



Australia's National
Science Agency

Healthdirect Australia Living with COVID program evaluation

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Table of contents

Executive summary	viii
Overview of findings	viii
Key results:.....	ix
Background.....	xiii

Part 1: 24/7 inbound call centre

0

1.1	National Coronavirus Helpline (Qld & SA)	1
1.1.1.	Caller Demographics (Qld & SA).....	1
1.1.2.	Call centre metrics, efficiency, and notification flow (Qld & SA)	2
1.1.3.	Call volumes by risk triage disposition (Qld & SA with COVID cases overlay)	2
1.1.4.	Call volume by risk triage disposition (Qld & SA with hospitalisation overlay) ...	3
1.1.5.	Call volume – age demographic overlay (Qld & SA).....	3
1.1.6.	Call duration	4
1.1.7.	Duration of calls (Qld & SA).....	5
1.1.8.	Duration of calls (Qld & SA) – risk triage category overlay	5
1.1.9.	Duration of calls (Qld & SA) – demographic overlay.....	6
1.1.10.	Call efficiency (Qld & SA) - Wait times (by case numbers).....	6
1.1.11.	Call efficiency (Qld & SA) - Wait times (by call volumes)	7
1.1.12.	Call efficiency (Qld & SA) – Unanswered calls (by staffing level).....	7
1.1.13.	GP Video consult data	8
1.2	Consumer Survey (Qld & SA)	9
1.2.1.	Consumer Survey demographics.....	9
1.2.2.	Age, gender, and location stratified by risk triage category	10
1.2.3.	Education, language, and housing stratified by risk triage category	10
1.2.4.	COVID vaccine doses	11
1.2.5.	Referral source	11
1.2.6.	Satisfaction with the helpline.....	12
1.2.7.	Satisfaction with individual elements	12
1.2.8.	Information clarity.....	13
1.2.9.	Likelihood of referral to friends, family, or colleagues	13

2.1	Qld & SA Consumer survey results	15
2.1.1.	Demographics (Qld & SA)	15
2.1.2.	Action after diagnosis (Qld & SA)	15
2.1.3.	Motivation to contact GP (Qld & SA)	16
2.1.4.	Antiviral medications (Qld & SA)	16
2.1.5.	Reasons for not contacting a GP (Qld & SA).....	17
2.1.6.	GP appointments (Qld & SA)	17
2.1.7.	Timing of appointments (Qld & SA)	18
2.2	National Coronavirus Helpline (CRM and Telephony Metrics)	18
2.2.1.	SA & Qld GP Notifications.....	18
2.3	Practice Manager and GP Survey results.....	19
2.3.1.	Limitations	19
2.3.2.	Practice Profiles	20
2.3.3.	Practice manager awareness of the LwC program secure notification system ..	20
2.3.4.	Practice manager engagement with the notification system	20
2.3.5.	Practice manager action taken after notifications.....	21
2.3.6.	Practice manager response times	21
2.3.7.	Practice manager service impacts.....	21
2.3.8.	Practice manager service impacts - qualitative.....	22
2.3.9.	Practice manager utility of service ratings	22
2.3.10.	Practice manager utility of service ratings - qualitative.....	23
2.3.11.	GP Demographics	24
2.3.12.	Services provided to patients.....	24
2.3.13.	Notifications from Healthdirect	25
2.3.14.	Utility of notifications	25
2.3.15.	Timeframe of notifications	26
2.3.16.	Suggestions for improvement	26
2.3.17.	Sustainability of the model.....	27
2.3.18.	Challenges of caring for COVID positive patients.....	27
2.3.19.	Impact of caring for COVID positive patients.....	28
2.3.20.	Resources that support caring for COVID positive patients.....	29

- 3.1 Website metrics 31
 - 3.1.1. Healthdirect COVID-19 related website users 31
 - 3.1.2. Healthdirect Australia website pages related to COVID-19 viewed 32
 - 3.1.3. Healthdirect Australia website pages related to COVID-19 viewed per session 33
 - 3.1.4. Healthdirect websites related to COVID-19 average visit session duration 33
 - 3.1.5. Individual page visits on Healthdirect website related to COVID-19 (All states and territories)..... 34
 - 3.1.6. Websites driving consumers to the symptom checker (All states and territories) 34
 - 3.1.7. COVID-19 symptom and antiviral eligibility checker (Qld & SA) 35
- 3.2 National Coronavirus Helpline feedback (Qld & SA consumer survey)..... 36
 - 3.2.1. Demographics..... 36
 - 3.2.2. Comfort with managing own care..... 36
 - 3.2.3. What reasons did people give when they did not feel comfortable managing their care?..... 37
 - 3.2.4. What actions did you take after calling the National Coronavirus Helpline? 38
- 3.3 Healthdirect Australia website (Qld & SA consumer survey)..... 39
 - 3.3.1. Following your call to the National Coronavirus Helpline, did you visit the Healthdirect Australia website? 39
 - 3.3.2. Information sought/versus provided 39
 - 3.3.3. Which of the following pages or tools did you use? 40
 - 3.3.4. Satisfaction with pages/tools 41
 - 3.3.5. Comfort with managing care after visiting the website..... 41
 - 3.3.6. What action did you take after visiting the website? 42

- 4.1 Healthdirect Australia telephony metrics..... 44
 - 4.1.1. Consumer Demographics (NSW) 44
- 4.2 Consumer Survey (NSW)..... 45
 - 4.2.1. NSW Consumer survey demographics 45
 - 4.2.2. NSW GP notifications 46
 - 4.2.3. Consumer awareness of SMS contacts 46

4.2.4.	GP/Health provider contact	47
4.2.5.	Treatment provision	48
4.2.6.	Support options	49
4.2.7.	Satisfaction with service	49
4.2.8.	Qualitative themes	50
4.2.9.	Theme exemplar quotes.....	50

Part 5: Economic analysis **51**

5.1	Economic evaluation of the Healthdirect Inbound National Coronavirus Helpline	52
5.1.1	Treatment pathways	52
5.1.2	Assumptions	53
5.1.3	Treatment costs.....	54
5.1.4	Weighting survey responses to represent the population of callers.....	57

Part 6: Discussion and recommendations **59**

6.1	Discussion:.....	60
6.2	Recommendations:	61

Figures

Figure 1: Qld & SA notification flow.....	xvii
Figure 2: NSW antiviral access facilitation pathway.....	xviii
Figure 3: Call volumes overtime (inc. Qld & SA weekly COVID case numbers).....	2
Figure 4: Call volumes overtime (inc. Qld & SA hospitalisation numbers).....	3
Figure 5: Call volumes by age group for Qld & SA over time with COVID case numbers overlay..	3
Figure 6: Duration of calls with a COVID cases overlay.....	5
Figure 7: Duration of calls stratified by risk triage category with COVID cases overlay.....	5
Figure 8: Duration of calls by age group over time.....	6
Figure 9: Wait times with COVID cases overlay.....	6
Figure 10: Wait times with call volume overlay.....	7
Figure 11: Unanswered calls over time with FTE staffing overlay.....	7
Figure 12: GP video users and consults over time with COVID case overlay.....	8
Figure 13: COVID vaccination status.....	11
Figure 14: Information clarity.....	13
Figure 15: Motivation to contact GP responses.....	16
Figure 16: Reasons for not engaging with GP.....	17
Figure 17: Wait times for GP visit.....	18
Figure 18: GP practice service impact of program.....	21
Figure 19: Qualitative responses to service impact rating.....	22
Figure 20: Usefulness of notification information.....	22
Figure 21: Qualitative responses to suggest improvements to notification process.....	23
Figure 22: GP demographics summary.....	24
Figure 23: Users of the website overlaid with case numbers.....	31
Figure 24: Average number of users per week by jurisdiction.....	31
Figure 25: Weekly page views by jurisdiction with COVID case numbers overlay.....	32
Figure 26: Total page view (jurisdictional distribution).....	32
Figure 27: Average number of pages viewed per session by week with COVID case number overlay.....	33
Figure 28: Average website visit session duration (seconds) with COVID case overlay.....	33
Figure 29: Number of page views on Healthdirect Australia website and average time spent on each page.....	34
Figure 30: Web pathway taken to access Symptom Checker.....	34

Figure 31: Number of weekly page visits to Symptom Checker stratified by state and calculated disposition.....	35
Figure 32: Reasons respondents did not feel comfortable managing their care	37
Figure 33: Actions after calling NCH	38
Figure 34: Website visits after calling helpline	39
Figure 35: Consumer answers to whether information sought was located (n = 114).....	39
Figure 36: Pages visited by respondents who visited the website after phoning the NCH (n = 114).	40
Figure 37: Heat map table showing satisfaction with website information and access (n = 114) respondents	41
Figure 38: Comfort with managing care	41
Figure 39: Overlay of data showing action after website vs phone engagement.....	42
Figure 40: Additional support options	49
Figure 41: Satisfaction with service	49

Tables

Table 1: Key research questions addressed.....	xiv
Table 2: Program activities and data sources	xvi
Table 3: Demographic characteristics of callers to the National Coronavirus Helpline.	1
Table 4: NCH metrics and GP notifications	2
Table 5: Call duration demographics	4
Table 6: Consumer survey demographics.....	9
Table 7: Consumer survey demographics by risk triage category	10
Table 8: Secondary demographics	10
Table 9: Satisfaction with individual elements	12
Table 10: Likelihood of referral.....	13
Table 11: Demographics of survey participants	15
Table 12: GP and practice manager survey data sources.....	19
Table 13: Demographics of survey respondents	36
Table 14: Consumer demographics (NSW)	44
Table 15: NSW Consumer survey demographics.....	45
Table 16: GP/Health provider contact	47
Table 17: Treatment provision.....	48
Table 18: Qualitative feedback themes	50
Table 19: Theme exemplar quotes	50
Table 20: Patients' survey responses and assumed treatment pathways	52
Table 21: Actions taken according to scenario	52
Table 22: Survey respondents' actual and hypothetical treatment pathways based on their survey responses.....	53
Table 23: The costs of each hypothetical and actual treatment pathway, assuming an hourly time cost of \$40.40	57
Table 24: Estimates of mean actual and hypothetical treatment costs per caller under different scenarios and time cost assumptions	58
Table 25: Estimates of total actual and hypothetical treatment across all calls from 2 May 2022 to 7 November 2022 under different assumptions and time cost assumptions.....	58

Executive summary

To ensure the Australian healthcare system is well prepared to safely manage COVID positive people, the Australian Government announced partnerships with primary care providers, States and Territories to establish the post-acute phase of the national COVID Response. Healthdirect Australia, a key partner for federal and jurisdiction governments, developed a national approach to connect COVID positive consumers with the right level of care – the ‘Living with COVID’ program. The model of care aims to assist COVID positive consumers who have a low or medium-risk of hospitalisation to self-manage their care at home and/or in consultation with their usual GP. The Living with COVID Program commenced in early 2022 and comprises a range of activities across all jurisdictions.

CSIRO have evaluated four of these key activities within Qld, SA and NSW:

1. Inbound National Coronavirus Helpline (NCH): 24/7 inbound call centre to assess, triage and provide health advice.
2. GP secure messaging system: Notify GP of COVID positive patients.
3. Healthdirect Australia website: Support self-managed care at home with digital tools and information.
4. NSW Antiviral access pathway.

This report summarises findings and provides insights for the Living with COVID program as of 7 November 2022. The report is guided by the evaluation objectives and questions within the approved evaluation framework. The report draws on qualitative and quantitative results and covers data obtained from Healthdirect Australia from 1 May to 7 November 2022 inclusive.

The mixed-methods evaluation has two key objectives:

- Evaluate the effectiveness of the Living with COVID Program from the perspective of COVID-positive consumers.
- Evaluate GP engagement with and perceived usefulness of secure message notifications sent by Healthdirect Australia.

To support the key objectives, the following secondary objectives are evaluated:

- Evaluate Qld and SA consumer engagement and satisfaction with Healthdirect Australia services (Website and National Coronavirus Helpline).
- Evaluate the usefulness of notification information to GPs for assisting in the management of COVID-positive consumers (Qld, SA, NSW).
- Evaluate the NSW program effectiveness of connecting eligible consumers with antivirals.
- Evaluate the economic efficiencies of the Living with COVID program (Qld, SA).

Overview of findings

Healthdirect Australia successfully developed and deployed a model of care through the Living with COVID (LwC) program. The LwC program has supported patient care through efficient triage and by connecting consumers to primary care enabling early intervention to enhance health outcomes. The LwC program has also contributed to a reduced patient flow through GP and hospital doors, leading to the saving of significant resources and budget. The LwC program allows patients to access the right care, at the right time. The LwC program offers the potential to streamline communication, care, and tasks to improve care. The LwC program has demonstrated its potential as an agile solution that can be scaled up and down as the demand dictates.

The National Coronavirus Helpline demonstrated an ability to rapidly respond and adapt to changing circumstances during COVID case peaks and consumers were highly satisfied with the Helpline service. In Qld and SA, eligibility for antivirals was the main driver for GP engagement, with most respondents contacting the GP themselves, consistent with the LwC program strategy. The website provided many people with information on how to manage and recover from COVID and enabled access to the symptom checker. The Helpline and website were found to increase consumers' health literacy and enabled them to make informed decisions about their own care. Further, Qld and SA consumers were engaged and highly satisfied with the Healthdirect Australia services including both the website and National Coronavirus Helpline.

In NSW, the LwC program was successful in connecting consumers potentially eligible for antivirals with Primary Care. Most respondents in NSW also contacted the GP themselves which is consistent with the LwC program strategy. The service was found to be useful by respondents and the program was effective in connecting eligible consumers with antivirals, many of whom were then able to self-manage after receiving treatment.

The LwC program's economic evaluation of the Qld and SA program components found there were estimated total actual cost savings of between \$1,472,339 and \$4,138,438 for the period 2 May to 7 November 2022. This indicates the National Coronavirus Helpline provides significant net benefits (or cost savings) by directing some callers to undertake less resource intensive and less costly treatment pathways than they would have undertaken without the helpline, while maintaining consumer satisfaction.

Key results:



Inbound Call Centre to assess, triage and provide health advice (Qld and SA)

The call centre was effective in directing consumers to either self-manage their care or seek assistance from primary or tertiary care providers.

National Coronavirus Helpline call metrics (Qld and SA) (1 May-7 November 2022, n = 94,494 calls)

- In total, the call centre handled 90,867 (only 3,627 [4%] calls abandoned).
- Average wait time for calls to be answered was 48 seconds.
- Average total call time was just over 7 minutes.
- The largest proportion of consumers (n = 33,501 [35%]) reached the helpline through the clinical queue which is dedicated to COVID positive consumers.
- While wait times tend to increase when case numbers rise, callers only waited on average 2 minutes during COVID case peaks.
- Call centre efficiently scaled up staffing when cases increased to address the rise in call volumes.

National Coronavirus Helpline customer satisfaction (Qld and SA) (n = 329 responses)

- Three quarters of callers were from metropolitan areas and were low risk.
- 71% (n = 234) of participants rated their satisfaction with the helpline at 8 or above out of 10.
- 94% (n = 304) of participants found some or all the information provided by call centre staff clear and easy to understand.
- Three quarters of participants were highly likely to recommend the helpline to family and friends.



Notification to GP of COVID positive status

Between July 10th and up until October 17th, 11,550 notifications had been sent to 3,289 GP clinics across Qld, SA & NSW. On average, each clinic received three notifications each (n = 3.51 (95% CI 3.34-3.68)).

National Coronavirus Helpline customer satisfaction: Qld and SA telephony metrics

- 27% (n = 3,272/12,166) of callers were eligible for a GP notification, with notifications sent to GPs for 84% (n = 2,742/3,272).

Qld and SA consumer survey (n = 329 responses)

- Two thirds (n = 224 [68%]) contacted the GP themselves and 22% (n = 72) did not see a GP at all, with only 10% having to be contacted to arrange an appointment.
- Two thirds of consumers (n = 166 [65%]) who saw a GP managed to see their regular GP, with the remaining third having to seek care away from their usual practice.
- 66% (n = 169) of consumers' reason for visiting a GP was they were eligible for antiviral medications.
- Almost two thirds (n = 257 [63%]) of consumers who visited their GP received a prescription for antiviral medication, with the vast majority of those reporting they filled the prescription (n = 160 [98%]).
- Access to antivirals in a timely manner is important and most consumers were able to see a GP within two days of their diagnosis.
- Feeling confident managing on their own was the main reason consumers did not contact their GP after diagnosis.

Practice managers (n = 21 responses) **note, not all respondents answered all questions*

- 43% (n = 9) reported receiving a notification and just over half (52%, n = 11) were not sure if they had received a notification.
- 29% (n = 6) of respondents reported checking the system 6-7 times per week.
- The number of notifications received were low among survey participants with only 2/21 respondents reporting receiving 6 or more notifications.
- Most practices appear to be taking the desired action after receiving the notification by contacting the patient or notifying their regular GP within 1-2 days.
- Five of eight (56%) of respondents reported the GP notification service as having a minimal increase in practice workload.
- Seven of nine (78%) respondents reported the notifications were moderately to extremely useful.

GP respondents (n = 21 responses) **note, not all respondents answered all questions*

- 81% of GP respondents received notifications from Healthdirect.
- 10/11 GP respondents found the service to be timely, with two specifically reporting that patients called within 24 hours or the same day of contacting the NCH.
- GP participants appreciated the risk triage aspect and the background information provided to them before the patient arrived for their consultation.
- Most GP participants were positive about the usefulness of the LwC model for other purposes
- GPs called for clear and consistent messaging that was up to date and further consideration to be given to ensure that information is acceptable to people from culturally and linguistically diverse backgrounds.



Healthdirect Australia website: Supporting self-managed care at home with digital tools and information

Website metrics May-Oct 2022 (Healthdirect Australia website analytics (n = 1,556,759 users))

- 1,556,759 users visited the website (Qld = 1,104,470, and SA = 452,289).
- The proportion of new users accessing the website remained steady initially, reducing over time as reported cases subsided.
- The top 8 most visited pages capture 70% of the cumulative visits.
- “Recovery and returning to normal duties” was the most visited page, almost double the second most visited page the “Symptom Checker”.
- The pages where consumers spent most of their time were related to more general information searching such as “Helpline FAQs” and “State and Territory Information”.
- 564,184 users engaged with the symptom checker.
- 34,344 visitors (who provided their age and gender) completed the symptom checker across Qld & SA.
- Traffic to the symptom checker were mainly from: Google, the Australian Department of Health and Aged Care website and the Healthdirect Australia website.
- Early data supports the accuracy of the symptom checker in predicting the risk of consumer hospitalisation.

Qld and SA consumer survey (n = 329 responses)

- Consumers felt comfortable to manage their own care following contact with the helpline.
- The helpline achieved the desired health behaviours of consumers isolating at home and calling their GP rather than visiting hospital or calling 000.
- The helpline was useful for providing information, with only around one third visiting the website *after* calling the helpline.
- Most consumers who visited the website found all the information they were seeking, reflecting the comprehensive nature of the website.
- Over half of consumers who visited the webpage after phoning the Helpline (survey data) sought information for managing their care at home.
- The most visited pages were “symptom management”, “when to seek medical advice”, “medications to treat COVID” and the “symptom checker”.
- 82% (n = 372/456) rated website components as ‘satisfied’ or ‘very satisfied’.
- 63% (n = 114) rating their comfort with self-care management after visiting the website an 8 or higher.
- The helpline facilitated improved levels of confidence in managing care at home in comparison to those accessing the website.
- Both accessing the helpline and visiting the website followed similar patterns of action after engagement, showing both are effective in influencing desired consumer behaviour.



NSW antiviral access

NSW Outbound call centre data (n = 18,729 calls)

NSW 7-day follow up antiviral survey (n = 5,943 responses)

GP notifications

- All survey respondents had notifications sent to their GP/GPRC.
- 87% (n = 5,181) of survey respondents had a successful outbound call made to their GP.
- 97% (n = 5,748) of survey respondents had an SMS notification sent to their phone.
- Successful SMS notifications were sent to 96% of those eligible for antiviral treatment.
- Most consumers recalled the SMS with three quarters aware of the notification to them or someone they know.
- 70% (n = 4,020) of consumers who received an SMS from Healthdirect had contact with their GP or provider in the seven days prior to being surveyed.
- As the program intended, 68% (n = 2,762) of the GP contacts were initiated by consumers.
- Most appointments were conducted via telehealth (95%) demonstrating the high uptake of this service option.
- 79% (n = 3,067) of consumers were prescribed antivirals.
- More than half of consumers indicated they preferred to self-manage their care after receiving antivirals, indicating that access to them assisted with their management of COVID.
- The Living with COVID program helped connect people to antivirals, thus enhancing the consumer's ability to self-manage and redirecting resource burdens away from the tertiary sector.
- Service satisfaction was high with 84% (n = 4,825/5,724) rating the service a 4 or 5 out of 5.
- Qualitative feedback supported the survey results with “good service” the dominant theme.
- Recommendations were made in the feedback on the need for clear and consistent information, calling sooner, number and timing of calls/SMS.



Economic evaluation

An economic evaluation was undertaken to determine efficiencies of the Living with COVID program.

- The total cost per patient treated via the helpline is \$41.76 in Qld and \$32.76 in SA
- Estimated cost savings of between \$41 and \$114 per caller to the helpline in Qld and SA.
- Estimated total actual cost savings for the Qld and SA health system of between \$1,472,339 and \$4,138,438 for the period 2 May to 7 November 2022.
- The economic evaluation indicates that the helpline provides significant net benefits (or cost savings) by directing some callers to undertake less resource intensive and less costly treatment pathways than they would have undertaken without the helpline.
- The avoided costs of ED and GP presentations for these patients outweigh the costs of administering and using the helpline.
- The helpline may generate additional net benefits that have not been quantified in this analysis by recommending that some patients undertake less resource intensive treatment than they would have undertaken without the helpline.

Background

In January 2022, the Australian and jurisdiction Governments announced steps to support and strengthen the health system as the country entered the next phase of the National Plan to re-open and live with COVID. With States and Territories reaching the target COVID vaccination rates, lockdowns were being lifted and borders opened. Community transmission of COVID is occurring and will continue to occur. With a highly vaccinated population, and the prevalent strain Omicron appearing to be less severe, there is an expectation that most COVID positive people will be able to self-manage their care at home and/or in consultation with their usual GP without requiring hospitalisation or attendance outpatient services.

In line with new expectations for care requirements and to ensure the Australian healthcare system is well prepared to safely manage COVID positive people, the Australian Government announced partnerships with primary care providers, States and Territories to establish the next phase of the national COVID Response.

Healthdirect Australia, a key partner for federal and jurisdiction governments, has been contracted by the Commonwealth Department of Health to provide programs to inform and empower COVID positive consumers who are considered low to medium risk of hospitalisation and facilitate coordination of GP appointments via their secure messaging system and outbound call centre.

In response, Healthdirect Australia developed a national approach to connect COVID positive consumers with the right level of care – the ‘Living with COVID’ program. The model of care aims to assist low and medium-risk COVID positive consumers to self-manage their care at home and/or in consultation with their usual GP. The Living with COVID Program commenced in early 2022. To date, Queensland (Qld) and South Australian (SA) governments have signed on to the full delivery of the program in their jurisdictions, with the first phase running until December 2022.

In May 2022, the New South Wales (NSW) government commenced active participation in the Living with COVID Program. However, rather than supporting low-risk COVID positive consumers to self-manage at home and facilitating the connection of medium-risk COVID positive consumers with their usual GP, the focus in NSW is on coordinating timely access to GP services for people considered eligible for antiviral treatment.

The ‘Living with COVID’ program comprises four key activities:

- Inbound National Coronavirus Helpline (NCH): 24/7 inbound call centre to assess, triage and provide health advice
- GP secure messaging system: Notify GP of COVID positive patients
- Healthdirect Australia website: Support self-managed care at home with digital tools and information
- NSW Antiviral access pathway

Scope of this report

This report summarises findings and insights for the Living with COVID program (Qld, SA, NSW), including an economic efficiency evaluation. The program components are evaluated according to research questions CSIRO developed in collaboration with Healthdirect Australia. Originally, Victoria was to be included in the evaluation, however, due to changes in scope and project leadership, this aspect was abandoned.

Table 1: Key research questions addressed

Research questions:	
✓	How effective is the National Coronavirus Helpline triage and notification process to facilitate the connection of medium-risk COVID positive consumers in Qld/SA with their usual GP?
✓	What is the level of consumer engagement and satisfaction with Healthdirect Australia services (e.g., National Coronavirus Helpline and website resources) in Qld/SA?
✓	How effective is the Healthdirect Australia notification process to facilitate timely access to GP services and uptake of antiviral treatments for eligible consumers in NSW?
✓	What is the level of GP engagement with secure message notifications sent by Healthdirect Australia?
✓	Do GPs find the notification information useful in assisting with management of COVID positive patients?
✓	Are there efficiency improvements/health economic impacts for the health system arising from this service
✗	Do contextual factors, such as evolving public messaging and COVID outbreaks, impact the effectiveness of the Living with COVID Program?

***Note:** the terms consumer and patient are used in this report. The term consumer is used when discussing data provided by Healthdirect Australia or the consumer (for example, consumer survey). The term patient is used when discussing data provided by Practice Managers (for example, patient throughput). Consumers are also referred to as low, medium or high-risk disposition which refers to the level of risk of hospitalisation as determined by the Healthdirect Australia COVID symptom checker. The term COVID is used throughout the report to refer to COVID-19 to improve clarity.

Methods

The mixed-methods evaluation combines data from several sources to provide an integrated snapshot of the Living with COVID program. All participant data was anonymous, aggregated, or de-identified before transfer to CSIRO. Data cleaning and refactoring was undertaken where required. Missing data in the Customer Relationship Management (CRM) datasets was treated as intentional by consumers. Individual demographic variable summaries include the number of missing values but results requiring cross-tabulations only include complete cases.

Participants for the consumer engagement and satisfaction survey were low and medium-risk callers to the National Coronavirus Helpline from Qld and SA, recruited by a third-party organisation specialising in survey distribution. Participants recruited for the Practice Manager surveys were managers in Qld/SA/NSW who received a secure message notification from Healthdirect Australia.

Healthdirect Australia CRM and telephony data included Qld and SA consumers identified as low and medium-risk, and NSW consumers considered potentially eligible for antiviral treatment from 1 May to 7 November 2022. Open-ended responses contained in the NSW consumer survey were only collected up until 10 June 2022. Healthdirect Australia website analytics include all available data for Qld/SA users from the week beginning 5 May to 24 October 2022. National and state/territory COVID statistics and public health restriction data from 1 May to 7 November 2022 that was publicly available were used for comparisons and correlations. Table 2 outlines key program activities and data sources used.

Data preparation and analysis

Google Analytics Website data

Raw data was initially summarised by week of year and state prior to further analysis. Columns consisting of total numbers were summed and columns with ratios or means were averaged. Calculating the top 10 pages visited required text searches for page names within URLs. Parent pages of the Healthdirect website have child pages, however these were often coded and not easily interpretable, therefore only parent pages were summarised. For example, the two URLs “/national-covid-19-helpline-faqs/consumers/774”, and “/national-covid-19-helpline-faqs/consumers/778” are child pages under the Helpline FAQ parent page and so data such as pageviews from these child pages were combined. There was some discrepancy between the total number of users accessing the symptom checker when comparing datasets (specifically A2 and A3) and it has been assumed that this is due to slight differences in query parameters.

CRM data

Raw data was summarised by week of year and state. Demographic tables included all data including ‘missing’ and ‘not provided’ responses. Data was filtered to exclude ‘missing’ and ‘not provided’ responses for select demographic figures and metrics. Analysis was carried out using RStudio and MS Excel. The R package ‘dplyr’ (version 1.0.2) was used to summarise categorical and numeric variables primarily by week and state. Simple summary statistics were undertaken on all data. Categorical data was presented either as totals or percentages of individual levels within categories. Any categorical data consisting of multiple responses is noted in the accompanying text. Numeric variables are presented as either totals or means.






