,422,788 (100%)	55

* [IRSAD](#) is a measure of the economic and social conditions within an area. Areas with a low IRSAD (e.g. IRSAD decile = 1) contain many households with low incomes, many people in unskilled occupations, AND few households with high incomes, or few people in skilled occupations. ** Target population sizes were based on 10% of the total Australian population size (ABS 2022a). *** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 6. EVA utilisation by First Nations people

Identify as First Nations	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
Yes	280 (2%)	812,728 (3%)	41
No	11,316 (82%)	24,610,060 (97%)	55
Unknown	2,281 (16%)	-	-
Total	13,877 (100%)	25,422,788 (100%)	55

* ABS (2022c) ** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Table 7. EVA utilisation by gender

Gender	Number (%) of scheduled EVA calls	Target population size based on 2021 Census data*	Number of EVA customers per 100,000 target population**
Yes	280 (2%)	12,877,635 (50%)	58
Female	3,345 (24%)	12,545,154 (50%)	51
Male	2,862 (21%)	-	-
Unknown	7,670 (55%)	25,422,788 (100%)	55

* ABS (2022c) ** The rate = (pro-rata number of scheduled EVA calls / target population size)*100,000.

Appendix 2: Survey questions

Survey 1 questions: Script for EVA call handlers

For all customers, at the end of the call back, the call handler stated: “We are interested in your experience using EVA, so it would be great if you could share your experiences with us. If you do share, we will use what you tell us to work out how EVA can best support the community in the future. We won’t share or publish your name or contact details with anything you say.”

Ask all customers: We’d like to ask you 8 questions about your experience finding the right health services for you. It should take around 4 to 8 minutes. Is it okay if you stay on the line to answer these questions right now?” [‘Yes’ ‘No’. If yes, ask the following questions:]

2. Before I ask you about the service you received from us today, in general, how easy or hard is it for you to find the right service for your health needs, for example finding and booking a GP appointment? [‘Very hard’, ‘Hard’, ‘Neutral’, ‘Easy’ or ‘Very Easy’. What makes it [‘Easy/Hard’]? [open response for any comments]
3. How easy or hard did you find it to use EVA? [‘Very hard’ ‘Hard’ ‘Neutral’ ‘Easy’ ‘Very easy’. If ‘Hard’ or ‘Very Hard’: “Please tell us how EVA could be improved?” [open response]]
4. Why did you choose EVA over other ways to find [the information you needed / a vaccination service]? [Open response for pilot test only. From pilot test, identify themes to create response option set]
5. Did you try other ways to [find a place to get a vaccine/get the information you needed], before you contacted EVA? [‘Yes’ ‘No’. If Yes: Please tell us what happened. [open response]]
6. What would you have done if EVA was not available? [Open response for pilot test only. From pilot test, identify themes to create response option set]
7. **If customer booked a vaccine appointment, to ask:** Can we call you after your vaccine appointment, to check in with you about whether your needs were met?’ [If yes, book a date/time for the ‘after vaccination call’ – see data collection point 2]

Survey 2 questions: Script for EVA call handlers

For customers with a vaccine appointment, on the date/time agreed during the initial call back (Survey 1), call handlers stated:

“Hi [customer name]. My name is ___. I’m calling from EVA to see how your COVID vaccination appointment went. I’ve got 3-5 questions for you, and it should take no more than a couple of minutes. Is this still a good time for you? [‘Yes’ ‘No’. If no, re-book a better time. If ‘Yes’, ask]

8. Did you get vaccinated by the service recommended by EVA? [‘Yes’, ‘Got vaccinated but different provider or appointment time’, ‘Did not get vaccinated’. If not ‘Yes’: Please tell us what happened? [open response]]
9. [If customer answered ‘Yes’ to Q6] Did the service EVA booked for you, meet your needs? [‘Yes’ ‘No’. If No: Please tell us what happened. [open response]]

10. Is there anything we could do to make EVA easier or better for you? [open response]

If call handlers were unable to contact the customer by phone: Send customers an SMS with a personalised link to the survey that says: “Hi [customer name]. This is EVA. I called about your COVID vaccine experience. If you still want to share your experience, please go to <<https://www.health.gov.au/EVA-survey>> Thanks”

Appendix 3: Customer demographics when Survey 1 and 2 were in field

The demographics of customers associated with a successful EVA call between 31 January 2023 and 15 May 2023 (when Survey 1 and 2 were in the field) are displayed in Table 8. A portion of EVA customers associated with a successful call also reported having personalised needs, with 5% (144) requiring that EVA find a vaccination service that:

- could provide the vaccination right away or on/before a specific date, or needed a provider outside of standard operating hours
- was able to accommodate multiple bookings at once
- did not require a Medicare card
- would attend the intended vaccination recipients home to provide the vaccination
- was wheelchair accessible
- had an interpreter available
- was at a hospital, or
- could give them a specific brand of vaccine.

