Afterhours Home-based Palliative Care Community Pharmacy Services Program Evaluation

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Contents

Table of Figures

Table of Tables

EXECUTIVE SUMMARY

Background

With the growth and ageing of Australia's population, and an increase of chronic and generally incurable illnesses, there is greater demand for home-based palliative care. Seventy percent of Australians report they would prefer to die at home (Foreman et al, 2006). There is evidence that home-based palliative care increases the chance of dying at home and reduces symptom burden in particular for patients with cancer, without impacting on carer grief (Gomes et al, 2013). Pain management and carers feeling confident to administer medication are critical to achieving these outcomes. Community pharmacists play an ongoing role in dispensing medication, providing advice to home-based palliative care patients and their family members on the quality use of medicines during business hours. Potential delays in obtaining medication during and after hours contributes to delayed patient symptom management and patient and family member distress (Pharmacy Guild of Australia Report 2007). The role of community pharmacists to provide after-hours delivery of medication to home-based palliative care patients has been unexplored to date.

In 2017, Capital Health Network (CHN), ACT's Primary Health Network funded the After-hours Home-based Palliative Care Community Pharmacy Services program ("After-hours service") by contracting two pharmacies, Capital Chemist Wanniassa and Capital Chemist Charnwood to deliver medications in the after-hours period for home-based palliative care patients residing in the ACT and promote the program to key stakeholders in the palliative care landscape. This After-hours service is supported by funding from the ACT Primary Health Network (PHN) through the Australian Government's PHN Program.

In 2020, CHN commissioned the University of Canberra, Health Research Institute to evaluate the program. This report describes the key features of the program and provides an overview of evaluation findings including areas of strength, areas for improvement, and recommendations.

Evaluation Aim & Design

This evaluation aimed to understand the implementation and demand for the After-hours service and to determine the perceived impacts of the after-hours home based palliative care community pharmacy program to support program improvements.

To address this aim, a mixed method concurrent triangulation design was used (Creswell et al, 2003). There was no comparison group. The evaluation was guided by a logic model. Both quantitative and qualitative data were collected and analysed separately and the results from both datasets compared. The quantitative component provided an objective lens on service delivery and value for money; the qualitative component provided subjective insight from key stakeholders on the operational side of the After-hours service and its perceived benefits and impacts.

The University of Canberra Human Research Ethics Committee (4722) and Calvary Public Hospital (Bruce) Human Research Ethics Committee (28-2020) provided ethical approval.

Methods

The quantitative component utilised information on the number of deliveries, delivery distance, cost of service to CHN, cost of emergency department (ED) and palliative care hospital separations, and type of referrals to inform how the service was functioning and whether it provided value for money. The quantitative analyses are based on three-years of data from Q1 2018 (July - September) to Q4 2021 (April - June). The pharmacies reported deliveries and cost information within this time frame without interruption. Data from October 2017 to June 2018 were missing and not included in the analyses; however, to help interpret qualitative findings on perceptions of deliveries over time, data from the first two reporting periods, Q1 and Q2 2017 (April – June, July - September) haven been included.

Sixteen interviews with pharmacists and palliative care stakeholders were conducted to obtain insight into program operations and impacts on clients and carers. It was not possible to interview carers; therefore, identified benefits to clients and carers are based on the perceptions of those interviewed.

Key Results

This section highlights some key findings for each of the five focal areas of the evaluation along with recommendations, areas of strength, and areas for improvement.

1. Client Demand for Service

- Across the three-year funding period, Wanniassa and Charnwood Capital Chemists made 4569 deliveries. Including the 2017 start-up period, the two contracted pharmacies made 5,279 deliveries. There was good uptake of deliveries within the first 6-months of funding.
- Most deliveries (75.6%) were within 10 km of the contracted pharmacies. Gaps in deliveries to suburbs within 10 km and 11 to 20 km from each pharmacy were noted. This analysis was based on deliveries for 10 months (in the last year) and may not be representative of the entire funding period.
- The number of deliveries declined over the three-year funding period for Wanniassa Capital Chemist. In addition, the number of deliveries varied by quarter, within each annual reporting period. These variations were due, in part, to pharmacy staff not wanting to promote the After-hours service when their contract had not been renewed.
- There was clear and consistent evidence from the interviews that the service was reliable and provided home-based palliative patients with timely access to medications. No client was turned away.
- Drivers of demand related to awareness of the service, and to some extent, workforce changes (e.g., rotations in and out of Calvary Specialist Palliative Care Services and new General Practitioners (GPs) in the ACT community) that impacted prescribers.

- ❖ The Program of Experience in the Palliative Approach (PEPA) placements for pharmacy staff were invaluable to ensure a high-quality service.
- ❖ There were no issues with pharmacies maintaining the stocklist of required medications.

Recommendations

- Reduce the uncertainty in the management of the contracts so pharmacy staff can plan to sustain ongoing efforts. Longer-term contracts would allow for better planning of service promotion efforts and likely PEPA training for staff.
- Consider supplementing the contracts to remunerate pharmacies for pharmacists to attend the PEPA training.

Consider supplementing the contracts in acknowledgement that clients are not being charged the $6.30 delivery fee.

CHN to work with ACT Health, Calvary Health, and contracted pharmacies to identify ongoing service promotion opportunities with GPs and other health professionals.

2. Client/ Carer Benefits & After-hours Impact

- ❖ Across the three-year funding period, the average delivery cost for both subsidised and unsubsidised categories was $40.61 and the average delivery cost for the subsidised category was $60.79.
- ❖ The average cost per palliative care separation/ ED presentation increased in the ACT across the After-hours service funding period from $9,271.44 to $11,589.38 (for palliative care separations) and from $705 to $799 (for ED presentations).
- ❖ The timely delivery of medication made palliative care patients feel more comfortable by alleviating their pain symptoms, alleviating the side effects of medications or treatments (e.g., vomiting), allowing for the timely treatment of secondary infections (e.g., bladder infection), alleviating mental health symptoms associated with illness (e.g., panic attacks) and promoting a sense of independence.
- ❖ Due to the timely delivery of medications, interviews suggest that palliative care patients were able to spend more quality time at home with their family members at the end-of-life and were able to avoid an ED presentation or hospital admission.
- ❖ Based on a comparison of palliative care separation costs to the average After-hours service medication delivery cost, the service was deemed to be value for money. In the absence of the service, palliative home-based patients may have been transported to the hospital, incurring greater cost to the health care system.

Recommendation

Continue supporting Wanniassa and Charnwood Capital Chemists to deliver the After-hours service as the service is value for money and is perceived by key stakeholders to benefit both clients and carers.

3. Referral Pathways

- A range of referral pathways were available for palliative care patients/ carers to access the After-hours service.
- The Calvary Specialist Palliative Care clinician-initiated referral pathway appeared to be working to the extent as originally intended and was the most common referral pathway.
- The General Practitioner (GP) referral pathway was not working as intended and was the least commonly accessed referral pathway.

Recommendation

Strengthen referral pathways through service promotion efforts that target GPs and hospitals.

4. Service Promotion

- The highest volume of service promotion activities was undertaken when the After-hours service was initiated in the 2017 start-up period.
- The findings broadly support Calvary Specialist Palliative Care Services and external community pharmacy awareness and support for the After-hours service.
- Once aware of the service, the findings broadly support GP and client and carer support for the After-hours service.
- The evaluation broadly supports the view that hospital clinicians were seldom aware of the After-hours service, and the extent of their support (or otherwise) for the After-hours service could not be established.
- Service promotion efforts need to be implemented with consistency to maintain awareness among current prescribers and to strengthen awareness in other stakeholder groups (e.g., GPs, hospitals).

Recommendations are integrated with (1) and (3) and highlighted, again, below.

CHN to work with ACT Health, Calvary Health, and contracted pharmacies to identify ongoing service promotion opportunities with GPs and other health professionals

Strengthen referral pathways through service promotion efforts that target GPs and hospitals.

5. After-hours Pharmacy Context

- The two contracted pharmacies, through the leadership of the pharmacy managers, created a culture that supported the timely and reliable delivery of palliative care medications to home-based palliative patients. Staff knew what to do through the standard operating procedures (SOPs) put into place when a palliative patient presented at a contracted pharmacy.

