Whiddon
Award-winning care

Rapid Antigen Testing trial at Whiddon Easton Park

An evaluation

13–27 July 2021

Introduction

Whiddon has been providing exceptional care to older Australians across regional, rural and remote NSW and QLD for more than 70 years. From our philanthropic beginnings, we have grown into a large not-for-profit organisation with more than 2,300 clients and over 2,000 employees. We are an award-winning aged care provider with residential and community care services and retirement villages across New South Wales and South East Queensland.

The founding and largest campus is at Easton Park, Glenfield. The campus includes four Care Homes (residential aged care services) as well as a community care hub and retirement village. We have 450 aged care residents on site, and over 800 staff members providing care at the Homes.

Whiddon is an award-winning aged care provider, and is passionate about enriching lives, and supporting wellbeing for both its residents and clients and employees. We have a strong reputation for innovation and leadership in the industry.

This report evaluates the trial of rapid antigen testing which Whiddon initiated and implemented at Easton Park over a two week period of the current COVID-19 lockdown from 13th July – 27th July. Whilst this report covers the first two weeks of implementation of rapid antigen testing, daily testing of employees continues whilst community transmission of COVID-19 remains high.

Acknowledgements

Whiddon would like to acknowledge the following people for the role that they played in the Easton Park trial of rapid antigen testing:

- DCEO Alyson Jarrett, for initiating the trial and supporting its implementation
- Operations Manager, Sharon Fletcher and her team at Easton Park for driving and implementing the trial so quickly and effectively
- Dr Ian Norton, Emergency Physician and the Respond Global team for all the support they provided including education around the evidence base, training and testing protocols

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Executive summary

Whiddon initiated rapid antigen testing at its Easton Park campus during the current Covid-19 outbreak to reduce the risk of infection associated with being located in a high-risk area in South West Sydney.

Concerns were heightened due to the emergence of the Delta variant and its virulence and high rate of transmission. At the time, over 30% of frontline staff at the Easton Park campus resided in three high risk LGAs, this percentage has now risen substantially with Campbelltown added to the list of high risk LGAs. In line with the rest of the industry, employee vaccination levels are low, although this is improving now that vaccination has been made mandatory and Whiddon was able to access on site vaccination clinics.

The main risk or access point to our home for the virus, whilst under restricted visitations, is through employees, essential carers and contractors infecting vulnerable residents, other staff members and their families. In addition, employees' fear of contracting the virus and infecting others including their family can have an adverse effect on overall staffing levels, with employees taking paid or unpaid sick leave to avoid potential exposure. This can result in staffing shortages and have a significant negative impact on the quality of care to vulnerable residents, and the burden on the remaining workforce. The consequences of an outbreak in an aged care home can have catastrophic consequences as seen in the Melbourne COVID-19 outbreak in 2020.

Once rapid antigen testing was identified as a robust risk mitigation strategy, combined with the already well established and strict screening processes, implementation progressed rapidly. Whiddon partnered with Dr Ian Norton, Emergency Physician and Founder and Managing Director of Respond Global, a health crisis response agency, who provided rapid antigen testing at Howard Springs and other high risk workplaces. Whiddon's executive team and the management team at Easton park were provided with the evidence supporting TGA approved rapid antigen tests and the testing protocols. The decision to go live with the testing program was made on Friday 9th July, and the trial started on Tuesday 13th July.

The testing environments were designed based on advice from Respond Global and in line with the TGA requirements. Testing was voluntary, however all employees were directly engaged and asked to test themselves at external testing locations, supervised by a trained registered nurse, before entering their designated home.

Key facts

Location of site	**Whiddon Glenfield**
Number of care homes	**4**
Number of aged care residents	**450**
Number of active employees	**700–750**

Key findings

Number of tests conducted	**5,180**
Number of employees tested daily	**370**
Rate of decline	**0.6%**
Percentage of negative tests	**100%**
Number of PCR tests conducted on site	**40 every 3 days**
Total cost of tests (including set up)	**$18**
Total cost of trial	**$95,000**
Percentage of employees reassured by rapid antigen testing	**91%**
Percentage of family members reassured	**92%**
Percentage of residents reassured	**88%**
Average total time to conduct test	**10–15 minutes**

Following a highly effective and dedicated on the ground engagement campaign by the senior management team at Easton Park, employee take up (acceptance of the rapid antigen test) was very high.

The trial has been evaluated through a variety of qualitative and quantitative data. Testing numbers, correlation of results, impact on staff attendance, and impact on rostering and shift start times were gathered and analysed. In addition, surveys and interviews gathered feedback from employees, residents and families. The cost of the trial was also analysed to assist other organisations and industries considering rapid antigen testing.

The evaluation demonstrates that the implementation of the testing was a success. Take up rates were very high, with only 0.6% of staff declining. Over the 2-week period 5,180 tests were conducted and all test results were negative. In keeping with NSW Health protocols, PCR testing was offered on site, and continues to be, for employees living in high risk LGAs. This resulted in an additional 40 PCR tests applied every 3 days. These PCR test results correlated with rapid antigen tests, all showing a negative result.

Employees, residents and families reported feeling very reassured that Whiddon had initiated the testing to protect them. Feedback from the local team, and anecdotal evidence suggests that employee attendance at the site was bolstered by the trial, although this is not supported substantially by rostering data due to other variables. Employees that had to undergo forced isolation due to being identified as close or casual contacts have been removed from the data.

