Report on COVID-19 Outbreak at North Rockhampton Nursing Centre, Central Queensland Hospital and Health Service, Rockhampton, Queensland

Central Queensland Hospital and Health Service

Lead authors:

Kerrie-Anne Frakes, COVID Chief Operating Officer,
Central Queensland Hospital and Health Service

Professor Gulam Khandaker, Director and Public Health Physician,
Central Queensland Public Health Unit

Dr. Nicolas Smoll, Public Health Registrar, Central Queensland Public Health Unit

Jacina Walker, Public Health Nurse, Central Queensland Public Health Unit

Contributing authors:

Candise Bradshaw, Nurse Unit Manager Blood Borne Virus & Sexual Health Service

Kalie Green, Senior Project Officer, Central Queensland Public Health Unit

Executive Summary

North Rockhampton Nursing Centre (NRNC) is a public residential aged care facility located in the Central Queensland Hospital and Health Service (CQHHS). During the period this report deals with, the facility was home to 115 residents across 3 wings with 149 staff. The facility has a mix of single and shared rooms with up to 4 residents sharing a bathroom.

On 14 May 2020, a staff member at the facility was identified as COVID-19 positive. The staff member reported developing symptoms on 5 May 2020. In accordance with the CDNA National Guidelines for Public Health Units – Coronavirus Disease 2019 (COVID-19), the infectious period was considered to be from 3 May 2020 onwards. During this time, until the positive COVID-19 result was available, the staff member continued to work a total of seven shifts in the [redacted] NRNC in a [redacted].

Following confirmation of the positive case, initial clinical review of available staff and residents within [redacted] identified one additional staff member and one resident with symptoms of clinical concern. In accordance with the CDNA Guidelines, these individuals, coupled with the single case of laboratory confirmed COVID-19 enabled a COVID-19 outbreak to be declared at the facility on 14 May 2020 and immediately the Health Service Chief Executive (CQHSCE) placed the North Rockhampton Nursing Centre in lockdown.

CQHHS and Queensland Health implemented a rapid response enacting the local disaster management plan. The Central Queensland Health Emergency Operations Centre (CQ-HEOC) coordinated the outbreak response where the Central Queensland Public Health Unit (CQPHU), led the Public Health response as part of this outbreak investigation and the Central Queensland Incident Management Team (CQ-IMT) led the operational response.

Contact tracing identified 44 close contacts of which, 36 were NRNC staff (24% of the total NRNC staff). Further, 40 of the 115 residents of the facility were as identified as close contacts. For the residents of NRNC, their 14-day self-quarantine period was taken from the last day the staff member worked, concluding at midnight 28 May 2020. The staff who were identified as close contacts had individually calculated quarantine periods, based on their last day of contact with the confirmed case.

To establish the potential burden of disease, all 115 NRNC residents undertook testing within 24 hours of the confirmed case. In addition, all 149 staff irrespective of their unit of work were also tested with 98.7% of staff tested within 72 hours of the positive case notification. Repeated interval testing was undertaken on all residents at day four, eight and 12 from their last exposure.

An onsite Outbreak Management Team (OMT) was established, led by the CQHHS COVID-19 Chief Operating Officer (COVID-COO). Reporting to the COVID-COO was a Nursing Commander (Outbreak management) and the Medical Commander (Outbreak management) who took command of the facility for the purpose of managing the outbreak and incident response. The incident response encompassed every resident of the NRNC including those who were subsequently relocated to an alternative facility.

To support the self-quarantine of the close contact residents, a total of 102 residents relocated from their homes to enable close contacts to have private bathroom quarantine. This included 35 residents who were moved offsite to two private hospitals and four residents who moved into Rockhampton Hospital. Droplet precaution PPE was instated across all three NRNC wings. Further, all communal areas across all facilities were closed and residents were quarantined to their bedrooms.

A Virtual Hospital in the Nursing Home was established, admitting every resident into a Virtual Unit under the clinical governance of the Medical Commander within 72 hours. Cognisant of the potential spread of disease, work was undertaken to minimise the risk of exposure and contain the spread including setting

up three separate teams (one team assigned to each wing) to reduce the potential for cross contamination. Rosters were expanded to take into consideration emergent leave with nursing levels staffed at 120%, with a 1:4 ratio and a skill mix of 30% Registered Nurse, 20% Enrolled Nurse and 50% Assistant in Nursing skill mix. Additional Allied Health resources were deployed to address any cognitive decline, functional deconditioning and weight management challenges that the residents may experience during this period of lockdown and isolation.

Staff were required to have temperature checks prior to shift commencement and at the end of shift.

Community testing capacity was expanded, with two fever clinics stood up, one in South Rockhampton on the Rockhampton Hospital campus and another in North Rockhampton. In the first five days of the incident 2,293 community members were tested with no positive cases identified.

Throughout the outbreak, a variety of communication and consultation activities were also being undertaken to support residents, their families, the broader community and key stakeholders, providing regular updates in relation to the incident and response.

The outbreak was declared over on 29 May 2020, however, the oversight by the OMT continued for a further seven days. During the period of the outbreak and the additional seven days of oversight, there were no hospitalisations for medical reasons, no COVID-19 related deaths and no secondary cases identified from this confirmed case.

The rapid response to identify all close contacts, resident isolation, early and broad testing of all residents and staff, enhanced infection prevention activities and open communication contributed to the successful management of this incident. There were a number of fortuitous factors outside the control of the response that occurred prior to case identification which meant the outbreak was limited, and also contributed to a successful response.

This document focuses on response activities occurring between the confirmation of the positive COVID-19 case and the closure of the response and subsequent return to normal operations. Moreover, it is intended the report will facilitate consideration of the learnings derived from this incident for any future responses to COVID-19 in similar settings.

Background

Case summary

On the evening of 14 May, 2020, an [redacted] who worked at the NRNC was identified as a confirmed case of COVID-19 and identified that [redacted] had worked at the facility while infectious. This led to an immediate Public Health outbreak investigation for COVID-19. Onset of symptoms was identified as 5 May 2020, with the infectious period commencing from 3 May 2020. During the initial case interview, it was identified that the index case had worked seven shifts at the facility while infectious between 4 and 14 May 2020. During the relevant period and preceding weeks, the staff member's duties were restricted to [redacted], where the staff member [redacted]

With no other active case of COVID-19 within Central Queensland and no apparent epidemiological link, the source of infection was not immediately identified.

Facility Specifics

The NRNC is a publicly run Residential Aged Care Facility (RACF) in Central Queensland. The Centre provides residential aged care accommodation for general high care residents, residents experiencing dementia, and also offers interim care and residential transition care.