Recommendation

Look at channels for Wanniassa and Charnwood Capital Chemists to be recognised for creating an organisational culture that supports the After-hours service. There are likely aspects of this culture that are transferable to other pharmaceutical program areas.

Key Areas of Strength and Improvement

1. Client Demand for Service & Service Promotion

Strength: There was clear and consistent evidence across multiple stakeholder groups that the service was reliable and provided home-based palliative patients with timely access to medications during contracted pharmacy opening hours. The leadership of the pharmacy managers and the SOPs were key drivers of the timely and reliable delivery of medication.

Strength: The availability of palliative care medications was a strength of the program. The stocklist was automated through the pharmacy's point-of-sales software. Any items that were sold were automatically re-ordered. If one contracted pharmacy ran out of a medication, they contacted the other pharmacy to obtain necessary stock.

Improvement: Delays in contract renewal by CHN impacted deliveries in the first and potentially second financial quarters of the new financial year. Although CHN had an intention to renew the contract, the pharmacies perceived a level of uncertainty with the contract renewal and this affected their promotion efforts i.e., they were hesitant to promote a service to GPs and other prescribers if the service would no longer be available.

Improvement*:* Drivers of demand related to awareness of the service, and to some extent, workforce changes (e.g., rotations in and out of Calvary Specialist Palliative Care Services and new GPs in the ACT community) that impacted the prescribers. Both awareness and workforce changes suggest a need for ongoing service promotion efforts.

2. **Client Needs, Experience and Quality of Life & After-hours impact**

Strength: The timely and reliable delivery of medication made home-based palliative care patients feel more comfortable by alleviating pain symptoms, alleviating side effects of medications or treatments (e.g., vomiting), allowing for the timely treatment of secondary infections (e.g., bladder infection), alleviating mental health symptoms associated with illness (e.g., panic attacks) and promoting a sense of independence. This contributed to patients being able to spend more quality time with their family

members at the end-of-life and for the palliative client to stay at home and avoid an ED presentation or hospital admission. Palliative care patients were able to die at home and have a good death, which also benefitted their family members.

Strength: In the ACT, the average emergency department palliative care separations cost ranged from $9,271 to $11,589 over the funding period of the After-hours service. The average delivery cost for all deliveries and subsidised deliveries was estimated at $40.61 and $60.79, respectively. The qualitative data provides evidence consistent with the After-hours service alleviating client symptoms and improving carer's experience with end-of-life by reducing their stress and the burdens associated with medication administration. This allowed palliative care patients to stay at home and avoid ED presentations or hospital admissions. Based on the palliative care separation costs compared to the average After-hour service medication delivery cost, the service is deemed to be value for money.

3. Referral Pathways & Service Promotion Efforts

***Strength*:** The Calvary Specialist Palliative Care clinician-initiated referral pathway appears to be working to the extent as originally intended and is an area of prescribing strength.

Improvement: Referrals from GPs and hospitals could be improved through targeted service promotion efforts as these referral pathways are not working as originally intended.

4. Service Promotion Efforts (also integrated with 1 and 3)

Strength: Pharmacies having funding for service promotion built into their contracts with respect to prescriber and community awareness raising is necessary to reach prescribers and the broader ACT community.

***Improvement*:** The current contract requires the pharmacies to undertake two facilitated CHN events and regular attendance at meetings at Clare Holland House. These requirements should be expanded to reach other prescribers such as GPs and hospital prescribers.

5. After-hours Pharmacy Context

Strength: The contracted pharmacies' context is a key driver of the success of the After-hours service. An organisational culture with SOPs and leadership from the pharmacy managers were critical to the reliable and timely delivery of palliative care medications. Staff demonstrated a high level of commitment to the program and knew exactly what to do when a patient presented.

Overall Recommendation

Based on the current evaluation, the After-hours service is deemed to be value for money. The service was implemented with sufficient fidelity (i.e., implemented as planned) to support carers to administer medications and benefit palliative care patients. The timely and reliable delivery of medications to home-based palliative care patients was found to alleviate their symptoms allowing

them to spend quality time at home with their families and avoid an ED or hospital admission. Thus, they were able to die at home and have a good death, which also seemed to benefit family members. What remains unknown is whether the reach of the service could be broadened for greater benefit given the issues noted with contract uncertainty, service promotion and the limited use of some referral pathways by some prescribers.

INTRODUCTION

Capital Health Network (CHN), ACT's Primary Health Network, was established by the Australian Government to progress innovative approaches and solutions that improve the efficiency, effectiveness, and co-ordination of locally based primary health care services and advance the way health care is delivered in Canberra.

In 2017, CHN funded the After-hours Home-based Palliative Care Community Pharmacy Services program ("After-hours service") by contracting two pharmacies, Capital Chemist Wanniassa and Capital Chemist Charnwood to deliver medications in the after-hours period for home-based palliative care patients residing in the ACT and promote the program to key stakeholders in the palliative care landscape. The program commenced in April 2017 and in its fourth year of operation at the time of writing and continues to enable timely access to palliative care medications in the after-hours period for people choosing to receive palliative care in a home environment.

In 2020, CHN commissioned the University of Canberra, Health Research Institute to conduct an evaluation of the program. The evaluation team worked closely with CHN, and the pharmacists involved in the program to co-design the evaluation questions and framework. This report provides a description of the key features of the program and an overview of interim evaluation findings including recommendations for improvement.

Background

Like many developed countries, the Australian population is ageing. Older Australians (those aged 65 years and over) make up a growing proportion of the total population. In two decades from 1999 to 2019, the proportion of the Australian population aged 65 years and over increased from 12.3% to 15.9%. In the year ending 30 June 2019, the number of Australian's aged 65 years or over increased by some 125,400 people or 3.2% (Australian Bureau of Statistics, 2019). This trend is projected to continue, significantly increasing the number of people belonging to this age category. In 2016, 15% or 3.7 million Australians were aged 65 years or over; by 2056 the current trajectory suggests this figure will rise to 22%; 8.7 million Australians will then be aged 65 years or older (Australian Bureau of Statistics, 2019).

An ageing population and increases in the prevalence of cancers and other chronic diseases place a greater burden on the health care system, including a demand for palliative care at the end stage of life. The Australian Government Department of Health National Palliative Care Strategy 2018 defines palliative care as:

> *"An approach that improves the quality of life of patients (adults and children) and their families who are facing the problems associated with life-limiting illness, through the prevention and relief of suffering by means of early identification and correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual."*

Palliative care aims to improve the quality of life of patients with a terminal illness. Importantly, it provides relief from pain and other distressing symptoms in addition to helping patients live as actively and comfortably as possible until death.

With the growth and ageing of Australia's population, and an increase of chronic and generally incurable illnesses, the types of patient groups requiring palliative care has widened. While palliative care can be provided to patients in a variety of settings, there is a distinction between care provided in hospitals and care provided in the community, including the patient's home. Home-based palliative care involves the management and care of palliative patients in their home. Seventy percent of Australians report they would prefer to die at home (Foreman et al, 2006).

The 2013-2017 ACT Palliative Care Services Plan (ACT Health, 2013) identified the high cost of palliative care to hospitals. In 2016-17, there were 645 hospital separations for palliative care. This involved 1,975 bed days in Canberra Hospital, and 5,905 bed days in Calvary Hospital. If people are unable to manage their pain levels at home, they are also more likely to present to ED, which is expensive to the system and extremely inconvenient and stressful for patients and their families. The average cost of non-admitted ED presentations in the ACT is $578 per person, within an overall average of $854 for all ED presentations (ACT Health, 2013; Independent Hospital Pricing Authority, 2016)

Evidence supports the benefit of home-based palliative care in cancer patients and has been associated with improved patient and family outcomes, reduction in symptom burden and a more positive, satisfying experience for patients and families. Moreover, results of a Cochrane meta-analysis provide clear evidence that home-based palliative care increases the chance of dying at home and reduces symptom burden, particularly for cancer patients, without impacting on carer grief (Gomes et al, 2013). Critical to patients staying at home is the ability to manage their pain and the capacity of carers to feel confident to administer the medication.