There were no positive results, either from the rapid antigen testing or the PCR testing. This was very reassuring and meant that Whiddon could be confident that employees and residents were not at risk. Over the trial period, some employees were identified as close contacts, with one incident where an employee had attended one of the Care Homes over three days, post exposure to the virus. The rapid antigen testing showed negative results for this employee over this period, and the PCR test conducted once the staff member was identified was also negative. This reassured everyone that the risk of any infection to residents or other staff members was very low. This reassurance, anecdotally, had a positive impact on employee attendance. It should be noted however that the required isolation procedures were followed until the negative PCR test was returned.

In addition, it was identified that residents returning from hospital treatment are also a key risk, and rapid antigen testing is being deployed, as well as the required PCR testing, as an extra protective measure. Three residents, for example, returned from treatment at high risk hospitals including RPA and Liverpool Hospital and were identified as close contacts during the trial. They were isolated in a separate building, with a separate care team and as well as the required PCR testing, they were rapid antigen tested every day for the first week, and then every other day for the second.

The cost analysis of the trial provides a per unit cost that includes set up, training and Registered Nurse supervision as well as the cost of the rapid antigen kits themselves. In addition to this, our analysis indicates that over a fixed period, the cost of prevention through a measure such as rapid antigen testing, is significantly less than the overall costs associated with an outbreak.

Qualitative feedback from key personnel suggests that the greatest benefits of the trial are the shift in attitude observed amongst employees, and the reassurance that it has provided to managers, employees, residents and families. There is groundswell positivity and confidence amongst staff that Whiddon will

protect them and their families as well as residents. This level of confidence will be vital to maintaining adequate staffing levels and quality care for residents during high risk periods. This is especially significant whilst the Single Site Working Arrangements are in place as these have placed much pressure on the rosters.

The objectives of the trial

The overarching aim of the trial was to protect residents, employees and their families from contracting the Covid-19 virus. In addition to this, an important specific aim was also to maintain adequate workforce levels at Easton Park over the high-risk period by reassuring employees that they were not infectious through the additional testing and screening afforded by rapid antigen testing.

Having sufficient workforce levels is very important to the safety and effective support of residents. Outbreaks in the community have an immediate and adverse effect on staffing levels as many staff are not prepared to take the risk of infecting others or getting infected in the workplace. Paid and unpaid sick leave levels rise as staff stay home to avoid the risk. Demonstrating to our employees that they are valued is key to attendance and morale and the introduction of rapid antigen testing was one way of achieving this.

The decision to use Rapid Antigen Testing

Following the Covid-19 outbreak in June of this year, Greater Sydney went into lockdown amid concerns around the highly transmissible Delta variant. The initial focus of infections was in the Eastern suburbs but quickly moved to South West Sydney and the suburbs surrounding the Easton Park campus. This was a major concern for Whiddon predominantly due to the potential exposure of our employees and the likelihood of staff living in high risk areas bringing Covid-19 into the residential care homes.

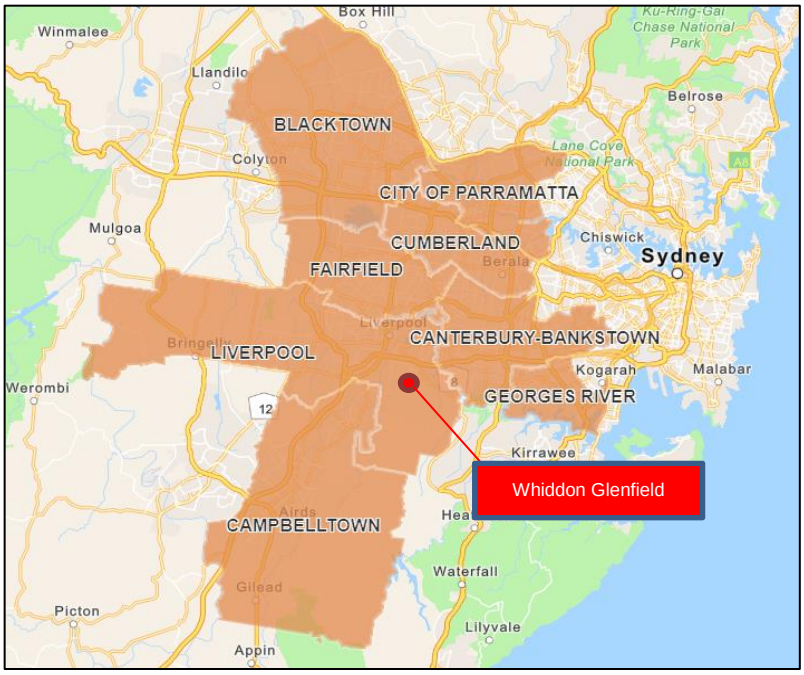


Figure 1 – Whiddon Glenfield in proximity to LGA's of concern, subject to strict lockdown protocols

During this initial period employee vaccination rates at Whiddon Easton Park were approximately 15%, which was generally consistent with community and industry vaccination rates. With Greater Sydney aged care operators enforcing strict visitation protocols (as per NSW Health directions) the key risk to the virus entering the homes remained the workforce. With more than one third of the workforce residing in one of the high risk LGA's, combined with the low levels of vaccination, another screening mechanism was sought after in order to further protect residents and employees.