The Centre is a single level facility which has three wings, all separate to each other. There are 120 bed spaces available across the three wings:

- Cec Pritchard Wing has 40 beds and provides care for general high care residents. It has four single rooms, each with an en suite bathroom and 18 twin share rooms, each with a shared en suite bathroom
- Ivy Baker Wing has 38 permanent high care dementia specific beds, as well as one male and one female high care dementia specific respite beds. There are four beds per room in the wing, with an en suite bathroom, shared between the four residents, for each room.
- Westwood Wing has 20 permanent high care beds, 20 interim care beds (Huxham Unit). There are four beds per room in the wing, with an en suite bathroom, shared between the four residents, for each room.

There is one main kitchen in the facility, with trolleys used to transport trayed meals to residents in individual units. Each unit has a small kitchenette. There is a shared dining room in the Cec Pritchard wing and ten annexes each in the Ivy Baker and Westwood wings where residents can take meals.

There is a single staff/dining room situated between the Westwood and Ivy Baker wings. Other communal areas in the facility include a recreational room, a gym area, a staff development room, a conference room with an administration area and a chapel. Each of the three units has its own shared lounge.

Laundering of residents personal clothing also occurs onsite, with bedlinen reprocessed offsite at a dedicated commercial laundry.

From the receipt of Aged Care Direction No 1 (issued 21 March 2020) the facility had ensured that there was only one entry point to each of the three units.

At the time of the incident, the centre was home to 115 residents which were supported by a total of 149 current employees.

Pre-Outbreak Preparedness

Implementation of CHO's Aged Care Directives

To protect the most vulnerable people, contact between residents and non-residents of an aged care facility had been restricted in accordance with Aged Care Directives from the Chief Health Officer (CHO) in accordance with emergency powers arising from the declared public health emergency. At the commencement of the outbreak, Aged Care Direction (No.3) was in in effect until superseded by Aged Care Direction No. 4 on 21 May 2020.

In response to both the Aged Care Directives and Hospital Visitors Directors from the CHO, CQHHS developed a *Visiting CQHHS Facilities During COVID-19 (or identified pandemic) Policy* endorsed by the Executive Director Nursing & Midwifery, Quality & Safety and authorised by the CQHSCE. This policy focused on the change to visiting hours, including restricting the number of visitors within each of the facilities; during an identified pandemic and aimed to provide the framework for implementation within CQHHS to minimise the risk to residents, staff and visitors through expanding on the areas of:

- visiting restrictions
- social distancing and
- enhanced infection control and prevention measures

Facility specific

NRNC had undertaken a number of preparatory activities prior to the incident to address COVID-19 risks.

These included:

- The allocation of staff to individual areas, with rostered casuals allocated to separate wings where possible
- Ensuring an onsite supply of PPE, including plastic boxes with supplies for each unit and regular stocktakes and updates of PPE supplies, and running staff education sessions on PPE preparedness
- Restriction of resident activities and education to individual wings (cancellation of communal group activities)
- Arranging for visits to be conducted in separate wings instead of usual combined activity
- Review of kitchen practices and implementation of plans to maintain a clean area and limit staff access and movements
- Implementation of COVID-19 related signage
- Purchase of infrared thermometers
- Activities to reinforce importance of handwashing with residents and staff, including signage, education sessions, and activities with recreational officers and residents
- A variety of communication activities, including letters to residents and relatives, staff memos and distribution of meeting minutes
- Staff meetings conducted via teleconference to support social distancing
- Activities to ensure GP and resident compliance with flu vaccination requirements
- Implementation of and engagement with a number of meetings and forums focusing on COVID-19 preparedness, including implementation of a daily teleconference attended by all NRNC managers, inclusion of COVID-19 as a discussion at individual unit meetings, workforce planning meetings for COVID-19 strategies, and participation in:
    - Strategic Policy Best Practice Network COVID-19 meetings
    - Transformation Team Aged and Frail COVID-19 Coordination Group
    - Vulnerable Persons Cell meetings, and

    - Public Health teleconferences discussed below
- Staff support measures and screening procedures, including daily temperature screening, sign-in sheets for all areas, onsite flu vaccination clinics (with alternative arrangements for those requiring further support and communication to staff on vaccination requirements), online COVID-19 training for staff and requesting of vulnerable staff information.

Public Health

To assist local RACFs preparedness for a potential COVID-19 outbreak, from 25 March, 2020, CQPHU coordinated weekly teleconferences with local facilities and the Primary Health Network (PHN). These meetings provided a platform to share the latest federal and state government information and promote a supportive environment where networking across facilities could occur. RACFs were encouraged to:

- Prepare their facility in accordance with the:
    - CDNA National Guidelines for Public Health Units – Coronavirus Disease 2019 (COVID-19),
    - COVID-19 Guidelines for Outbreaks in Residential Care Facilities; and
    - Queensland Chief Health Officer Public Health Aged Care Directions
- Conduct desktop exercises to understand their capacity in the event of a COVID-19 outbreak and develop strategies to manage same

In addition to the weekly meetings, CQPHU requested all RACF managers to complete and submit their COVID-19 Preparedness Checklist (Guidelines for Outbreaks in Residential Care Facilities) and a facility map to Public Health. RACFs were also encouraged to share their learnings and challenges from their onsite planning with the wider group.

One month prior to the outbreak, CQPHU conducted a two-hour education session via videoconference covering outbreak preparedness, response to an outbreak, donning and doffing PPE, swab collection, symptom response and comfort measures for aged care residents.

Initial response following confirmation of positive case

The positive case was confirmed at 7:52pm on 14 May 2020 by the on-call Public Health Physician for Central Region. This was communicated to the Health Service Chief Executive (CQHSCE) at 8:30pm and subsequently, Central Queensland HHS and the Queensland Health responded rapidly, undertaking the following measures by 9am (13 hours following the initial confirmation):