Qualitative studies identify that whilst family members can provide immediate symptom relief in administering medication (Anderson & Kralik, 2008), some experience anxiety over administering timely and correct dosages (Payne et al, 2015). Carers may be confronted with several issues in administering medication to loved ones. A qualitative synthesis identified that having access to 24-hour support and medication reviews assisted family carers in administering medications to palliative care patients (Wilson et al, 2018). More research is needed to understand carer experiences in administering these medications and the supports available to them, including pharmacists (Wilson et al, 2018).

Community pharmacists play an ongoing role in the dispensing of medication during business hours to improve the quality of life and manage pain for home-based palliative care patients. This role also encompasses providing advice to home-based palliative care patients and their family members on the quality use of medicines. It is likely that any potential delays in obtaining medication during and after hours contributes to delayed patient symptom management and patient and family member distress (Pharmacy Guild of Australia Report 2007). This is exacerbated by the increased likelihood of a patient moving from oral medication to other administration forms towards end of life (Hill 2007). The potential

role of community pharmacists to provide after-hours delivery of medication to home-based palliative care patients has been unexplored to date.

Program Context

The After-hours service aims to provide home-based palliative care community pharmacy services in the after-hours period for community-based palliative care patients wishing to live their last days in the comfort of their home. These patients often have a terminal diagnosis, commonly cancer, or may have a chronic disease (e.g., chronic obstructive pulmonary disease, heart failure, renal failure, liver disease) that will progress to a terminal phase. Although most palliative patients tend to be older, some patients are children, adolescents, or young adults. They may have one or more family members or close friends who care for them and manage their medications. Dying at home is their choice rather than being in a hospice or another healthcare setting.

Although the After-hours service does not explicitly target palliative care patients in residential aged-care facilities (RACF), it does not exclude them either. RACFs generally have a medication supply contract with a sole community pharmacy to supply their medications to patients. Compared with patients living in the community, RACF patients are more likely to be cognitively impaired from a neurodegenerative disorder (e.g., dementia, Parkinson's) and less likely to suffer from cancer. Patients are more likely to have complex health needs, including high disability and multi morbid disease, and to require alternate decision-makers to manage their conditions.

The types of medications required for patients living in the community and RACFs are not dissimilar. Palliative patients are commonly prescribed opioid pain medications such hydromorphone, midazolam, and morphine. In earlier stages of palliation, these pain medications are used in oral form and in the later stages in an injectable form. In addition to opioid pain medication and benzodiazepines, other medications to alleviate common symptoms of palliation are also prescribed such as steroids (e.g., dexamethasone), antiemetics (e.g., cyclizine lactate), anticholinergics (e.g., glycopyrrolate) and antibiotics for secondary infections (e.g., erythromycin).

The program intends to address the gap in the After-hours service arrangements for home-based palliative care patients and improve service integration in the ACT. Home deliveries are subject to a tiered pricing structure, based on the distance from the pharmacy to the patient's place of residence. Maximum patient contribution is charged at $6.30 per delivery, plus the cost of medications.

The specific program objectives of the After-hours service are to:

1. Increase the efficiency and effectiveness of After-Hours Primary Health Care for patients, particularly those with limited access to Health Services.
2. Improve access to After-Hours Primary Health Care through effective planning, coordination and support for population based After-Hours Primary Health Care.

The intended outcomes of the After-hours service are:

1. Improved knowledge of community pharmacists regarding the palliative care approach through PEPA (Program of Experience in the Palliative Approach) training.
2. Improved communication between the community pharmacy and palliative care prescribers regarding medication stocked, medication management and dose administration aids.
3. Improved awareness of the After-hours service among palliative care prescribers.
4. Improved timely access to palliative care medications during after-hours period for home-based palliative care patients residing in the ACT.

The program logic model supporting the delivery and evaluation of the After-hours service is presented in Figure 1. This program is based on the theoretical propositions, outlined below.

That the engagement of two pharmacies, one in the north and one in the south of Canberra for the provision of After-hours home-based delivery services to palliative care patients and the promotion of the services to palliative care prescribers will:

- improve prescriber knowledge regarding the service,
- promote better communication with community pharmacists across the ACT,
- increase the number of requests received from palliative care patients/carers for after-hours home-based delivery; and
- increase the number of after-hours deliveries.

This will lead to better patient access to palliative care medications, improve patient quality of life and associated symptoms of palliation, and reduce the need for ED presentations and hospitalisation.

Enrolling pharmacists in PEPA training (which includes workshop and placement components) will improve their knowledge regarding palliative care approaches and equip them to be able to better support palliative care patients and their families by reassuring them and providing them information on palliative care medication management and dosage administration (e.g., use of syringe drivers).

Schedule 8 (controlled medicines) prescribed for pain management, particularly during end-of-life, often have short expiry dates and require secure storage in a locked safe. This makes it expensive for pharmacies to maintain a large volume of Schedule 8 stock. Creation and maintenance of stock of terminal phase medications (identified in consultation with prescribers) at both participating pharmacies will ensure that these medications are consistently available when needed, therefore indirectly reducing the need for patients to be admitted in the ED for alleviation of symptoms of palliation.

Improved partnerships between prescribers and pharmacists coupled with better patient access to palliative care medications will address gaps in After-hours service arrangements and indirectly improve access to after-hours primary health care in ACT, thereby reducing instances of avoidable emergency hospital admissions

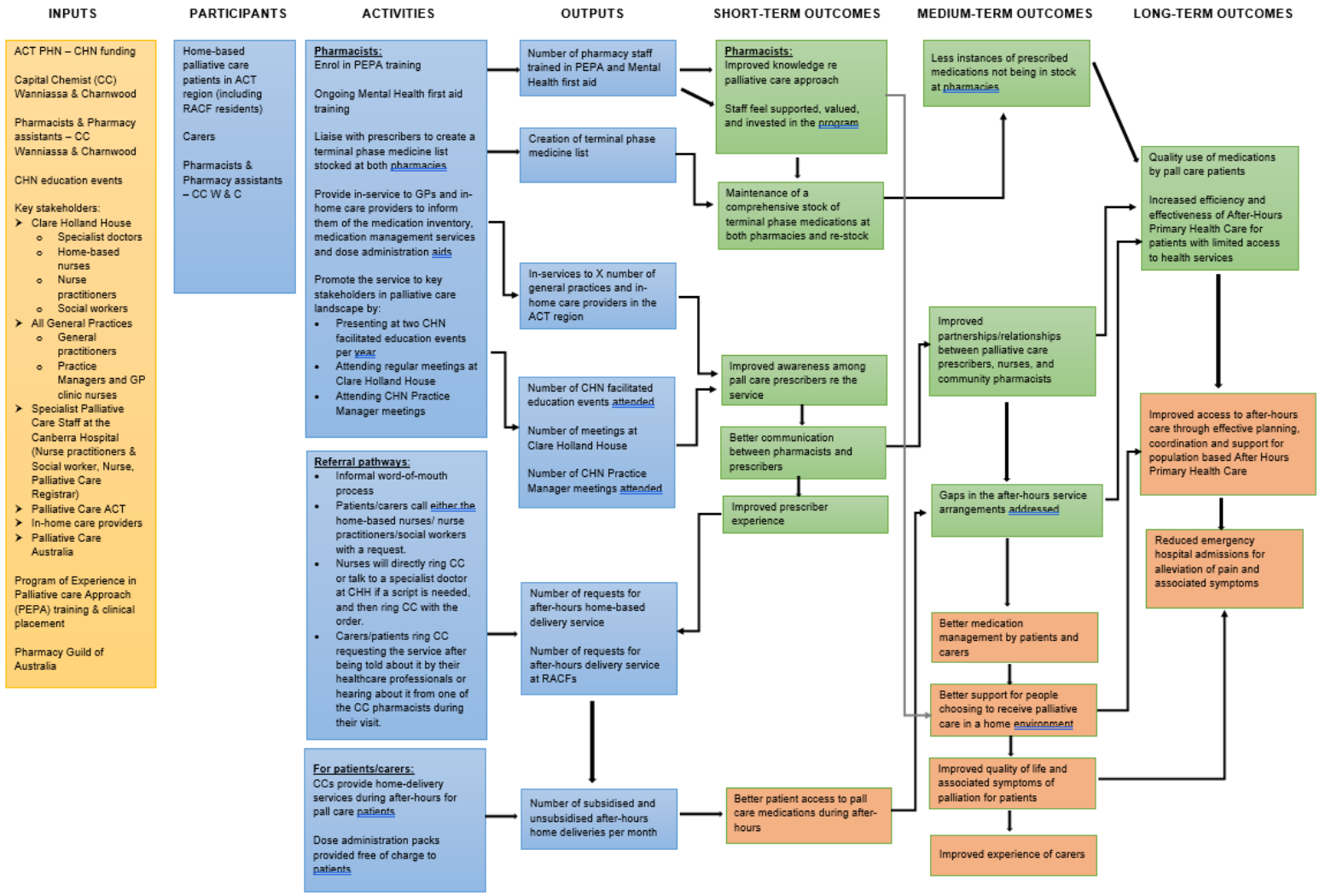


Figure 1: Logic model for the After-hours Home-based Palliative Care Community Pharmacy Services Program

EVALUATION APPROACH & AIM

This study took a participatory approach and has been co-designed with the Evaluation Officer at CHN. The evaluation questions were reviewed, discussed, and refined by the pharmacy managers of the two contracted pharmacies.