Further, being able to maintain adequate staffing levels is of course vital to the provision of quality of care and support to 450 frail and vulnerable aged care residents. The fear amongst the team of spreading infection amongst residents, other employees and their families is high and we had seen high levels of sick leave and absenteeism in the previous lockdowns. This was further compounded by single site working arrangements that incentivises employees who work at multiple homes to commit to only one home during high risk periods. This also has an immediate effect on staffing levels, as many employees work with more than one provider.

While PCR testing is available to employees in their local areas, it is not always offered onsite in residential aged care homes. In addition to this, the time delay especially in peak testing periods (up to four days) in receiving results from PCR tests, rendered them ineffective as a strategy to proactively screen and manage daily workforce movements and to contract trace in the event of a positive case. Rapid antigen testing had not been used in aged care in the previous lockdowns, and was not being used across the industry at the beginning of this lockdown. In fact, NSW Health was actively not supporting its use due to concerns about accuracy. However, rapid antigen testing is being used widely internationally, in particular in the UK, Europe and the US, including in aged care settings.

Our Deputy CEO had come to learn about rapid antigen testing (RAT), and conducted an initial assessment into the availability, accuracy and effectiveness of the tests. Following this, an Emergency Physician, Dr Ian Norton, founder and Managing Director of Respond Global* a health crisis response agency, with extensive experience of designing COVID-19 Rapid Antigen Testing processes, was engaged. This then led to a period of due diligence conducted by the management team in order to assess all aspects of the tests including their suitability for use within the aged care setting.

Respond Global recommended the CareStart Rapid Antigen tests on the basis of its efficacy, track record and research supporting its effectiveness, and in particular its recent validation by NSW Pathology on effectiveness against the Delta variant over other TGA approved Rapid Antigen Tests. This now became the test of choice which allowed further planning to continue. The advice provided in regard to product selection was particularly important given a number of additional Rapid Antigen Tests on the market. Gaining access to an external expert on product selection and operational roll-out was a critical factor supporting the overall project.

Dr Norton was able to provide the evidence base from trials and implementation at Howard Springs isolation centre and other high-risk work places. Research supported that frequent rapid testing complemented by strict screening processes and robust Covid-19 protocols can reduce the risk of infection to near zero, even in areas of high community transmission. Rapid antigen tests detect viral proteins and have high sensitivity when a person is in their most infectious period, with accuracy levels of 92% - 98%. It is less accurate when a person is asymptomatic with sensitivity levels of around 60%, however frequency of testing has a dramatic effect on accuracy levels bringing them up to 98% (Please refer to: https://www.nih.gov/news-events/news-releases/nih-funded-screening-study-builds-case-frequent-covid-19-antigen-testing).

Following this period of due diligence, management decided that the risk to the workforce and residents during this passage of high community transmission, merited escalated testing and screening with the use of rapid antigen testing. This decision was made carefully but quickly on Friday 9th July. The senior management team at Easton Park, with the support of Respond Global, worked over the weekend to set up the logistics, organise the education and training for the wider team and design the process for daily rapid antigen testing for all staff, visitors or contractors entering the Easton Park campus. Regulatory authorities including the Department of Health and the Aged Care Quality and Safety Commission were also notified or consulted with during this process. With the positive response received from the Department of Health, combined with management and Board endorsement, the trial commenced on Tuesday 13th July.

** Respond global is a health crisis response agency. They are experts in providing infectious disease prevention and control frameworks including testing, testing protocols and training*.

Onsite PCR testing to support staff in high risk LGAs

It should be noted that part way through the trial, PCR testing on site was also offered to employees residing in one of the three high risk LGAs. NSW Health required essential workers residing in these areas to complete PCR testing every 72 hours. 260 staff, approximately 34% of our active staff on site, came from these LGAs. The combination of rapid antigen testing and onsite PCR testing meant that employees in high risk LGAs were still able to attend work with a high level of confidence

Establishing the trial

Timing and scope of the trial

The two-week trial was conducted over the period Tuesday 13th July until Tuesday 27th July. All employees, contractors and permitted visitors were required to be tested in five separate external test locations before commencing shifts or entering the care homes. The testing was highly recommended although not mandatory. Employees were able to decline, and if they did so were asked to provide their reasons for declining. Refusal rates were extremely low, around 0.6% declined the testing. Some of the rationale from employees who refused testing included recent nasal surgery and a lack of understanding of the requirements which was mostly resolved through further explanation.

Education and training

The Operations Manager and management team of all four Care Homes and other support services were engaged immediately and were fully involved in the decision and implementation process regarding the trial. Dr Ian Norton and the Respond Global team conducted a virtual assessment of the campus and made recommendations for the most suitable testing locations ensuring that the locations provided the required environment and capacity to decrease the risk of transmission. The team provided education around the evidence base and accuracy and approved testing protocols of rapid antigen testing. This immediately gained the support of the management team. It was important to have managers of operations, facilities, HR and clinical in attendance at these preliminary meetings.

Training was then provided for the supervising Registered Nurses (RNs) who were responsible for providing instruction to all employees on self swabbing and for overall supervision of the testing, as required by testing protocols. The training included an instructional video and a webinar with senior nurses from Respond Global to demonstrate use, discuss protocols and flow management along with a Q&A session. The responsible RNs also had to manage the external testing sites and COVID Safe protocols amongst waiting staff. This required Registered Nurses with strong communication and organisational skills.