- CQ-IMT consisting of the CQHSCE, other CQHHS Executives, the Director of Nursing (DON) NRNC and CQPHU members met urgently at 9pm, 14 May to develop an immediate action plan to deploy a rapid response team.
- NRNC was placed in lockdown with the immediate cessation of non-essential visitors, staff, contractors and family
- Subsequently CQHSCE informed the Chief Health Officer (CHO) and CQPHU Director/Public Health Physician (PHP) confirmed the situation and planned actions for that night Public Health Incident Controller (COVID-IMT).
- Central Queensland Public Health Unit Rapid Response Team (CQPHU RRT) was deployed and public health outbreak response commenced
- CQPHU RRT worked through the night assessing the facility, identifying and contacting close contacts (e.g. reviewing the roster and visitors list)
- The primary case was isolated, and a more detailed case interview was conducted
- Work commenced to assess, collect specimens from residents' [redacted] as well as close contact staff on shift using rapid GeneXpert test for COVID-19, with swabbing of residents completed by 1am Friday, 15 May
- The local disaster management plan was enacted with the CQHSCE identified as the Health Incident Controller and the COVID-COO was appointed the Outbreak lead.
- A communication strategy was established to urgently communicate with the families of the residents and staff, with residents' families contacted and informed of the situation by members of the Central Queensland HHS Executive Team from 7:30am, Friday and a five-person family support team established
- CQ-IMT met again at 15 May 2am and 7am – In addition to progress updates, another focus of the IMT was ensuring appropriate support was in place for the Public Health team and the NRNC team to adequately operate and ensure patient safety (a number of core staff were quarantined and subsequently tested)
- Infection Control team deployed to the NRNC at morning shift change with a focus on Droplet Precaution PPE compliance and increased cleaning and disinfection implemented across the whole facility
- Contacting close contacts due to commence morning shift on 15 May to establish if any had clinical symptoms, prevent the staff member from attending work, provide advice on self-quarantine and the required specimen collection
- The HHS reviewed its stock availability to confirm it had sufficient Personal Protective Equipment and additional staff to backfill for the response.
- Rapid response support from the COVID-IMT including a senior public health medical officer was flown to Rockhampton by 9.00am on the morning of 15 May 2020.
- State based Commonwealth aged care officials were notified of the situation at NRNC.

Public Health Response

A rapid response team was deployed to the facility by 11:00pm on the evening of 14 May 2020, led by CQPHU PHP along with two Public Health Nurses and CQHHS Executive Director Medical Services.

The objectives of the public health response were to identify the source of infection, any further cases, potential exposure, close contacts, secondary cases, and to stop any onward transmission through isolation and quarantine. Key activities attended during the onsite Public Health response included:

- Case identification
- Review of facility/wing set-up
- More detailed case interview
- Clinical assessment of al [redacted] residents and available staff
- Review of medical records
- Review of [redacted] roster to identify close contacts
- Extensive contact tracing and identifying all close contacts
- Establishing a line list of all close contacts with their last date of contact with the case
- Reviewing visitor logs (external visitors, contractors and other health providers)
- Collection of specimens from residents of [redacted] and staff present on the evening and night shift
- Contacting close contacts due to commence morning shift on 15 May to establish if any had clinical symptoms, prevent the staff member from attending work, provide advice on self-quarantine and the required specimen collection
- Isolation of [redacted] residents from other residents
- Restriction of staff movement between wings
- Provide advice on enhanced infection control practices (e.g. PPE, isolation, increased cleaning frequency)

Following the clinical assessment of residents and available staff, it was established that two other individuals (one staff and one resident) met clinical and epidemiological criteria for suspected COVID-19. As per the CDNA National Guidelines for Public Health Units – Coronavirus Disease 2019 (COVID-19), a confirmed COVID-19 outbreak in RACF is defined as; two or more cases of acute respiratory illness (ARI) in residents or staff of a RACF within three days (72 hrs) AND at least one case of COVID-19 confirmed by laboratory testing. As such, an outbreak of COVID-19 was declared for NRNC.

Public Health Incident controller from the Public Health Incident Management Team (COVID-IMT) in Brisbane arrived Rockhampton at 9:00am on Friday, 15 May 2020 to provide support to CQPHU.

Testing regime

- Baseline testing all staff and residents
- Baseline testing of all identified close contacts, with subsequent testing on day 14 and if symptomatic
- Planned testing intervals of NRNC residents (day 4, 8 and 12 and when symptomatic)
- Progress updates on the follow up and symptomatic testing outcomes of residents as they occurred

Baseline Testing

All (100%) residents had swabs collected within 24 hours and 98.7% of staff were tested within 72 hours of the outbreak being declared, with 100% of staff tested by ≤96hours. All tests for residents and staff were negative for COVID-19.

Table 1: Baseline swab results and status for cases, close contacts, others (NRNC staff and other workers) and NRNC residents. 100% persons had swabs collected. Index case was identified on May 14, 2020 at 2000hrs.					
Swabs collected and tested for COVID-19	15/05/2020	16/05/2020	17/05/2020	18/05/2020	Total
Residents (n=115)	114		1*		115
Staff (n=149)	99	23**	25	2	149
% of total Staff swabbed	66.5%	14.8%	16.8%	1.3%	
Cumulative % by hours	≤24hrs 66.4%	≤48hrs 81.9%	≤72hrs 98.7%	≤96hrs 100%	

* 1 x Resident offsite as an outlier at another facility since 23/04/2020, however precautionary baseline testing completed on 17/05/2020

** Index case was retested on 16/05/2020

Additional Testing

Residents of NRNC

Residents were re-swabbed at day four, eight and 12 following their last exposure to the confirmed case and if they became symptomatic during the 14 days. 113 residents were swabbed, and all found to be negative for COVID-19. One resident died on day 4 from [redacted], was swabbed prior to death and had serology collected and both tested negative for COVID-19. At day 8 and at day 12, 113 residents were again swabbed, and all found to be negative for COVID-19 (note - the person who died and another resident who was offsite as an outlier at another facility since 23 April 2020 represent the missing tests).

Table 2: Swab collection timeline for residents of NRNC. Baseline, day 4, 8 and 12 following potential contact with confirmed case															
Day since last Close Contact with Case	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	**Total**
Initial (n=115)		114		1												115
Day 4					77	36*										113 **
Day 8									113							113 ***
Day 12													113			113 ***
Symptomatic		1		1					1		2	1			1	7

* 36 x Residents had been moved offsite from Nursing Centre and swabs were collected by private pathology on request

** 1 x Resident Refused retesting;1 x Resident not retested as had been an outlier at another facility since 23 April 2020. This resident was screened during initial swabbing, however but follow up swabs were not requested for Day 4, Day 8 or Day 12

***1 x initial Resident now deceased; 1 x Resident remains as an outlier

Close Contacts of Confirmed Case

Of the 44 identified close contacts, 95.5% (42) were employees of CQHHS, with 36 (81.8%) staff identified as dedicated NRNC staff causing a 24% loss in staff to NRNC. 87% (39) of close contacts were swabbed within 24 hours notification of the index case with 100% of close contacts tested by ≤72hours. Close contacts were retested if they became symptomatic during their quarantine period and/or to exit follow-up at day 14. In total, 101 swabs were collected on the close contacts. 14 (31.8%) of the close contacts were re-swabbed as a result of symptoms meeting the testing criteria during the quarantine period, all results negative for COVID-19.