NSW antiviral data

Raw data was summarised by week of year prior to analysis.

Consumer survey and GP data

Consumer survey data were analysed using descriptive statistical analysis. Where data was categorical, counts and percentages are used for reporting. Where open ended responses were provided, they are reported as stated, with minor grammatical corrections for enhancement of clarity. Qualitative answers are analysed using an inductive thematic analysis approach.

Table 2: Program activities and data sources

Program activity	Data sources	Participants
 <p>Inbound National Coronavirus Helpline (NCH): 24/7 Call centre: Assessment, Triage and Health Advice</p>	<p>Healthdirect Australian CRM and telephony data</p> <p>State/Territory COVID case numbers data</p> <p>Consumer engagement and satisfaction survey (developed by CSIRO)</p>	<p>Qld/SA callers to the National Coronavirus helpline (n = 94,494)</p> <p>All available data (May-Nov 2022)</p> <p>Low and medium-risk callers to the National Coronavirus Helpline (n = 329) recruited by third-party organisation specialising in survey distribution</p>
 <p>GP secure messaging system: Notification to GP</p>	<p>Consumer engagement and satisfaction survey (developed by CSIRO)</p> <p>Practice Manager and GP surveys (developed by CSIRO)</p>	<p>Low and medium-risk callers to the National Coronavirus Helpline (n = 329) recruited by third-party organisation specialising in survey distribution</p> <p>Practice Managers and GPs in Qld/SA/NSW (n = 42) who have received a secure message notification from Healthdirect Australia recruited via Healthdirect Australia</p>
 <p>Healthdirect Australia website: Supporting self-managed care at home with digital tools and info</p>	<p>Healthdirect Australia website analytics</p> <p>Consumer engagement and satisfaction survey (developed by CSIRO) – Qld and SA</p>	<p>All available data for Qld/SA users from May-October 2022. Symptom Checker web data only covers the period May-September 2022 due to low numbers</p> <p>Low and medium-risk callers to the National Coronavirus Helpline (n = 329) recruited by third-party organisation specialising in survey distribution</p>
 <p>NSW antiviral access facilitation</p>	<p>NSW outbound call centre data</p> <p>NSW 7-day follow-up antiviral survey</p>	<p>NSW consumers contacted/attempted to be contacted by the NCH (n = 21,765)</p> <p>NSW consumers eligible for antivirals who agreed to participate (n=5,943)</p>
 <p>Economic evaluation</p>	<p>Australian Bureau of Statistics</p> <p>Independent Hospital Pricing authority</p> <p>Consumer engagement and satisfaction survey (developed by CSIRO)</p>	<p>Employee earnings and hours</p> <p>National Hospital Cost Data Collection Report</p> <p>Low and medium-risk callers to the National Coronavirus Helpline (n = 329) recruited by third-party organisation specialising in survey distribution</p>

Program activity details

National Coronavirus Helpline (NCH)

The NCH provides bespoke care according to jurisdictional requirements. Qld and SA focused on supporting low-medium risk consumers to manage their care and assist with coordinating GP visits, where appropriate. The NSW program focused on connecting eligible consumers to antiviral treatments through GP appointment coordination.

Qld & SA: The 24/7 inbound call centre (known as the National Coronavirus Helpline (NCH)) has been established to provide information for people who are COVID positive and need support with managing symptoms at home or advising when they should seek medical assistance. As shown in Figure 1, call handlers use the COVID Symptom Checker to assess caller symptoms and advise, based on severity, whether the caller needs to get to hospital, should contact their GP or can manage at home. Callers assessed as low-risk are advised on what to do to manage their condition and when to seek help. They also receive a link to the Healthdirect Australia Symptom Checker and other online digital tools to support their recovery at home. Callers assessed as medium-risk can opt to have an outcome of their symptom/clinical risk assessment sent via secure messaging as a notification to their GP/healthcare provider to support follow-up care. Callers triaged as high-risk are directed back to the state’s health service and are outside the scope of this evaluation.

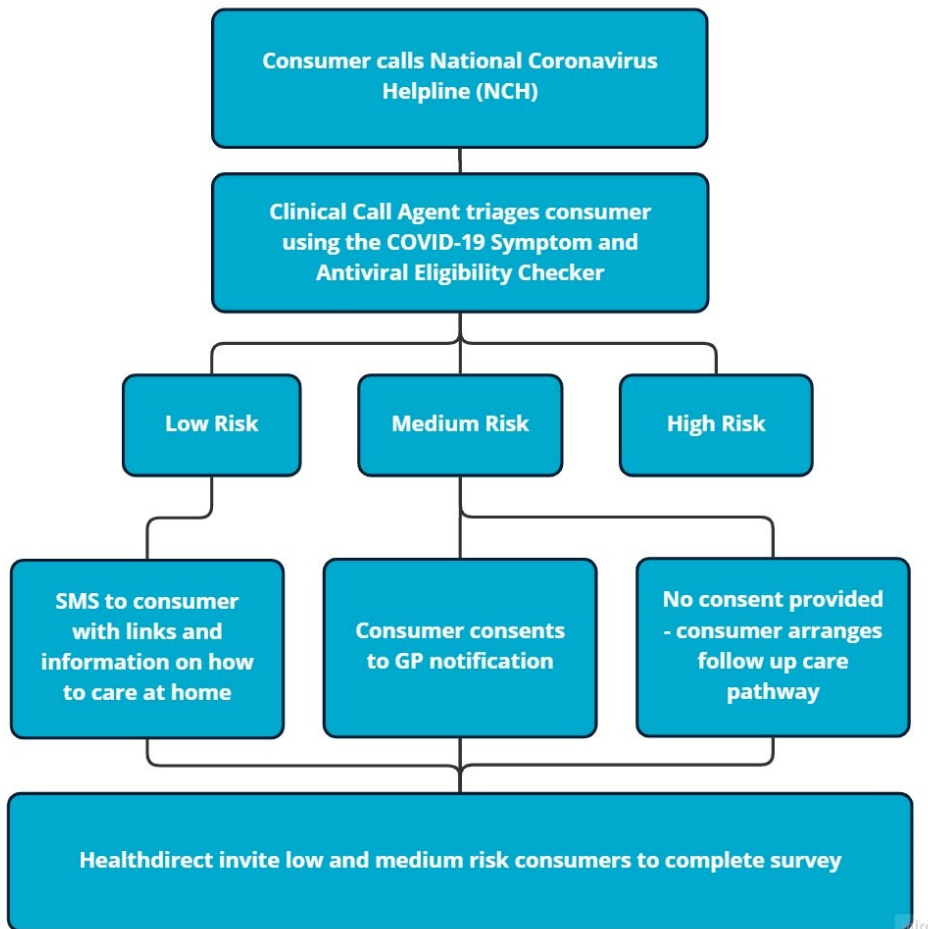


Figure 1: Qld & SA notification flow

NSW: In May 2022, the New South Wales (NSW) government commenced active participation in the Living with COVID Program however, the focus in NSW is only on coordinating timely access to GP services for people considered eligible for antiviral treatment. For COVID positive consumers that NSW Health assesses as not requiring urgent hospital care and eligible for antiviral therapy, NSW Health provides a real-time data feed to Healthdirect Australia. For those who have consented to a message being sent to their GP, Healthdirect Australia notify the consumer’s nominated GP that their patient has COVID and may be eligible for treatment. Figure 2 summarises the NSW antiviral access facilitation process.

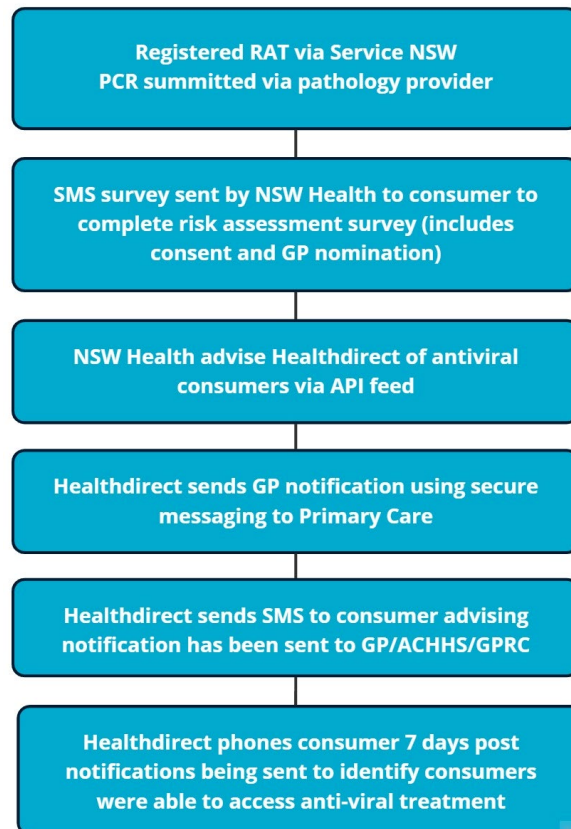


Figure 2: NSW antiviral access facilitation pathway

Healthdirect Australia website

The Healthdirect Australia website was designed to provide free, clinically accurate health advice that aligns with current medical guidelines and government policy to consumers seeking information about COVID. The website offers a range of resources to support self-care, including Symptom Checker, managing symptoms and recovery at home, when to get tested, antiviral eligibility and applications to find local testing and vaccine clinics. Consumers are encouraged to ring the NCH if they need further information.

Antiviral notifications

The GP notification of a potentially eligible antiviral medication consumer is sent via a secure message system. Healthdirect Australia also undertakes an outbound call to the practice to advise of the notification being sent. Healthdirect Australia engages with alternate practices including General Practice Respiratory Centres (GPRCs) for consumers that do not have a regular GP, their GP does not utilise secure messaging for information exchange or does not have capacity to see their patient in the next 24 hours. Healthdirect Australia sends an SMS to the consumer advising them that their GP has been notified and advising them to contact their GP for further assessment for antiviral treatment eligibility. A follow up survey is undertaken 7-days following the notification to evaluate whether the consumer was able to access a primary care consult and whether antiviral treatments were provided. The process is detailed in Figure 1 and 2 above.



Part 1: 24/7 inbound call centre

The following section reports the effectiveness of the call centre in directing consumers to either self-manage their care or seek assistance from primary or tertiary care providers. First, an overview of Healthdirect Australia CRM and telephony metrics provides insights into the performance of the service in meeting consumer demand. This is followed by the Qld and SA consumer survey data points that relate to satisfaction with the National Coronavirus Helpline (NCH).

1.1 National Coronavirus Helpline (Qld & SA)

1.1.1. Caller Demographics (Qld & SA)

To provide a comprehensive picture of the Qld & SA consumers who called the helpline and how efficient it is, CRM data and telephony metrics are reported below. All available demographic characteristics are shown in Table 3. SA had almost double the number of calls compared to Qld although the demographics of callers were similar. ***Note: percentages are rounded to the nearest decimal place**

Table 3: Demographic characteristics of callers to the National Coronavirus Helpline.

Variable	Qld	SA	Total
Overall = n	34,332 (36)	60,162 (64)	94,494
Handled calls = n (%)	32,999 (96)	57,868 (96)	90,867 (96)
Gender = n (%)			
Female	9,445 (28)	16,841 (28)	26,286 (28)
Male	5,039 (15)	8,985 (15)	14,024 (15)
Other	9 (0)	9 (0)	18 (0)
Not provided	17,774 (52)	30,791 (51)	48,565 (51)
Missing	2,065 (6)	3,536 (6)	5,601 (6)
COVID status = n (%)			
Yes	18,137 (53)	30,949 (51)	49,086 (52)
No	2,918 (8)	4,920 (8)	7,838 (8)
N/A (not tested)	11,212 (33)	20,757 (35)	31,969 (34)
Missing	2,065 (6)	3,356 (6)	5,601 (6)
Age bracket = n (%)			
0-10yrs	423 (1)	704 (1)	1,127 (1)
11-20yrs	750 (2)	1,144 (2)	1,894 (2)
21-30yrs	3,324 (10)	5,186 (9)	8,510 (9)
31-40yrs	4,583 (13)	7,913 (13)	12,496 (13)
41-50yrs	4,216 (12)	7,342 (12)	11,558 (12)
51-60yrs	3,951 (12)	7,408 (12)	11,359 (12)
61-70yrs	3,611 (11)	6,699 (11)	10,310 (11)
71-80yrs	2,768 (8)	4,715 (8)	7,483 (8)
81-90yrs	686 (2)	1,290 (2)	1,976 (2)
91-100yrs	62 (0)	122 (0)	184 (0)
Over 100yrs	0 (0)	1 (0)	1 (0)
Not Provided	2,065 (6)	3,536 (6)	5,601 (6)
Missing	7,893 (23)	14,102 (23)	21,995 (23)
Caller relationship = n (%)			
Self	28,206 (82)	49,887 (83)	78,093 (83)
Parent	1,509 (4)	2,678 (4)	4,187 (4)
Partner	1,240 (4)	1,714 (3)	2,954 (3)
Child	779 (2)	1,476 (2)	2,255 (2)
Family Member	271 (1)	459 (1)	730 (1)
Health Care Provider	82 (0)	143 (0)	225 (0)
Other	180 (1)	269 (0)	449 (0)
Not provided	2,065 (6)	3,536 (6)	5,601 (6)
Risk triage disposition = n (%)			
Low	3,756 (11)	5,569 (9)	9,325 (10)
Medium	1,164 (3)	1,677 (3)	2,841 (3)
High	2,957 (9)	3,788 (6)	6,745 (7)
Call (000)	902 (3)	1,263 (2)	2,165 (2)
Not Provided	23,488 (68)	44,329 (74)	67,817 (72)
Missing	2,065 (6)	3,536 (6)	5,601 (6)

1.1.2. Call centre metrics, efficiency, and notification flow (Qld & SA)

Call centre metrics are summarised in Table 4. Results show that consumers did not wait long to speak to an operator, and once they did, were triaged, assessed, and advised in approximately 7 minutes. Most consumers reached the helpline through the Living with COVID clinical queue which is dedicated to COVID consumers. ***Note: percentages are rounded to the nearest decimal place. Minutes have been expressed as a portion (e.g., 1 minute, 20 seconds = 80 seconds = 1.3 minutes) to enable calculation of standard deviation.**

Table 4: NCH metrics and GP notifications

Variables	Qld	SA	Total
Overall n (%)	34,332 (36)	60,162 (64)	94,494
Call metrics			
Abandoned calls (%)	1,333 (4)	2,294 (4)	3,627 (4)
Handled calls (%)	32,999 (96)	57,868 (96)	90,867 (96)
Avg wait time (mins) (mean (SD))	0.82 (1.84)	0.79 (1.82)	0.80 (1.83)
Avg call duration (mins) (mean (SD))	7.72 (6.40)	6.93 (6.10)	7.22 (6.22)
Queue (%)			
General	9,968 (29)	18,628 (31)	28,596 (30)
LWC Clinical	14,189 (41)	19,312 (32)	33,501 (35)
Clinical	1,365 (4)	2,738 (5)	4,103 (4)
LWC General	8,560 (25)	19,139 (32)	27,699 (29)
NCH Priority	250 (1)	345 (1)	595 (1)

1.1.3. Call volumes by risk triage disposition (Qld & SA with COVID cases overlay)

Figure 3 tracks the volume of calls to the NCH over time across both Qld and SA by risk triage category (risk triage category = low risk, medium risk, high risk, call 000). In total, 23% (n = 21,076/90,867) callers were allocated a risk triage category using symptom checker between May-Nov 2022. Most calls come from low and high-risk callers. Call volumes also trend closely with reported COVID case numbers.

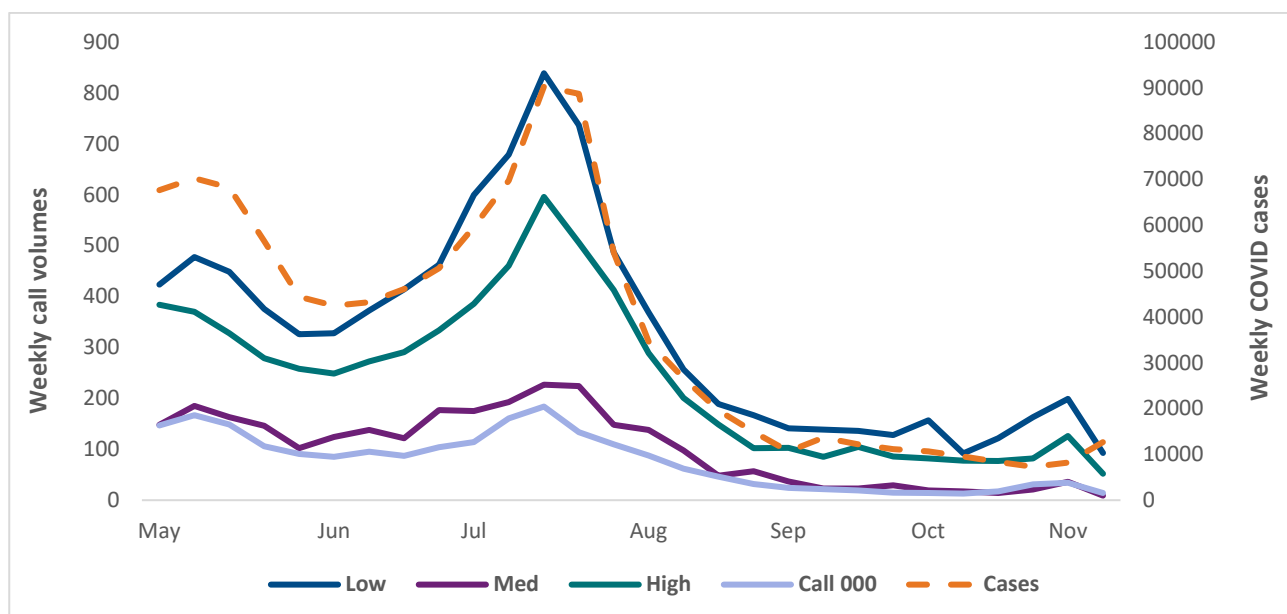


Figure 3: Call volumes overtime (inc. Qld & SA weekly COVID case numbers)

1.1.4. Call volume by risk triage disposition (Qld & SA with hospitalisation overlay)

Figure 4 tracks the call volumes over time by disposition alongside COVID hospitalisation numbers (n = 21,076). Hospitalisations include all patients in hospital with COVID at any given time on a weekly basis. There is a slight lag between the peak triage of high-risk callers and hospitalisation numbers which is to be expected when considering the COVID disease trajectory. The data points positively towards the accuracy of the symptom checker as a predictor of hospitalisations.

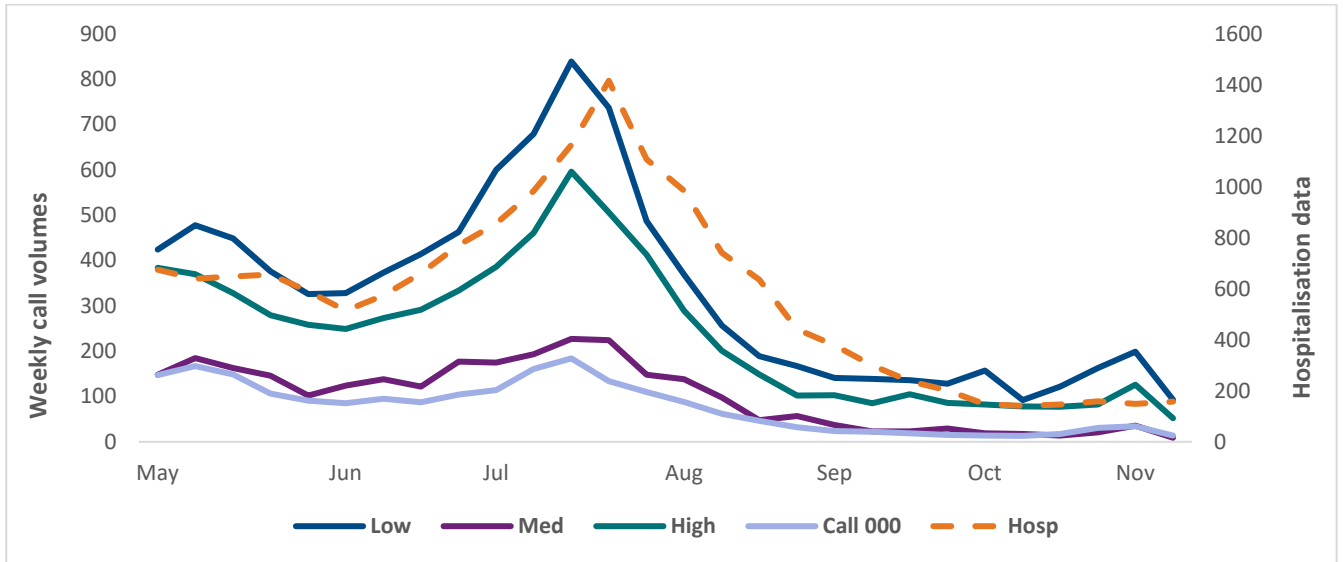


Figure 4: Call volumes overtime (inc. Qld & SA hospitalisation numbers)

1.1.5. Call volume – age demographic overlay (Qld & SA)

Figure 5 tracks the age groups of callers to the NCH and cases over time. In total, 66,898 callers are included from Qld and SA to the NCH were predominantly from the 21 to 60 age brackets (n = 43,923 (66%)).

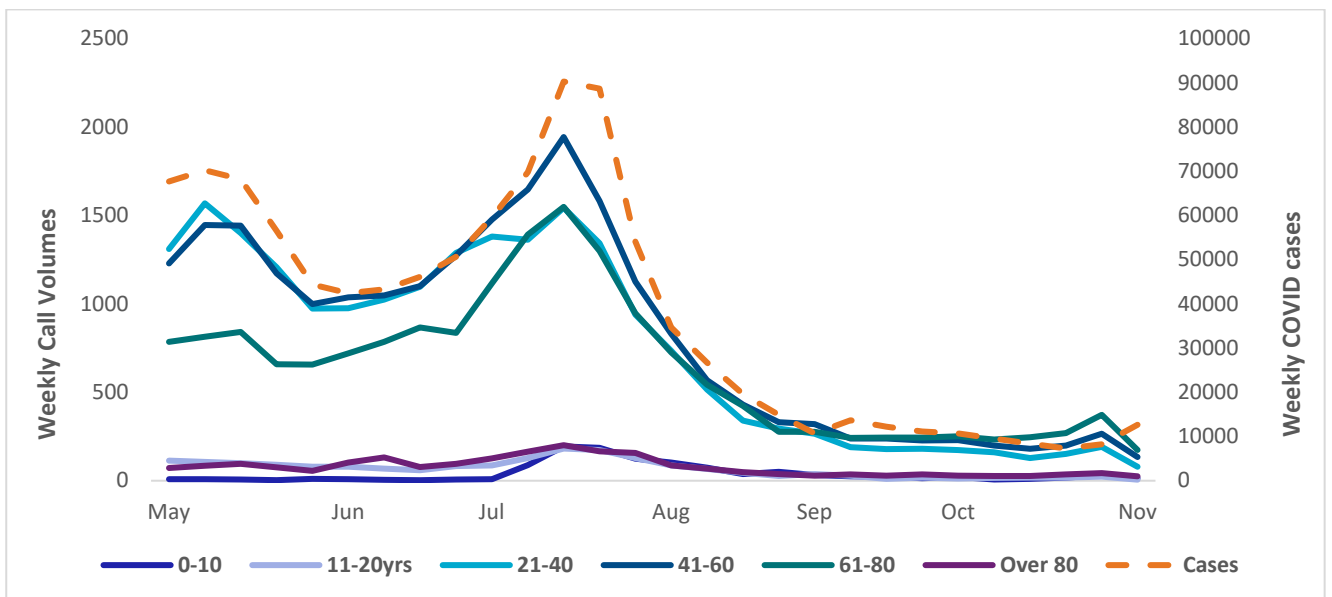


Figure 5: Call volumes by age group for Qld & SA over time with COVID case numbers overlay

1.1.6.Call duration

Table 5 shows handled call duration based on available demographic data. Qld calls were the longest in duration in the context of jurisdiction, with those coming via the LWC clinical queue taking the longest to finalise. **Minutes have been expressed as a portion (e.g., 1 minute, 20 seconds = 80 seconds = 1.3 minutes)**

Table 5: Call duration demographics

Average call duration	Qld	SA	Total
Overall	32,999 (7.72)	60,162 (6.92)	94,494 (7.22)
Gender			
Male	5,039 (9.38)	8,985 (8.29)	14,024 (8.69)
Female	9,445 (9.25)	16,841 (8.30)	26,286 (8.64)
Other	9 (9.19)	9 (9.59)	18 (9.75)
Not provided	17,774 (6.47)	30,791 (5.76)	48,565 (6.02)
Missing	2,065 (7.04)	3,536 (7.29)	5,601 (7.20)
Age bracket			
0-10yrs	423 (12.01)	704 (11.79)	1,127 (11.88)
11-20yrs	750 (8.39)	1,144 (7.70)	1,894 (7.98)
21-30yrs	3,324 (8.14)	5,186 (7.44)	8,510 (7.71)
31-40yrs	4,583 (8.42)	7,913 (7.48)	12,496 (7.82)
41-50yrs	4,216 (8.63)	7,342 (7.31)	11,558 (7.79)
51-60yrs	3,951 (8.54)	7,408 (7.62)	11,359 (7.94)
61-70yrs	3,611 (8.75)	6,699 (7.88)	10,310 (8.18)
71-80yrs	2,768 (9.17)	4,715 (8.12)	7,483 (8.51)
81-90yrs	686 (9.58)	1,290 (9.16)	1,976 (9.30)
91-100yrs	62 (9.78)	122 (10.0)	184 (9.92)
Over 100yrs	0 (0)	3,536 (7.29)	5,601 (7.20)
Not provided	2,065 (7.04)	14,102 (4.45)	21,995 (4.60)
Missing	7,893 (4.85)	1 (3.78)	1 (3.80)
Queue			
General	9,968 (5.35)	18,628 (5.15)	28,596 (5.22)
LWC Clinical	14,189 (11.11)	19,312 (10.88)	33,501 (10.97)
Clinical	1,365 (8.74)	2,738 (8.81)	4,103 (8.79)
LWC General	8,560 (4.64)	19,139 (4.42)	27,699 (4.49)
NCH Priority	250 (12.48)	345 (10.42)	595 (11.29)
COVID status			
Yes	18,137 (9.56)	30,949 (8.5)	49,086 (8.90)
No	2,918 (6.66)	4,920 (6.37)	7,838 (6.48)
N/A (not tested)	11,212 (5.10)	20,757 (4.69)	31,969 (4.83)
Missing	2,065 (7.04)	3,536 (7.29)	49,086 (7.20)

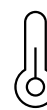
Calls from the youngest (0-10) and oldest brackets (91-100) took the longest to finalise



COVID positive consumer calls took longer than general related calls



Living with COVID clinical and priority queues had the longest call times



1.1.7. Duration of calls (Qld & SA)

Figure 6 shows the average duration of handled calls (in minutes) over time.