Process and testing protocols

Respond Global together with our Easton Park management team designed the process around TGA approved testing protocols for rapid antigen testing. Key points to note are:

- Rapid antigen tests were used as a screening tool to complement the routine screening practices in place.
- That the testing and waiting period for test results had to occur outside of the care home to reduce infection risk and exposure to the internal premises
- The responsible RN trained employees on how to self-swab and complete the testing

- The actual testing has to be supervised by an AHPRA registered health professional, in this case the responsible RN
- The actual time taken to administer the test is approximately two minutes, supervised by the RN followed by the time taken to generate the result
- The rapid antigen test (CareStart) generated results within approximately 10 minutes
- A positive rapid antigen test result requires immediate notification to the Public Health Unit and adherence to NSW Health protocol.

Please see below the protocols and process for testing and for the RN response depending on whether the result is positive or negative. Of note the Rapid Antigen Test was designed as a screening tool, always to be confirmed with PCR.

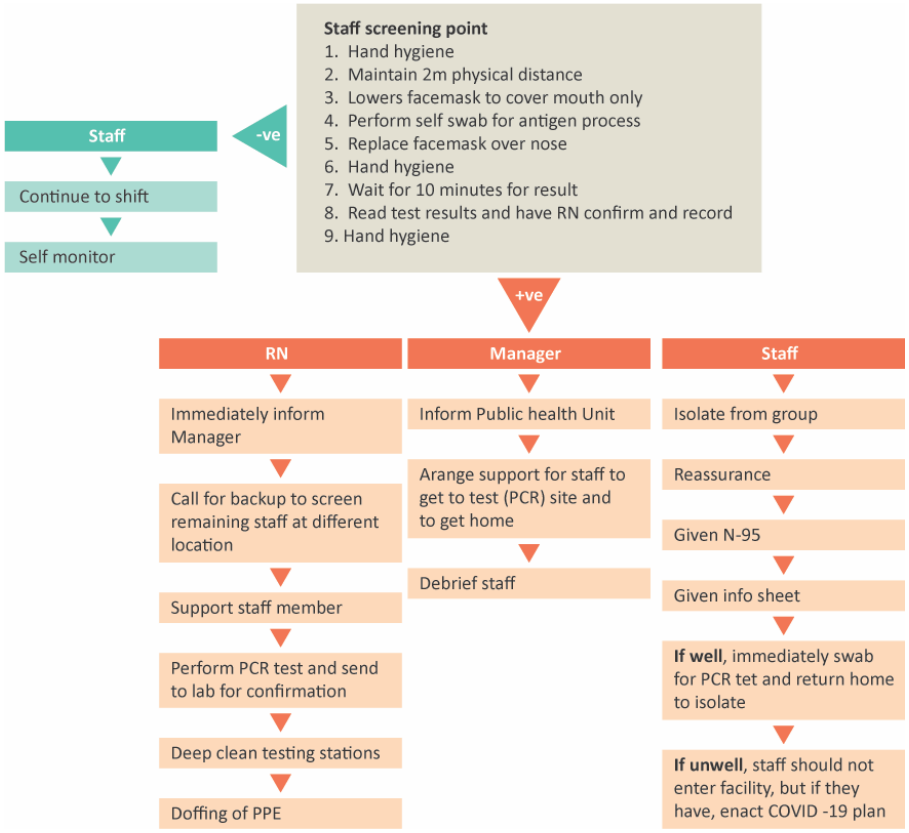


Figure 2 – Protocols and testing process

Collection of data

Data and feedback was collected throughout the trial to assist with the evaluation. Measures included:

1. Time taken to process the test
2. Ease of use
3. Time taken to educate employees on its application
4. Impact on rostering / shift commencement
5. Rate of take up due to the test being voluntary
6. Rate of accuracy in testing or levels of negative and positive tests
7. Rate of PCR testing on site, to correlate with rapid antigen tests
8. Surveying of employees to understand their response to the testing process
9. Impact on staff attendance during testing
10. Surveying residents and family perceptions of testing.
11. Interviewing key personnel to understand the learnings, benefits and challenges experienced during the trial

A mixed methods approach was applied to gathering data and feedback throughout the trial. This involved point of testing data collection by the responsible RN, surveying of employees, residents and family members, data analysis from rostering systems and interviewing of key personnel.

Engaging the workforce

Due to circumstances the trial was established within whirlwind timeframes. Having decided to implement the trial on Friday 9th July, testing started on the following Tuesday 13th. With this said engaging the Easton Park management team and registered nurses at Easton Park was a relatively straight forward process. Once the evidence had been presented by Dr Ian Norton it was clear that rapid antigen testing, using the CareStart product, would significantly reduce the risk of infected employees entering the care homes.

The key challenge was how to engage the wider team, the 700 or so active employees, across the site in a very short space of time, in a way that would ensure a high uptake of testing. The Operational Manager of the Easton Park campus, Sharon Fletcher, supported by her management team, embarked on an intensive campaign of educating and explaining to employees, why rapid antigen testing was so important. Among other strategies, this involved intensive face to face communication over the first few days of the trial. The evidence and the strategy behind the testing program were explained in detail to all employees. Managers demonstrated how to self-administer the test in front of the assembled team members.