Table 3: Swab collection timeline for close contacts. Baseline, when symptomatic and upon quarantine exit

Test Date	14/05/2020	15/05/2020	16/05/2020	17/05/2020	19/05/2020	20/05/2020	21/05/2020	22/05/2020	24/05/2020	27/05/2020	28/05/2020	Total
Initial (n=44)	4	35	5									44
Symptomatic				7	4	1	1*	1	1			14
Exit Test**					1		5	9		8	20	43*

* 1 x Close Contact had a symptomatic swab collected on Day 13 and therefore Day 14/Exit swab was not repeated

** Exit test performed on day 14 of individual's quarantine period. This date was calculated as 14 days from last date of contact with the index case for individual close contacts, therefore differs for each close contact

Serology Testing

Baseline and convalescent serum samples were collected on 92% of residents (n=105). This testing was planned to coincide with any regular blood test to minimise the impact on the resident. No serological evidence of reactive IgM or IgG was identified. However, several specimens showed equivocal results on single point. Further investigation is currently underway to interpret the serological data.

Outbreak Management Team Response

The primary objective of this outbreak response was to control secondary transmission of COVID-19 in the facility and to prevent any associated deaths.

To support this, an OMT was established for managing an outbreak of COVID-19 for NRNC. The Outbreak Management Team was led by the COVID-COO under the direction of the CQHSCE as the Health Incident Controller. The OMT's role was to direct, monitor and oversee the outbreak in addition to maintaining and sustaining care for the residents, their families and staff of NRNC.

Reporting to the COVID-COO was the DON NRNC (Outbreak Management) and the Medical Commander (Outbreak management). These two roles took command of the facility for the purpose of managing this outbreak and incident response. The OMT's response encompassed every resident of the NRNC including those residents moved to private hospitals (Rockhampton Mater Hospital and Mater Hillcrest Hospital, as well as the residents temporarily managed at Rockhampton Hospital.

The team was supported by the following roles:

- Clinical Leads – Mater Hospital, Hillcrest Hospital, Rockhampton Hospital (Medical and Nursing)
- Nurse Unit Managers (NUMs) NRNC
- Infection Control Lead – this role ensured all infection control decisions were carried out; a coordinated the activities required to contain and prevent an outbreak
- Allied Health Lead – this role addressed any deconditioning and weight management challenges that the residents may have experienced during this period of lockdown and quarantine
- Family Support Team – this team served as the contact with the families of the residents of North Rockhampton Nursing Centre and provided communication to this group regarding key concerns identified by families, as well as relaying key messages back to the families

Ex-officio

- Visiting General Practitioners or GPLO
- Public Health Officer – this role was responsible for providing advice on public health response within the NRNC as well as other facilities and providing advice for staff in quarantine
- Executive Director Rural District Wide Service – operational executive for business as usual, with responsibility for communicating lessons learned to other Aged Care Facilities and Multipurpose Health Services
- Finance Officer

The following outlines the service provision to support the management of the nursing home residents at NRNC who required quarantine due to COVID-19 situation in Central Queensland.

Virtual Hospital in the Nursing Home

The OMT implemented a virtual care management model for residents at NRNC in a Hospital in the Home type model to support these residents due to their vulnerability and diminished ability to identify any change in clinical condition or onset of symptoms. This included close monitoring by medical and nursing

health care teams to ensure early detection of clinical deterioration and facilitation of proactive care delivery.

The purpose of this model was to ensure resident-centred care was delivered safely and effectively virtually within the nursing home to keep residents out of hospital and reduce the need for multiple health professionals attending the nursing home. This In-home care model was inclusive of virtual patient rounding, remote patient monitoring 24 hours a day, and assessment and treatment by a dedicated treating team. It also identified the considerations for safely and effectively managing NRNC residents that had been relocated to the Hillcrest and Mater Private Hospitals.

All residents were assessed and admitted into the Virtual Hospital in the Nursing Home under the clinical governance of the dedicated Medical Commander. This assessment included the medical history, medication review, and a Rockwood Clinical Frailty Score. Documented plans for continence, medical management, pain management, cognition, emotional health and behavioural risks were formulated. Twice daily observation of temperature, pulse rate, respiratory rate, blood pressure, blood glucose level (if indicated) and SpO2 were taken. A baseline urinalysis was also undertaken.

Undertaking this new baseline assessment was important given that a new clinical team was taking over care. Many residents had undergone full assessments at time of their RACF admission and the new assessment highlighted some had subsequently declined considerably. For example, a resident was listed as a falls risk and wanderer but at the time of the incident, was bed-bound.

During the outbreak, twice daily observations for all residents were conducted with the escalation of any COVID-19 symptoms, with residents retested using the rapid GeneXpert. The line listing was emailed twice a day to CQPHU. Preparation was undertaken at Rockhampton Hospital to facilitate the immediate transfer of any resident who tested positive to COVID-19 into isolation rooms on the COVID-19 ward.

As part of the response, the clinical team increased the frequency of observations for NRNC residents as follows:

- Falls screening and assessment was **increased to weekly** – usually monthly
- Pressure Injury screen/assessment **increased to weekly** – usually monthly
- Malnutrition screening tool and weight was **increased to weekly** – usually monthly
- Physiological observations including pain score was **increase to minimum 8 hourly and then as per Q-ADDS escalation and observation monitoring plan –** usually done monthly
- Cognitive status assessment Confusion Assessment Method (CAM) **increased to daily** (due to mixed model of care)

A full model of care was developed including standard operating procedures and escalation pathways for NRNC for the outbreak management.

Isolation and quarantining of residents

To meet the appropriate isolation requirements of the close contact residents of the [redacted] with access to single bathrooms, a significant number of residents within the NRNC facility and to the Public and Private Hospitals in Rockhampton occurred. These moves took place over the first 72 hours of the incident and involved 102 of the 115 residents being displaced from their usual place of residence to an alternate area.

Resident movements required 35 lower care and interim care ( ) residents to be moved to private hospitals (Rockhampton Hillcrest Hospital (10 residents) and Rockhampton Mater Hospital (25 residents); with four of the residents transferred to Rockhampton Hospital to support the single ensuited isolation configuration.

The remaining 75 residents located at the North Rockhampton Nursing Centre were then spread across the three wings of the facility, with the residents in single isolated rooms, and the remaining residents distributed in a less dense configuration.

Further, communal dining/areas in all wings were locked down and communal activities and gatherings were ceased. Meals served in the resident's room.