This evaluation aimed to understand the implementation and perceived impacts of the After-hours service. The study was conducted to strengthen the future delivery of the program by:

1. Addressing barriers to service delivery
2. Strengthening promotional activities to address gaps in referral pathways and client reach
3. Expanding the reach of the program
4. Providing additional support to pharmacists
5. Assessing the demand for the service and whether the demand has changed over time

Evaluation Questions

The evaluation was guided by the following questions, which were grouped into the following areas to facilitate data analysis and interpretation.

Client demand for service

1. What is the client demand for the service? What is driving the demand for the service? Has demand for the service increased during the pandemic lock down?
2. To what extent is the home delivery service able to meet the client demand? Are budget and resources enough to meet the service demand?
3. What issues, if any, have been encountered by pharmacists maintaining the stock list of terminal medications?

Client needs, experience, and quality of life & After-hours impact

4. Is the service value for money? To what extent has the service helped keep clients out of emergency departments?
5. To what extent are client needs being addressed by the service?
6. What has carers/clients experience with the program been like?
7. To what extent has the service improve client quality of life? To what extent did the service improve or alleviate associated symptoms of palliation and reduce avoidable emergency department presentations?

Referral pathways

8. What referral pathways are being used by palliative care patients and carers? To what extent are referral pathways working as intended?

Service Promotion

9. To what extent are key stakeholders aware of and support the after-hours service?

After-hours pharmacy context

10. To what extent do the program staff feel supported to carry out the program activities?

Evaluation Design

The evaluation aimed to understand the implementation and demand for the After-hours service and to determine the perceived impacts of the after-hours home based palliative care community pharmacy program to support program improvements.

To address this aim, a mixed method evaluation approach was used, specifically a concurrent triangulation design (Creswell et al, 2003). There was no comparison group. In this design, both quantitative and qualitative data were collected and analysed separately; the results from the analysis of both datasets were compared, and an interpretation was made as to whether the results supported or contradicted each other. Each method provided complementary strengths; together, both methods provided a more complete understanding of the After-hours service. The quantitative component provided an objective lens on service delivery and value for money, while the qualitative component provided subjective insight from the perspectives of key stakeholders on the operational side of the After-hours service and its perceived benefits and impacts.

The data were integrated in the results section to facilitate the interpretation of results.

Ethical Approval

This external evaluation was commissioned by CHN. Ethical approval for this evaluation was received from the University of Canberra Human Research Ethics Committee (4722) and the Calvary Public Hospital (Bruce) Human Research Ethics Committee (28-2020).

METHODS

PART 1: QUANTITATIVE

Data Collection

Program-related descriptive data were provided by the pharmacy managers as per their contractual obligations with CHN. Information from Capital Chemists Wanniassa and Charnwood were provided in excel spreadsheets as quarterly reports, for each year: Q1 (July – September), Q2 (October – December), Q3 (January – March) and Q4 (April – June). Use of this data for evaluation purposes was covered under the data sharing agreement executed between CHN and University of Canberra. The measures used to characterise the deliveries are identified below:

Measures

Number of deliveries: The number of deliveries was calculated by month, year and overall, for each pharmacy and across both pharmacies. The pharmacies reported their deliveries in quarterly reports (Q1 July – September; Q2 October – December; Q3 January – March: Q4 April – June). The descriptive and inferential analyses are based on three-years of data from Q1 2018 (July - September 2018) to Q4 2021 (April - June 2021). The pharmacies reported their deliveries and cost information

within this time on a regular basis without any interruption. Data from October 2017 to June 2018 were missing and therefore not included in the analyses; however, to facilitate interpretation of the qualitative data on perceptions of deliveries over time, one tabulation includes data from the first two reporting periods, Q1 and Q2 2017 (April - June and July - September 2017).

Distance of deliveries: The number of deliveries were classified into distances of within 3 kilometers, between 3 to 10 km, between 11 to 20 km and more than 20 km from each pharmacy. The following distance categories were subsidised by CHN: between 3 to 10 km, between 11 to 20 km and more than 20 km.

Geographic location of deliveries: Geographic mapping of pharmacy deliveries by ACT suburb for four consecutive quarters (Q1, Q2 2020 and Q3, Q4 2021) was undertaken. Note, however, that for Q1 2020 data were only provided for the last month (i.e., September 2020) due to a contract variation requiring the commencement of suburb reporting. Pharmacy addresses were geocoded with service areas developed using Geographic Information Systems (ESRI ArcMap, 2020) to indicate the road network distance in km from both the Charnwood and Wanniassa pharmacies.

Cost of service to CHN: The information on cost of service to CHN was provided on a quarterly basis across the funding period. We have estimated the average cost to CHN for deliveries between July 2018 and June 2021 by dividing the total number of deliveries to the total program expenditure to CHN during that period. Expenditures include payment: (a) for deliveries; (b) service promotion activities; (c) administration; (d) PEPA training in the first year of the service; and (e) startup costs in the first year which impacted deliveries during this period.

Cost of emergency department and palliative care hospital separations were extracted from National Hospital Cost Data Collection (NHCDC) in Australia based on Independent Hospital Pricing Authority estimates on Hospital Cost data (Independent Hospital Pricing Authority, 2021).

Referral data: Information on referrals was reported on a quarterly basis from Q1 2020. The referrals were classified into referrals from: 1) staff at the contracted pharmacies; 2) carers; 3) GPs; 4) Clare Holland House; and 5) other (hospital). Data prior to Q1 2020 was not available and therefore was not included in the analysis.

Quantitative Data Analysis

Descriptive statistics (e.g., frequencies, means, medians) were computed to depict the deliveries at pharmacy level. The cumulative number of deliveries were mapped by month and year for each pharmacy separately and with delivery data pooled across pharmacies. ArcMap was used to generate maps showing delivery distance from each pharmacy and suburb location. Regression analysis modelled time as a predictor of the number of deliveries per year, by pharmacy (separately and combined). STATA16 was used for descriptive and inferential analyses.

Part 2: QUALITATIVE

Qualitative Data Collection

Interview was the primary method of qualitative data collection. A document of written responses to the evaluation questions provided by two senior pharmacists was also used in the analysis. Patton's (2014)) qualitative research methods for evaluation were followed.

Four key stakeholder groups were identified and invited to participate in semi-structured interviews:

1. Pharmacy staff in the two contracted pharmacies
2. Pharmacy manager in the two contracted pharmacies
3. Carers who engaged the After-hours service
4. Calvary Specialist Palliative Care and ACT Health staff who provide care to palliative patients

Pharmacy manager and staff interviews provided insight into service delivery, including referral pathways, maintaining the stock list of medications, standard operating procedures, and training/support. The Calvary Specialist Palliative Care and ACT Health staff interviews provided additional insight into referral pathways accessed by other health professionals in the ACT palliative care setting. Carer interviews aimed to illuminate service benefits for palliative clients and carers.

Interview guides were prepared for each participant group. Face validity was sought from: (a) a pharmacist with experience managing community pharmacies for the pharmacist manager interview guide; and (b) an expert in palliative care for the provider and carer interview guides.