Table 8. Customer demographics while the surveys were in the field

Demographic description	Percentage (%)
Priority cohort	51%
Aged over 60 years	44%
Immunocompromised	5%
CALD status	2%
Had a disability	2%
Were carers	2%
First Nations people	<1%
Required an interpreter	<1%
Male	34%
Female	52%
Gender unknown	13%
Lived in Victoria	36%
Lived in NSW	27%
Lived in SA	10%
Lived in QLD	10%
Lived in WA	7%
Lived in NT	<1%
Lived in Tasmania	5%

Technical Appendix

Ethics

This project was approved through BETA's ethics approval process, with risk assessed by Macquarie University in accordance with the guidelines outlined in the National Statement of Ethical Conduct in Human Research. Macquarie University Ethics' project Id: 12815, and Reference No: 520221281544874.

Data collection platforms

A core feature of the EVA service was to limit questions asked of customers. This meant that for this evaluation, wherever possible we used data collected as part of Business As Usual (BAU) to limit the impact of EVA's evaluation on customers. In particular, we used the demographic information collected as BAU instead of re-asking customers for this information.

The EVA service used two independent systems to capture customer BAU data: the CRM (Client Relationship Management) and a configurable Form. The CRM has been in place from EVA's conception, and contains demographic data for all customer contacts with the EVA service. However, the CRM data fields could not be readily customised for EVA. With the uncertain and rapidly changing context of the COVID-19 pandemic and the swift development and implementation of EVA to support Australians, a readily configurable Form was introduced on 11 May 2022. This Form allowed additional data pertaining to the EVA call itself (such as the success of the EVA call, and whether the intended vaccination recipients belonged to an identified priority cohort) to be captured. Data for Survey 1 and Survey 2 were also collected using a Form, but were captured in separate Forms. In addition, the Qualtrics platform was used to collect the data of customers who consented to participate in Survey 2, though were not contactable by phone, and so were sent a text message with an individualised link.

We were unable to successfully link data between the CRM and Forms, or between the survey Forms in a way that we could confidently interpret. This is because the base unit of analysis and the definition of 'an EVA customer' differed between the BAU data capture systems and between call handlers, and there was a lack of clarity around which customers' unique identifier call handlers should record in Form data when there were multiple intended customers within a single EVA call. For instance, CRM data capture is primarily at the unit level of an individual contact per customer (where a customer can be identified) – which includes both the person contacting EVA as well as intended service recipients. Sometimes the caller and the intended recipient were equivalent, however in circumstances where someone calls EVA on behalf of another, they are distinct. It is not possible in the CRM to distinguish between an intended recipient and caller. Whereas, Forms data capture was often on the level of an EVA call, and the data contained within pertains to intended service recipients (one or multiple) involved in the call – with customers defined here more narrowly as only the service recipient/s. Call handlers differed in how they logged calls in the Forms that involved multiple recipients. Some chose to record only one of the customer's unique identifiers for the call (and there is no way of telling whether they chose the unique identifier for the caller or service recipients), some logged multiple unique identifiers (though for the most part it was unclear which data in the MS form related to which unique identifier).

However, the Forms data did capture how many service recipients within the call for whom the call handler supported a vaccination booking appointment for.

The demographic data presented in this report pertains to customers captured in the CRM for whom an EVA call was scheduled. It was not possible from these data to determine whether the EVA call was ultimately successful (i.e. the call handler spoke with the customer), as this data was captured in the Form (which we were unable to reliably link). Form data indicated that 7,394 customers had a successful EVA call recorded against their name.

The inability to reliably link the CRM and Form data also meant that while we had demographic data for EVA customers during the time period when the customer surveys were in the field, we were unable to link demographic information with the customers who completed the surveys.

Data cleaning business rules

Data cleaning and analysis occurred using R. The following business case rules were applied when cleaning the data:

- Nonsensical data (e.g. customers state = “VICWA”) was re-coded as “NA”.
- Responses where the customer declined to answer or where the call handler recorded variations of “unknown” were recoded as “NA”.
- Date/times were converted to a consistent format.
- When data was clearly identifiable as correct, but was recorded in the wrong field, we moved the data into the correct field.
- For observations where two different columns had inconsistent values, we updated one of the columns to ensure consistency. For example, if call back success was ‘Yes’ then we set the variable interaction type to be ‘EVA call’.
- Customer unique identifier numbers:
 - We first created a separate row for each unique identifier number for the observations where there were multiple unique identifier numbers in a single row.
 - Where the same unique identifier number appeared in more than one row, we combined data to form a single row. For example, we combined free text responses into a single response, and we updated the column ‘How many people were they booking for’ to be the maximum of this quantity in each row.
 - Customers who had a successful EVA call were identified as ‘Vaccination supported’ when the identified purpose of the call was “Vaccine or booster booking” AND they were identified as being eligible for the vaccine (in any row for that customer). All other customers who had a successful call (in any row) were categorised as receiving ‘Information only’.
- To identify callers booking for family or friends, we analysed the ‘Who was booking for’ column and classified callers based on semantically related words. Similarly, we used the ‘Priority Cohort’ column to identify semantically related cohorts.