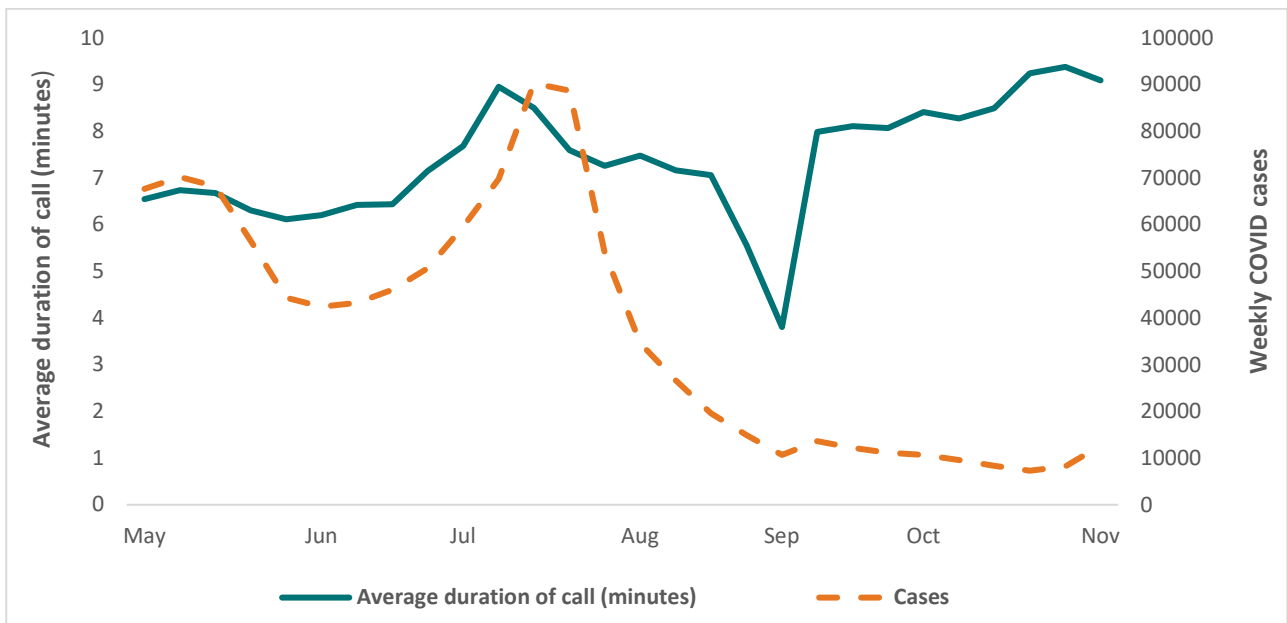


Figure 6: Duration of calls with a COVID cases overlay

1.1.8. Duration of calls (Qld & SA) – risk triage category overlay

Figure 7 shows the average duration of calls (in minutes) over time according to risk triage category. 22% (n = 21,076) callers were allocated a risk triage category and are included in the graph below. Calls from low, medium, and high-risk triage categories tend to take a similar amount of time to complete, with call 000 being the shortest, as would be expected.

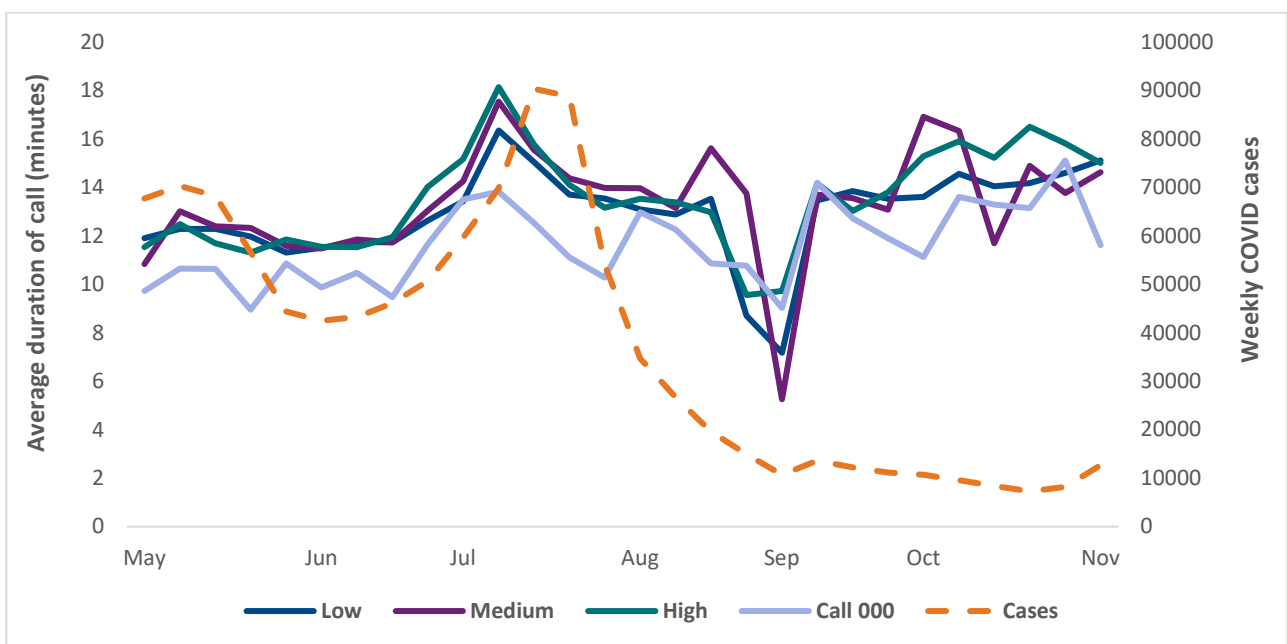


Figure 7: Duration of calls stratified by risk triage category with COVID cases overlay

1.1.9. Duration of calls (Qld & SA) – demographic overlay

Figure 8 shows the average duration of calls by age group. 71% (n = 66,898) callers provided their age and are included below.

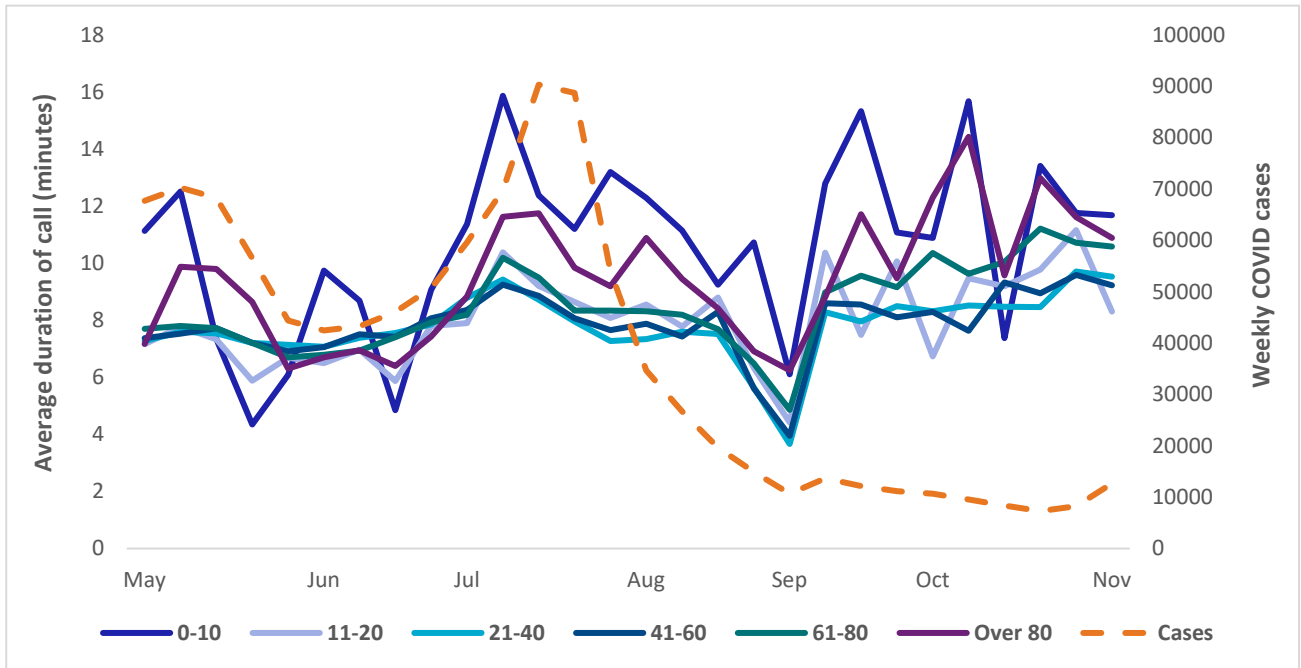


Figure 8: Duration of calls by age group over time

1.1.10. Call efficiency (Qld & SA) - Wait times (by case numbers)

Figures 9 & 10 show that wait times tend to increase when case numbers rise, which is unsurprising. Despite this, callers only had to wait around 2 minutes during peaks of COVID cases. However, as time progresses, wait times appear to be increasing despite falling COVID case numbers.

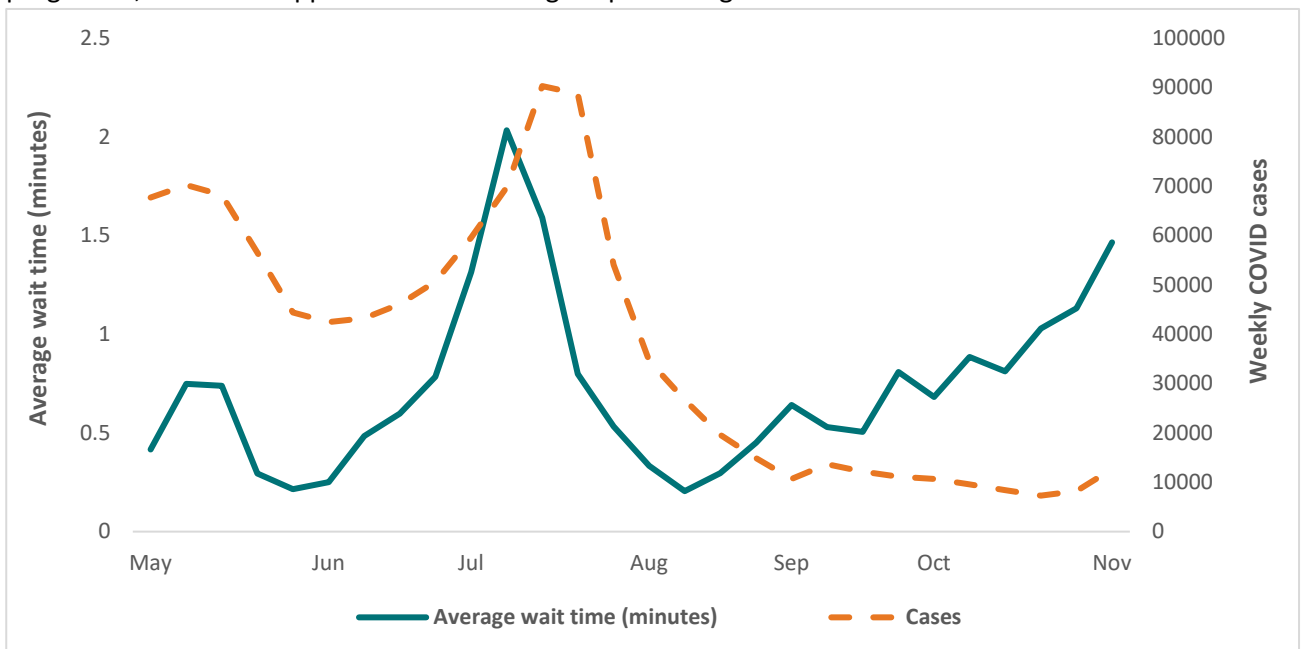


Figure 9: Wait times with COVID cases overlay

1.1.11. Call efficiency (Qld & SA) - Wait times (by call volumes)

Figure 10 below shows that while wait times initially peaked during an increase in COVID cases, later trends show that wait times are increasing despite the reduction in call volumes and COVID cases, as seen in Figure 9.

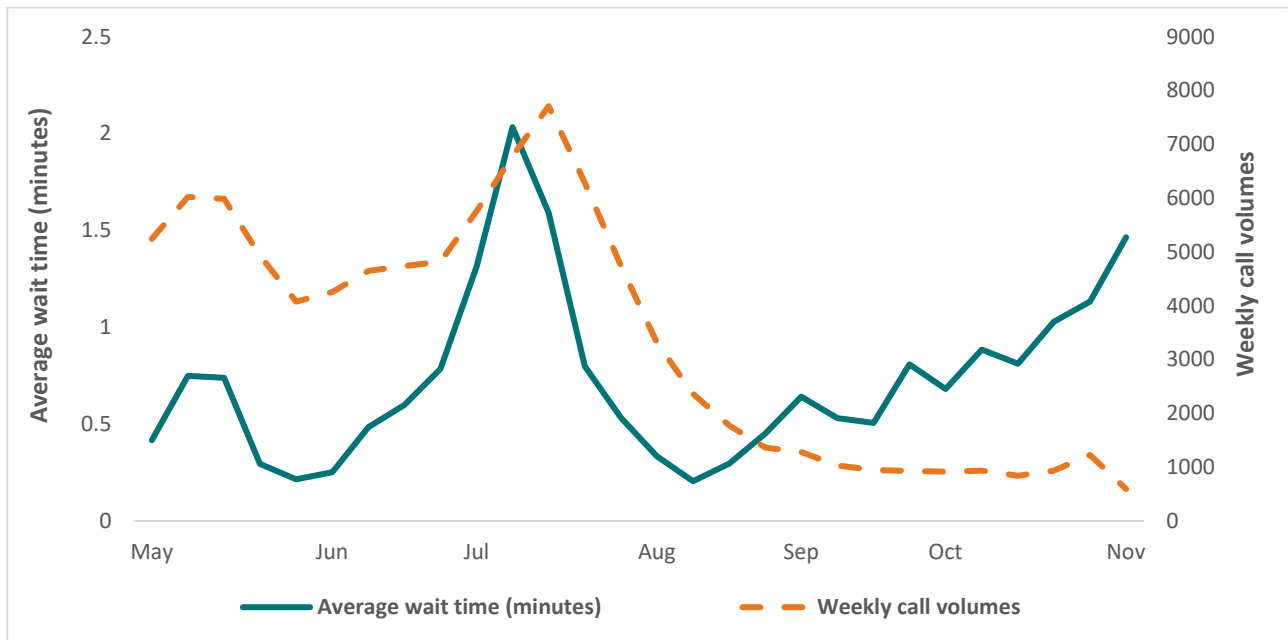


Figure 10: Wait times with call volume overlay

1.1.12. Call efficiency (Qld & SA) – Unanswered calls (by staffing level)

The wait time trend in Figure 9 & 10 is consistent with the rate of call abandonment as shown in Figure 11. That is, as wait times increase, people are more likely to abandon their call. Figure 11 shows that despite a trending increase in FTE, more calls are being abandoned. This may be potentially due to increased wait times – the reasons for this are unclear and may warrant further investigation.

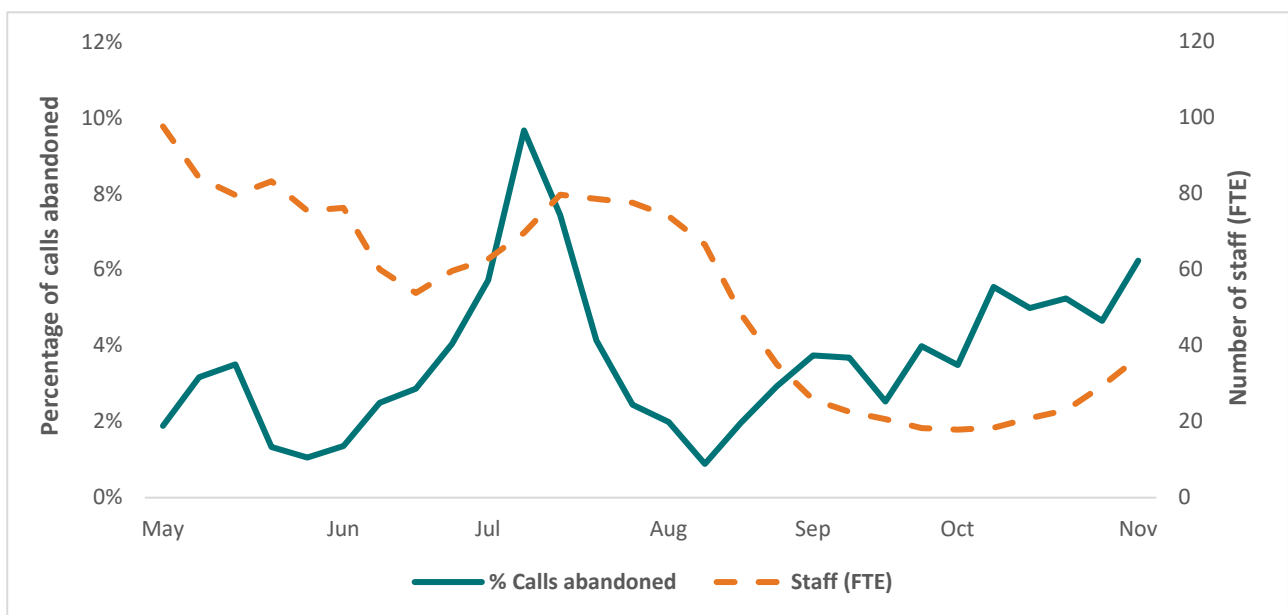


Figure 11: Unanswered calls over time with FTE staffing overlay

1.1.13.GP Video consult data

The number of GPs who conduct video consultations and the number of consultations per day did not vary significantly with case numbers as seen in Figure 12. This suggests that there is a finite pool of GPs who undertake video consultations and that they are at maximum capacity for the number of video consultations they can conduct per day. ***Note: data for consults is restricted to the week commencing 16th October**

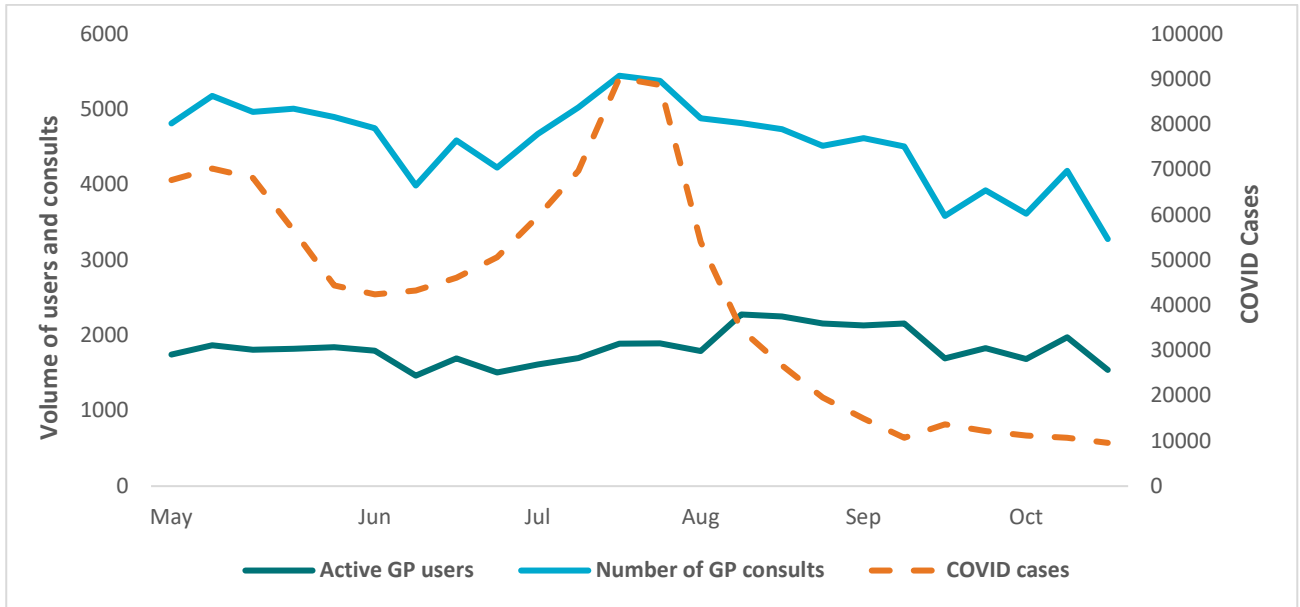


Figure 12: GP video users and consults over time with COVID case overlay

1.2 Consumer Survey (Qld & SA)

1.2.1. Consumer Survey demographics

Consumers calling the National Coronavirus Helpline and triaged as low or medium-risk were invited to complete a survey to understand satisfaction levels and the impact on health seeking behaviours. The following includes survey responses across the period of July-October 2022. Of 2,784 invitations sent, 329 responses were received reflecting a 12% response rate. Table 6 shows the primary demographics of survey participants. ***Note: percentages are rounded to the nearest decimal place**

Table 6: Consumer survey demographics

Demographic	Qld	SA	Total
n	148 (45)	181 (55)	329
Age = n (%)			
18-24 years	3 (2)	0 (0)	3 (1)
25-34 years	9 (6)	13 (7)	22 (7)
35-44 years	21 (15)	16 (9)	39 (12)
45-54 years	18 (12)	22 (12)	40 (12)
55-64 years	32 (22)	37 (20)	69 (21)
65-74 years	39 (26)	68 (38)	107 (33)
75+ years	26 (18)	23 (13)	49 (15)
Total	148	181	329
Gender = n (%)			
Female	108 (73)	117 (65)	225 (68)
Male	40 (27)	64 (35)	104 (32)
Total	148	181	329
Risk of hospitalisation = n (%)			
Low risk	104 (70)	140 (78)	244 (74)
Medium Risk	44 (30)	41 (22)	85 (26)
Total	148	181	329
Regional/Metro location = n (%)			
Regional	53 (36)	32 (18)	85 (26)
Metropolitan	94 (64)	148 (82)	242 (74)
Prefer not to say	1 (1)	1 (1)	3 (1)
Total	148	181	329

1.2.2. Age, gender, and location stratified by risk triage category

Table 7 shows that most consumers were triaged as low-risk and within the 65-74 years old bracket (n = 95, 39%). This trend continued at the overall proportion level of callers (n = 107, 33%), however most of the medium-risk callers were in the 35-44 years old bracket (n = 23, 27%). There was an even spread of participants across Qld and SA. Most surveys were completed by female respondents (n = 225, 68%).

***Note: percentages are rounded to the nearest decimal place**

Table 7: Consumer survey demographics by risk triage category

Demographic	Low risk	Medium Risk	Overall
Age = n (%)			
18-24 years	2 (1)	1 (1)	3 (1)
25-34 years	12 (5)	10 (12)	22 (7)
35-44 years	16 (7)	23 (27)	39 (12)
45-54 years	24 (10)	16 (19)	40 (12)
55-64 years	51 (21)	18 (21)	69 (22)
65-74 years	95 (39)	12 (14)	107 (33)
75+ years	44 (18)	5 (6)	49 (15)
Total	244	85	329
Location = n (%)			
Qld	104 (43)	44 (52)	148 (45)
SA	140 (57)	41 (48)	181 (55)
Total	244	85	329
Gender = n (%)			
Female	161 (66)	64 (75)	225 (68)
Male	83 (34)	21 (25)	104 (32)
Other/Prefer not	0 (0)	0 (0)	0 (0)
Total	244	85	329

1.2.3. Education, language, and housing stratified by risk triage category

There was an even spread of education attainment from the senior secondary levels and above, with 45% of the sample having a university level education, indicating the sample is well educated. Only 5% of respondents do not appear to have completed greater than secondary education schooling. ***Note: percentages are rounded to the nearest decimal place**

Table 8: Secondary demographics

Demographic	Low risk	Medium risk	Overall
Highest level of education = n (%)			
Post graduate degree	31 (13)	13 (15)	44 (13)
Grad cert/diploma	31 (13)	15 (18)	46 (14)
Bachelor's degree	42 (17)	16 (19)	58 (18)
Adv. Dip/Diploma	35 (14)	8 (9)	43 (13)
Certificate level	35 (14)	11 (13)	46 (14)
Senior secondary	46 (19)	17 (20)	63 (19)
Junior secondary	13 (5)	2 (2)	15 (5)
Primary education	1 (0)	1 (1)	2 (1)
Other	3 (1)	1 (1)	4 (1)
Rather not say	7 (3)	1 (1)	8 (2)
Total	244	85	329
English (Y/N) = n (%)			
Yes	197 (81)	68 (80)	265 (81)
No	44 (18)	17 (20)	61 (19)
Rather not say	3 (1)	0 (0)	4 (1)
Total	244	85	329

Demographic	Low risk	Medium risk	Overall
How many people usually live in your household? = n (%)			
1	61 (25)	12 (14)	73 (22)
2	125 (51)	32 (38)	157 (48)
3	33 (14)	16 (19)	49 (15)
4 or more	25 (10)	25 (29)	50 (15)
Total	244	85	329
Do you have children living in your household? = n (%)			
Yes	42 (17)	38 (45)	80 (24)
No	139 (57)	35 (41)	174 (53)
Rather not say	2 (1)	0 (0)	2 (1)
N/A	61 (25)	12 (14)	73 (22)
Total	244	85	329

1.2.4. COVID vaccine doses

Consumers were asked about the number of COVID vaccine doses they had. Most indicated that they had received three or more doses of the vaccine (n = 286, 87%).

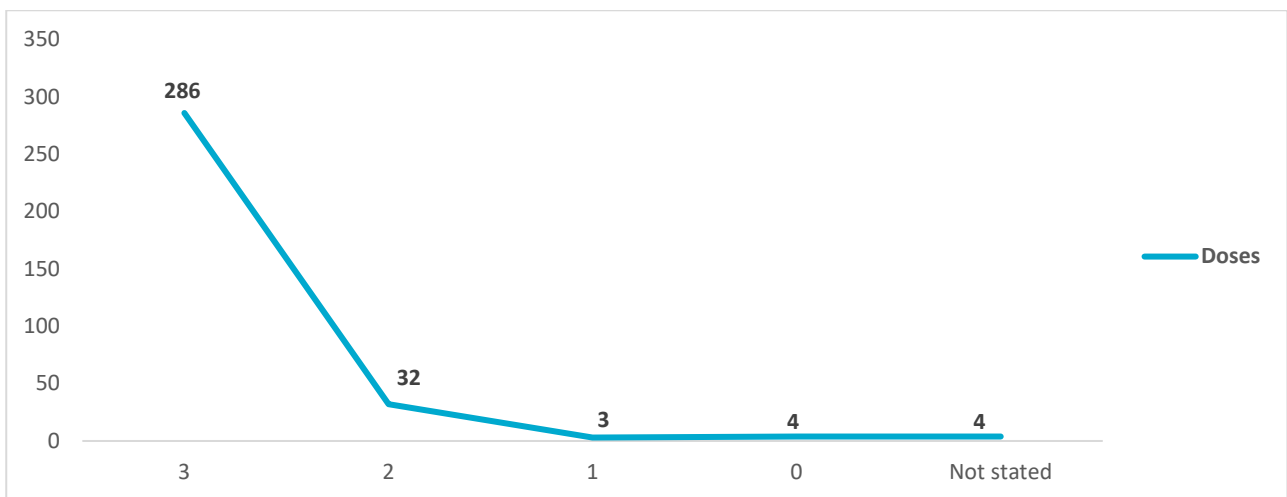



Figure 13: COVID vaccination status

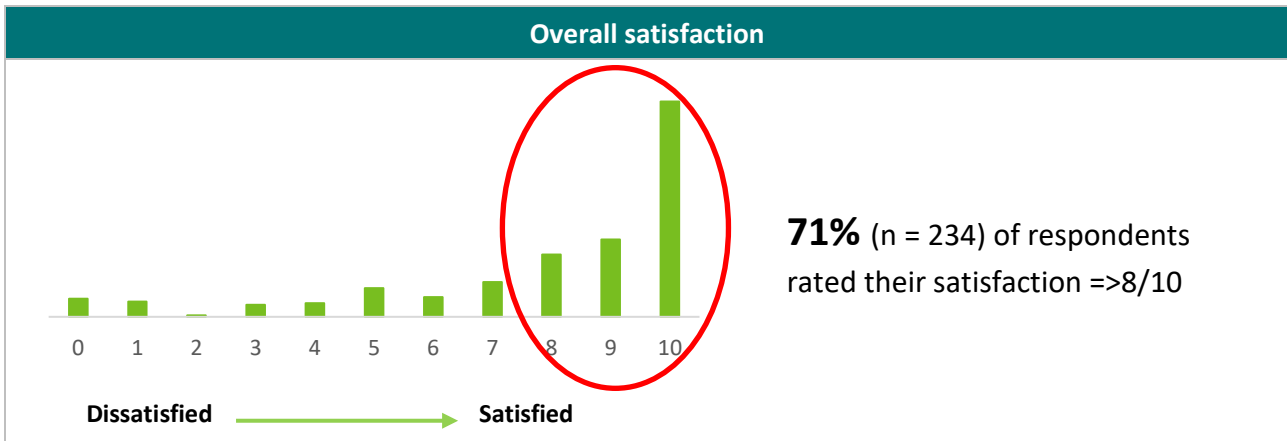
1.2.5. Referral source

Consumers were asked about how they came to be referred to call the helpline. Just under half (n = 136, 41%) stated that they were directed to call by the state health department or health provider. ***Note: consumers could select more than one response**

Helpline referral source		
	42% state health dept/health provider	10% were recommended by family or friends
	26% searched for the number online/service directory	8% stated 'other'
	15% saw the number in marketing	7% stated that they had rung previously

1.2.6. Satisfaction with the helpline

Overall, consumers were highly satisfied with the helpline with 71% of respondents providing a rating of 8 or higher out of 10.