The project research assistant, a registered pharmacist with experience working in community pharmacy, organised and conducted the interviews. Pharmacy managers identified expressions of interest from pharmacy staff. The Evaluation Officer identified expressions of interest from Calvary Specialist Palliative Care and ACT Health staff, and carers. To recruit carers, we advertised through Carers ACT and the Palliative Care ACT newsletter.

Participants were given the option of completing the interview online, via telephone or face-to-face, with the assurance that UC, Calvary Specialist Palliative Care and ACT Health institutional sanctioned COVID-19 procedures would be followed. All interviews were conducted via an online video conferencing system or telephone.

Interviews were scheduled once the participant returned a copy of the signed consent form to the project team. The research assistant reviewed the information sheet and consent form with each participant and answered any questions prior to the interview. All participants consented to their interviews being recorded.

Sixteen individual interviews, ranging from 30 to 90 minutes, were conducted. Despite the research team's best efforts, which included consultation with the pharmacies, advertising through Carers ACT and the Palliative Care ACT newsletter, we were not able to recruit any carers. This was likely due to the sensitivity of the topic. We were also unsuccessful in recruiting GPs. They are a cohort of health professionals experiencing consultation fatigue during the COVID period.

Participant characteristics are summarised in Table 1. The majority of participants were pharmacists from the two contracted pharmacies. Most participants had more than 10 years of experience in their profession (75%) and were female (75%).

Participants were forthcoming in the interviews and were able to provide good insights into their experiences either delivering or accessing the After-hours service. There was good data triangulation in the responses provided across the three groups of participants.

Table 1: Interview participant characteristics (n=16)

	Participants (n) percent
Organisational affiliation • Pharmacy • Calvary Specialist Palliative Care Services • ACT Health Personnel	 (9) 56% (6) 38% (1) 6%
Profession • Pharmacy staff • PEPA Manager • Palliative Medicine Staff Specialist • Palliative Care Nurse Practitioner • Home Based Palliative Care Nurse	 (9) 56% (1) 6% (2) 12.6% (2) 12.6% (2) 12.6%
Age • < 44 years • > 44 years	 (11) 69% (5) 31%
Gender • male • female	 (4) 25% (12) 75%
Experience in pharmacy (pharmacists only) • < 10 years • > 10 years	 (3) 33% (6) 67%
Experience in palliative care (Calvary Specialist Palliative Care Services and ACT Health staff) • < 10 years • > 10 years	 (1) 14% (6) 86%
Experience in profession • < 10 years • > 10 years	 (4) 25% (12) 75%
Highest level of qualification • Certificate • Bachelor • Master • Doctorate	 (1) 6.5% (9) 56% (4) 25 % (2) 12.5%

Qualitative Data Analysis

The interviews were audio-recorded and transcribed by a professional transcriber (Transcription Australia). Once the transcripts were received, they were read and re-read to gain a sense of the storyline and perspectives shared. Preliminary coding was assigned to each transcript in hard copy as well as once the transcripts were imported into NVivo (qualitative software). Use of NVivo provided an audit trail and transparency of the analysis process.

Responses to the questions were analysed using a combination of deductive and inductive coding. The deductive codes were generated from the outputs and outcomes in the logic model; inductive codes emerged during the coding process. Memos in NVivo were utilised to track evidence to

support and refine the pathways in the logic model (Figure 1) and emerging themes.

To strengthen credibility, the findings were member checked with a senior pharmacist. Quotations from all interviews have been used to present and support the results. Quotations have been edited where necessary to maintain anonymity and confidentiality of those interviewed.

Limitations

The findings of the report need to be interpreted in the context of certain evaluation limitations. Due to the sensitivity of the topic (Gyels et al, 2008), we were unable to recruit and interview carers and palliative clients. The benefits of the service for palliative clients and carers are therefore based on the perceptions reported by interviewed pharmacy staff, the PEPA manager, and palliative care professionals. We were additionally unable to interview GPs and hospital prescribers, in part due to the COVID-19 pandemic. The evaluation design did not include a comparison group, so we were not able to determine, via comparison, any differences between those who received the service and those who did not. This type of design would have provided more cogent evidence on the avoidable ED presentations and hospital presentations.

RESULTS

PART 1: CLIENT DEMAND FOR SERVICE

This part addresses the following evaluation objectives:

1. What is the client demand for the service? What is driving the demand for the service? Has demand for the service increased during the pandemic lock down?
2. To what extent is the home delivery service able to meet the client demand? Are budget and resources enough to meet the service demand?
3. What issues, if any, have been encountered by pharmacists maintaining the stock list of terminal medications?

Analysis of the number of deliveries, overall, by reporting period, geographic location, and over time provides an objective evaluation of client demand for the After-hours service. The qualitative interviews provide insight into the perceptions of client demand, drivers of demand, and whether sufficient resources are available to meet the service demand.

Section A reports on the total number of deliveries by reporting period, distance, geographic location, and over time to characterise client demand for the service.

Section B provides qualitative insights into the different aspects of service demand.

Section C integrates the quantitative and qualitative findings.

Section A. Quantitative findings

The total number of deliveries by reporting period, distance, geographic location, and over time to characterise client demand for the service.

Table 2 presents the total number of subsidised deliveries (> 3 kms) and unsubsidised deliveries (< 3 kms) for the reporting periods, July 2018 (year 1) to June 2021 (year 3).

- The two pharmacies made 4,569 deliveries across the three-year funding period (i.e., 2018 – 2021).
- Charnwood Capital Chemist made more deliveries than Wanniassa Capital Chemist (62.9% compared to 37.1%).
- Charnwood Capital Chemist averaged 79.8 deliveries per month while Wanniassa Capital Chemist averaged 47.1 deliveries per month.
- The minimum and maximum number of deliveries and standard deviation suggest fluctuations in the number of deliveries per month.

Charnwood Capital Chemist is a larger pharmacy and employs more pharmacists than Wanniassa Capital Chemist. The difference in pharmacy size and employees accounts for Charnwood Capital Chemist making a greater proportion of after-hours deliveries.

Table 2: Descriptive statistics for total deliveries (subsidised and unsubsidised) between July 2018 to June 2021 with average and median number of deliveries per month

Pharmacies	Total Deliveries	%	Mean (Median)	Std. Dev.	Min	Max
Wanniassa	1696	37.1	47.1 (44.5)	25.6	10	101
Charnwood	2873	62.9	79.8 (81.0)	28.3	13	143
Combined	4569	100.0	126.9 (131.0)	47.2	28	219

Table 3 shows the total number of deliveries by pharmacy, reporting period and year, separately and combined. It also includes deliveries in the first two reporting periods (i.e., Q4, 2017 and Q1, 2017). Note that data are missing for Q2, 2017 to Q1, 2018. Given missing data, year 1 refers to the first financial year for which data are reported across all 4 quarters (i.e., Q1/Q2, 2018 and Q3/Q4, 2019).

- There were a greater number of deliveries in year 1 (2018/19) with fewer deliveries in years 2 and 3 for both pharmacies, separately and combined.
- The decrease in deliveries between year 1 (2018/19) and year 2 (2019/20) for Charnwood Capital Chemist is accounted for by a drop in deliveries in the first reporting period (Q1, July – September) in year 2 with only 79 reported deliveries.
- The decrease in deliveries between year 1 (2018/19) and year 2 (2019/20) for Wanniassa Capital Chemist is accounted for by a drop in deliveries in the first reporting period Q1, (July – September) in years 2 and 3. In year 3, the decrease in the number of reported deliveries extends into the second reporting period (Q2, October – November).
- Due to COVID-19, the ACT declared a state of emergency on 16th March 2020. There was a corresponding increase in deliveries in the Q4, 2020 reporting period, compared to the preceding reporting period, particularly noticeable for Wanniassa Capital Chemist.
- The After-hours service was launched in Q4, 2017. Comparatively, the combined number of deliveries for this reporting period was low (n=239). The deliveries in the second reporting period (Q1, 2017) almost doubled (n=471), for one of the highest quarterly reported totals. This suggests strong prescriber and carer uptake in the first six months of the program.
- Charnwood Capital Chemist is a larger pharmacy than Wanniassa Capital Chemist. Up until Q2, 2018 Wanniassa Capital Chemist, despite being a smaller pharmacy, was making a similar number of deliveries as Charnwood Capital Chemist.