Messaging was consistent about the fact that Whiddon was seeking to protect employees, their families as well as residents. It was made clear that the testing was not mandatory, however if employees wished to decline then they would be asked to fill out a form providing their reasons. Senior Managers were constantly present during these early days to provide reassurance to the employees and answer any questions.

In addition, a full internal communication campaign was conducted with posters in the environment and video messaging to employees from our CEO and Deputy CEO. In the initial days, our Operations Manager and her team made an effort to personally thank every member of staff for completing a test in order to reinforce the important role they were playing.

Our Operations Manager and her team observed a shift in attitude by the workforce over this period. In the day before the trial, employees were heard to express apprehension and concerns about being made to undertake testing. In response to the personal appeals and relevant messaging around how the aim of the trial was to protect them and their families and residents, employees endorsed the messaging and the rationale for testing and expressed gratitude that Whiddon was protecting them. This was evidenced in the very low rates of decline (0.6%) and the very positive response recorded by staff in the survey that was launched in the first week of testing.

In addition, employees were reassured that Whiddon would cover the cost of the additional testing time, and that the time taken to complete the test would be incorporated into their shift to ensure no financial penalty. This required new tolerance levels to be applied to the rostering and payroll systems, and some manual intervention to timesheets also.

Following new NSW Health guidelines and to further enhance workforce movements. employees from high risk LGAs, with increased restrictions were offered PCR testing on site, so that they did not have to line up for PCR testing at NSW Health testing clinics within their LGA (that were experiencing long time delays).

Findings

Data measures

Employee Rapid Antigen Tests - Rates of take up

The rate of take up among employees was very high. Across the two week period, 13th July – 27th July, 5,180 tests were conducted averaging 370 tests a day. Schedules show that an average 350 employees were attending every day during the week, with slightly lower numbers at the weekend as expected. The 370 tests included testing employees, contractors and permitted visitors. Of these tests 100% were negative. Rates of decline were very low at about 0.6% and this includes contractors, some of whom did decline.

Sample period 21– 28 July 2021

Location (Name of building)	Number of tests	+ve/-ve	Number declined	Reasons given	Issues with function of kits
Taylor House	559	-ve	3	Unwilling to undertake	Nil
AWC	230	-ve	0	N/A	7
EPU	463	-ve	2	Personal choice	Nil
SDM	512	-ve	4	Tested/PCR tested day before	3
Other	476	-ve	4	Tested elsewhere	Nil
Total	**2240**	**100% -ve**	**13**		**10**

Average testing times

Staff and responsible RN surveys show that the average total time for testing was 10 – 15 minutes. This corresponds with what we know about the tests – the actual time to test is 2 minutes, and then 10 minutes wait time for the result. Anecdotally, the testing got faster as the trial proceeded, and staff and RNs became more familiar with the processes. In the second week, the responsible RNs were able to oversee 40 staff tests every hour this rate continues to improve.

Ease of use

Staff were asked in the staff survey whether they were comfortable testing themselves, and whether the training was adequate. Over 90% agreed in the positive. This was supported by responsible RN feedback. Around 75% agreed that it was easy to train staff to test themselves.

Rates of onsite PCR testing

It is important to note that as there were no positive results to rapid antigen testing, PCR testing was not required as a follow up to employees testing positive. Onsite PCR testing was offered to those employees living in high risk LGAs that were required to PCR test every 72 hours. These were taken up at a rate of 40 every 3 days. The individuals who required a PCR test under NSW Health guidelines also had a rapid antigen test taken prior to entering the home. All PCR tests conducted onsite were negative, and showed a direct correlation with the corresponding rapid antigen test taken.

Impact on staff attendance

Roster analysis: An analysis of paid and unpaid sick leave levels for a week in lockdown prior to the trial (the week commencing 5th July), was compared to a week inside the trial period (week commencing 19th July). It is estimated that the active staff cohort over both of these weeks was around 700. The findings from this analysis are inconclusive as there are many factors that will have impacted levels of staff absenteeism, particularly in the period during the trial. These include:

- w/c 5th July was still within the NSW school holidays
- w/c 19th July was during the school term, employees were required to provide home schooling. Whiddon has high levels of staff with school age children
- Access to child care for younger children

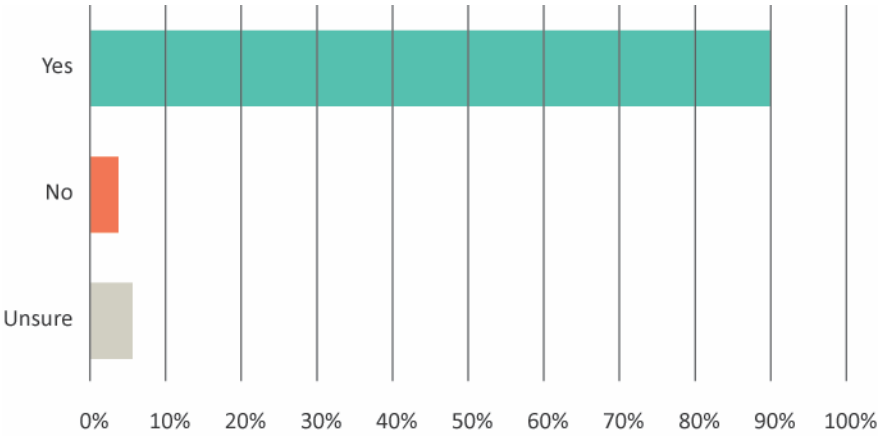
	Trial status	Numbers of staff taking paid or unpaid sick leave*	% of total cohort n = 700
w/c 5 July	Outside of trial	135	19%
w/c 19 July	Within trial	122	17%

**Staff who were unable to attend as they were deemed a close or casual contact have been removed from these figures.*

Anecdotally, managers provided feedback over the trial period that employees were less likely to be absent for fear of infecting family or residents. In the initial period of the trial the rostering team also reported improved roster compliance.