Resident moves were facilitated quickly using local ambulance services and partnerships with the private facilities within the Rockhampton community. The configuration achieved ensured social distancing and bathroom requirements of all residents were met. The speed of the movements resulted in some residents not having access to personal belongings such as family photographs for comfort and to assist staff orientation to that individual for 72 hours whilst these were found and returned. Additionally, the stand down and quarantine of a large number of regular staff prior to resident movements made the tracking and identification of residents for hospital admission more challenging.

During the outbreak an additional residents ( ) were transferred to Rockhampton Hospital for , not related to COVID-19. One resident had been admitted for and therefore remained in for the duration of the outbreak response. Despite not being at NRNC during the infectious period, precautionary baseline testing completed on 17 May 2020.

Enhanced Infection Control Measures

On the first day of the outbreak the CQHSCE directed that all parts of NRNC including all 3 wings were to remain in lockdown with no non-essential visits by any staff, contractors, family members or other visitors until further notice. To ensure consistency and provide maximum protection to vulnerable residents, droplet precaution PPE was adopted across all wings of the facility.

In accordance with the Aged Care Visitors Direction and the *Visiting CQHHS Facilities During COVID-19 (or identified pandemic) Policy,* staff were required to have temperature checked prior to shift commencement and at the end of each shift. Entry to the facility was through a single point of entry and additional staff were rostered to undertake this activity, check vaccination records, and maintained a register for staff and visitors. A competency package was developed to ensure the staff members undertaking this task executed it with appropriate skill, understanding, consistency and accuracy.

Staff and visitors who did not meet the requirements of the Direction and Policy were refused entry and subsequently directed to attend a fever clinic.

Infection Prevention and Control Nurses with 24 hour presence at NRNC were established immediately. These Infection Prevention and Control Nurses provided PPE orientation for staff new to the clinical area, as well as observing donning and doffing processes. A PPE station was established at the front door of each wing (donning and doffing area) with droplet and contact precautions (impervious isolation gown, flat surgical mask, gloves and eye protection) and normal hand hygiene employed across all wings.

The nurses' station/medication room in each wing was designated a clean zone. Staff were to remove PPE before entering the room and donned again when leaving. The doors were kept closed with access via swipe cards only.

Opportunities for increased hand hygiene were implemented throughout the facility and there were additional staff rostered to facilitate increased environmental cleaning of high touch surfaces such as taps/faucets, chairs, doorknobs, corridor rails, window winders etc. In addition, increased cleaning frequency of resident's bathrooms and general areas within the wings was implemented. Excess furniture and clutter were also removed from all wings. The integrity of all patient care equipment was reviewed, repaired or replaced as a priority to facilitate effective cleaning.

Residents' tactile items were limited to a single item per resident with laundering in between. The residents own personal items were laundered when soiled and coloured linen bags were employed for each wing were utilised to differentiate zones.

Personal care

The focus on personal care is considered the same across acute and aged care, although the resources and priorities for delivering clinical care will differ with the service capability framework. During the outbreak, this created some challenges for the incoming staff who were largely acute/critical care RNs rather than RACF AINs. Staff were unfamiliar with each other and naturally, took time to form cohesive teams with best matching of ability to resident need. To address this, quarantined staff joined shift handover virtually to share their knowledge of residents. Further, NRNC staff were deployed for the first 48 hours to the two private facilities to ensure that the residents were settled and there was appropriate handover of care

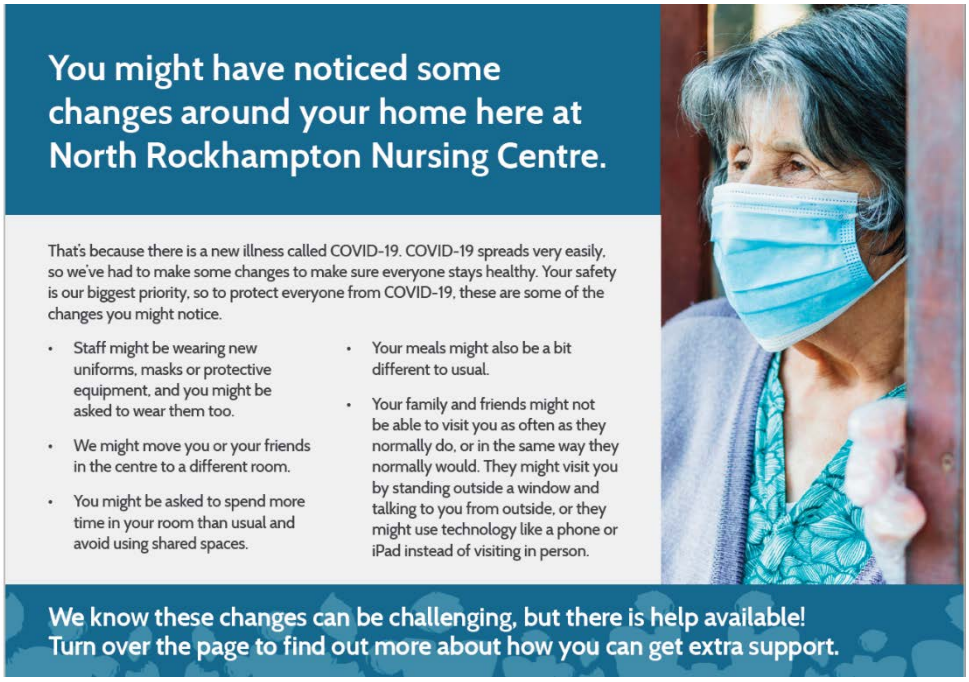
Incoming staff were unfamiliar with the residents and with the location of essential equipment/paperwork within the unit and may have initially been less time efficient as a consequence. Volunteers including family members were locked-out during the outbreak, which reduced the number of people available to assist to walk and feed residents.

Management of behaviour

The need for distancing restricted the residents' capacity for social inclusiveness and made it more difficult for residents to form relationships with incoming staff who were all wearing PPE. For some residents, this was quite distressing, leading to an increase in calling out or aggressive behaviours. Reduction in residents' outside time also contributed to an increase in reported insomnia due to disruption in diurnal rhythms.

Work with the Older Person's Advocacy Network resulted in two key communication tools to support resident's understanding of the changes in NRNC. The first was a video of one of the NUMs providing an overview how the virus works and why certain restrictions are necessary to prevent it spreading. The video discussed examples such as PPE, non-communal meals, staying in rooms and visitor restrictions. The video also discussed the residents' rights and provided information on how residents could get help/assistance from advocates. This script was written to ensure it was older person friendly and came from a staff member who was trusted and well known.

The second communication tool was a postcard/poster, copies of which were put up and distributed in the facility to support the residents' understanding of the changes made within the facility.