Table 3: Total number of deliveries by pharmacy, reporting period, and year

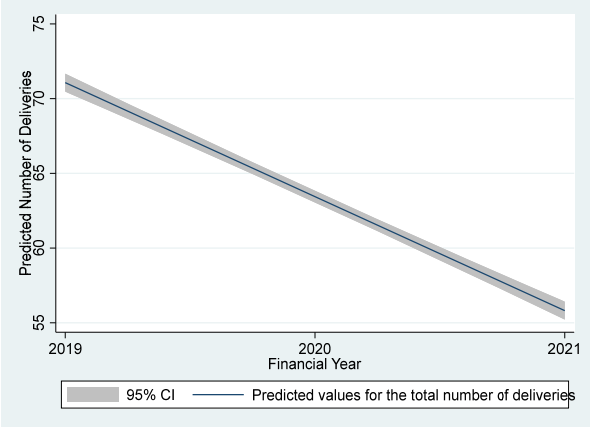
Funding Period/ Year			**Quarterly # of Deliveries**			**Annual # of Deliveries**		
Financial Year	Quarter	Month	Wanniassa	Charnwood	Combined	Wanniassa	Charnwood	Combined
	2017-Q4	*April - June*	*119*	*120*	*239*	*119**	*120**	*239**
	2017-Q1	*July - September*	*232*	*239*	*471*			
	2017-Q2	October - December	missing	missing	missing			
	2017-Q3	January - March	missing	missing	missing			
	2018-Q4	April - June	missing	missing	missing	*232**	*239**	*471**
Year1	2018 - Q1	July - September	255	283	538			
	2018 – Q2	October - December	250	270	520			
	2019 - Q3	January - March	171	287	458			
	2019 - Q4	April - June	150	223	373	826	1063	1889
Year 2	2019 - Q1	July - September	53	79	132			
	2019 - Q2	October - December	97	195	292			
	2020 - Q3	January - March	105	220	325			
	2020 - Q4	April - June	171	265	436	426	759	1185
Year 3	2020 - Q1	July - September	43	248	291			
	2020 - Q2	October - December	83	218	301			
	2021 - Q3	January - March	123	269	392			
	2021 - Q4	April - June	195	316	511	444	1051	1495

*Annual estimates based on data from one quarterly report only.

Regression analysis was used to examine the effect of time (in years and months between July 2018 and June 2021) on the total number of deliveries, by both pharmacies combined (Figure 2) and for each pharmacy, separately (Figure 3). Depending on the count data type of the dependent variable – total number of deliveries by the pharmacies in a month, a negative binomial regression model was used for over-dispersed count data, that is when the conditional variance exceeds the conditional mean. The model fitted trend line for the predicted number of total deliveries is presented in Figure 2 and Figure 3.

- Time (in years) had a negative effect on the total number of deliveries across both pharmacies, i.e., from July 2018 to June 2021 the total number of deliveries per year declined (Figure 2).
- Figure 3 shows an effect of pharmacy type (Charnwood/Wanniassa) and time (in years and months) on the number of deliveries. Charnwood Capital Chemist as opposed to Wanniassa Capital Chemist made a greater number of deliveries over time. This is expected as Charnwood Capital Chemist employs a greater number of pharmacists and is a bigger pharmacy with greater area coverage than Wanniassa Capital Chemist.
- Time (in years) had a negative effect on the number of deliveries for Wanniassa Capital Chemist between July 2018 to June 2021. The rate of decline (over the years) in total number of deliveries for Wanniassa Capital Chemist is statistically significant at less than the one percent level. The coefficient value for the variable year in the regression model estimates the expected difference in log count between year 2/3 and the reference year 1. Compared to the number of deliveries in year 1 (July 2018-June 2019) the expected log count in year 2 (July 2019-June 2020) was 0.66 less (CI=-0.9942748, -0.330036) and in year 3 (July 2020-June 2021) was 0.62 less (CI=-0.9523388, -0.289201). For Charnwood Capital Chemist, the number of deliveries remained stable (Figure 3).

Figure 2: Predicted number of total deliveries by pharmacies combined by financial year, 2018/19 (2019) to 2020/21(2021)	*Figure 3: Predicted number of total deliveries by pharmacy by financial year, 2018/19 (2019) to 2020/21(2021)*



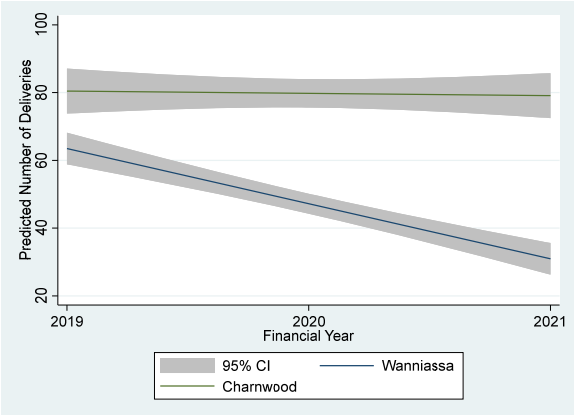


Table 4 presents descriptive statistics for the number of deliveries, by distance, from year 1 to year 3 (i.e., July 2018 to June 2021).

- 75.6% of all deliveries were to locations within 10 km of the pharmacies.
- Unsubsidised deliveries (i.e., within 3 km) accounted for 33.2% of all deliveries.
- About 1 in 5 deliveries were to locations between 11 to 20 km.
- Home deliveries over 20 kms were least frequent, accounting for 4.6 % of all deliveries.

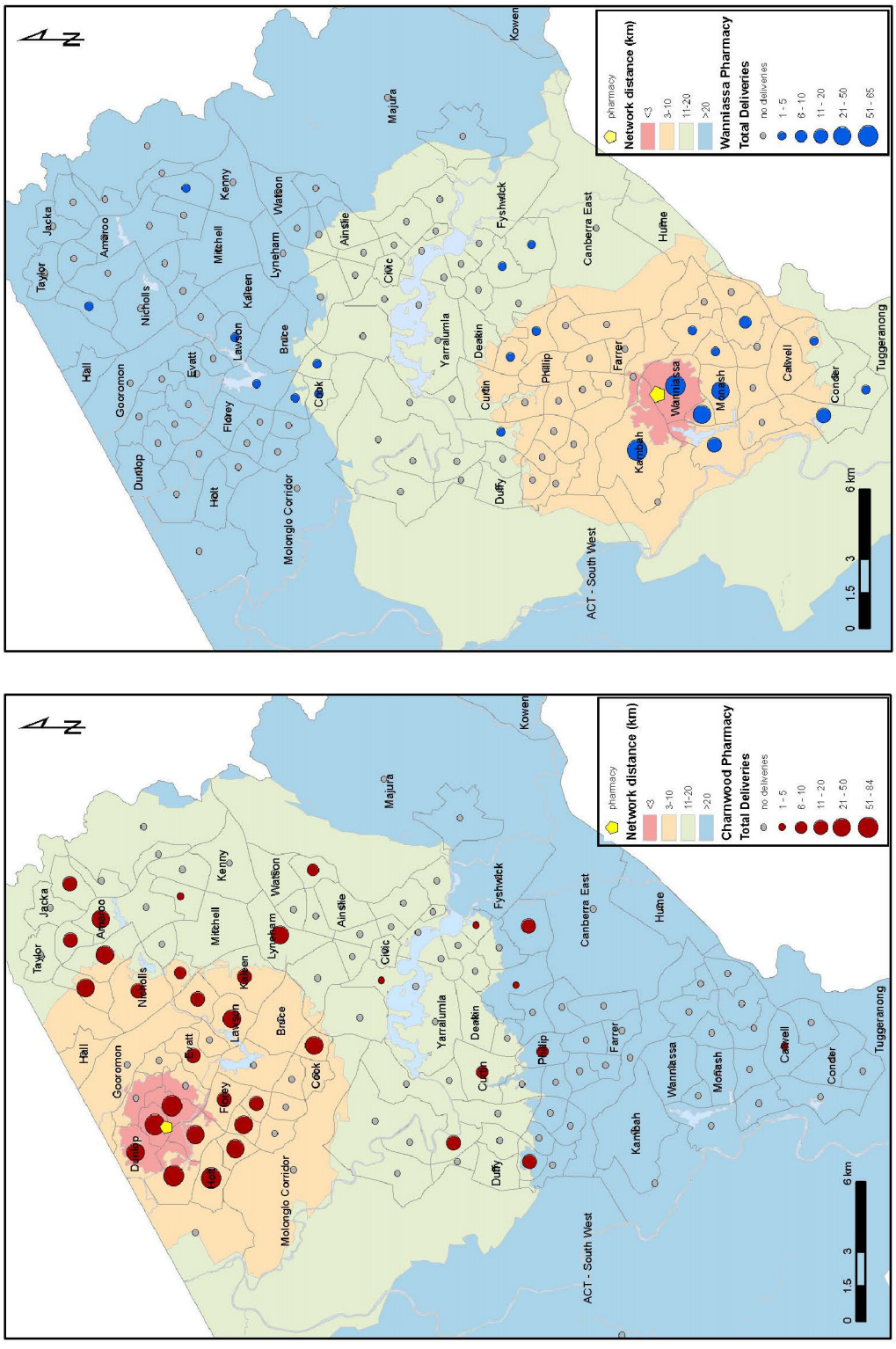
*Table 4: Descriptive statistics for subsidised and unsubsidised deliveries from year 1 to year 3 (i.e., July 2018 to June 2021) with the average and median number of deliveries per month**