1.2.7. Satisfaction with individual elements

Consumers were asked about their satisfaction levels with various elements of the service, including response times, the information provided, and the communication skills of the call receiver. Table 9 uses a heat map to demonstrate that most respondents felt positive about the experience, with most selecting satisfied or very satisfied about each element.

Table 9: Satisfaction with individual elements

	Very dissatisfied n (%)	Dissatisfied n (%)	Neutral n (%)	Satisfied n (%)	Very Satisfied n (%)
Access to the service (including call menus and pre-call information)	2 (2)	5 (2)	44 (13)	140 (43)	133 (40)
Time kept on hold	5 (2)	8 (2)	40 (12)	148 (45)	128 (39)
Answers to your questions	8 (2)	19 (6)	43 (13)	101 (31)	158 (48)
Advice provided to you	16 (5)	21 (6)	34 (10)	97 (29)	161 (49)
Communication skills and support provided by the call handler	8 (2)	16 (5)	28 (9)	99 (30)	178 (54)

Most consumers were satisfied or very satisfied for each element of the NCH service. When combining all ratings across all elements, 82% of scores provided a rating of satisfied or very satisfied.



1.2.8. Information clarity

Consumers were asked questions about the information and advice provided to them by the National Coronavirus Helpline call centre staff in the context of how clear and easy to understand it was. As shown in Figure 14, 92% (n = 304) found some or all the information provided to be clear and easy to understand. The remaining 8% (n = 25) stated that they did not understand much or all of the information given to them.

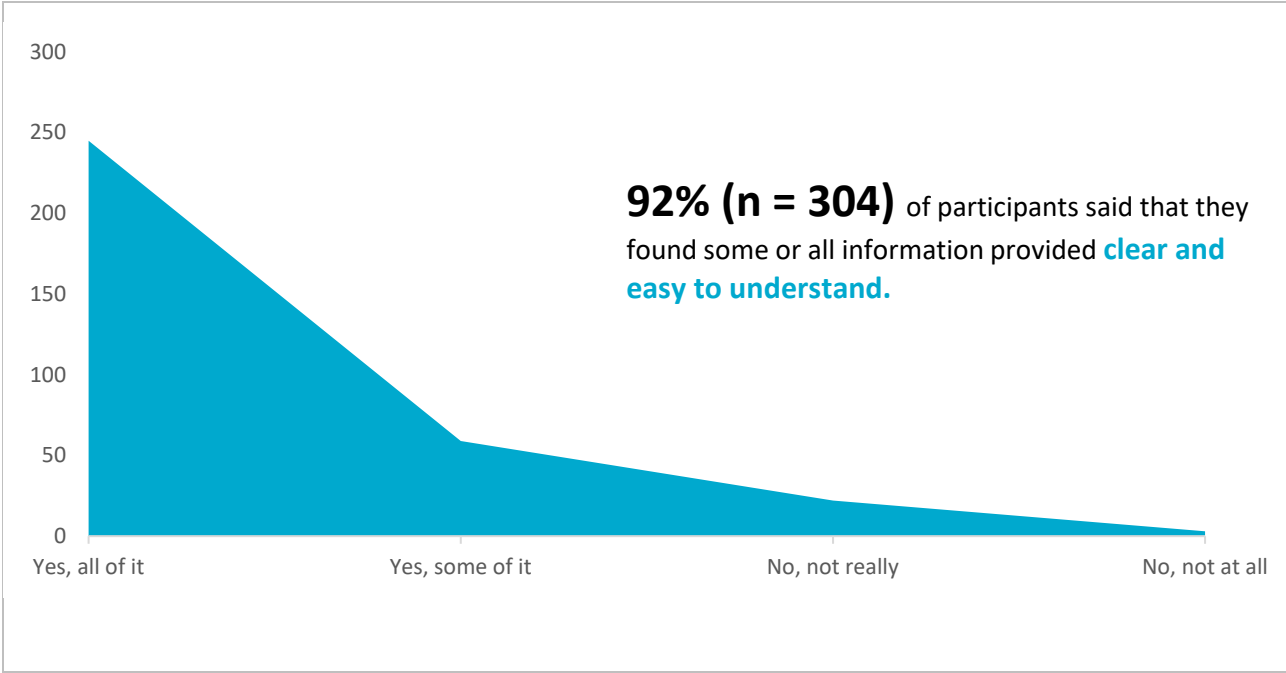


Figure 14: Information clarity

1.2.9. Likelihood of referral to friends, family, or colleagues

Further evidence of satisfaction with the service was demonstrated through almost three quarters of consumers (72%, n = 237) highly likely to recommend the helpline to family and friends.

Table 10: Likelihood of referral

How likely are you to recommend the helpline to family and friends?
72% scored likelihood =>8/10 (10 = extremely likely)



Part 2: Notification to GP

The following section of the report provides insights into the performance of the National Coronavirus Helpline (NCH) in facilitating GP notifications to Qld and SA consumers using survey data. Self-report behavioural drivers that influence consumer engagement with GPs are reported. Practice Manager and GP survey responses are reported across Qld, SA and NSW (although are limited) and track general awareness of perceived utility of the notification service.

2.1 Qld & SA Consumer survey results

2.1.1. Demographics (Qld & SA)



Consumers who had rung the National Coronavirus Helpline and were triaged as low or medium risk were invited to complete a survey to understand satisfaction levels and the impact on health seeking behaviours. The following includes survey responses across the period of July-October 2022. Of 2,784 invitations sent, 329 responses were received reflecting a 12% response rate. Table 11 shows the primary demographics of survey participants. ***Note: percentages are rounded to the nearest decimal place**

Table 11: Demographics of survey participants

Demographic	Qld	SA	Total
n	148 (45)	181 (55)	329
Age = n (%)			
18-24 years	3 (2)	0 (0)	3 (1)
25-34 years	9 (6)	13 (7)	22 (7)
35-44 years	21 (15)	16 (9)	39 (12)
45-54 years	18 (12)	22 (12)	40 (12)
55-64 years	32 (22)	37 (20)	69 (21)
65-74 years	39 (26)	68 (38)	107 (33)
75+ years	26 (18)	23 (13)	49 (15)
Gender = n (%)			
Female	108 (73)	117 (65)	225 (68)
Male	40 (27)	64 (35)	104 (32)
Risk of hospitalisation = n (%)			
Low risk	104 (70)	140 (78)	244 (74)
Medium Risk	44 (30)	41 (22)	85 (26)
Regional/Metro location = n (%)			
Regional	53 (36)	32 (18)	85 (26)
Metropolitan	94 (64)	148 (82)	242 (74)
Prefer not to say	1 (1)	1 (1)	2 (1)

2.1.2. Action after diagnosis (Qld & SA)

Consumers were asked if they contacted a GP after being diagnosed, or, if the GP reached out to them. Most (68%) contacted the GP themselves (n = 224/329), with almost one quarter (n = 72/329, 22%) not seeing a GP at all. Only 10% (n = 33/329) had to be contacted to arrange an appointment.

<p>I contacted the GP</p>  <p>68% (n = 224)</p>	<p>The GP contacted me</p>  <p>10% (n = 33)</p>	<p>No GP consultation</p>  <p>22% (n = 72)</p>
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2.1.3. Motivation to contact GP (Qld & SA)

Consumers who had an appointment with the GP (n = 257) were then asked what prompted them to visit the GP. Figure 15 provides an overview of the reasons for visiting the GP. Interestingly, two thirds state their reason was that they were eligible for antiviral medications (n = 169, 66%). ***Note: consumers could select more than one response.**

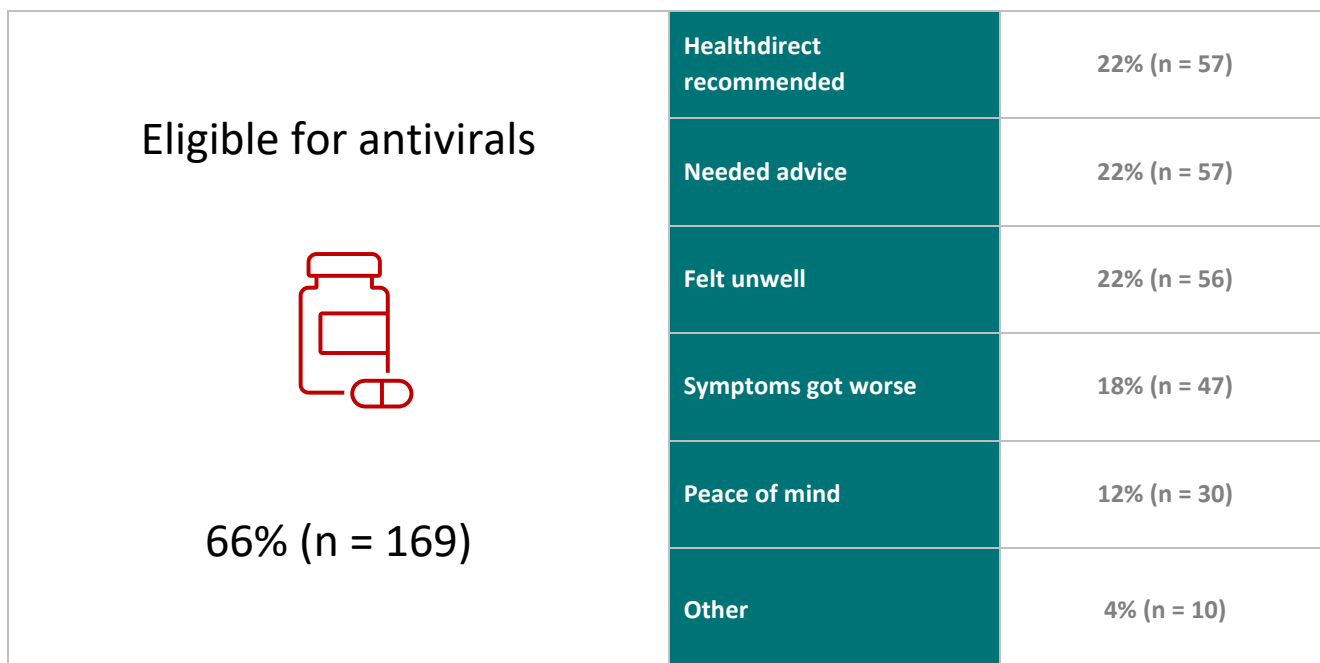
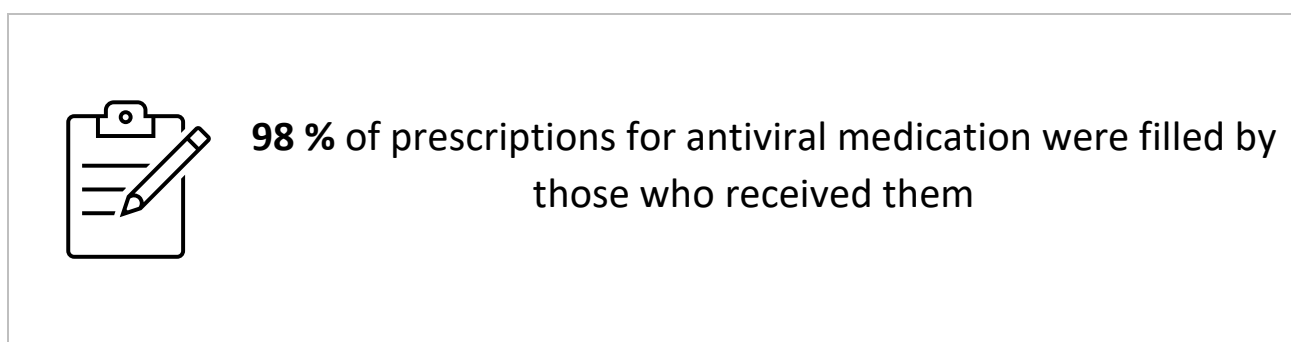


Figure 15: Motivation to contact GP responses

2.1.4. Antiviral medications (Qld & SA)

Whilst Healthdirect Australia saw a large uptake of antivirals in NSW, consumers from Qld and SA were asked whether they accessed antivirals to ensure a global view of the provision and uptake of antiviral treatment. Interestingly, as observed earlier, eligibility for antivirals was the main driver of GP engagement. Of those who visited their GP (n = 257), 63% (n = 163) stated that they received a prescription for antiviral medication, with the vast majority of those 98% (n = 160) reporting they filled the prescription.



2.1.5. Reasons for not contacting a GP (Qld & SA)

Consumers were asked why they **did not** consult a GP following a COVID-positive diagnosis (22%, n = 72). They were able to select multiple reasons for this. The most common reason was that people felt confident managing on their own (n = 32/72, 44%). ***Note: consumers could select more than one response.**


<p>I felt confident managing on my own</p>  <p>44% (n = 32)</p>	Other	25% (n = 18)
	I didn't want to leave the house	19% (n = 14)
	Wait time too long	15% (n = 11)
	I felt OK	7% (n = 5)
	I don't have a regular GP	6% (n = 4)
	I didn't want to burden the GP	6% (n = 4)
	Couldn't afford to see the GP	4% (n = 3)
	Couldn't arrange transport	1% (n = 1)



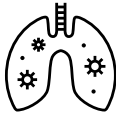
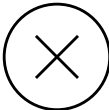
Figure 16: Reasons for not engaging with GP

2.1.6. GP appointments (Qld & SA)

In addition to asking whether they saw a GP, consumers were asked about the appointment characteristics. We sought to ascertain if the consumer was engaging with their regular GP or another and the reason why they did not see their usual practitioner. Of the (n = 257) consumers who saw a GP, 65% (n = 166) managed to see their regular GP, with the remaining 35% (n = 91) having to seek care away from their usual practice.

Consumers were asked for the reason they were not able to see their usual GP and could select multiple reasons which are summarised below. The most common reason being that the wait time was too long (n = 36, 40%), or their GP was absent or on leave (n = 35, 38%). Some (n = 18, 20%) selected 'none of the above'.

***Note: consumers could select more than one response**

 <p>Wait time too long n = 36 (40%)</p>	 <p>Regular GP absent or on leave n = 35 (38%)</p>	 <p>Not seeing COVID positive n = 5 (5%)</p>	 <p>No regular GP n = 1 (<1%)</p>
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2.1.7. Timing of appointments (Qld & SA)

Access to antivirals in a timely manner is important. Figure 17 shows most consumers (89%) were able to see a GP within two days of their diagnosis, 182 (71%) within 1 day and 48 (19%) within 1-2 days. ***Note: percentages are rounded to the nearest decimal place**

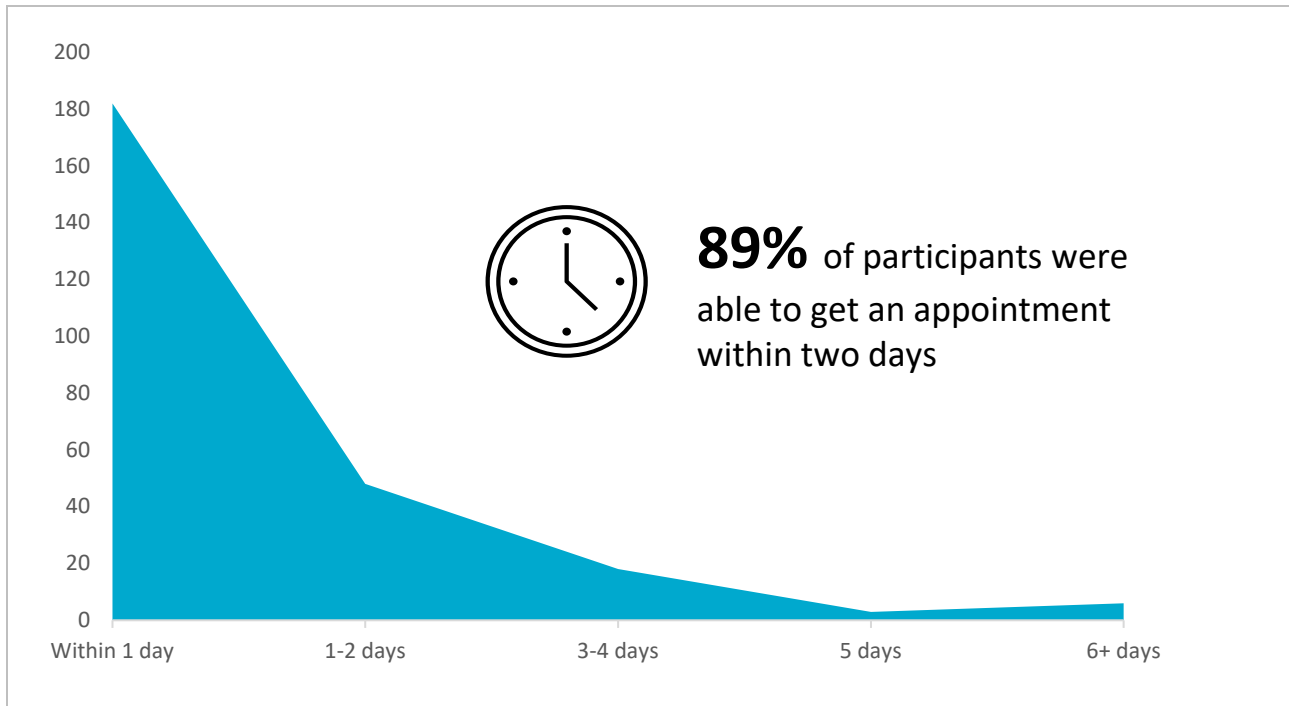


Figure 17: Wait times for GP visit

2.2 National Coronavirus Helpline (CRM and Telephony Metrics)

2.2.1. SA & Qld GP Notifications

19% of low-risk consumers (n = 1,743/9,325) were deemed eligible for self-care at home compared to 53% of medium-risk consumers (n = 1,496/2,841), providing a combined total of 27% eligible overall (n = 3,239/12,166).





2.3 Practice Manager and GP Survey results

As part of the Living with COVID program, notifications were sent by Healthdirect Australia to the Practice Managers of GP clinics suggesting that they contact consumers to arrange an appointment with a GP. Between 10th July and up until 17th October, 11,550 notifications had been sent to 3,289 GP clinics across Qld, SA & NSW. On average, each clinic received three notifications each (n = 3.51 (95% CI 3.34-3.68)). The notifications were sent through the secure messaging service and designed to act as a prompt to contact consumers for an appointment in the instance that the consumer had not reached out sooner.

Practice Managers and GPs were invited to participate in a survey that aimed to understand their satisfaction with the Living with COVID program and perceived usefulness of the notification system. Such notification systems will become increasingly important in the face of future health crises, and it is important to evaluate their utility so that they can be streamlined and adapted to maximise use and engagement. Of 1,867 survey invitations sent, 25 responses were received (1.3% response rate). Of those, 21 responses were from Practice Managers and 4 from GPs.

Table 12: GP and practice manager survey data sources



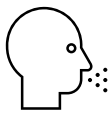

GP and Practice Manager Survey data sources	
<p>Survey distributed by a third-party organisation specialising in survey distribution</p>  <p>Recruited through individual email invitation 1,867 invitations sent; 25 responses returned (1.3% response rate).</p>	<p>Survey distributed by Healthdirect on behalf of CSIRO using promotional flyer/email</p>  <p>Recruited through verbal invitation and email sent by Healthdirect staff 17 surveys completed</p>

2.3.1. Limitations

The following analysis is based on the limited data available and may not be generalisable. Further research is needed to have greater certainty in the acceptability and utility of the program to practice managers and GPs.

2.3.2. Practice Profiles




Practice demographic information was collected to gain a picture of the size of clinics that are engaging with the system and location to understand if there are geographical influences on engagement with the program.

<p>6+ GPs on average in practice</p> 	<p>2-5 admin roles on average in each practice</p> 	<p>Mean monthly patient volume 3,833</p> 	<p>Even mix of metro (n = 10) and regional (n = 11) areas</p> 
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2.3.3. Practice manager awareness of the LwC program secure notification system

We sought to understand if Practice Managers had an awareness of the Living with COVID secure notification system and asked if they had received one or more notifications of a COVID positive patient (considered eligible for antiviral treatment) from Healthdirect Australia (on behalf of Qld Health, SA Health, NSW Health).

Of the limited number of respondents, 43% (n = 9) reported receiving a notification and just over half (52%, n = 11) were not sure if they had received a notification, demonstrating a potential lack of awareness about the program notification system. Further data is needed to understand if this is generalisable.

 <p>Not sure/can't say</p> <p>52%</p> <p>n = 11/21</p>	 <p>No</p> <p>5%</p> <p>n = 1/21</p>	 <p>Yes</p> <p>43%</p> <p>n = 9/21</p>
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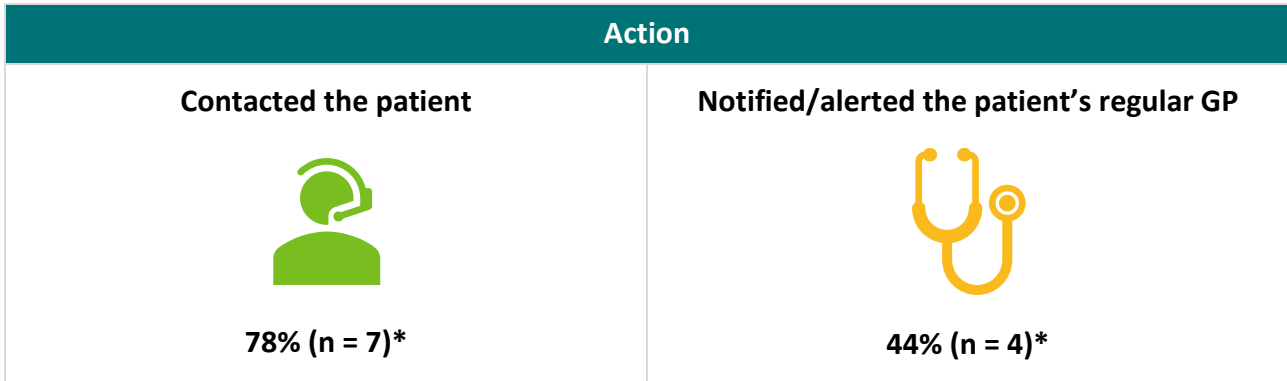
2.3.4. Practice manager engagement with the notification system

Practice managers were asked about the number of notifications received and the frequency that the system was checked for notifications. In total, 29% (n = 6) of respondents reported checking the system 6-7 times per week, with 10% (n = 2) checking 4-5 times per week, while more than half did not check the system at all (57%, n = 12). The number of notifications received were low with only 9.5% (2/21) of respondents reporting receiving 6 or more notifications.

Notifications received		Frequency of checking system	
1-2	9.5% (n = 2)	Less than weekly	5% (n = 1)
3-5	24% (n = 5)	4-5 times	10% (n = 2)
6+	9.5% (n = 2)	6-7 times	29% (n = 6)
N/A	57% (n = 12)	N/A	57% (n = 12)

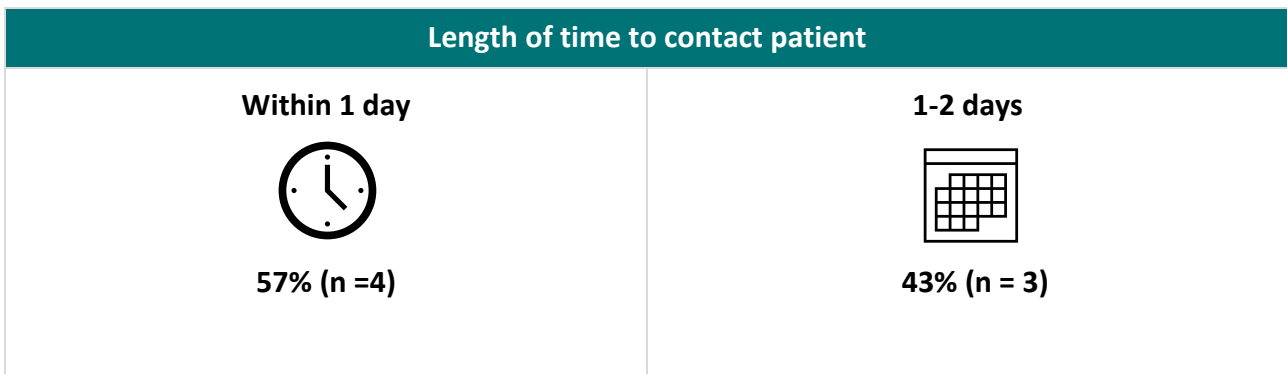
2.3.5. Practice manager action taken after notifications

Respondents who received a notification were asked about the action they took once receiving it. Seven (78%) of respondents reported contacting the patient after receiving the notification and 4 (44%) notified the patient’s regular GP. Thus, it appears that most practices are taking the desired action after receiving the notification. **Note: participants could select more than one response.*



2.3.6. Practice manager response times

Respondents were asked how long it took for the practice to contact the patient. All respondents who contacted the patient did so within 1-2 days.



2.3.7. Practice manager service impacts

Respondents were asked to rate the level of impact on their practice (increase in workload) of the GP notification service from 1-10 with 1 being low impact (minimal interruption to the service) and 10 being significant impact. Most respondents said the impact was low (56%, n = 5). **Note: percentages are rounded to the nearest decimal place*

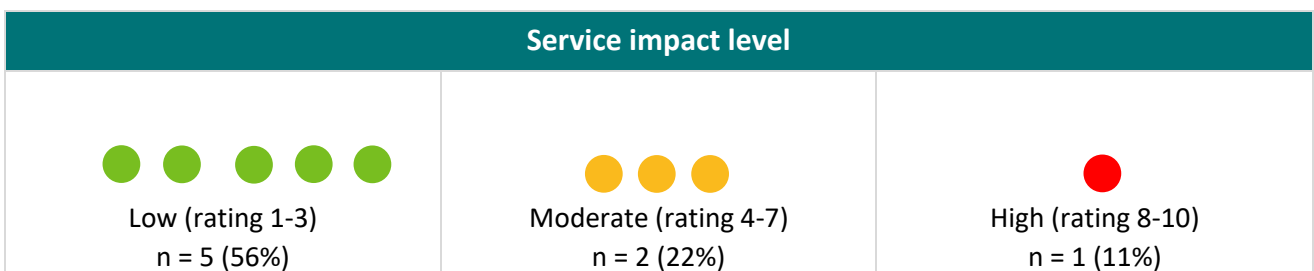


Figure 18: GP practice service impact of program

2.3.8. Practice manager service impacts - qualitative

Respondents were asked to elaborate on the reason for their service impact rating. The qualitative responses are reported below.