Workforce

Cognisant of the way that this disease spread and the potential risk if there was to be further cases, three separate teams were established to minimise the risk of exposure and contain the spread.

36 NRNC staff (24% of the total NRNC staff) were identified as a close contact of the confirmed case and therefore were required to self-quarantine for 14 days following their last contact with the index case. This included 2 out of 3 of the Nurse Unit Managers being identified as close contacts. This loss of nursing leadership coupled with the overall loss of nursing staff resources caused a major impact to available staffing and the ability to fill rosters.

Further, a decision was made that all NRNC staff – including those who were not identified a close contact and were asymptomatic – must self-quarantine until their test result was available. Once a negative test result was available staff could return to work and were encouraged to liaise with their line manager. This plan impacted workforce availability for the first 5 days on the outbreak and led to a heavy reliance on staff who were unfamiliar with the residents and the facility.

A Medical Commander (Senior Medical Officer (SMO)) and a DON were appointed to the facility within 48 hours. The Nursing Roster was expanded to a 1:4 ratio keeping the aged care ratios (20% RN, 30%EN, 50% AIN). A surge nursing workforce plan was developed to ensure business continuity and enable NRNC to continue to provide effective care to the residents. This plan ensured that each wing functioned as a stand-alone unit, with no staff working between wings. The first 72 hours required the CQHHS to manage the incident and supplement the workforce through local means. Subsequent feedback indicated that use of locally sourced workforce created pressures for other local residential aged care providers, whose staff took up short term contracts. Ultimately, an additional workforce surge was required, with the State Health Emergency Control Centre (SHECC) providing an additional 33 nurses into the region by day four and another 23 nurses arriving in a second cohort in the second week of the outbreak. The additional workforce ensured the delivery of a level of staffing in line with such a clinical outbreak response.

The presence of the SMO/medical commander onsite was beneficial in ensuring clinical assessments were completed and residents Acute Resuscitation Plans (ARP) were reviewed and updated. Acute medical concerns were addressed in a timely manner and the SMO liaised closely with the PHP in arranging rapid COVID-19 testing in setting of acute concern (e.g. resident with fever or acute respiratory symptoms). The combination of medical and senior nursing staff on site was looked upon favorably with the DON commenting "it was extremely reassuring for all staff to have Senior Medical Officer onsite."

Additional medical staff were also deployed from SHECC to support the medical oversight including a Infectious Disease Physician and Geriatrician.

There was a wide variety of ability and functioning among the residents, cognitive and physical, and a diversity of social and cultural backgrounds. Residents need roles/activities that have meaning, and they want to manage their day-to-day life and live as well as they can. Three Allied Health (Occupational Therapy) Student Cadets were recruited with one assigned to each of the three wings in order to reduce cognitive and functional decline in residents. This enabled the continuation of existing Allied Health treatment as well as activities with a diversional focus. One of the projects led by these cadets included remodelling outdoors to include a garden, using a therapeutic design to ensure a dementia friendly environment.

Communications Strategy

During the course of the outbreak, communication across CQHHS occurred daily via numerous mediums. This included direct correspondence (COVID-19 Update) via email from the CQHHS CE to all staff. In addition, weekly CQHHS-wide videoconference briefing was made available to all staff throughout the health service and CQ Health Staff news updates were distributed via email to all staff.

As the confirmed case was an employee of CQHHS, the information provided to the staff outlined the response to date during the outbreak and any future planned actions. This included:

- Reinforcing the commitment of CQHHS to protect the residents and staff of the NRNC
- Changes in access to the NRNC and the associated lockdown conditions
- Movement of residents to ensure compliance with recommendations of COVID-19 Response Guidelines for Aged Care facilities
- Advising all CQHHS staff to access testing if symptomatically required and reinforced not returning to work until negative results were received and symptoms had resolved
- Welcoming external senior medical officers and nursing staff to NRNC to strengthen the staffing response
- Acknowledging the outstanding community support from internal and external stakeholders
- Recognition given to the multidisciplinary workforce responding to the outbreak and providing support to the outbreak management
- Shared timelines regarding the plans to repatriate residents back to the NRNC
- Declaration of the conclusion of the outbreak and the subsequent changes to visiting restrictions, cessation of PPE requirements and reintroduction of the use of communal spaces at NRNC
- Notification when all NRNC residents were repatriated and reunited with family as the visiting restrictions were relaxed
- Messages of acknowledgement and gratitude shared to all external and internal stakeholders that assisted in achieving a positive outcome for the CQHHS

Local Residential Aged Care Facilities were emailed an update from CQPHU within 24 hours of case notification but reported concerns about timeliness of communications at the outset of the response. A number of local RACFs did not receive the initial update at the time it was emailed. This was particularly

concerning for providers whose staff had worked shifts at NRNC preceding the confirmation of the positive case. The absence of an electronic staff and visitor log and a process for tracking staff working across multiple facilities likely contributed to this. Existing relationships between Queensland Health and Aged Care sector peak bodies allowed this issue to be identified and addressed.

The CQHHS GP Liaison Officer communicated with GPs and Primary Health Network, CQHHS Communications staff managed Social Media channels and Fever Clinic promotion. The Queensland Government managed all other media.

The IMT continued to meet up to three times daily over the first weekend and then daily following day four. The CQHSCE, COVID-COO and EDMS provided regular updates to the CQHH Board. A Pandemic System Leadership Team was formed to provide updates to staff, union representatives, Local and District Disaster Management Groups, Queensland Ambulance, the PHN, Private hospitals and other key partners.

Regular meetings were held between State and Commonwealth aged care officials, with the State Aged Care lead contacting Commonwealth counterparts daily to keep them apprised of the situation.

Daily, and when required, more frequent updates were provided to the DG, CHO, DDG, through the CQHSCE to provide rapid escalation of issues to the Department and seek support as required. This included situation reports on the progress of the outbreak, key communications messages and communication strategy, and key actions and progress.

Family Support Team

As discussed above, on 15 May 2020, attempts were made to contact all next of kin for the NRNC residents by a Senior Executive or Director of Medical Services to inform them of the situation at the facility and assure family that the Health Service was doing everything possible to ensure the safety of the residents. This communication also outlined the testing regime and changes that had been implemented in the facility.

The Outbreak management team pulled together a dedicated Family Support Team (FaST), comprising nursing, social work, consumer feedback engagement officers and quality and patient safety staff, to support residents and their family members during the response was rapidly mobilized. This specialised team was specifically tasked with ensuring currency and cohesion of communication with the residents' families and ensuring all were well informed A staffed 24-hour number facilitated families having the opportunity to ask questions as they arose at any time of the day or night.