Distance (km)	Deliveries (#)	%	Mean (Median)	Std. Dev.	Min	Max
< 3	1517	33.2%	42.1 (32)	19.8	10	88
3 to 10	1935	42.4%	53.8 (55)	20.0	13	91
11 to 20	906	19.8%	25.2 (24)	11.3	5	56
20 +	211	4.6%	5.9 (5)	4.7	0	19
Total	4569	100%				

Figure 4 displays the deliveries, geographically by suburb, for each pharmacy for the 1,245 deliveries. reported from 1 October 2020 to 30 June 2021 and may not be representative of deliveries across the three-year funding period. Appendix 2 includes separate maps with a larger resolution.

- Although most deliveries were within 10 km of each pharmacy, gaps in deliveries to suburbs within 3 to 10 km of each pharmacy are present. This gap in deliveries was more pronounced for Wanniassa Capital Chemist than Charnwood Capital Chemist. For example, Wanniassa did not deliver to many suburbs in the Weston Creek area and Charnwood did not deliver to Belconnen, Mitchell, Cook, Weetangera, or Hawker.
- There were no deliveries to the following suburbs, within 11 to 20 km of each pharmacy: Canberra East, Civic, or areas bordering Civic, including Deakin, Ainslie and Yarralumla.
- Each pharmacy also delivered to suburbs that were closer to the other pharmacy. For example, Wanniassa Capital Chemist delivered to suburbs more than 20 km away (e.g., Lawson, Belconnen, Macquarie) or suburbs bordering on 20 km away (i.e., Cook, Aranda). These suburbs are within 3 to 10 km of Charnwood Capital Chemist.

Figure 4: Deliveries by distance category for Charnwood and Wanniassa Capital Chemists for 10 months spanning Year 3 (Q2, Q3, Q4) and Year 4 (Q1) quarterly reporting periods



Key Quantitative Findings

- Across the three-year funding period, Wanniassa and Charnwood Capital Chemists made 4569 deliveries. Including the 2017 start-up period, the two contracted pharmacies made 5,279 deliveries. There was good uptake of deliveries within the first 6-months of funding.
- The majority of deliveries (75.6%) were within 10 km of the pharmacies. Despite this, there are gaps in deliveries to suburbs within 10 km and also 11 to 20 km from each pharmacy. Note, that geographic data were only provided for 10 months, spanning four quarterly reports (Q2,2020 to Q1,2021). These data may not be representative of deliveries across the three-year funding period.
- The number of deliveries declined over time for Wanniassa Capital Chemist. Note, however, that Wanniassa Capital Chemist is a smaller pharmacy than Charnwood and was making a similar number of deliveries to Charnwood until Q2 2019.
- Compared to the two quarters prior to COVID (Q4, 2019 and Q1, 2020) the number of deliveries in Q2 and Q3 2021 increased for both pharmacies; however, the number of deliveries made by Wanniassa Capital Chemist decreased substantially in Q1 and Q2 2021. The decline was only slight in Charnwood for these quarters.

Section B. Qualitative findings

Stakeholder insights into the After-hours service meeting client demand.

The quantitative data indicate variations in deliveries over time, pharmacy, and distance from the pharmacies. The interviews provide insight into the nature of these variations and into the pharmacy's ability to respond to client/carer demand for requested deliveries.

To what extent is the home delivery service able to meet the client demand?

Variations during the financial year: Qualitative findings suggest that client demand for the service varies, with fewer deliveries at the start of every financial year (Q1, July - September) due to uncertainty and delays in the renewal of the service contract.

> *"We would comment though that our team members do tend to do less deliveries when program uncertainty is about (i.e., at the start of every financial year) and this is often observed as a drop in referrals and deliveries at the time."* – Pharmacy staff

> *"So, my observation is that during July, August, we tend to have a dip, a trough I should say, and then it increases again throughout the year, and then it dips again … (I think staff are) hesitant to recommend something that they're not 100% sure (will continue). They don't want to cause any harm or create a difficulty for us further down the track."* – Pharmacy staff

The pharmacies were without a contract for 3 months at the beginning of year 2 (Q1, July to September 2019) and year 3 (Q1, July to September 2020) and did not want to promote a service (e.g., to GPs and allied health professionals) and make promises, which they felt may not continue.

Perceptions of service growth and demand. The interviews imply an initial high demand, followed by a relatively consistent level of demand overall, *"I couldn't say that I've noticed a change in demand. It seems to me that it's been, in my experience, pretty steady over the time that the program has been run, …"* [Palliative Care Specialist]

> "*And again, I don't memorise the numbers, but I feel like it was, for Wanniassa [Capital Chemist], a bit more intense at the start, and I think it's plateaued now. We're at a fairly consistent amount of deliveries that we do." - Pharmacy staff*

However, as highlighted in the quotation below, senior staff, who were engaged with the program for the duration of the funding period, perceived pharmacy level differences in the number of deliveries over time:

> *"At the start, I feel like it was a lot more but I think it was a bit of a – we were able to do a lot more advertising and a bigger push, but I feel like we've had a number of barriers that have meant that it hasn't been able to be sustained." - Pharmacy staff*

The annual number of deliveries for Wanniassa Capital Chemist was perceived as plateauing after a positive start, and then dropping off due to barriers. This does not appear to be the case for Charnwood Capital Chemist where there was a perception that the demand for the After-hours

service increased over time with "*demand into Gungahlin… certainly increasing*" [pharmacy staff]. This perception aligns with some of the periodic variations in deliveries across consecutive funding periods (e.g., 2020, Q1 – Q4,Table 3).

It is possible that perceptions of demand for the service may vary by interviewee role and interviewee's length and extent of involvement with the service.

Perceptions of demand for service with COVID. Pharmacy staff perceived an increased demand for the After-hours service due to COVID-19.

> *"I'd say the referrals from home-based nursing went up [since COVID-19]."* – Pharmacy staff

The increased demand for palliative care medications was likely due to clients wanting to remain at home, instead of going to hospital or hospice. People were *"scared of COVID and didn't wanna go to the hospital and die"* (Pharmacy staff). The ACT declared a state of emergency on 16th March 2020. As shown in Table 3, the number of quarterly deliveries increased in Q3, 2020 (January – March) and Q4, 2020 (April – June) compared to Q2, 2019 (October – December). Thereafter, deliveries dipped (especially for Wanniassa Capital Chemist) which is likely due to the absence of a contract.

Delivery by distance: The qualitative findings suggest that the pharmacies did not turn away a delivery and deliver to any geographic distance.