Training for EVA call handlers to administer Survey 1 and 2

Staff from BETA and Healthdirect Australia created and presented training materials to EVA call handlers in the week prior to the launch of the Surveys in the field. The training aimed to assist call handlers to administer the Surveys and record data with fidelity. This training was recorded and distributed to call handlers for subsequent reference. Call handlers were encouraged to reach out to the researchers if they had further questions.

Pilot survey

From 1 February to 19 February 2023 the surveys in the field functioned as a pilot. At the end of the pilot, BETA staff:

- Examined data from the open responses to identify whether response options could be created (for easier data collection and analysis). Participants' responses to these questions varied too widely to create response option sets that were operationally viable. As such, customers' responses to these questions were analysed using the qualitative methodology as outlined in the 'Qualitative methodology' section within this technical appendix.
- Sought call handler feedback as to the flow of customer experience to determine if revision to the questions or process was required. Call handlers noted that:
 - Survey 1 was taking longer than originally predicted, and that for most customers, they were asking the additional follow-up questions. As such, the initial blurb for Survey 1 was updated from "We'd like to ask you 5 questions about your experience finding the right health services for you. It should take no more than 3 minutes. Is it okay if you stay on the line to answer these questions right now" to "We'd like to ask you 8 questions about your experience finding the right health services for you. It should take around 4 to 8 minutes. Is it okay if you stay on the line to answer these questions right now?"
 - Some customers would benefit from greater context for Survey 1 question 1 to assist them to understand that the first question was about their access to health services more generally. As such, question 1 was re-worded from "How easy or hard is it for you to find the right service for your general health needs?" to "Before I ask you about the service you received from us today, in general, how easy or hard is it for you to find the right service for your health needs, for example finding and booking a GP appointment?". For this question, pilot data was removed for the final analysis.

In addition, during the pilot, customers were asked whether they had tried alternatives before they were asked why they chose to use EVA. However, pilot data indicated that an unexpectedly high number of customers reported having tried alternatives prior to contacting EVA, and were subsequently responding that this was the reason why they chose to use EVA. To ensure that participants responses to the question about alternatives tried was not unnecessarily restricting their responses to the 'why EVA' question, the order of these questions was reversed. After the pilot, customers were first asked 'why EVA' and were then subsequently asked the more specific questions about any alternatives they had tried prior to contacting EVA.

All other aspects of the Surveys remained the same at the end of the pilot. As such, for most of the data analyses, pilot data was included in the final analysis.

Survey sample size considerations

For the EVA customer surveys, our goal was to maximise the number of participants given time constraints. Based on previous call volumes and the participation rate in a similar survey run in 2022 by Healthdirect Australia (where participation rate = 45%), we anticipated that we would recruit approximately 40-50 participants per week. By recruiting survey participants from 1 February 2023 to end April 2023 (with Survey 2 completion before 14 May), we hoped to recruit at least 500 participants. As our participation rates were much higher than anticipated.

The primary consideration for the length of time the surveys were in the field was to ensure we captured the views of:

- Those who wanted a vaccine prior to, or post, the release of a new booster dose. The 5th booster dose was rolled out from 20 February 2023, which meant our survey captured the views of those who were eligible for previous doses, as well as those who were immediately ready to get the 5th booster.
- Those who might be prompted to get the vaccine during prior to going on holidays/public holidays, during school holidays, or during school term. Term 1 school holidays occurred during our sampling period.

Qualitative methodology

To analyse responses from the two open-ended questions in Survey 1 (“Why choose EVA?” and “What would you do if EVA was not available?”) we took a subset of 178 participants data and scanned their responses to identify common themes to form the basis of our coding system. To test the coding system, we had two staff members independently rate whether each theme was present or absent in the responses of the sample of 178 participants. We then compared ratings and discussed differences to clarify the definitions and scope of each theme, and determine whether additional themes needed to be added. Of the 2500 data points examined, the raters formed a consensus for all but two data points (both within the same question/theme). As part of standard interrater reliability procedures, a 3rd team member was consulted to make the final determination. One staff members subsequently rated whether each theme was present or absent in each participants’ response for the rest of the data. For all other qualitative responses to questions in Survey 1 and 2, one staff member identified and analysed themes using NVivo in consultation with a second staff member.

Themes arising from participants’ responses were identified for specific questions, as well as across questions. This was because there were some themes that occurred across all of the questions but not enough occurrences in one question to warrant a theme by itself (e.g. survey participants contacting their MP’s, emotional responses, a survey participant stating that they were from a rural or remote area). For example, the NVivo Concept Mapping tool was used on responses across both surveys to identify the pathways that customers took to find and use EVA.

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