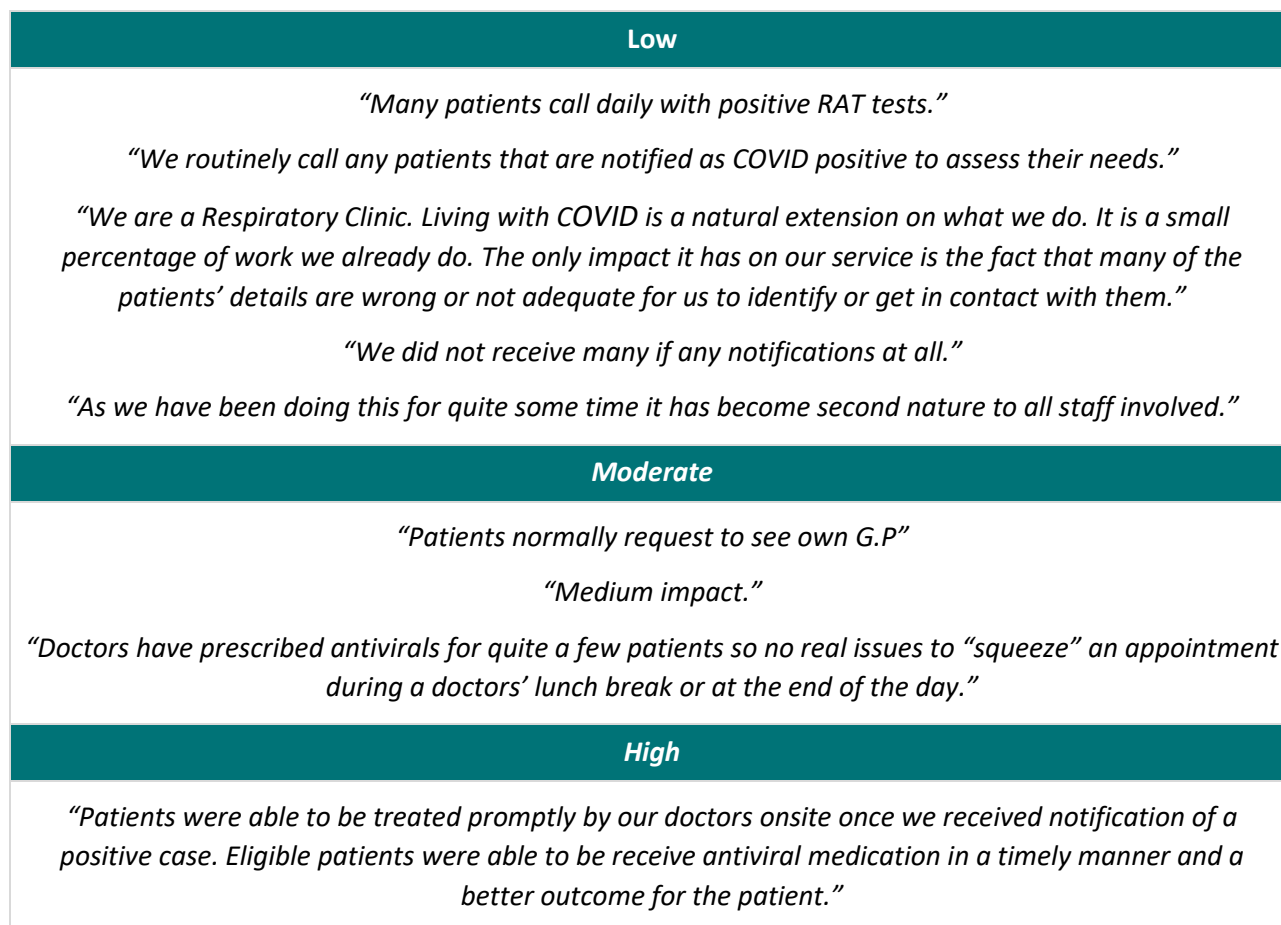


Figure 19: Qualitative responses to service impact rating

2.3.9. Practice manager utility of service ratings

Respondents were asked to rate the usefulness of the information provided in the notification from Healthdirect between 1-10, with 1 being not useful at all and 10 being extremely useful. Most respondents said the notifications were moderately to extremely useful (n = 7, 78%). ***Note: percentages are rounded to the nearest decimal place**

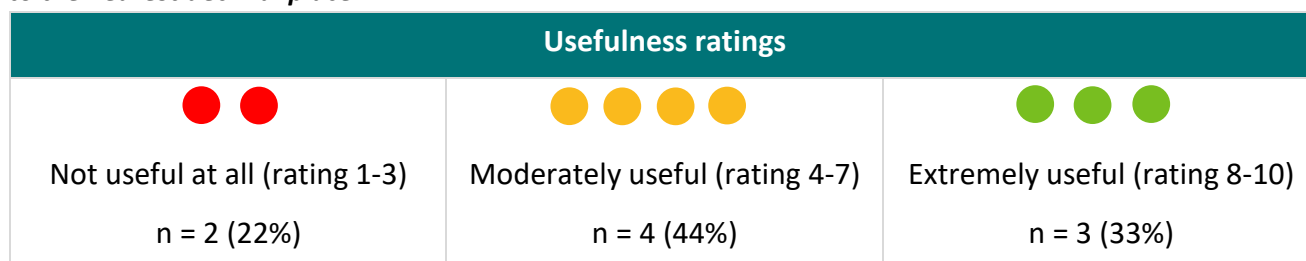


Figure 20: Usefulness of notification information

2.3.10. Practice manager utility of service ratings - qualitative

Respondents were asked to elaborate on how the notification process could be improved. The qualitative responses are reported below.

Not useful at all
<p><i>"Contact the patient on our behalf, first."</i></p> <p><i>"If the telephone number supplied is wrong, there is no way of identifying the patient with the information provided. There was no way for us to inform Healthdirect that we could not get in contact with the patient with the information provided."</i></p>
Moderately useful
<p><i>"I could give a more honest opinion if we had received notifications more regularly however unfortunately we could not rate this appropriately due to this factor."</i></p> <p><i>"The whole process worked well."</i></p> <p><i>"Nil."</i></p> <p><i>"Probably useful for non-regular patients - but most were known to our GPs. They made a phone call and did their own assessment as well."</i></p>
Extremely useful
<p><i>"Not sure."</i></p> <p><i>"No suggestions at this stage."</i></p> <p><i>"N/A."</i></p>

Figure 21: Qualitative responses to suggest improvements to notification process

2.3.11. GP Demographics

The below data includes demographic data of GPs who completed the survey distributed by a third-party organisation specialising in survey distribution (n = 4) and from a survey distributed by Healthdirect (n = 17). Most (57%) have been practising for between 6-15 years. Just over half of the respondents worked more than 40 hours per week (n = 11, 52%), with some reporting working up to 80 hours. This is reflective of the high demand on GP services and may help explain the limited response rate.

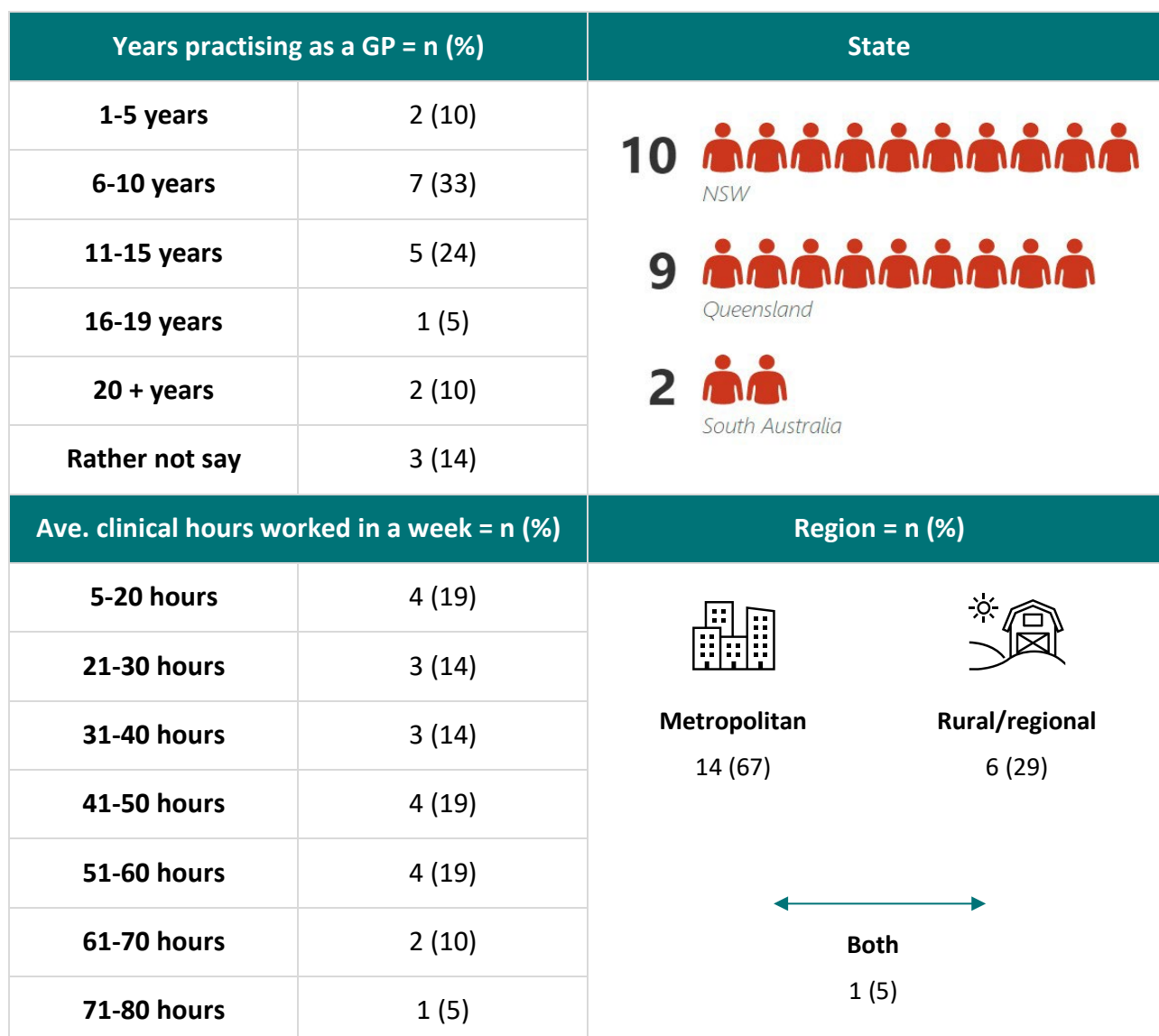



Figure 22: GP demographics summary

2.3.12. Services provided to patients

GPs were asked in both surveys about the services they currently provided to COVID patients. Of the four respondents in the third party distributed survey, two offered telehealth consultations only and two offered both face-to-face and telehealth. The responses in the Healthdirect distributed survey asked more broadly about services offered and all of them advised that they provided a full spectrum of care from testing through to treatment and monitoring.

2.3.13. Notifications from Healthdirect

Participants were asked in both surveys about whether they have been notified of COVID patients by Healthdirect. Most (81%) of GPs noted that they had received a notification. The majority of those who received a notification are from GP practices (n = 10, 63%).

Notifications received by GPs from Healthdirect	
 <p>81% of GPs across the combined data set received notifications from Healthdirect</p>	Third party survey = n (%)
	1 (25)
	Healthdirect distributed survey= n (%)
	16 (94)
Setting of notification = n (%)	
<i>*One participant did not provide a response</i>	
GP practice 10 (63)	
Both 5 (31)	
GP respiratory clinic 1 (6)	

2.3.14. Utility of notifications

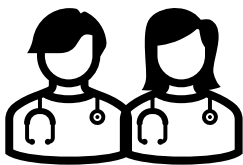
Participants were asked in the Healthdirect distributed survey what worked well regarding the notifications. Some exemplar qualitative responses are noted below. Overall, participants appreciated the risk triage aspect and the background information provided to them before the patient arrived.

Very useful
<p><i>“Consumer information and assessment, which meant I didn't have to re ask the consumer.”</i></p> <p><i>“Love seeing my patient’s assessment details.”</i></p> <p><i>“I had additional information to assist with consultation.”</i></p> <p><i>“Receiving assessment information about the consumer before they attended.”</i></p> <p><i>“Information on notification was useful.”</i></p> <p><i>“Notification and connection with primary care.”</i></p> <p><i>“Consumer details, assessment, risk stratification.”</i></p>
Not useful
<p><i>“The website was impossible for patients to navigate, and we never received any feedback even when patients said they did register their results and tried to navigate the system so NO benefit at all.”</i></p>

2.3.15. Timeframe of notifications

Participants were asked in the Healthdirect distribute survey about the timeliness of notifications. 11 of 17 participants provided a response. There was an overwhelming agreement that the notifications were received in a good timeframe (10 stated 'yes'), with one comment providing some ideas to enhance the service:

"No notification received in a timely manner that was any help - a message to our results inbox would be a start and not hard to do. We received state health messages to that inbox saying that the health services were being delayed - so it is possible to send us messages."

Notification response from consumers to GP	
	<p><i>10/11 GP respondents found the service to be timely, with two reporting that patients called within 24 hours or the same day of contacting the NCH.</i></p>

2.3.16. Suggestions for improvement

Participants were asked in the Healthdirect distributed survey what could be improved. Quotes are provided as well as a theme to highlight the key issue that could be addressed.

Qualitative suggestions for improvement
<p><i>"Something that truly engaged with the GP that actually usually cared for the patient - with timely information and enabling appropriate secondary/tertiary care to be delivered the system was especially bad for people that did not speak/read English - though adding the earlier option for an interpreter on the phone was a useful start - We had to develop a completely independently funded program for our patients with CALD (Culturally and linguistically diverse) background to ensure their safety - patients from diverse backgrounds should be allowed access to safe care as a routine - not with scraping together special funding so that new systems parallel to what others already have being established due to unaddressed need"</i></p> <p>*Theme: catering more comprehensively for consumers who are culturally and/or linguistically different</p> <p><i>"Maybe include the Medicare number"</i> <i>"Maybe include blood results"</i></p> <p>*Theme: additional information to give a more comprehensive view of patient background</p>

2.3.17. Sustainability of the model

Participants were asked in the Healthdirect distributed survey about the sustainability of the model moving forward. Most participants responded positively, with one who had some suggestions to improve/bolster the existing model.

Is the model sustainable moving forward?

"Yes - notification to GPs is great and improves care for the consumer."

"Yes - Can be used for many other use cases and types."

"Great model, can be used for lots of other care types."

"Yes-can be used for lots of use cases."

"Yes, lots of use cases".

"Yes. Can be used for many use cases and types. The notifications piece is very important."

***Theme: respondents could see the potential of the system to assist with management ongoing as well as other health issues.**

"No - if we get something like Ebola we are seriously in trouble, we need to get the system right. We need proper, not pretend, communication from those in Healthdirect and we need a system that is actually user-friendly for all people - that robot thing was hopeless - not one patient could use it unless it was someone who was already IT literate - digital literacy / health literacy / health system literacy / English literacy are all important here!"

***Theme: catering more comprehensively for consumers who are culturally and/or linguistically different as well as different health literacy levels.**

2.3.18. Challenges of caring for COVID positive patients

Participants in the Healthdirect distributed survey were asked about the challenges they face in caring for COVID positive patients. Most of the comments were focused on resourcing and an inability to provide timely access to care for patients who need it.

What are the challenges in caring for COVID positive patients?

"Knowing the person has COVID and knowing the pathways to further care once simple options are not working prior to serious illness."

***Theme: education about escalation pathways for patients who need access to tertiary care.**

"Getting the patients to test early."

***Theme: education for patients to test as soon as symptomatic.**

"No notification of GPs from lab directly for PCRs."

***Theme: communication could also come from the lab for PCR tests**

"Understaffed and over worked."

"Access to bookings within a timely manner."

"Timely access to GPs."

"The need for PPE/ adequate infrastructure (rooms/air quality/separate waiting/toilets/entrances) /adequately trained staff/ costs involved with purchase of PPE/extra costs of staff -nurses and doctors who need "danger money" for the work done, finding and retaining staff /extra staff training"

"This would be unsustainable without the contracts provided by the Commonwealth which assist in the costs involved. If this were not in place then the service would be unsustainable, and we would be forced to close and refer the patients to the local hospital ED for treatment. No other General practices will see these patients because of the risks/difficulties/costs involved. Just Telehealth is inadequate in many cases as they need clinical assessment in person-i.e., COVID. An integrated approach with pharmacy available to deliver and dispense drugs/ radiology provider able to cope with COVID positive patients as well as doctor and nurse follow up and escalation plans for worsening patients. Also, a close working relationship with the ambulance and established hospital referral pathways."

***Theme: lack of sufficient resources to provide timely care**

"Having to gain extensive consent etc - it should be treated like any other prescribing decision."

"Trying to find a pharmacy with stock."

'Access to antiviral medication."

***Theme: access and supply of antiviral medication could be improved**

2.3.19. Impact of caring for COVID positive patients

Participants were asked about the impact of caring for COVID positive patients on their care practices.

What has been the impact of caring for COVID positive patients on your care practices?

"High cost with minimal capacity to bill for cost of care delivered."

"Limited appointments due to extended assessment time for COVID patients, infection control guidelines and equipment."

"Longer wait times and PPE."

***Theme: reduced capacity for care due to infection control requirements**

"Masks, social distancing, increased working hours."

"Increase in staff required increase in PPE."

"Cleaning and protection."

***Theme: increased costs and need for PPE**

"Staff departing."

"Stress."

"Staff leaving."

***Theme: staff attrition**

"Continuous, change in practices."

"Everything,"


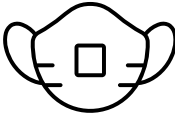

***Theme: ongoing and constant change of guidelines**

"Limited - practice already had processes and functions in place prior to me starting."

***Theme: no change**

2.3.20. Resources that support caring for COVID positive patients

Participants were asked about the resources they have and if any additional supports would be helpful in the provision of care to COVID positive patients.

What supports do you have now?	What else would help?	
		
<ul style="list-style-type: none"> • RACGP (Royal Australian College of General Practitioners) guidelines • Qld Health information • Multicultural patient information such as packs developed by Qld health. 	<ul style="list-style-type: none"> • Mask wearing 	<ul style="list-style-type: none"> • Good clear and consistent and up to date messaging with handouts - not confusing

Part 3: Healthdirect Australia Website: Supporting self-managed care at home with digital tools and information



Both the Healthdirect Australia website and the National Coronavirus Helpline (NCH) were developed to assist consumers to self-manage their care as appropriate. In Qld and SA, consumers could call the helpline, and be given information to support self-care which may have consisted of verbal advice or direction to access the Healthdirect Australia website. The following section provides website metrics for Qld and SA consumers to understand who is accessing the website and what information they commonly seek. Consumer survey data follows this and reports the level of perceived support provided by the website and helpline.

3.1 Website metrics

Data reported was provided by Healthdirect Australia and is considered against COVID case numbers (where appropriate). Data from Qld and SA only is used to enable correlation with survey data that rates the helpfulness and ease of use of the website.

3.1.1. Healthdirect COVID-19 related website users

Between May-Oct 2022, 1,556,759 Qld & SA users visited the Healthdirect Australia Living with COVID website. Of those, 1,104,470 originated from Qld, and 452,289 from SA. The proportion of new users accessing the website remained steady initially, reducing over time as reported cases subsided.

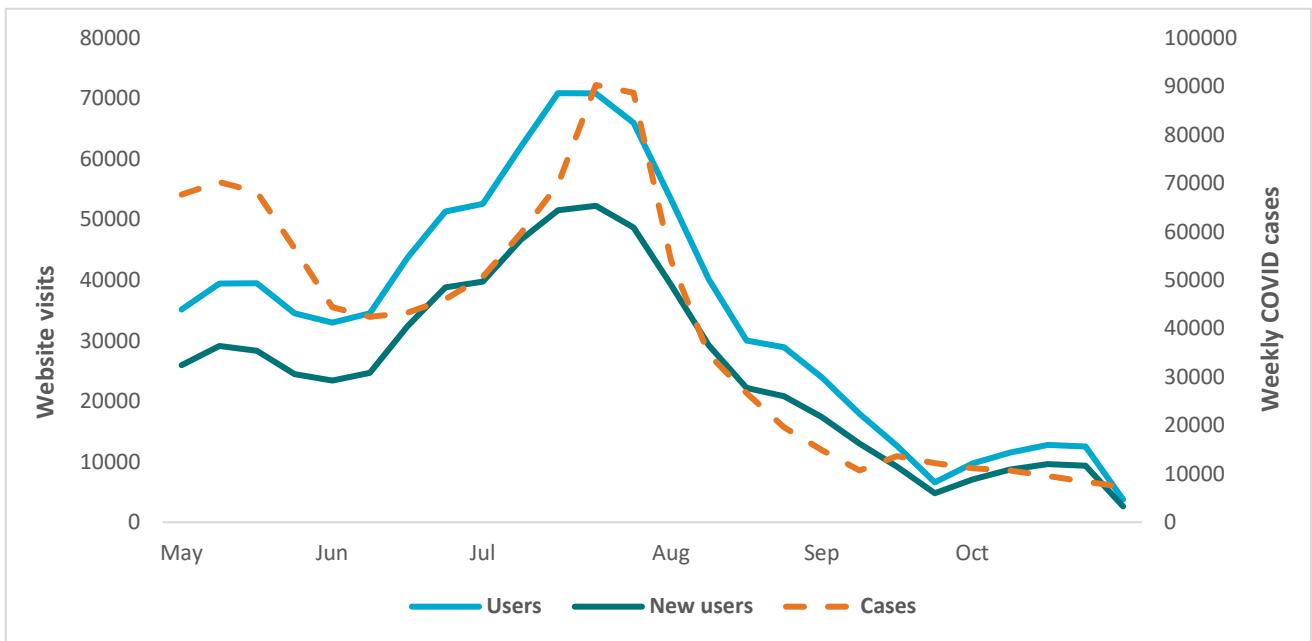


Figure 23: Users of the website overlaid with case numbers

Queensland	South Australia
42,480	17,396
Average users per week	Average users per week

Figure 24: Average number of users per week by jurisdiction

3.1.2. Healthdirect Australia website pages related to COVID-19 viewed

The following graph tracks page views per week (absolute). In total, there were 1,554,943 page views between May-Oct 2022 originating from Qld and SA. On average, there were 43,890 page views from Qld and 15,915 from SA each week. Overall, there were 29,903 page views (on average) per week from these jurisdictions combined.

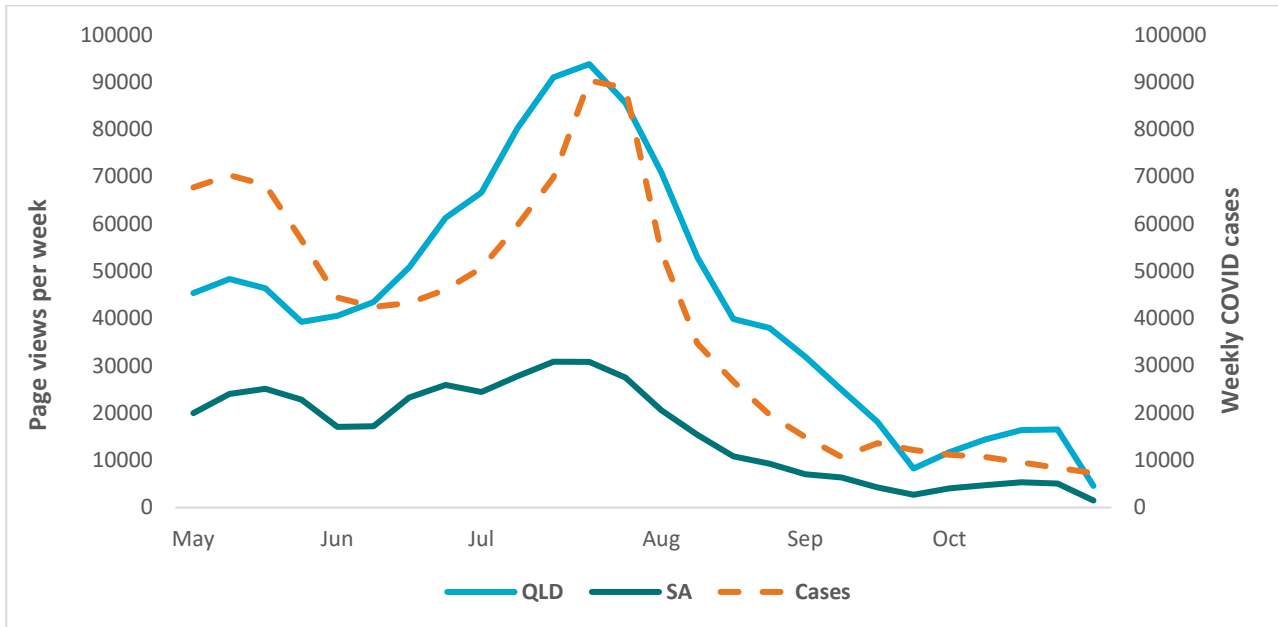


Figure 25: Weekly page views by jurisdiction with COVID case numbers overlay

Figure 26 below outlines the split of page views by jurisdiction, with the majority originating from Qld.

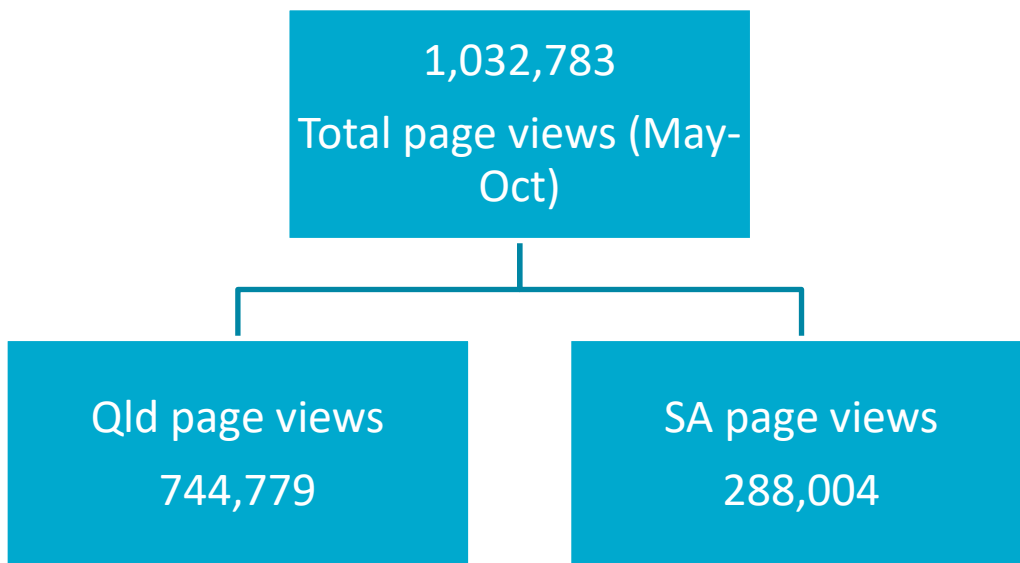


Figure 26: Total page view (jurisdictional distribution)

3.1.3. Healthdirect Australia website pages related to COVID-19 viewed per session

Figure 27 shows the average number of pages viewed per session per week. Across both Qld and SA between May-Oct 2022, each user visited 1.37 pages on average (per session). The number of pages viewed per session did not appear to vary greatly over time.