Further, this was strongly supported by the staff survey findings from the trial period. Over 50% of employees participated. Employees were asked if the combination of testing and vaccination (Whiddon is also offering on site vaccination clinics) had made it more likely that they would attend their shifts. 90% agreed with this statement.

Q12: Are you more likely to attend work now that many staff are being tested as well as vaccinated? (Staff survey)

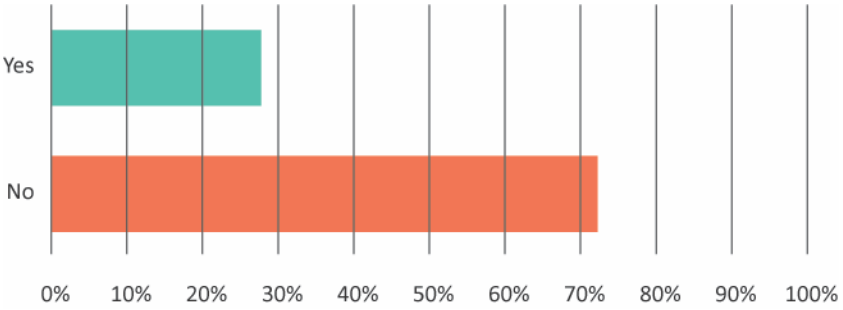


Impact on shift start times

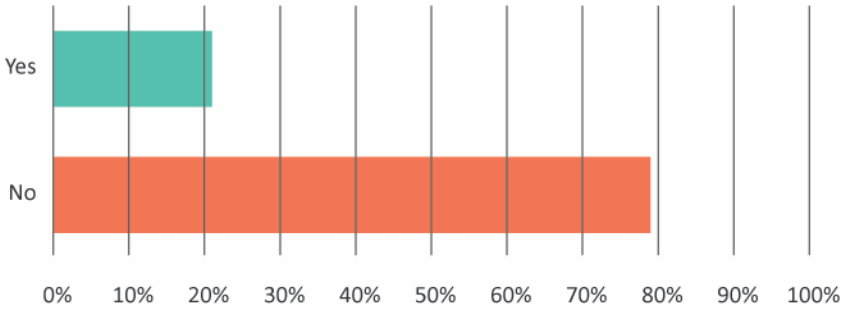
Easton Park management had anticipated major disruption to shift start times, and potentially a negative impact on operational management. Fortunately, this didn't eventuate. Employees were delayed by a maximum of 20 minutes, which did not appear to have an adverse impact on daily operations. This was also borne out in the interviews with key personnel.

Please see responses to this question from both surveys:

Q8: Did the testing provide any serious disruption to you starting you shift? (Staff Survey)



Q3: Have you noticed any disruption this week to staff coming on the floor due to testing? (Resident Survey)



Feedback

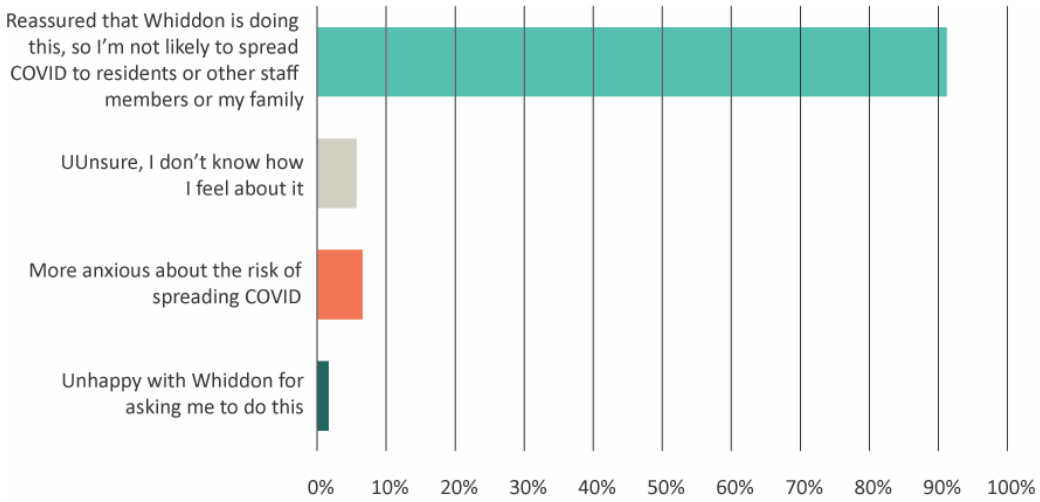
Feedback from staff, residents and family members

In addition to data collection, several surveys were conducted over the trial period to gauge employee and responsible RN attitudes to the trial and resident and family member attitudes. 51% of employees participated in the survey, about 30% of family members, and over 20% of residents were surveyed.