The team was accessible via a telephone services and its availability was promoted by the Deputy Premier in his public press conferences. Each family had a designated contact in the call centre to facilitate consistency and families were provided regular, and as-required information. In addition, staff were contacted regularly and offered any support required. Families and carers of all residents were contacted at least twice in the week following the outbreak commencement and at least 4 times during the outbreak period.

iPads were deployed to the centre to allow residents and their families to stay in touch while the facility was in lockdown and residents in quarantine.

Other Operational Impacts

CQHHS facilitated and encouraged enhanced COVID-19 testing for both the wider population in and around Rockhampton and for CQHHS staff, including those working at NRNC and other HHS facilities. To support this response, the Health Emergency Operations Centre worked to stand up additional resources in Rockhampton and onboard clinical staff from across the State to ensure adequate human and consumable resources were available to:

- Replace the quarantined staff from NRNC
- Establish an additional fever clinic
- Increase staffing and clinical consumable demand to facilitate 2 testing sites in Rockhampton (Rockhampton Hospital Campus (South Rockhampton) and at CQUniversity (North Rockhampton).
- Communicate ongoing testing information for the wider CQHHS population

Similarly, private pathology providers also increased testing capacity which was evident in the substantial rise in the number of tests performed in Rockhampton from both public and private pathology services in the following days after the outbreak was declared. A total of 2,293 persons in the community were tested for COVID-19 in the first 5 days, without finding a single positive case.

Table 6: Enhanced community surveillance screening

Date	Tests (n)
15 May 2020	527
16 May 2020	381
17 May 2020	429
18 May 2020	687
19 May 2020	269
Total (in 5 days)	2,293

Declaring the Outbreak Over

In accordance with the Communicable Disease Network Australia (CDNA) National Guidelines for the Prevention, Control and Public Health Management of COVID-19 Outbreaks in Residential Care Facilities in Australia, a COVID-19 an outbreak can be declared over if no new cases occur within 14 days (maximum incubation period) following the date of isolation of the last confirmed case. In the absence of evidence of onward COVID-19 transmission, despite the enhanced testing and clinical screening of staff, residents and close contacts, the outbreak was declared over May 29, 2020. The OMT remained in placed for the following 7 days and from 1 June 2020, a phased return of residents to the facility and transition to a business as usual footing was implemented.

Hot and Cold Debriefs with relevant parties have taken place and the strengths and limitations of the response as well as key learnings described following.

Strengths

- There was a prompt response from the CQ IMT/HEOC, with significant elements of the response being initiated between the afterhours notification of the confirmed case on 14 May 2020 and the next business day.
- The ability to mobilise a rapid response team (CQPHU RRT) locally meant that there was immediate ability to Find, Identify, Test and quarantine all close contacts within 24 hours of the notification of the index case.
- The flexibility and agility to deploy local resources to facilitate rapid and enhanced testing in Rockhampton, with two Fever Clinic testing sites established in the first days of the response. This supported community concern as well as enhanced surveillance of the broader community.
- CQHHS had already established a COVID Hotline which provided a single contact point for the community to phone into and seek advice. This number, despite becoming overwhelmed with community response, was essential in the ability to contain and maintain communication.
- Onsite infection control support 24/7 was deployed from day one. Staff were able to implement a higher level of infection control response and provide just in time teaching for donning and doffing procedures.
- The nursing home already maintained excellent environmental cleaning processes and there was a committed and passionate team that maintain the cleanliness of the environment before, during and after the outbreak.
- The provision of resources to facilitate continuity of care for residents, in particular the onsite nursing and medical commander, allowed a Hospital in the Nursing Home mechanism to be established and a higher level of observation and care maintained.
- Support from and an existing plan/collaboration with private facilities to enable appropriate facilities for isolation of residents.
- Open and scheduled communication (initially twice daily followed by daily) between the OMT and IMT/senior leadership team ensured rapid response and completion and endorsement of actions in a timely manner.
- The commitment of IMT, Executive and staff to do “whatever it takes” to stop the spread and protect residents, staff and the community from infection.
- Ability to identify and implement required innovation such as the Virtual Aged Care Facility.
- Appropriate mix of skill, knowledge and experience on the Incident Management Team.
- Unlimited support from Queensland Health and Chief Health Officer.
- Implementation of a single point of accountability onsite worked well.

Limitations

- Pending test results for COVID-19 had rostering implications (i.e. Asymptomatic staff who were tested were unable to work until a negative test result was obtained). Establishment of a communication channel to the Roster Centre or staff services during similar emergencies needs to be considered, noting the confidential nature of the information.
- Roster management was not designated to just one staff member to maintain oversight of all nursing staff resulting in some confusion and potential overlap.
- There was limited additional locally available operational staff to meet the increased cleaning and separation requirements. Requests for operational staff through SHECC when calling out for nursing staff.
- Other residential aged care providers in the community subsequently reported that the use of local staff as part of the surge workforce created staffing pressures in their own facilities.
- Communication channels – the call centre/fever clinic hotline was initially inundated with the increased number of calls, however, was resolved within a short period of time. Demand for up-to-date information from different stakeholders during the outbreak was high and initial communications did not reach all relevant stakeholders, with some local aged care providers needing to work with their peak bodies to be added to PHU distribution lists. Again, these issues were resolved within a short period of time, with existing sector relationships providing a pathway for prompt resolution.
- Infrastructure issues, in particular, rooms with multiple beds and shared bathrooms, prevented the quarantining all the residents on site for the duration of the outbreak at the NRNC.
- The absence of an electronic log of all staff and visitors to the facility. Which slowed down the contact tracing and testing ability by the PHU.
- Turn-around-time for pathology results from Rockhampton (i.e. regional towns) is dependent on availability of courier/flights.
- The test results were not conveyed to a central point (i.e. CQPHU) for the baseline testing of all close contacts, NRNC residents and staff. A centralised process in conjunction with the local laboratory and PHU would be helpful in future to single oversight of the close contacts as well as affected staff and residents.
- Initially, conveying negative results for those who were tested at the fever clinic was a challenge. An automated process has since been implemented (i.e. COVID-19 Pathology Tracker Application to SMS negative results).
- The way in which resident care needs and profiles were recorded within the unit was not well-adapted to the needs of the unfamiliar workforce. Even though there were very detailed care plans for each resident, it would have been very useful to have a quick reference list to assist new staff in providing safe care (e.g. information regarding mobility, diet, hygiene on a hand over sheet, wandering dementia, wound care requirements etc.) This can be facilitated via the Leecare system once fully implemented.
- The absence of a list of all external stakeholders prevented comprehensive communication to all relevant parties about the situation at NRNC. As a result, private pathology collectors had not been communicated with in relation to the lockdown status and were still attending the site.