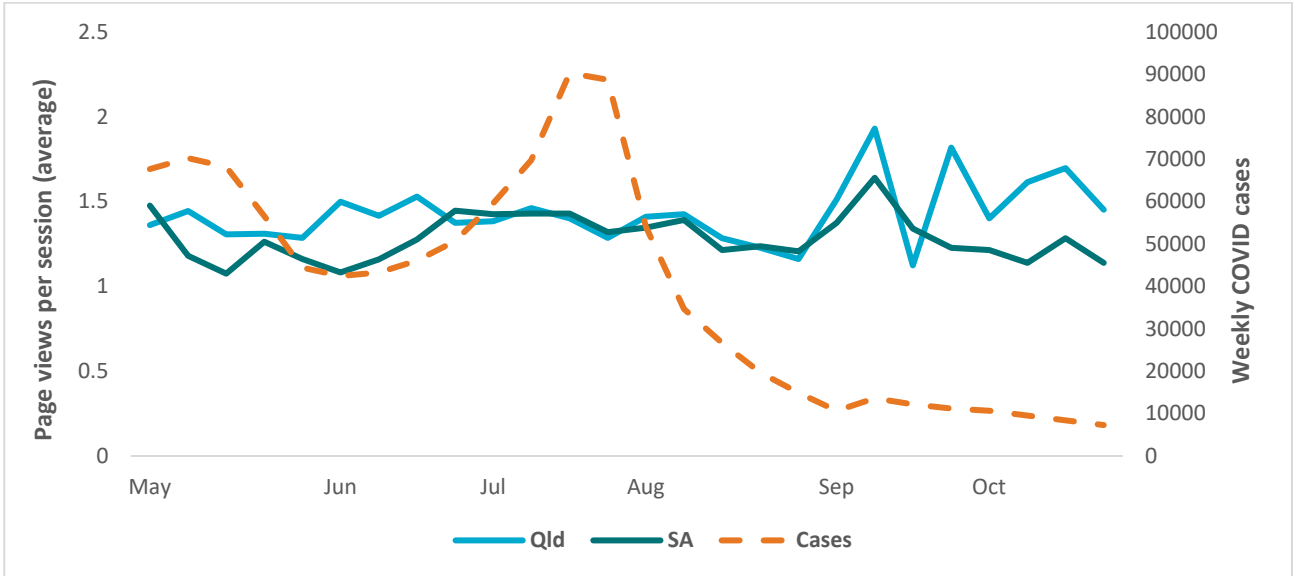


Figure 27: Average number of pages viewed per session by week with COVID case number overlay

3.1.4. Healthdirect websites related to COVID-19 average visit session duration

Figure 28 shows how long each user visit session lasted (in seconds). Across both Qld and SA between May-Oct 2022, users spent 90 seconds on the website (on average).

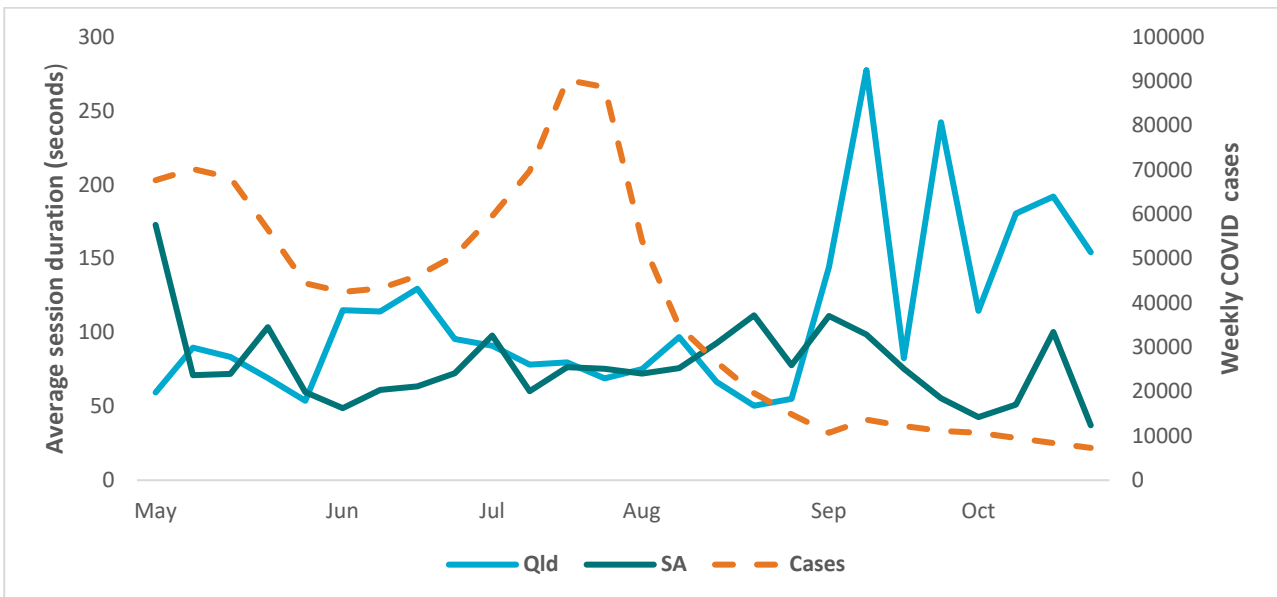


Figure 28: Average website visit session duration (seconds) with COVID case overlay

3.1.5. Individual page visits on Healthdirect website related to COVID-19 (All states and territories)

The top 8 most visited pages are listed in Figure 29 below. They capture 70% of the cumulative visits. The page with the highest number of visitors was “Recovery and returning to normal duties” (n = 826,477), almost twice as many as “Symptom Checker” (n = 532,477) which was the second most visited page. The pages where consumers spent most of their time were related to more general information searching such as “Helpline FAQs” and “State and Territory Information”.

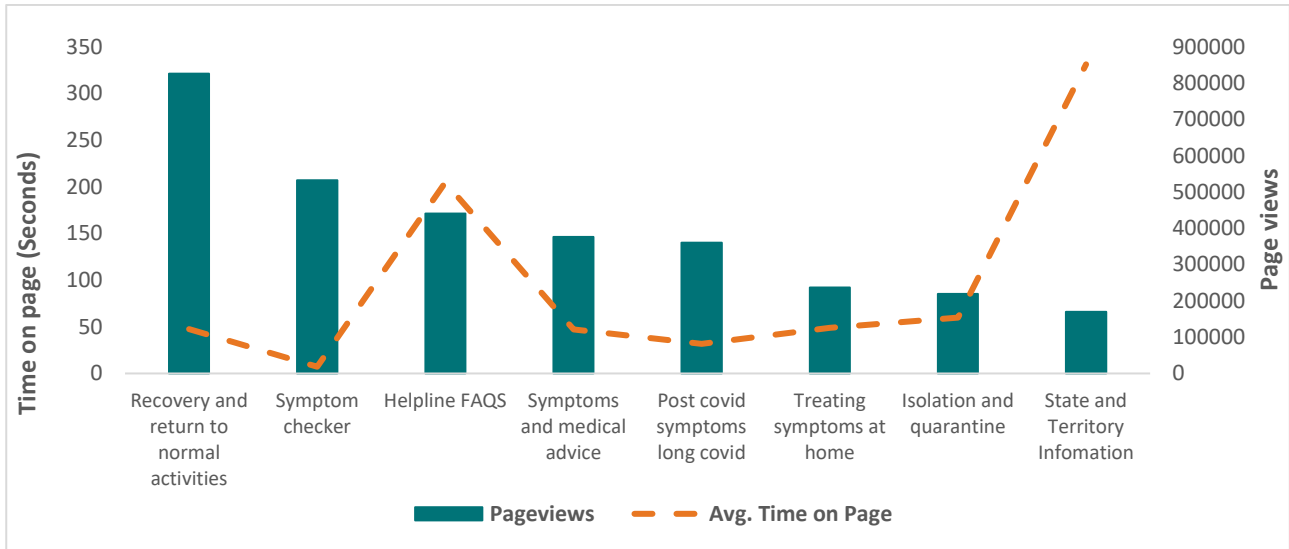


Figure 29: Number of page views on Healthdirect Australia website and average time spent on each page.

3.1.6. Websites driving consumers to the symptom checker (All states and territories)

564,184 users engaged with the symptom checker between May-Oct 2022. Three key sources drove traffic to the symptom checker, with 52% of consumers (n = 290,669) using Google to find the address of the symptom checker followed by the Australian Department of Health and Aged Care website (17% n = 94,823) and the Healthdirect Australia website (17% n = 93,044). Very few consumers navigated to the symptom checker by other means such as social media apps and paid links.

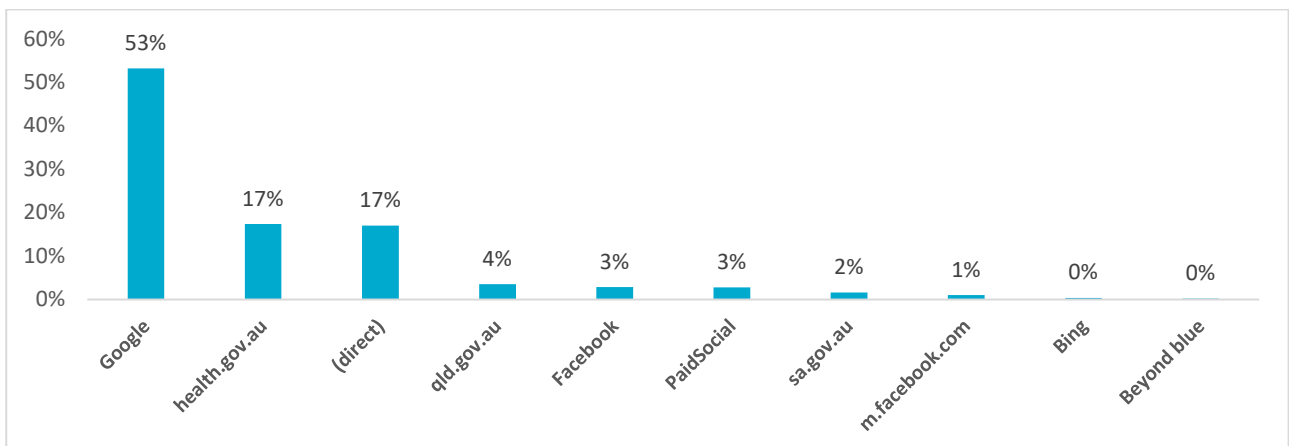


Figure 30: Web pathway taken to access Symptom Checker

3.1.7. COVID-19 symptom and antiviral eligibility checker (Qld & SA)

In total, 34,344 visitors (who provided their age and gender) completed the symptom checker across Qld & SA between May-September 2022. Figure 31 shows the risk dispositions provided by the symptom checker after completion as well as COVID hospitalisation figures. Most visitors were consistently found to be low risk disposition across time. The symptom checker results are proportionate to hospitalisation numbers, demonstrating that the symptom checker numbers could be useful as a predictive tool for future hospitalisation.

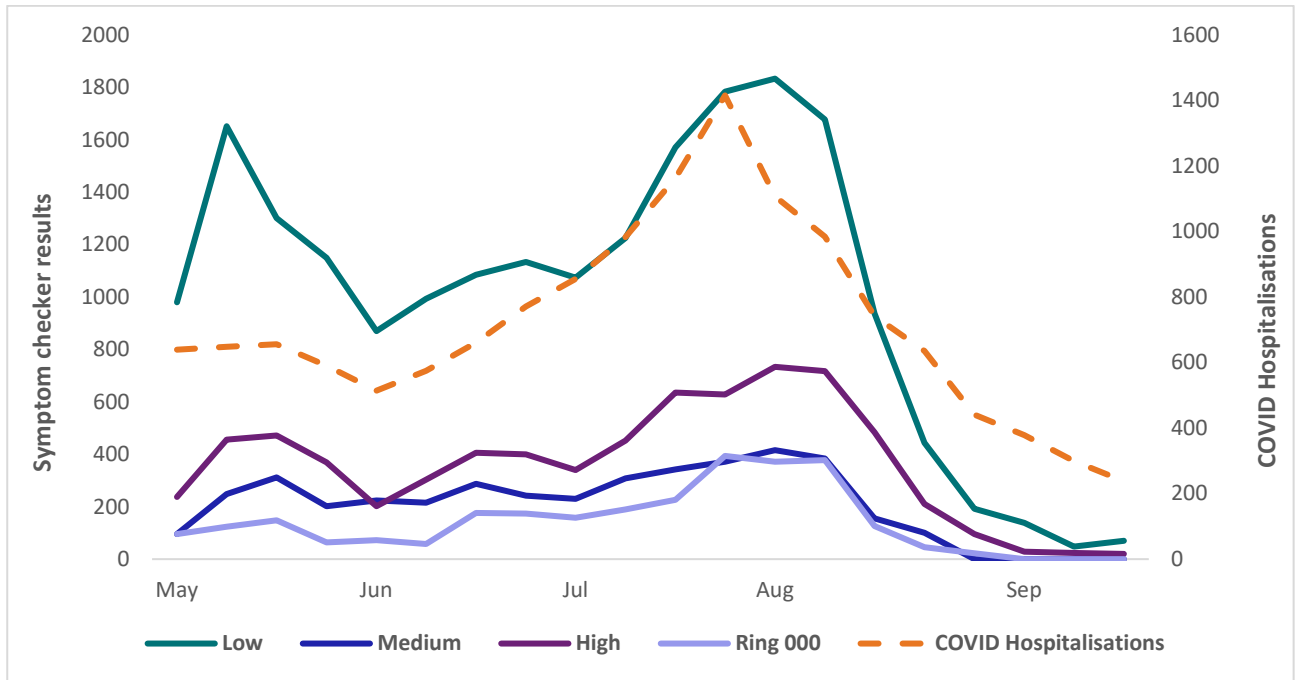


Figure 31: Number of weekly page visits to Symptom Checker stratified by state and calculated disposition

3.2 National Coronavirus Helpline feedback (Qld & SA consumer survey)

A survey was developed which asked questions related to health seeking behaviours of respondents and engagement with the Living with COVID program (website, call centre). The survey also included questions about GP contact, for example, whether consumers contacted their GP after being advised to do so and whether they were able to obtain an appointment for further assessment.

3.2.1. Demographics

Table 13: Demographics of survey respondents

Demographic	Qld	SA	Total
n	148 (45)	181 (55)	329
Age = n (%)			
18-24 years	3 (2)	0 (0)	3 (1)
25-34 years	9 (6)	13 (7)	22 (7)
35-44 years	21 (15)	16 (9)	39 (12)
45-54 years	18 (12)	22 (12)	40 (12)
55-64 years	32 (22)	37 (20)	69 (21)
65-74 years	39 (26)	68 (38)	107 (33)
75+ years	26 (18)	23 (13)	49 (15)
Gender = n (%)			
Female	108 (73)	117 (65)	225 (68)
Male	40 (27)	64 (35)	104 (32)
Risk of hospitalisation = n (%)			
Low risk	104 (70)	140 (78)	244 (74)
Medium Risk	44 (30)	41 (22)	85 (26)
Regional/Metro location = n (%)			
Regional	53 (36)	32 (18)	85 (26)
Metropolitan	94 (64)	148 (82)	242 (74)
Prefer not to say	1 (1)	1 (1)	2 (1)

3.2.2. Comfort with managing own care

Overwhelmingly, consumers felt comfortable to manage their own care following contact with the helpline. This demonstrates the National Coronavirus Helpline was able to increase health literacy in those who engaged with the service.

 <p>83 % (n = 273) Yes, I felt managing my own care at home</p>	 <p>17 % (n = 56) No, I did not feel comfortable managing my own care</p>
---	---

3.2.3. What reasons did people give when they did not feel comfortable managing their care?

Where participants were asked why they did not feel comfortable managing their own care after calling the helpline, they were asked to provide the reason(s). 139 respondents provided an answer, and multiple reasons could be selected. The most common reason provided by respondents (n = 26, 20%) was that they had trouble contacting their GP. ***Note: participants could select more than one response and are expressed below in absolute numbers for this reason.**

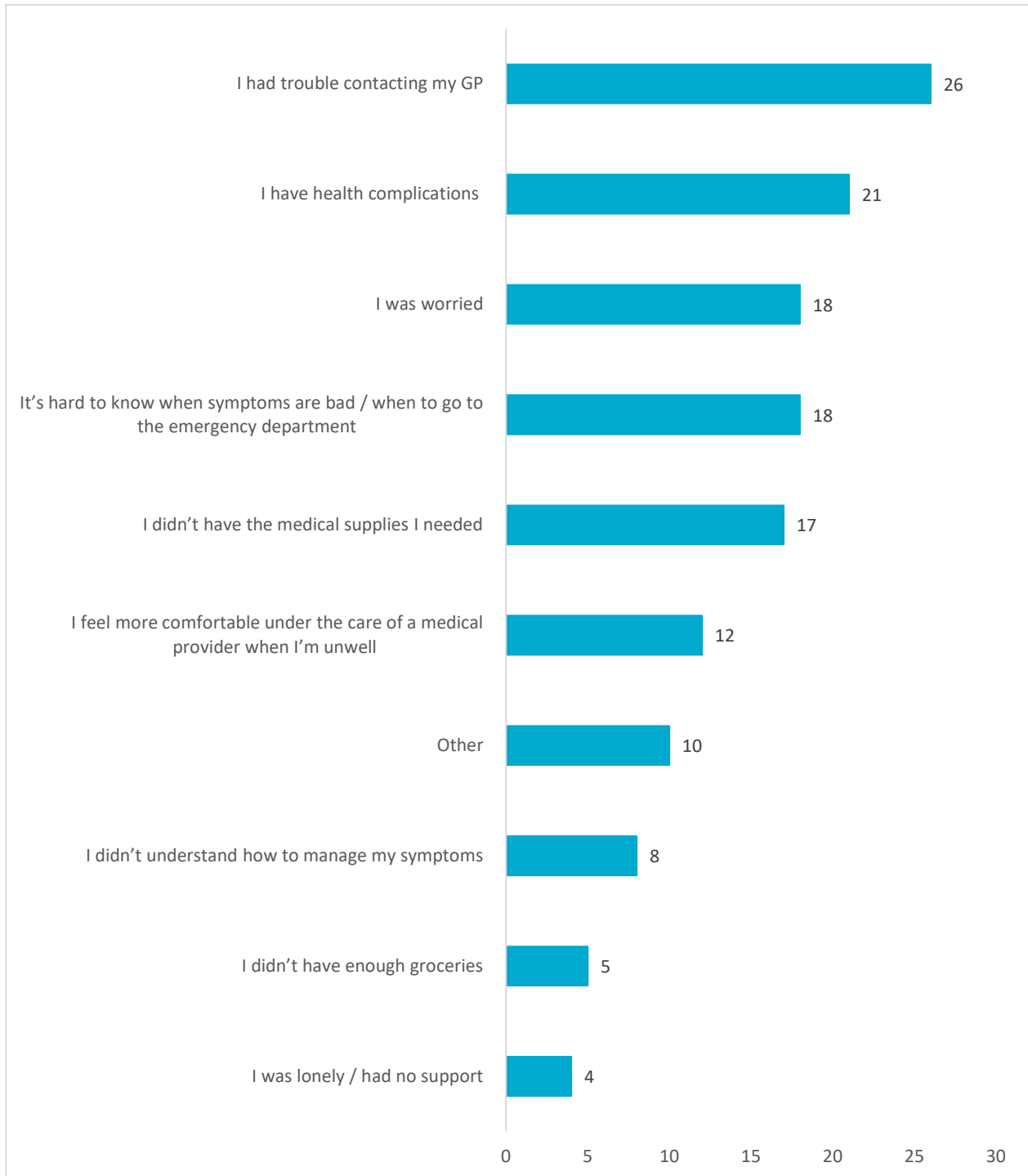


Figure 32: Reasons respondents did not feel comfortable managing their care

3.2.4. What actions did you take after calling the National Coronavirus Helpline?

To track the health-seeking behaviours of callers and understand if the helpline influenced them, participants were asked what they would have done had the helpline not been available and what actions they took after calling the helpline. The intent of this question is to understand the impact of the helpline on health-seeking behaviours. As shown in Figure 33, the helpline achieved the desired health behaviours of isolating at home and calling their GP. These behaviours potentially diverted pressure from overburdened tertiary settings to primary or self-care. ***Note: participants could select more than one response and are expressed below in absolute numbers for this reason.**

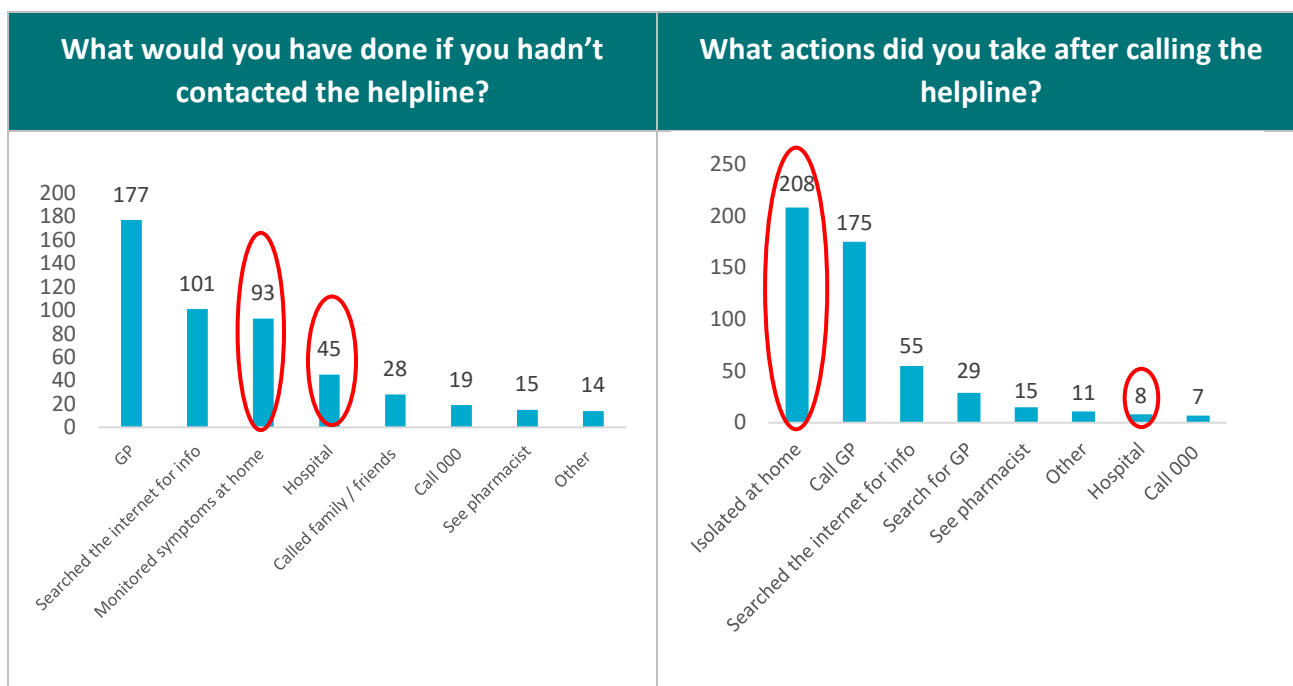


Figure 33: Actions after calling NCH

Consumers were less likely to present to the hospital after phoning the helpline. Based on the consumer survey responses alone, 37 ED visits were potentially saved. When applying this proportion to low and medium risk disposition consumers who called the helpline (n =12,166), this is scaled up to a potential of 1,363 ED visits saved.



3.3 Healthdirect Australia website (Qld & SA consumer survey)

3.3.1. Following your call to the National Coronavirus Helpline, did you visit the Healthdirect Australia website?

Both the website and helpline were developed as a COVID intervention package. Both sources of information and guidance are designed to be complimentary of each other. Based on the survey responses, in most cases, the helpline was sufficient for providing information, with only 35% (n = 114) stating that they visited the website *after* calling the helpline.

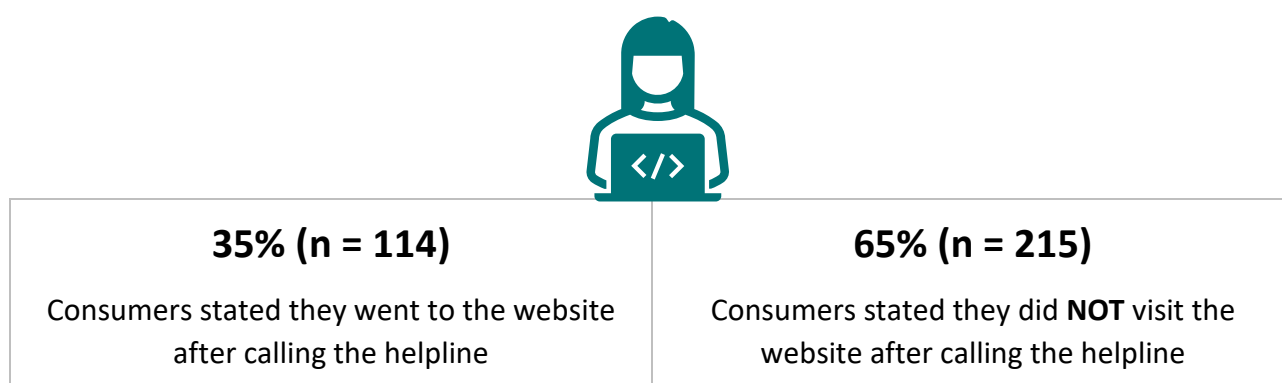


Figure 34: Website visits after calling helpline

3.3.2. Information sought/versus provided

Consumers who did visit the website after calling the NCH were also asked if they found all the information they were looking for. As shown in Figure 35, most consumers found all the information they were seeking, reflecting the comprehensive nature of the website.