Levels of reassurance

In line with the feedback from key personnel, interviews regarding the shift in employee attitude following on the ground engagement, indicated that 91% of staff agreed that they felt reassured that 'Whiddon is doing this to protect them, their families and the residents'.

Q3: How did the rapid testing make you feel? (you can select one or more options that may apply) (Staff Survey)



Similarly, 92% of family members and 88% of residents who participated in the survey, agreed that rapid antigen testing reassured them that Whiddon was protecting residents and staff members.

Broader feedback and other areas of concern

As testament to the success of the pre planning that occurred, 91% of employees agreed that the training was adequate, 93% felt comfortable testing themselves and 75% felt that the trial was well organized. Concerns were raised, following the first survey, that the daily nasal swab might be causing discomfort, this was tested in a second survey. 37% of employees participated, of which 85% agreed that they had experienced no discomfort, and 89% were happy to continue to be tested daily or frequently.

The responsible registered nurses (RNs) were surveyed separately. They too were very positive about the trial. 75% agreed that it was easy to train employees, and easy to use the tests. 95% were comfortable managing the process. There had been some challenges experienced with the external testing locations. There was a strong wind, for example, in the first week that hadn't been anticipated. Cold temperatures had also made it difficult to keep employees waiting outside, particularly in the very early morning shift. These challenges had been quickly overcome though, and 65% of RNs agreed that the locations were easy to manage once they got going.

It is interesting, that despite the low rates of declines evidenced in the data collected at point of testing, 10% of RNs perceived that many employees had refused, and 35% that some had refused.

Effect on employees, resident and family perception of Whiddon

As covered previously, employees, family members and residents all fed back that this Whiddon initiative was reassuring them that Whiddon was protecting employees, their families and residents. We also saw a significant increase in NPS score amongst the frontline staff, which increased from 38 (July 2020) to 45, a significant increase over a difficult time. Resident NPS had gone up to 44, and family member NPS to 54, both of these represent significant increases from measures taken at the end of 2020.

Similarly, 100% of the responsible RNs enjoyed being part of this proactive approach.

Attitudes to vaccination

Whiddon offered onsite vaccination clinics over the trial period. This was part of the overall effort to encourage greater levels of employee vaccination, which was at approximately 15% prior to the trial period. We were able to include questions around attitudes to vaccination in the staff surveys, to understand if there was any correlation between willingness to be rapid antigen tested and vaccinated. Of the 51% of employees that participated in the survey, 92% said they were vaccinated. They were asked how they felt about the Government making vaccination mandatory, to which 84% responded that they are happy to do so to protect their families, residents and other employees. This was a very positive result, showing groundswell positivity towards vaccination and rapid antigen testing.

What happened when an incident occurred?

An incident did occur during the second week of the trial where an employee was notified that they were a close contact. A period of three days had lapsed since the employee had come into contact with the infected person and the employee had been attending the care home over the prior 3 days. On becoming aware of this the employee contacted their manager immediately.

Our records were able to confirm that the employee's rapid antigen tests for the previous three days had all been negative. Whiddon organized PCR testing for the employee, and a negative result was obtained. Both the employee, and Whiddon, were confident that the employee had not been infectious over the prior three day period that they had attended the site. All the usual protocols had to be followed, the employee was still required to isolate for 14 days, and the care home had to follow isolation protocols for the time that it took for the negative result to come through. The reassurance of the rapid antigen testing results had a positive impact on the team and their attendance.

While thankfully there have been no positive testing results for employees, Whiddon has been caring for three residents who were identified as close contacts following their return from Liverpool and RPA hospitals. These residents are all isolated in a separate building, cared for by a separate team. They were rapid antigen tested every day for the first week, as well as the required PCR testing, all returning negative results. They were then tested every other day in the second week as an extra protective measure. Daily rapid antigen testing for this care team under these circumstances has been very effective at reassuring employees that they are not taking the infection back to their families. We have extended the rapid antigen testing to these residents in combination with the required PCR testing, as well as to new resident admissions coming from high risk LGAs or other hospitals. This again provides an extra layer of assurance to the residents and employees.

Cost of the trial

We have calculated the cost of the trial using 3 different approaches:

- Unit cost of the testing
- Total cost of the two week trial including establishment costs
- As an estimated comparison of outbreak versus testing costs

Unit cost of the testing

In calculating the unit cost of testing we have taken into account 3 factors:

- The cost of the test kits excluding GST
- The cost of having Registered Nurses oversee the testing, as per approved testing protocols
- Set up and establishment costs including training and consulting costs

Taking into account the range of different employee roles and respective salary levels incorporated into the daily testing program, our calculations indicate that the daily cost per person arrives within a range of approximately $18-$20.

As noted previously, employee testing occurred within existing roster parameters. Had employees required additional time (outside of the standard roster) for testing, there would have been an additional employee related cost. This should still be considered with ongoing testing and in different settings. Our calculation estimates an employee related cost of approximately $8 per employee, if 15 minutes were to be added to the roster for testing wait times.