Lessons Learnt

- A single case of COVID-19 can cause a very large proportion of clinical *and* administrative/managerial staff contacts to be quarantined (24% in this case), leading to a large staff knowledge void that had to be replaced by staff members not familiar with the facility and its residents. This presented challenges for the incoming staff who initially were not able to obtain a handover due to staff quarantine. The inclusion of quarantined regular staff at virtual handover was a development that mitigated this issue and should be considered in future responses.
- The level of concern among staff, residents and their families and within the local community could be substantial and that may cause panic and disorganization of planned activities which are usually deemed to be straightforward. Extensive communication, education and sharing of information through a single point/channel is essential.
- Staff working in multiple facilities is a major concern during an outbreak. Prior implementation of a log or other process for tracking movements of staff working in multiple facilities, which could be shared across facilities and PHUs, would limit undue concerns/unnecessary testing and mitigate risk.
- A detailed plan for isolation and quarantine of residents in the absence of single rooms/ensuite needs careful planning in advance and regular updates.
- An electronic staff list (with those who are current), their up-to-date contact details, staff rosters and accurate lists of contractors and visitors are vital for responding to an outbreak and need to be maintained regularly.
- Communication channels between PHU, local communications team, local HEOC and other stakeholders need to be streamlined. There was intense demand for up-to-date information from different stakeholders during the outbreak. At times, it was also difficult to distinguish individuals responsible for the requested data/information. A process needs to be established, preferably with a single point of contact and with specific reporting times/structure (e.g. twice a day) to enable this to happen
- Adherence to national and state guidelines during outbreak management is important. A local expert advisory group consisting of HEOC XO/EDMS, PHP, Infectious Diseases Physician, Director of Medical Services, Director of Emergency and Director of ICU could be created to support this process.
- Although there were no secondary cases of COVID-19 or any hospital admission due to medical reason from this outbreak, a medical management plan should be in place, and should include where the residents will be managed (i.e. within the facility or in hospital) and up-to-date advance life directives for all residents.
- Development of a quick reference package of documents for non-aged care staff to assist them with orientation would support a surge workforce response. This package may include guides to and examples of the documentation/clinical forms used in the aged care setting. Key documents differ significantly between the aged care and acute setting (e.g. medication charts) and surge workforce staff from non-aged care backgrounds may benefit from the provision of such support.
- Identification bands are not routinely used in the aged care setting but are useful in the context of an outbreak. Future responses should ensure that there is an up to date printed identification band available for and worn by all residents in the event a similar scenario where mass resident movements are required. Use of identification bands should be implemented in relation to all residents being transferred for whatever reason out of a residential facility prior to transfer (e.g. to hospital) to support immediate identification.

- This experience of the outbreak prompted CQHHS to take a closer look at existing continuity plans in other aged care, disability and MPHS facilities, and led to refined contingency planning. Other HHSs and providers may benefit from proactively examining and refining existing contingency plans based on the issues documented in this report.

References

CDNA Guideline: https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm

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Public Health Guidelines: https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/novel-coronavirus-qld-clinicians/public-health,-laboratory-testing-and-infection-control-information

Queensland Chief Health Officer Public Health directions: https://www.health.qld.gov.au/system-governance/legislation/cho-public-health-directions-under-expanded-public-health-act-powers/aged-care

North Rockhampton Nursing Home (NRNH) COVID-19 Outbreak response

- 115 residents across 3 wings with 149 staff, facility has up to 4 residents sharing a bathroom
- Index case staff member confirmed COVID-19 positive on evening of 14 May 2020, infectious period included prior shifts at NRNH
- 39 close contact residents identified in 1 wing ([redacted])
- 36 close contact NRNH staff identified in 1 wing ([redacted])
- Outbreak Management response immediately initiated 14 May
- No further COVID-19 confirmed cases
- Outbreak declared closed 15 days later on 29 May

Key actions:

- Immediate lockdown or NRNH
- Day 1, 4, 8, 12 testing all 115 residents
- Baseline testing all 149 staff
- Exit testing for 36 quarantined close contact NRNH staff prior to return
- Droplet precaution PPE across all 3 NRNH wings throughout
- Close contact residents provided single bedroom/private bathroom
- All communal areas closed, residents quarantined to bedrooms
- Enhanced clinical support and observations

Immediate actions first 6 hours

- Rapid response mobilized
- Response team deployed onsite to NRNH
- Facility lockdown
- Quarantine of 39 identified close contact residents ([redacted])
- Clinical assessment of all close contact residents commenced
- Contact tracing initiated
- Commence onsite testing overnight all staff and residents
- Quarantine of identified close contact staff
- Incident Management Team stood up, HSCE Incident Controller, COO Outbreak lead
- CHO and QH PH Incident Controller notified

Rapid response first 80 hours

- Relocation of 102 residents to enable close contacts to have private bathroom quarantine (35 residents moved offsite to 2 private hospitals)
- 39 close contact residents in single bedrooms/private bathrooms in 2 wings
- Communal dining/areas closed in all wings
- All NRNH residents quarantined to bedrooms
- Droplet precaution PPE all 3 NRNH wings
- 2nd fever clinic established
- Medical Commander and incident DoN established
- Increased clinical observations
- Staff dedicated to individual wing
- Enhanced cleaning regime
- Family Support Team and Call centre for NRNH resident families mobilised
- Gene expert COVID-19 test kits centralised at Rockhampton from across CQ
- Day 1 resident tests and baseline staff tests
- Daily+ QH response team DG,CHO, DDG, HSCE
- 24/7 Infection Control nurses deployed onsite

Days 4 -14

- Droplet precaution PPE in all wings
- Enhanced clinical observations
- Virtual visiting (Ipad facetime)
- Enhanced testing: Day 4, 8, 12 testing of all residents (not just close contacts, including residents relocated to private hospitals)
- Quarantine exit tests for NRNH close contact staff
- Deployment of nursing support from QH into CQ
- Quarantined staff join shift handover virtually to share knowledge of residents
- Symptomatic testing of all residents with gene expert for rapid result
- Dedicated staff for each wing with no cross-over
- The 35 residents (not close contacts) transferred to 2 private hospitals required to remain in their rooms but no PPE regime and visitors allowed
- 24/7 infection control nurses remain deployed to NRNH

Outbreak closure

- Outbreak closed day 15 with no further COVID-19 cases other than index case
- Communal areas and communal dining re-opened day 15
- Visiting restrictions for a further 7 days to day 21
- Medical Commander and incident DoN maintained for further 7+ days
- Phased move over 7 days of residents back to original accommodation