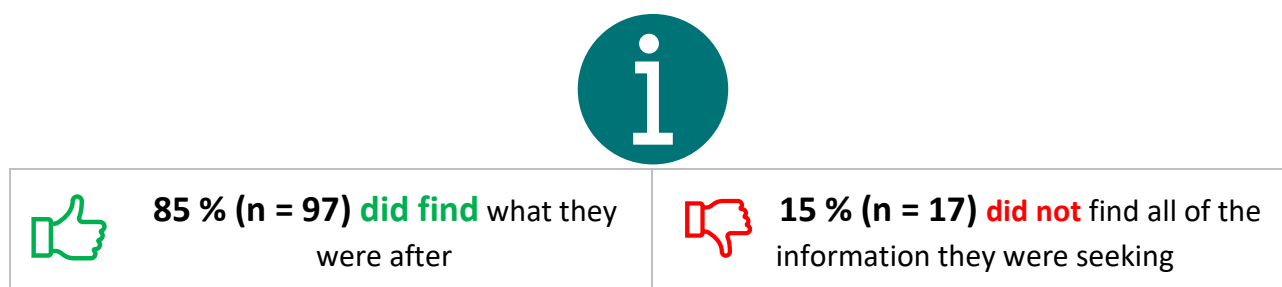


Figure 35: Consumer answers to whether information sought was located (n = 114)

3.3.3. Which of the following pages or tools did you use?

To maximise the value and efficiency of the website information, we sought to understand which aspects of the website that consumers engaged with most. Of the 35% (n = 114) of consumers who visited the webpage after phoning the Helpline (survey data), most sought information for managing their care at home, with the most popular being information pages on symptom management (n = 61, 54%), when to seek medical advice (n = 54, 47%), medications to treat COVID (n = 50, 44%) and the symptom checker (n = 48, 42%). ***Note: consumers could select more than one response and are expressed below in absolute numbers for this reason.**

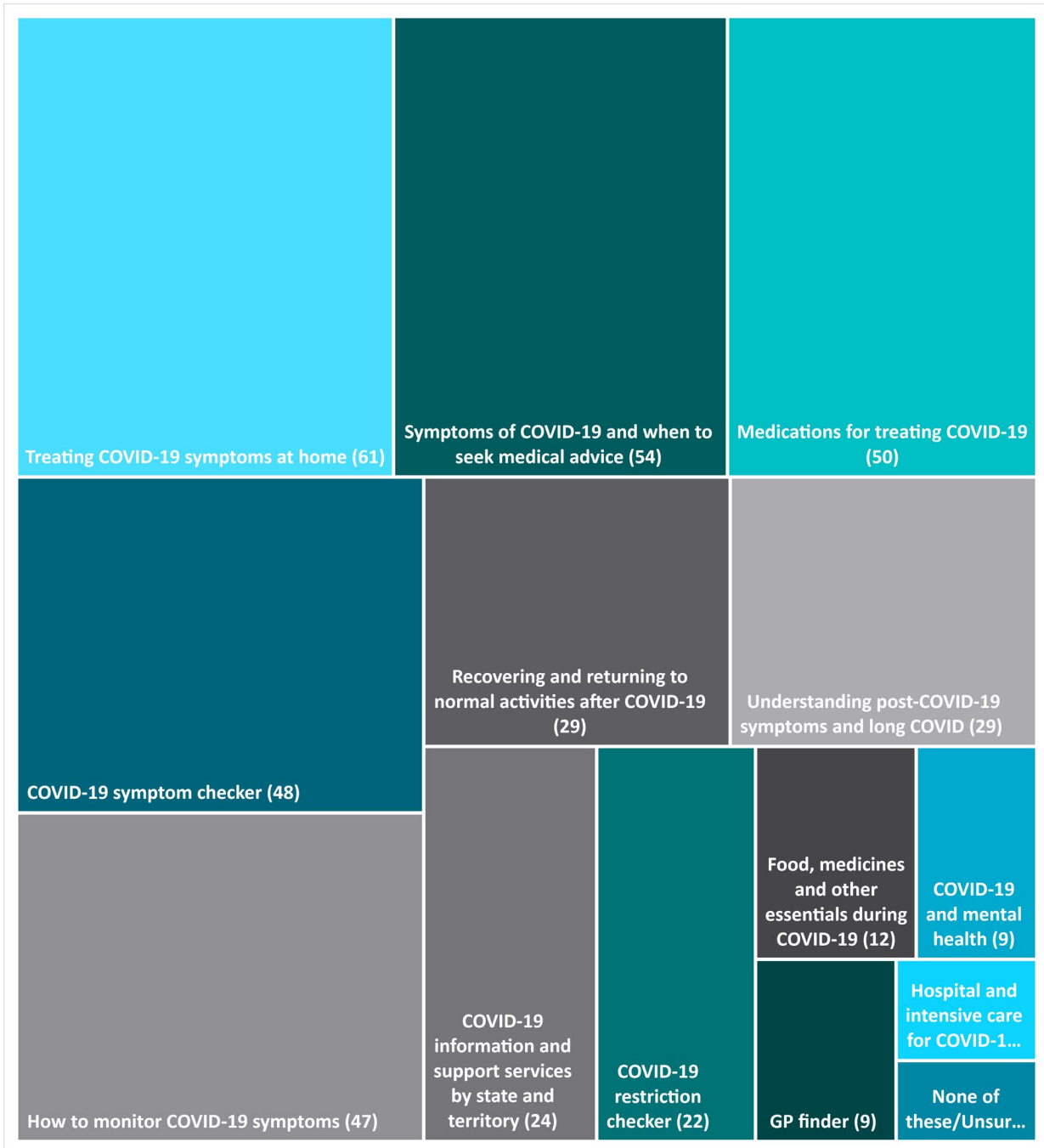


Figure 36: Pages visited by respondents who visited the website after phoning the NCH (n = 114).

3.3.4. Satisfaction with pages/tools

Consumers were asked to grade their collective satisfaction with various website pages and tools based on criteria that assessed the perceived credibility, amount, complexity of information and the degree of ease to which it was accessed. Most were satisfied or very satisfied with the website components with 82% of ratings as 'satisfied' or 'very satisfied'.

	Very dissatisfied n (%)	Dissatisfied n (%)	Neutral n (%)	Satisfied n (%)	Very Satisfied n (%)
Amount of information provided	3 (3)	5 (4)	17 (15)	50 (44)	39 (34)
Credibility of information provided	1 (1)	2 (2)	15 (13)	54 (47)	42 (37)
Complexity of information provided	2 (2)	2 (2)	15 (13)	61 (54)	34 (30)
Ease of navigation of website	1 (1)	3 (3)	18 (16)	56 (49)	36 (36)

Figure 37: Heat map table showing satisfaction with website information and access (n = 114) respondents

3.3.5. Comfort with managing care after visiting the website

Consumers who accessed the website were asked how comfortable they were managing their own care after visiting it. Of those who accessed the website (n = 114), 63% rated an 8 or higher reflecting a high level of comfort with self-care management after visiting. The figure is lower than the proportion who advised they were comfortable managing their care (83%) following a call to the helpline. This data indicates that consumers generally found the helpline facilitated improved levels of confidence in managing care at home in comparison to those accessing the website, which warrants further investigation.

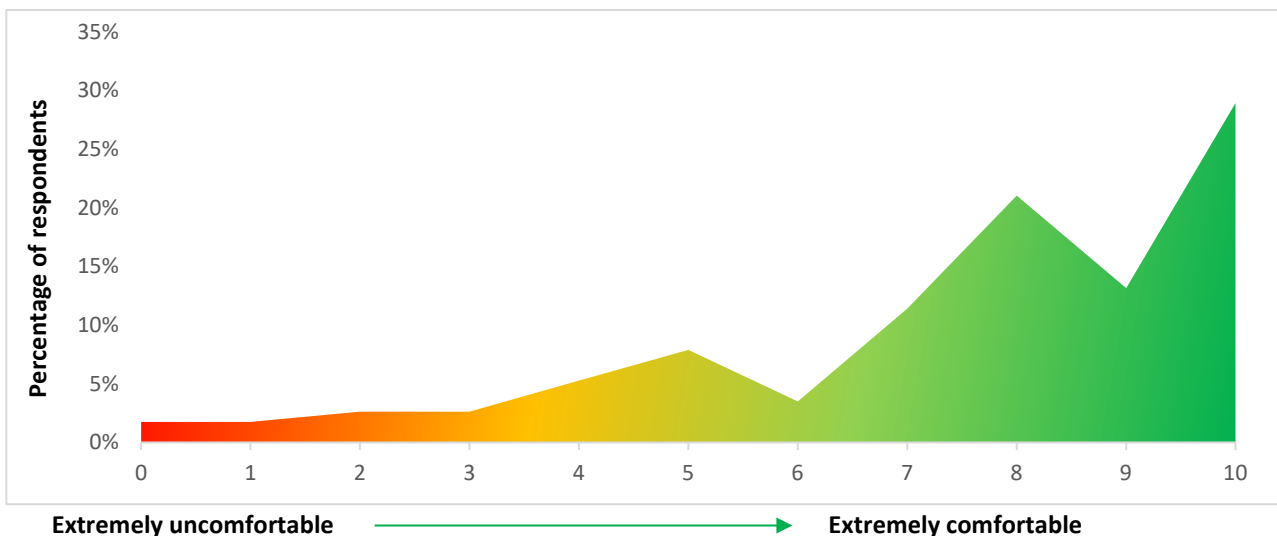


Figure 38: Comfort with managing care

3.3.6. What action did you take after visiting the website?

The project seeks to evaluate the impact of the Living with COVID program activities on influencing the health seeking behaviours of consumers. This question asked what the consumers did after visiting the website and is compared with the data from the telephone call actions. Both modalities followed similar patterns of action after engagement, showing the website and helpline are effective in influencing desired consumer behaviour. However, this effect is more pronounced due to larger numbers of responses following engagement with the helpline. ***Note: consumers could select more than one response.**

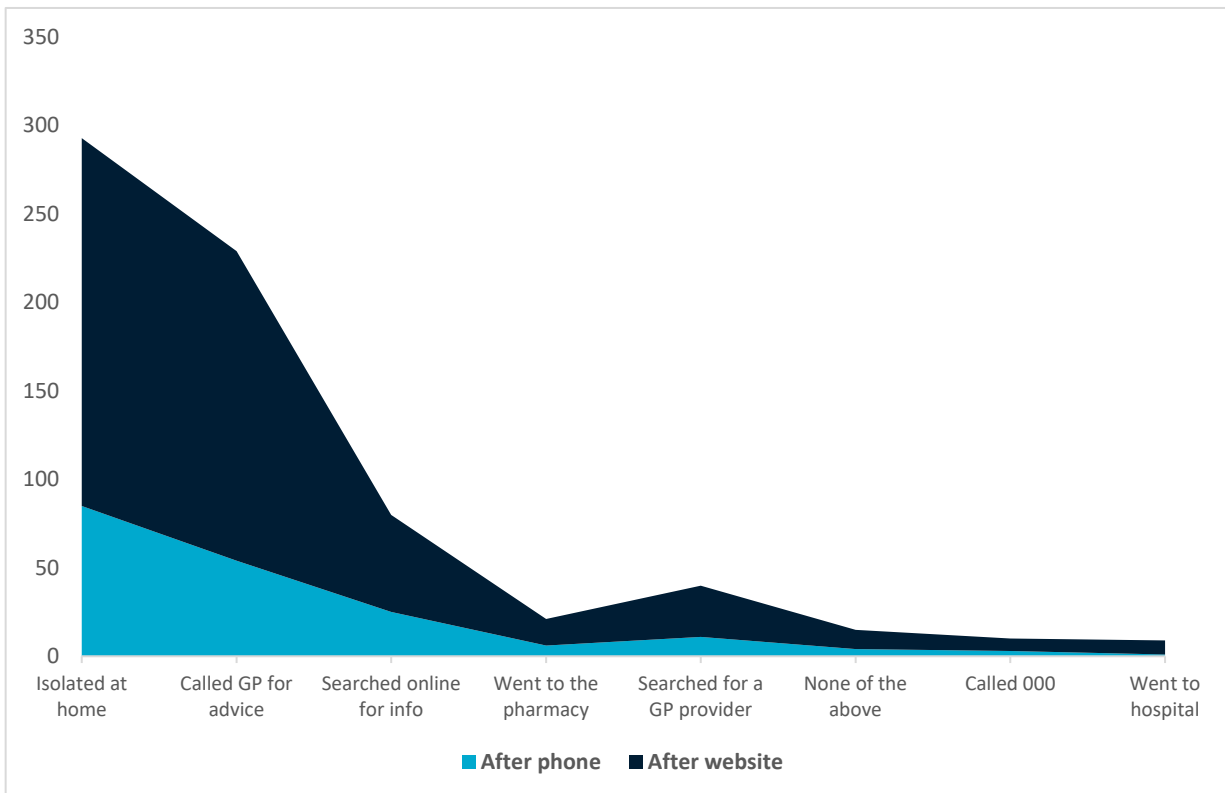
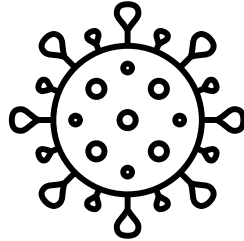


Figure 39: Overlay of data showing action after website vs phone engagement



Part 4: NSW antiviral access facilitation

The following section of the report comprises the NSW data set provided to CSIRO by Healthdirect Australia. The data set is representative of the National Coronavirus Helpline outbound call centre activity, specifically related to NSW. A broad overview of demographics for consumers that were contacted is provided as well as data from a proactive survey undertaken by call centre staff with consumers are reported. Consumer behaviour data points are reported with a specific focus on antiviral access facilitation.

4.1 Healthdirect Australia telephony metrics

4.1.1. Consumer Demographics (NSW)

NSW Health notified Healthdirect Australia of COVID positive consumers to facilitate connection with a GP/GPRC to establish eligibility for access to antiviral treatments. Within 7 days, Healthdirect Australia followed up with a consumer survey of those who were potentially eligible for antiviral treatment. Up until 29th September 2022, there were 21,765 calls made by Healthdirect Australia to consumers. Consumer demographics are summarised in Table 14. ***Note: percentages are rounded to the nearest decimal place**

Table 14: Consumer demographics (NSW)

	Female	Male	Other	Not provided	Total
Overall	13,231	8,202	37	295	21,765
Age = n (%)					
0-10yrs	3 (0)	0 (0)	1 (3)	0 (0)	4 (0)
11-20yrs	222 (2)	154 (2)	4 (11)	3 (1)	383 (2)
21-30yrs	1,088 (8)	332 (4)	9 (24)	14 (5)	1,443 (7)
31-40yrs	1,659 (13)	698 (9)	10 (27)	22 (7)	2,389 (11)
41-50yrs	2,067 (16)	824 (10)	8 (22)	22 (7)	2,921 (13)
51-60yrs	2,618 (20)	1,324 (16)	1 (3)	31 (11)	3,974 (18)
61-70yrs	2,429 (18)	1,929 (24)	2 (5)	11 (4)	4,371 (20)
71-80yrs	2,389 (18)	2,329 (28)	1 (3)	11 (4)	4,730 (22)
81-90yrs	654 (5)	555 (7)	0 (0)	0 (0)	1,209 (6)
91-100yrs	87 (1)	51 (1)	0 (0)	0 (0)	138 (1)
Over 100yrs	0 (1)	3 (0)	1	0 (0)	4 (0)
Not Provided	15 (0)	3 (0)	0 (0)	181 (61)	199 (1)
Referral path = n (%)					
GP	7,338 (55)	4,499 (55)	112 (38)	15 (41)	11,964 (55)
GPRC	5,710 (43)	3,575 (44)	80 (27)	17 (46)	9,382 (43)
NSW Health	177 (1)	124 (2)	9 (3)	5 (14)	400 (2)
Pending	6 (0)	4 (0)	94 (32)	0 (0)	19 (0)

4.2 Consumer Survey (NSW)

In this evaluation, the NSW Living with COVID program had a slightly different focus to that of Qld and SA. The NSW data collected focuses on the uptake of antiviral treatments, with the aim of understanding how effective the Healthdirect Australia Living with COVID program is at facilitating access to treatments. This section of the report includes patient experience data as captured through Healthdirect Australia NSW telephone survey data (n = 5,943).

4.2.1. NSW Consumer survey demographics




There were limited demographics available for the telephone survey participants. The age and gender and summarised below in Table 15. The majority of participants were female (58%, n = 3,435). Most survey respondents were aged between 51-80 years of age (69%, n = 4,089). ***Note: percentages are rounded to the nearest decimal place**

Table 15: NSW Consumer survey demographics

n (%)	Female	Male	Other	Not provided	Total
0-10yrs	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)
11-20yrs	46 (1)	21 (1)	0 (0)	0 (0)	67 (1)
21-30yrs	179 (5)	70 (3)	1 (3)	2 (29)	252 (4)
31-40yrs	306 (9)	145 (6)	1 (3)	2 (29)	454 (8)
41-50yrs	433 (13)	181 (7)	2 (6)	3 (43)	619 (10)
51-60yrs	669 (19)	374 (15)	4 (11)	0 (0)	1,047 (18)
61-70yrs	732 (21)	631 (26)	3 (9)	0 (0)	1,366 (23)
71-80yrs	834 (24)	838 (34)	4 (11)	0 (0)	1,676 (28)
81-90yrs	209 (6)	185 (8)	0 (0)	0 (0)	394 (7)
91-100yrs	26 (1)	21 (1)	0 (0)	0 (0)	47 (1)
Not Provided	0 (0)	0 (0)	20 (57)	0 (0)	20 (0)
Total	3,435 (58)	2,466 (41)	35 (1)	7 (0)	5,943

4.2.2. NSW GP notifications

Healthdirect Australia made outbound calls to a GP/GPRC after they were sent an SMS and subsequently send an SMS to the consumer to advise them that a notification has been sent to their GP. For consumers who had GP/GPRC notifications sent, Healthdirect Australia called 7 dayslater to establish via survey if they were able to access the antiviral treatment. Call records were kept by Healthdirect Australia and shared with CSIRO. Overall, the referral and notification process ran as expected with high rates of contact with GPs and patients.

Notification sent to GP/GPRC	Outbound call to GP/GPRC	SMS to patient
		
<p>100% (n = 5,943) of survey respondents had notifications sent to their GP/GPRC</p>	<p>87% (n = 5,181) of survey respondents had a successful outbound call made to their GP</p>	<p>97% (n = 5,748) of survey respondents had an SMS notification sent to their phone</p>

4.2.3. Consumer awareness of SMS contacts


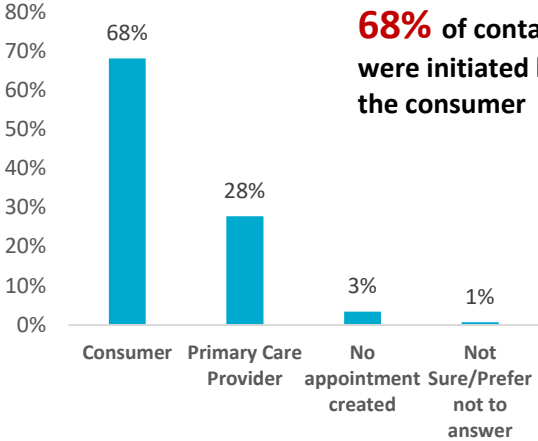
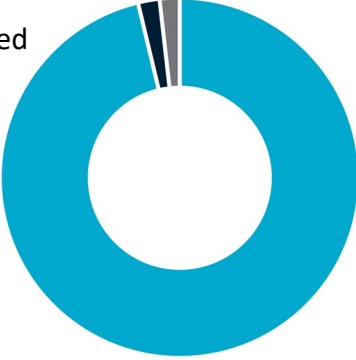
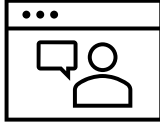


Consumers eligible for antiviral treatment were sent text messages advising them of their eligibility and to contact their health provider for access. The SMS notification went either to the patient or primary caregiver (as relevant). Of the 5,943 survey respondents, successful SMS notifications were sent to 97% (n = 5,748). Most consumers recalled the SMS with 77% aware of the notification to them or someone they know. Interestingly, 58% who were not expected to have received a message as the data said it was not successful, stated that they recalled seeing one (n = 113/195).

SMS Successful	SMS not successful
<p>Yes – aware: 77% (n = 4,422/5,748)</p> <p>Not sure/prefer no answer: 5% (n = 267/5,748)</p> <p>No: 18% (n = 1,059/5,748)</p>	<p>Yes – aware: 58% (n = 113/195)</p> <p>Not sure/prefer no answer: 5% (n = 9/195)</p> <p>No: 37% (n = 72/195)</p>

4.2.4. GP/Health provider contact

An aim of the Living with COVID program was to encourage interaction with a GP or suitable primary health provider by providing prompts to both the consumer and the GP practices. The effectiveness of the GP/Health provider contact in prompting an appointment booking is shown in Table 16. Over two-thirds (70%, n = 4,020) of consumers who received an SMS from Healthdirect Australia had contact with their GP or provider in the previous seven days and almost half (68%, n = 2,762) of the GP contacts were initiated by consumers. Most appointments were conducted via telehealth (95%) demonstrating the high uptake of this service option.

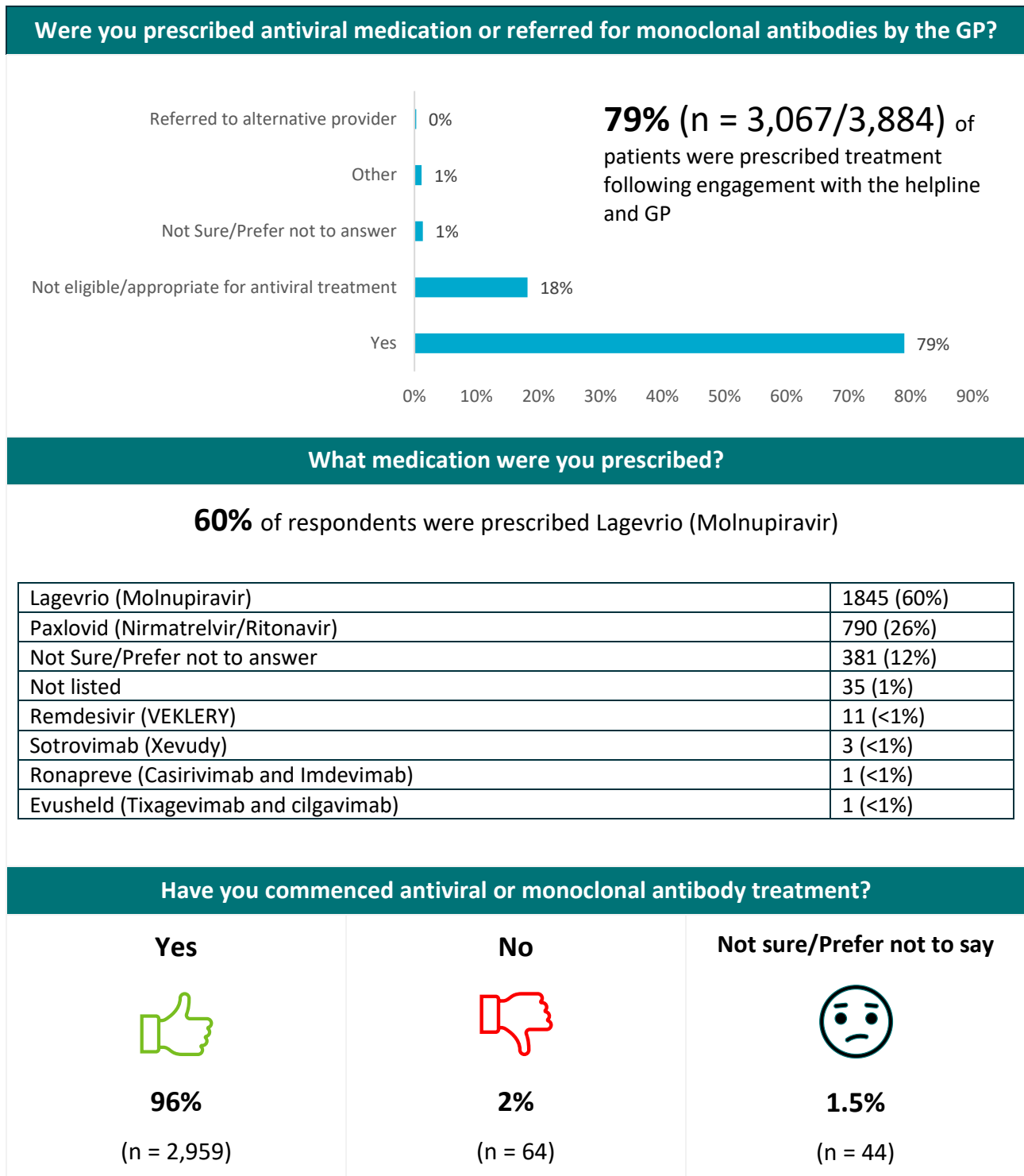
Table 16: GP/Health provider contact

Have you had contact with the GP/Health provider in the last 7 days?	Who initiated the contact with the GP/Health provider?
 <p>70% (n = 4,020) of consumers had contact with a GP or provider in the previous seven days (No, n = 1,682, No answer, n = 46)</p>	 <p>68% of contacts were initiated by the consumer</p>
<p>95% completed</p>  <ul style="list-style-type: none"> ■ Appointment completed ■ Appointment scheduled/pending ■ Other 	<p>95% telehealth appointments</p>  <p>3% in-person appointments</p>  <p>2% not sure/prefer not to say</p> 

4.2.5. Treatment provision

A primary interest in the NSW cohort was the uptake of antiviral medications or monoclonal antibodies as prescribed by a GP. Consumers were asked questions regarding whether they were prescribed treatment, what that treatment was and whether they commenced any recommended treatment. 3,884 provided an answer regarding whether their GP prescribed antiviral medication. Of those, 79% (n = 3,067) were given a prescription from their GP. Most (96%, n = 2,959) who were prescribed antivirals, commenced treatment.

Table 17: Treatment provision



4.2.6. Support options

Consumers were asked if they accessed any additional support during their episode of COVID. Of the 5,953 survey respondents, 2,745 provided an answer. Of those, more than half (52%) reported they preferred to self-manage after receiving antivirals, indicating this assisted them with their management of COVID.

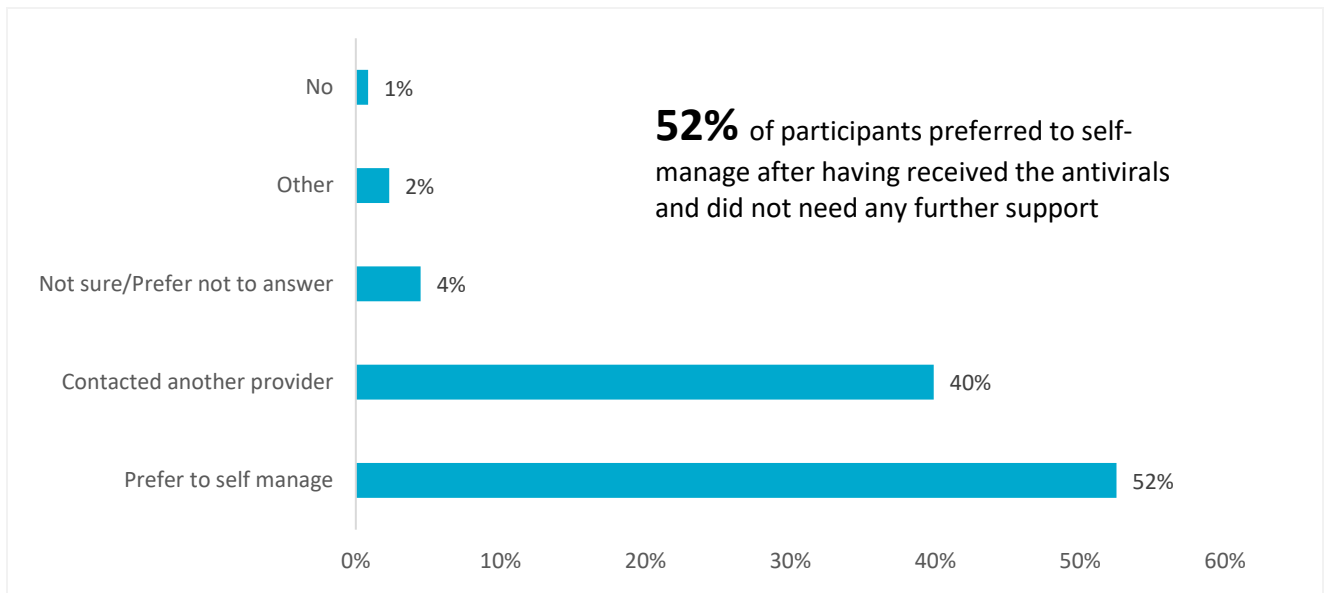


Figure 4040: Additional support options

4.2.7. Satisfaction with service

Consumers were asked to provide an overall satisfaction rating with the service (1 = low satisfaction, 5 = high satisfaction). Ratings were quite high with 84% (n = 4,825/5,724) rating the service a 4 or 5. Ratings are reported in Figure 41, followed by qualitative themes identified in the survey that sought suggestions on how the service could be improved further.