It is important to note, that the set up component of the unit cost is influenced by the scale of the testing. Set up costs have been apportioned to the number of tests used in the trial and will vary depending on the size and scale of the operation. The Whiddon trial for example involved 5,180 tests and required all 70 RNs to be trained for one hour.

The unit cost findings are summarized in the table below:

Cost per unit including kit + RN supervision + set up	$18–$20
Average employee cost for 15 minutes testing time	$8
Total cost if testing time is absorbed in roster	**$18– $20**
Total cost if testing time is additional to roster	$26–$28

Total cost of the 2-week trial

Based on our lowest unit cost, $18, and the 5,180 tests conducted during the trial, the total cost of the trial for the 2 weeks arrived at:

5,180 tests @ $18 per person	$ 93,240
Additional Management support	$ 2,500
TOTAL	**$95,740**

For ease, if this is rounded to $95,000 for the 2-week trial period, the trial generated an operating cost of $47,500 per week, and $6,785 per day. This cost will vary significantly depending on the size and scale of the operation and whether the average testing time of 15 minutes is additional to or absorbed within the roster.

A comparison of testing costs versus outbreak costs

Direct costs of an outbreak

The cost of an outbreak is multifaceted, with many direct and indirect costs. Generally, the majority of the staff cohort has to be replaced with agency staff, there are specialised cleaning and many other associated costs. Please see the list below for a summary of the types of direct costs involved:

- Total replacement of staff cohort from the day of contact
- Furlough (sick leave) for existing staff cohort from day of contact
- Deep cleaning
- Specialist infection control
- Communication, PR, other support

We have estimated the cost of an outbreak in the largest care home at Easton Park with 160 residents rostered for accordingly. Our estimates indicate that the cost of an outbreak within this home could generate additional costs up to $700,000 per week. There are numerous factors that could see this outcome vary favourably or unfavourably. In addition, this does not take into account the substantial indirect costs involved in an outbreak, these include:

- Effect on health and wellbeing of residents (including mortality rates of up to 20% in older age groups due to Covid-19 infection)
- Effect on the quality of care provided with non Whiddon trained staff
- Ongoing sick leave for staff
- Ongoing support of existing staff members
- Potential workers compensation claims
- Reputational risks to Whiddon amongst all its key stakeholders, Department of health, the provider community and potential consumers and their families

Given these variables and rather than attempt to generate a ratio, it is simply worth noting the significant cost variation associated with prevention. Obviously, these preventative decisions are solely based on the health and safety of our residents, employees and their families, however the cost analysis is still a relevant observation.

Learnings from the trial

Key personnel were interviewed at the end of the trial, asking them to reflect on the key benefits, challenges and things that they might do differently. There are some valuable learnings for other industries and organisations considering rapid antigen testing.

- All parties agreed that having an emergency health crisis expert, with relevant experience associated with rapid antigen testing, on hand to provide education, recommend products, provide training and assist with design of processes and compliance with TGA approved protocols was vital to the success of the trial. This was particularly the case as rapid antigen testing had not been used in the aged care industry prior to the trial, and was not endorsed by NSW Health.

- Given that this trial was a response to a crisis, once it was ascertained that rapid antigen testing was a robust strategy to reduce risk of infection at the Easton Park site, the implementation strategy moved very quickly. The management and operational team focused on the benefits of the testing, and saw that they outweighed the risks of not employing any further strategies. This positive approach to risk enabled and supported rapid implementation and the deployment of additional resources.

- Having the rapid antigen testing available as an extra protective measure for both residents and employees has proved invaluable at times where incidents have occurred and PCR results take time. Residents retuning from high risk hospitals, for example, were rapid antigen tested daily in the first week and then every other day in the second week, alongside the required PCR testing.

- Engaging the wider workforce with relevant and consistent messaging, personal endorsements and education supporting the testing was pivotal to the high take up rates of voluntary testing. The combination of constant on the ground endorsement, role modelling and thanking of staff was very powerful, combined with a strong and consistent internal communications campaign. The shift in attitude amongst staff early on in the trial was tangible, and this confidence in Whiddon's aim to protect staff, their families and residents will endure through the continuing and future lockdowns.

- Thinking through the consequences to rosters and shifts is important. Some adjustments had to be made for roster tolerances within our systems, but there was a short period where time sheets had to be entered manually. This was soon remedied but could have been avoided had we had more

time to anticipate this. Considering whether testing time will affect rostering, and whether it will be absorbed within the roster or sit outside needs to be carefully considered, and can have a significant impact on the total cost of testing.

- The trained clinical professionals, in this case Whiddon RNs, were selected for their communication and organizational skills. This proved invaluable in the first few days with some challenging logistics.

- Logistics around testing outside in the winter months do need to be carefully thought through. There were teething problems with unexpected high winds, cold temperatures and rain but they were overcome quickly.

- Finally, the main learning of the trial is that the reassurance and reduced risk provided by a combination of robust screening processes, a reliable and well researched product, daily rapid antigen testing including additional measures where available (e.g. on site PCR testing) is extremely effective. Knowing that we can maintain continuity of quality care for residents while significantly mitigating the level of risk to all individuals within our premises, with a high degree of confidence is what really matters in an outbreak. Residents are reassured and employees will continue to attend the work place with a high level of trust and confidence in Whiddon and ensure workforce continuity during this critical period.

Appendix

An introduction to rapid antigen testing and protocols: Dr Ian Norton