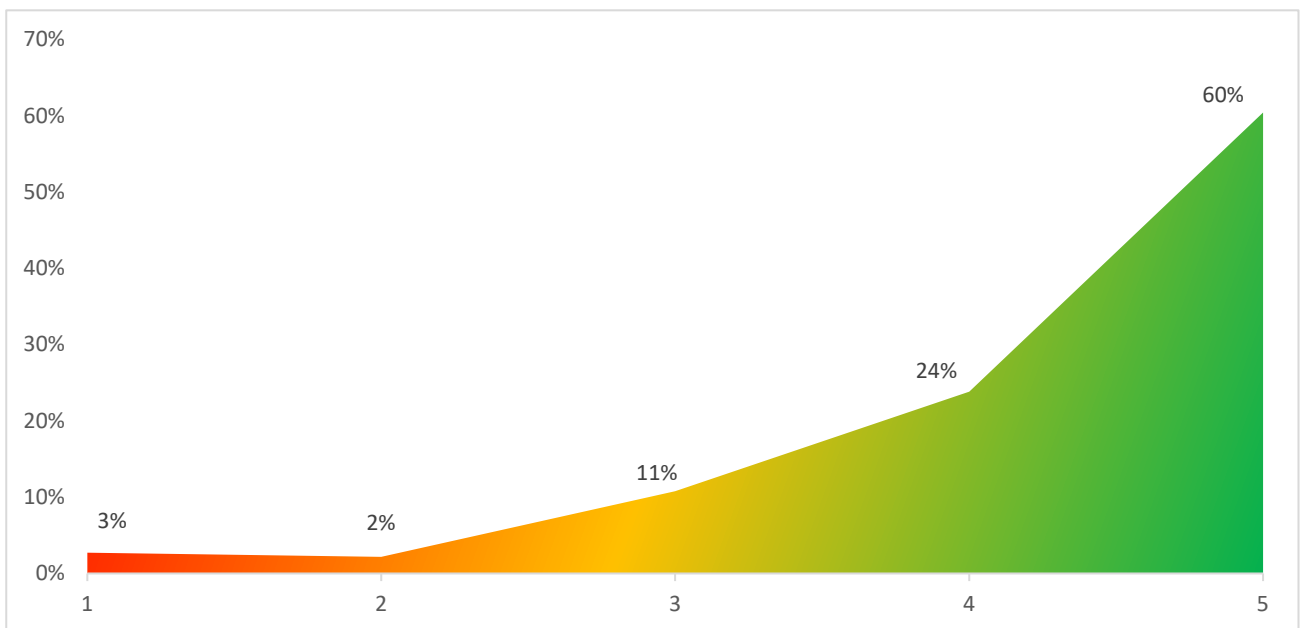


Figure 4141: Satisfaction with service

4.2.8. Qualitative themes

Consumers had the option to provide feedback about the service during survey administration until the 10th of July 2022, when the survey question changed. Table 18 provides the most mentioned themes, with “good service” the most frequently mentioned theme. The themes also provided constructive feedback which could be incorporated into future program improvements such as providing clearer communication, consistent information, time of day for SMS, and more contact. Table 19 shows some exemplar quotes next to each theme to illustrate the definition.

Table 18: Qualitative feedback themes

Theme	#	Theme	#
Good service	59	Clearer communication/more information	12
Didn't receive message or was not contacted	26	Access to antivirals	11
Mismatch of service	24	Inconsistent information	7
Confusion	21	Raise GP awareness of service	5
Call sooner	17	Number of SMS	5
System coordination	14	Time of day of SMS	4
More contact	14	Technology (number comes up as spam)	3

4.2.9. Theme exemplar quotes

Table 19: Theme exemplar quotes

Theme	Quotes
Good service	"I felt like I was treated like royalty amazing service and speed"
Didn't receive message/no contact	"What service?", would like for contact to be made.
Mismatch of service	"Doctor that patient was sent to was over 2-hour drive away, so patient wasn't able to make her appointment."
Confusion	"Confusing - When she spoke to the GP, they hadn't received the letter from Healthdirect."
Call sooner	"By the time the doctor contacted her, it was day 5 and too late to be prescribed any antiviral medication."
System coordination	"Giving the individual a place to call for further information / questions (possibly have a hotline number sent by SMS to the patient)."
More contact	"Checking in with the patient every few days."
Clearer communication/more information	"Clearer communication on what to do."
Access to antivirals	"She said that the only complaint she has was that it was very hard to access the antivirals once she had been prescribed them as the first 4 pharmacy's she called were out of stock - otherwise very happy with the service."
Inconsistent information	"Conflicting answers, one party said he was okay but then he was enrolled into the antiviral treatment despite him supposedly not needing it."
Raise GP awareness of service	"Received SMS for GP, however, when they called the GP, they didn't know how/where to access the antivirals. The case then called NCH where they stated that she had already passed the 5-day mark and thus couldn't take the antivirals."
Number of SMS	"A bit repetitive regarding texts."
Time of day of SMS	"3am texts were not ideal."
Technology	"Number comes up as spam."



Part 5: Economic analysis

This section of the report provides an economic analysis of the impact of the Healthdirect Inbound National Coronavirus Helpline. It considers the cost implications of the behaviour change resulting from engagement with the National Coronavirus Helpline. Two scenarios are modelled to demonstrate the potential cost savings of the program achieved through resource shifting.

5.1 Economic evaluation of the Healthdirect Inbound National Coronavirus Helpline

The LwC program comprised several activities across different jurisdictions. This economic evaluation focuses on one of these activities in Qld and SA: the Inbound National Coronavirus Helpline (NCH) – a 24/7 inbound call centre to assess, triage and provide health advice. The evaluation compares the opportunity costs of treating patients who used the helpline to the opportunity costs that would have been incurred to treat the patients without the helpline.

5.1.1 Treatment pathways

In the LwC consumer survey each respondent (a user of the helpline) indicated the treatment pathway they took after contacting the helpline and the treatment pathway they would have taken without the helpline. Table 20 shows the responses the survey allowed (ordered from most to least resource intensive treatment), along with the treatment pathway that we assume is associated with each response.

Table 20: Patients' survey responses and assumed treatment pathways

Survey response	Assumed treatment pathway
Call an ambulance	The patient calls 000, is attended to by paramedics, is taken to the hospital emergency department in an ambulance and is treated at the hospital.
Present to an emergency department	The patient presents to the hospital emergency department and is treated at the hospital.
See a GP	The patient makes and attends an appointment with a GP.
Go to a pharmacy	The patient presents to a pharmacy.
Other	The patient isolates at home, searches for information online etc.

Some respondents selected multiple options from the list in Table 20 as their actual/hypothetical treatment pathways. If a patient provided multiple responses for their actual treatment pathway, we assumed they undertook the most resource intensive selected option. To account for patients who provided multiple responses for their hypothetical treatment pathway, we analysed two scenarios: one where all these patients undertook the most resource intensive option (scenario 1), and one where they undertook the least resource intensive option (scenario 2). Table 21 summarises the difference in actions taken according to the relevant scenario modelled (conservative versus liberal measures).

Table 21: Actions taken according to scenario

Actions taken according to scenario					
No change in action		More resource intensive		Less resource intensive	
Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
173 (53%)	159 (48%)	58 (18%)	108 (33%)	98 (30%)	62 (19%)
No impact		Potential added costs		Potential savings	

Table 22 provides a detailed breakdown of the 329 survey respondents by hypothetical and actual treatment pathways under scenarios 1 and 2.

Table 22: Survey respondents' actual and hypothetical treatment pathways based on their survey responses

Hypothetical action	Actual action	Number of patients (scenario 1)	Proportion of patients (scenario 1)	Number of patients (scenario 2)	Proportion of patients (scenario 2)
Call 000	Call 000	6	2.2%	2	0.7%
Call 000	Present to ED	2	0.7%	0	0.0%
Call 000	Present to GP	9	3.3%	5	1.8%
Call 000	Present to pharmacy	0	0.0%	0	0.0%
Call 000	Other	2	0.7%	0	0.0%
Present to ED	Call 000	0	0.0%	1	0.4%
Present to ED	Present to ED	1	0.4%	2	0.7%
Present to ED	Present to GP	22	8.1%	10	3.7%
Present to ED	Present to pharmacy	2	0.7%	2	0.7%
Present to ED	Other	10	3.7%	7	2.6%
Present to GP	Call 000	1	0.4%	1	0.4%
Present to GP	Present to ED	3	1.1%	4	1.5%
Present to GP	Present to GP	107	39.5%	80	29.5%
Present to GP	Present to pharmacy	2	0.7%	0	0.0%
Present to GP	Other	46	17.0%	37	13.7%
Present to pharmacy	Call 000	0	0.0%	1	0.4%
Present to pharmacy	Present to ED	0	0.0%	0	0.0%
Present to pharmacy	Present to GP	2	0.7%	4	1.5%
Present to pharmacy	Present to pharmacy	0	0.0%	0	0.0%
Present to pharmacy	Other	3	1.1%	1	0.4%
Other	Call 000	0	0.0%	2	0.7%
Other	Present to ED	1	0.4%	1	0.4%
Other	Present to GP	50	18.5%	91	33.6%
Other	Present to pharmacy	1	0.4%	3	1.1%
Other	Other	59	21.8%	75	27.7%

5.1.2 Assumptions

In our evaluation of the NCH, we make the following assumptions.

- If a patient's action after contacting the helpline was the same as the action they would have taken without the helpline (grey shading in Table 20), then the actual action incurs the additional opportunity cost of the call to the helpline. This additional cost is incurred by Healthdirect (cost of handling the call) and the patient (time cost).
- If a patient's action after contacting the helpline was more resource intensive than the action they would have taken without the helpline (yellow shading in Table 20), then we exclude the patient from the quantitative analysis. The basis for this exclusion is that the more resource intensive treatment pathway, having been recommended by a medical professional on the helpline, likely

improves the patient's health outcomes, but we lack the information required to reliably quantify the additional health benefit of the more resource intensive treatment pathway. Reliable quantification of this benefit would require knowing the patients' actual and hypothetical health outcomes, which requires a range of assumptions including assumptions about patient behaviour (e.g., whether a patient who states that they would have stayed at home without the helpline would have sought treatment if their condition persisted or deteriorated). Rather than quantifying this benefit, we note that the helpline provides the additional qualitative benefit of timelier and more appropriate treatment for patients by directing some patients to undertake more resource intensive treatment than they otherwise would have undertaken. We also note that since a medical professional on the helpline recommended the more resource intensive treatment option, the additional benefit of the more resource intensive treatment likely exceeds the additional cost.

- If a patient's action after contacting the helpline was less resource intensive than the action they would have taken without the helpline (green shading in Table 22), then the actual action incurs the additional opportunity cost of the call to the helpline and yields a cost saving from the less resource intensive treatment. We assume that this less resource intensive treatment provides the same health outcome as the more resource intensive treatment the patient would have undertaken without the helpline (as both pathways involve treatment by medical professionals).

Our quantitative evaluation likely understates the benefit of the helpline for two reasons:

- As noted above, patients who take more resource intensive action after contacting the helpline than they would have taken without the helpline likely receive an additional benefit from the more resource intensive treatment that exceeds the additional cost (on average). This benefit is excluded from the quantitative analysis.
- Some of the patients who take the same action after calling the helpline that they would have taken without the helpline likely feel reassured that they have chosen the right treatment option after talking to a medical professional. This benefit is not captured in the analysis.

5.1.3 Treatment costs

The following sections set out our assumptions about the costs of treatment. Section 5.1.3.1 explains how we measure the opportunity cost of time, sections 5.1.3.2-5.1.3.6 provide our cost assumptions for each treatment option, and section 5.1.3.7 combines these assumptions to provide our cost estimates for each actual and hypothetical treatment pathway.

5.1.3.1 Opportunity cost of time

All the treatments use the patient's time (e.g., calling the helpline, presenting to a GP etc.). The opportunity cost of the time a patient spends seeking and undertaking treatment is the value of their alternative use of time if they did not seek treatment (e.g., resting, leisure). We use the mean hourly wage of workers in Qld and SA (\$40.40) as the opportunity cost of one hour of each patient's time¹.

¹ Australian Bureau of Statistics (2021). *Employee Earnings and Hours, Australia, May 2021*. Accessed 5 December 2022. Retrieved from <https://www.abs.gov.au/statistics/labour/earnings-and-working-conditions/employee-earnings-and-hours-australia/latest-release>

The rationale for using the wage rate as the opportunity cost of time is that if people choose the number of hours they work, each person is indifferent to working an additional hour for the wage rate². As such, the person's valuation of an additional hour of spare time is the wage rate. This approach to measuring the opportunity cost of time has a couple of practical limitations. First, people may not be able to freely choose the number of hours they work. For example, if a person wishes to work more hours, then they value their spare time at less than the wage rate. Second, one hour of seeking, waiting for and receiving medical treatment is likely worse than losing one hour of spare time, in which case the value of avoiding treatment is greater than the spare time saved. Given the uncertainty regarding the cost of time, we produce results under different assumptions (costs of \$40.40, \$20.20, and zero).

5.1.3.2 Emergency department treatment

The opportunity cost of treatment at an emergency department has two parts. The first part is the time cost to the patient. We assume that the patient spends 30 minutes travelling to and from the emergency department. We also assume that the patient's total length of stay (waiting time and treatment time) is 2 hours and 17 minutes in Qld and 2 hours and 34 minutes in SA, based on the median lengths of stay for semi-urgent treatment (the second least urgent out of five triage categories) in 2019-20 in Qld and SA respectively³. Therefore, the patient's time cost of emergency department treatment is:

- 2 hours and 47 minutes in Qld, which translates to \$112 (at an hourly time cost of \$40.40)
- 3 hours and 4 minutes in SA, which translates to \$124 (at an hourly time cost of \$40.40)

The second part of the opportunity cost of a patient's treatment at an emergency department is the alternative use of emergency department resources if the patient did not require treatment. We assume that if the patient did not present to the emergency department, then the resources would have been allocated to other patients in the queue requiring care. We assume that the value of this alternative use of resources is the average cost per non-admitted emergency department presentation in each state: \$573 in Qld and \$702 in SA⁴.

Therefore, the total cost of an emergency department presentation is \$685 in Qld and \$826 in SA.

5.1.3.3 Ambulance service treatment

The opportunity cost of treatment by paramedics and ambulance transport to hospital has two parts. The first part is the time cost to the patient. We assume that the patient spends 15 minutes being treated by

² Saez, Emmanuel (n.d.). Cost-Benefit Analysis [lecture notes]. Accessed 5 December 2022. Retrieved from https://eml.berkeley.edu/~saez/course131/costbenefit_ch08.pdf

³ Australian Institute of Health and Welfare (2022). Health system: Accessibility – Australia's health performance framework. Accessed 5 December 2022. Retrieved from [https://www.aihw.gov.au/reports-data/australias-health-performance/australias-health-performance-framework/national/all-australia/access/accessibility/2_5_7?tab=2.5.7|Latest&tab=2.5.8|Table&filter=2.5.7|4|2019%E2%80%9320&filter=2.5.7|2|Total&filter=2.5.7|1|Proportion%20of%20public%20hospital%20emergency%20department%20presentations%20where%20the%20time%20from%20presentation%20to%20physical%20departure%20is%20within%204%20hours&filter=2.5.8|4|2020%E2%80%9321&filter=2.5.8|2|Triage%20category%204%20%E2%80%9320Semi-urgent&filter=2.5.8|1|50th%20percentile%20\(hours:minutes\)](https://www.aihw.gov.au/reports-data/australias-health-performance/australias-health-performance-framework/national/all-australia/access/accessibility/2_5_7?tab=2.5.7|Latest&tab=2.5.8|Table&filter=2.5.7|4|2019%E2%80%9320&filter=2.5.7|2|Total&filter=2.5.7|1|Proportion%20of%20public%20hospital%20emergency%20department%20presentations%20where%20the%20time%20from%20presentation%20to%20physical%20departure%20is%20within%204%20hours&filter=2.5.8|4|2020%E2%80%9321&filter=2.5.8|2|Triage%20category%204%20%E2%80%9320Semi-urgent&filter=2.5.8|1|50th%20percentile%20(hours:minutes))

⁴ Independent Hospital Pricing Authority (2021). National Hospital Cost Data Collection Report, Public Sector, Round 24. Accessed 5 December 2022. Retrieved from https://www.ihacpa.gov.au/sites/default/files/2022-08/NHCDC%20Round%2024%20Report_0_0.pdf

paramedics and then 15 minutes being transported to the emergency department. Therefore, the patient's total time cost is 30 minutes, which translates to \$20.20 (at an hourly time cost of \$40.40).

The second part of the treatment's opportunity cost is the alternative use of ambulance service resources if the patient did not require treatment. We assume that if the patient did not call the ambulance, then ambulance service resources would have been allocated to other patients in the queue requiring care. We assume that the value of this alternative use of resources is the cost of non-emergency ambulance treatment and transport. This cost is \$522.65 in Qld⁵ and \$242 plus \$6.20 per kilometre in SA⁶. We assume an average ambulance trip distance of 10km, bringing the total cost to \$304 in SA.

Therefore, the total cost per patient of ambulance service treatment and transport is \$542.85 in Qld and \$324.20 in SA.

5.1.3.4 GP treatment

We assume that a patient spends 1 hour and 15 minutes travelling to and from the GP clinic, waiting at the clinic, and being treated by the GP. This amount of time translates to a time cost of \$50.50 (at an hourly time cost of \$40.40).

We also assume that if the patient did not visit the GP, then the GP's time would have been allocated to treating another patient. We assume that the value of this alternative use of resources is the average cost of a clinical examination lasting less than 20 minutes by a GP at consulting rooms. According to Medicare Benefits Schedule item 23, GPs receive a fee of \$39.75 for conducting this type of examination⁷. We inflate this amount to an average cost of \$50 per clinical examination to account for the fact that many GPs charge patients an additional fee.

Therefore, the total cost per patient of GP treatment is \$100.50.

5.1.3.5 Pharmacy treatment

We assume that a patient spends 30 minutes travelling to and from the pharmacy for treatment. This amount of time translates to a time cost of \$20.20 (at an hourly time cost of \$40.40). We assume that the patient's treatment at the pharmacy does not displace any other patients' treatments and therefore creates no additional opportunity costs.

5.1.3.6 Helpline treatment

Based on Healthdirect call data, we assume the patient spends 7.1 minutes on the phone to the helpline: 0.8 minutes waiting and 6.3 minutes talking to an operator. A call time of 7.1 minutes translates to a time cost of \$4.76 (at an hourly time cost of \$40.40).

Healthdirect's cost of administering the helpline is \$37 per call in Qld and \$28 per call in SA. These costs represent the opportunity costs to Healthdirect of running the helpline.

⁵ Queensland Government (2022). Queensland Ambulance Treatment and Transport. Accessed 5 December 2022. Retrieved from <https://www.qld.gov.au/emergency/emergencies-services/qld-visitors-qas>

⁶ SA Ambulance Service (n.d.). Fees and charges. Accessed 5 December 2022. Retrieved from <https://saambulance.sa.gov.au/what-we-do/fees-and-charges/>

⁷ Department of Health and Aged Care (n.d.). Medicare Benefits Schedule – Item 23. Accessed 5 December 2022. Retrieved from <http://www9.health.gov.au/mbs/fullDisplay.cfm?type=item&q=23>

Therefore, the total cost per patient treated via the helpline is \$41.76 in Qld and \$32.76 in SA.

5.1.3.7 Costs of the treatment pathways

Table 23 provides our cost estimates of each actual and hypothetical treatment pathway based on the cost assumptions from section 3. In the actual treatment pathway, the patient first calls the helpline for advice, so the actual treatment cost exceeds the hypothetical treatment cost by the cost of the call.

Table 23: The costs of each hypothetical and actual treatment pathway, assuming an hourly time cost of \$40.40

Treatment pathway	Hypothetical treatment cost	Actual treatment cost
The patient calls 000, is attended to by paramedics, is taken to the hospital emergency department in an ambulance and is treated at the hospital	\$1,228 Qld \$1,150 SA	\$1,270 Qld \$1,183 SA
The patient presents to the hospital emergency department and is treated at the hospital.	\$685 Qld \$826 SA	\$727 Qld \$859 SA
The patient makes and attends an appointment with a GP.	\$101 both	\$143 Qld \$134 SA
The patient presents to a pharmacy.	\$20 both	\$62 Qld \$53 SA
Other (the patient isolates at home, searches for information online etc).	Zero both	\$42 Qld \$33 SA

5.1.4 Weighting survey responses to represent the population of callers

The survey respondents are not representative of the age and sex distribution of the population of callers to the helpline. Further, based on the survey responses, treatment decisions (and therefore costs) vary significantly by age and sex. Therefore, the average treatment costs of survey respondents misrepresent the average treatment costs of the population of callers. To address this problem, we divide the survey respondents into strata that capture some of the variation in treatment decisions (and costs) across different age groups and sexes, and then weight each stratum using its share of total calls to the helpline to estimate the caller population's average treatment costs. We use the following method to produce these estimates:

1. Divide the survey respondents into six strata based on sex (male or female) and age group (18-44 years, 45-64 years, or 65+ years). Denote the strata $i = 1, \dots, 6$.
2. Calculate the mean actual and hypothetical treatment costs for patients in each stratum (c_i^{act} and c_i^{hyp}), using the patients' survey responses and our cost assumptions.
3. Calculate each stratum's percentage share of all calls placed to the helpline, using data on the population of calls. Denote the i th stratum's share of calls w_i .
4. Weight each stratum's mean treatment cost by its share of calls and then sum across all strata to estimate the mean treatment costs: $c^{act} = \sum_i w_i c_i^{act}$ and $c^{hyp} = \sum_i w_i c_i^{hyp}$.

5.1.5 Estimates of treatment costs

Table 24 provides estimates of the mean actual and hypothetical treatment costs per caller under scenarios 1 and 2 and different time cost assumptions. In all cases, the mean actual treatment cost per caller is significantly less than the hypothetical treatment cost per caller.

As noted earlier, in scenario 2 we assume that patients who provided multiple responses for their hypothetical treatment pathway would have undertaken the less resource intensive selected option. This assumption increases the number of patients whose actual treatment is more resource intensive than their hypothetical treatment (relative to scenario 1). Since we exclude these patients from the cost shifting analysis, the actual treatment cost per caller is lower in scenario 2 than in scenario 1.

Table 24: Estimates of mean actual and hypothetical treatment costs per caller under different scenarios and time cost assumptions

Scenario	Cost per hour of time (\$)	Actual treatment cost per caller (\$)	Hypothetical treatment cost per caller (\$)	Cost saving per caller (\$)
1	40.40	111	225	114
1	20.20	96	201	105
1	0.00	81	178	97
2	40.40	67	116	49
2	20.20	57	102	45
2	0.00	47	88	41

Table 25 provides estimates of the total actual and hypothetical treatment costs across all calls (from Qld and SA) to the helpline between 2 May 2022 and 7 November 2022.

Table 25: Estimates of total actual and hypothetical treatment across all calls from 2 May 2022 to 7 November 2022 under different assumptions and time cost assumptions

Scenario	Cost per hour of time (\$)	Total actual treatment cost (\$)	Total hypothetical treatment cost (\$)	Total cost saving (\$)
1	40.40	4,027,892	8,166,330	4,138,438
1	20.20	3,487,098	7,314,829	3,827,731
1	0.00	2,946,304	6,463,328	3,517,024
2	40.40	2,418,932	4,222,620	1,803,688
2	20.20	2,067,535	3,705,549	1,638,014
2	0.00	1,716,138	3,188,477	1,472,339

5.1.6 Conclusion

This economic evaluation found there were estimated total actual cost savings of between \$1,472,339 and \$4,138,438 for the period 2 May to 7 November 2022. This evaluation indicates that the helpline provides significant net benefits (or cost savings) by directing some callers to undertake less resource intensive and less costly treatment pathways than they would have undertaken without the helpline. The avoided costs of ED and GP presentations for these patients outweigh the costs of administering and using the helpline. The helpline also likely generates additional net benefits that have not been quantified in this analysis by recommending that some patients undertake more resource intensive treatment than they would have undertaken without the helpline.



Part 6: Discussion and recommendations

This section of the report discusses the findings in the context of the broader health system implications and makes recommendations for future program development.

6.1 Discussion:

The Living with COVID program is successfully delivering timely COVID advice and assisting consumers to manage their own care. In Qld and SA most respondents contacted the GP themselves, consistent with the LwC program approach. The Helpline delivered timely and appropriate advice and was effective in assisting consumers to manage their own care. The website provided many people with useful information on how to manage and recover from COVID and enabled access to the symptom checker. In NSW, the program is successfully coordinating timely access to GP services for people considered eligible for antiviral treatment. The LwC program is a valuable public health initiative achieving positive early outcomes at the consumer and health system levels.

Qld and SA consumers were engaged and highly satisfied with the Healthdirect Australia services including the website and National Coronavirus Helpline. Further, the findings demonstrate the service offering was useful and easy to use which provides important insights for future service design and delivery of the Healthdirect Australia LwC program and other services seeking to offer similar services which may direct consumers away from tertiary care to primary care or enable consumers to manage their own care safely. This demonstrates that the LwC program is considered as usable and easy to use by consumers which are both important for implementation and uptake of health services, particularly those with a digital component.

Findings suggest both the Helpline and website were performing as a brief intervention which increased consumers' health literacy and enabled them to make informed decisions about their own care. This is consistent with the Department of Health and Aged Care National Health Literacy Strategy to provide an evidence-based health literacy environment, where health information is person-centred, accessible, and culturally and linguistically appropriate, and to improve health literacy skills of all Australians⁸.

The LwC program is being implemented as intended, for example, in NSW, the program was successful in connecting consumers with GPs/GPRCs. Most respondents contacted the GP themselves, which is consistent with the LwC program strategy. Furthermore, in NSW, the service was found to be useful by respondents and the program was effective as intended in connecting eligible consumers with antivirals within the recommended time window, many of whom were then able to self-manage after receiving their antivirals. This has important implications for potentially reducing the load on primary and tertiary care services.

A successful program (model of care) has been developed that can support patient care strategies with efficient patient triage and access to care. Key benefits to the consumer include reduced waiting times for access to health services and streamlined access to antiviral medication if eligible. The service also demonstrated its ability to scale up and down as the need arose. This enables early intervention to enhance health outcomes and reduce flow through GP and hospital doors at peak times, while saving significant resources and budget. The LwC program allows patients to access the right care, at the right time. The LwC program offers the potential to streamline communication, care, and tasks to improve care. The LwC program has demonstrated its potential as a scalable system solution that can grow and contract as the demand dictates.

Finally, the LwC program is demonstrating it is financially viable for the Australian Government in delivering a program that reduces the load on the health system. The economic evaluation found there were potential cost savings to the health system by triaging patients via the NCH and website and enabling them to self-manage rather than presenting to their GP or hospital ED. The LwC program has the potential to be

⁸ <https://consultations.health.gov.au/national-preventive-health-taskforce/national-health-literacy-strategy-framework-consul/#:~:text=The%20objective%20of%20the%20National,literacy%20skills%20of%20all%20Australians.>

cost sustainable and can support ongoing improvements. LwC program can reduce costs associated with the delivery of COVID related health services and has the potential to deliver benefits for the consumer and the health system.

6.2 Recommendations:

Data driven decision-making

- Continue to monitor case numbers for efficient helpline staffing and hospitalisation predictions.
- Define quality metrics and monitoring cycles for ongoing monitoring and evaluation.
- To ensure the program continues to be consumer-centric, continue periodic customer feedback surveys.
- Continue to monitor for system inefficiencies.

Outbound communications

- Provide clear, consistent communication and information to support future programs.
- Monitor frequency and timing for outbound communication e.g., SMS, and email.

Built-in interoperability


- Incorporate pathway learnings into future service models.
- Integrate services such as GP notifications into existing digital systems/services.
- Ensure service can be adapted and delivered to those with culturally and linguistically diverse backgrounds.

Transformation for different needs

- As part of a pandemic preparedness strategy, develop a service template/scaffold that can be adapted for different uses based on the LwC program.

Dedicated pandemic responses

- Utilise the National Coronavirus Helpline approach for future pandemics and other health emergencies to connect consumers with the right care at the right time.



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