> *We've never like declined or said, "No, we're too busy to do that delivery," that won't be a situation – it simply would not be an option. I don't think that that's appropriate. We're at both ends of Canberra, because there's no fee associated with where we deliver, irrespective of distance to the patient, I also don't perceive that there would be a fear of using a pharmacy just because it was a distance from your home. I mean it may not be the first pharmacy that you think of, of course, because just, geographically, you're not familiar with it but there's not that barrier where for regular deliveries, we might say, "Okay, well, if you're in these postcodes," so there's also not that barrier, a fear of how far one lives from the pharmacy too.* - Pharmacy staff

The pharmacy focuses on delivering palliative care medications to clients in a timely fashion. This is particularly important given the stories of some clients having contacted multiple pharmacies and expressing '*relief*' to finally find a pharmacy with the palliative medication in stock. Asking the client to contact the other pharmacy may not be appropriate and add stress to a '*stressful*' situation.

Note that the After-hours service delivers medications to, "*people in their fifth, sixth, seventh, eighth decade, probably seventh decade, the peak and fewer numbers on either side of that*" (Palliative Care Specialist). The demographic profiles of suburbs, population density, and land use mix (e.g., residential vs commercial use) may influence deliveries to specific suburbs.

From the perspectives of the pharmacists, distance from the pharmacies did not factor into the deliveries i.e., medications were delivered irrespective of the distance. This may be the case because pharmacies focus on the service; however, without carer interviews, we do not know what factors inform their decision to access or not access the contracted pharmacies. It is possible that distance may be a potential barrier and some clients may prefer to deal with their usual pharmacy or a pharmacy that is easier for them to access (if they don't have a usual pharmacy).

To what extent is the home delivery service able to meet the client demand?

The quantitative data show a decline in the annual number of deliveries for Wanniassa Capital Chemist and some gaps in service delivery to particular geographic areas. However, interviews indicated that: (1) no requests were turned away, irrespective of the delivery distance; and (2) that both pharmacies met client demand with respect to timely access to palliative care medications.

> *"Well, definitely the responsiveness and that it happens, I ring, and it happens. So that's probably the best way I can say that. I've got no problems with it, whatsoever. I've never had an issue. I've never had anything overall."* – Palliative Care Nurse Practitioner

> *"So, it really, really enhanced timely access to medicines in residential aged care. So, our model generally was to try to get anticipatory medications in early so that we wouldn't end up in this situation. But this emergency situation still happened. And so, when it did, accessing it through the Pharmacy 1 and Pharmacy 2 was just so very helpful."* – Palliative Care Nurse Practitioner

There was consistent evidence from stakeholders that the After-hours service was reliable:

> *"It's reliable. I could always rely on it. I knew if I rang and I said I needed ten ampoules of methadone, it's there. They'll be delivered if I need it to. I could always rely on it…. So, the reliability, the kindness, and the generosity of the staff, the pharmacists was outstanding, and the communication skills, the efficiency of getting that access, that timely access."* – Palliative Care Nurse Practitioner

It should be noted that the pharmacies provided timely access and reliable delivery to palliative care medications for hours in which they were open, that is, until either 8 pm or 9 pm, 7 days a week. Some prescribers and pharmacists did comment that although it was an After-hours service, that the pharmacies were not open until 11 pm or midnight.

> " ... So, yeah, that's probably – the biggest [issue] is that it goes to particular time after hours and that we're not accessible all hours. And then even though we say it's an after-hour service, we will still actually deliver during [normal] hours too." - Pharmacist

It's possible that clients reach out to pharmacies that are open longer hours to obtain medications, particularly if they have a pre-existing relationship with that pharmacy, in which case the pharmacy may order in the necessary medications.

What issues, if any, have been encountered by pharmacists maintaining the stock list of terminal medications?

Timely consistent access to medications was facilitated by maintaining the stock list. The stock list is automated through the pharmacy's point-of-sales software. Any items that are sold are automatically re-ordered. In one instance, a pharmacy did not have the required medication due to filling a script for another patient that day. This was resolved through liaison between the contracted pharmacies to ensure that the patient was able to access the required medication that evening.

> *"… we didn't actually have the medication that they needed because we'd filled a palliative script for it earlier in that day. And so, we were getting more the next day, but we didn't know if that was going to be timely enough for them. And I was able to arrange with Capital Chemist Charnwood, who did have it in stock, and one of their pharmacists lives further south side, so we sort of met halfway between Wanniassa and Charnwood, swapped the medication and then went to do the delivery, to drop it off to the patient."* – Pharmacy staff

There were two situations where medications were not available and the pharmacies found workarounds; however, these issues affected all pharmacies in the state.

What is driving the demand for the service?

Drivers of demand relate to awareness of the service, and to some extent, changes in the workforce that impact the prescribers. The findings suggest that the demand for service is driven by *"prescribers, pharmacies, and the rest of the palliative care network"* (Pharmacy staff). Once prescribers are aware or familiar with the service, they tend to stick with it.

> *"once we have someone who's engaged with the service in the longer term, they're gonna be very consistent but then they also get in a better pattern because they know that the service is there in the long term"* – Pharmacy staff

This is reinforced by the below statement from a Calvary Specialist Palliative Care staff member:

> *"Yes, it's talked about regularly. So, it's talked about in various meetings where it's appropriate. So, in meetings of the home-based team, there will be references to that made, for particular patients on appropriate times, there's references made in clinic notes on times when that service is being drawn upon. There's reference made in doctors' meetings, so when new consultants start or new registrars start, then discussion of those services do take place. It tends to be around particular patients rather than abstract, so it tends to be, "Here is a particular person with a particular set of needs. If we run out of medication over the weekend, here is a plan as to how we might address that. The usual pharmacy is such and such a pharmacy. If for any reason they can't secure the medication via them, the after-hours services [is] available."*

In contrast, not all prescribers are familiar with the service for a variety of reasons such as "*rotation of team members in and out of the palliative care health landscape of the ACT*" (Pharmacy staff).

> *"I just think that certain prescribers have become very familiar and love the program, and then other prescribers probably just don't really know what's going on, or they're not up-to-date, or they don't engage with the promotion, their practice manager never passes on the message to them when we send it out, all manner of reasons that the message never gets to the individual that says to the patient, "I know this pharmacy has this medicine right now, if you need it."* – Pharmacy staff

Ongoing service promotion efforts may be required to reach prescribers who tend not to engage and to reach those who rotate in and out of palliative care. It also should be noted that it is widely known in the ACT that GPs experience barriers to prescribing palliative care medication. Financially, there is little incentive for them to be involved in palliative care prescribing. They may be pinged for prescribing Schedule 8 medications, i.e., they will receive a letter from the Chief Health Officer when they prescribe these medications for symptom management. These factors may play a role in GP engagement with palliative care more broadly.

Whether the budget and resources are enough to meet the service demand?

The extent to which budget and resources are sufficient to meet the service demand is shown in the quantitative data for this evaluation, as well as qualitative insights shared by key stakeholders.

There was a sense from senior staff at both pharmacies that the annual budget provided to deliver this service might not currently be sufficient to meet the service demand.

> *"My gut tells me that financially, (both pharmacies) are losing money running this program."* - Pharmacy staff

> There was also a sense that with the current budget, *"we don't want to promote it too much because we're – the funding is at capacity."* - Pharmacy staff

The above sentiment may be partially explained by pharmacists from both pharmacies attending PEPA placements, funded by the Australian Government Department of Health. PEPA placements assist health care professionals to expand their skills and knowledge in the palliative approach, as well as incorporating these skills and knowledge into daily practice. As part of the After-hours service, wherever possible, pharmacists from both pharmacies are given an opportunity to undertake a supervised observational placement for two-three days within a host site, commonly, Clare Holland House, Calvary. Pharmacist PEPA placements are not currently budgeted under the current service contract. The importance of pharmacists attending PEPA placements has been reinformed in a majority of interviews for this evaluation:

> *"I think the honest answer to that is you need to see people dying to understand what they need when they're dying. In our work, physically at the pharmacy, I don't see patients actively dying at home or in end-of-life care. I had a perception of what it might look like but I had never actually seen it unless it was my family member, but even then, while I've had grandparents pass and things, I haven't actually physically been the one that their primary care during that time of life. So that's why the PEPA Program is really important, so that's the placement program through Clare Holland House. So that allows us to send in for*

funding, so some funding is provided from PEPA and then us, as a pharmacy, we make up the rest of the cost so that our pharmacists [are paid] their usual wage to attend." - Pharmacy staff

Hence, the suggestion that the cost for pharmacy staff to attend PEPA training contributed to the funding shortfall:

"It would be great to get a bit more funding for more pharmacists to go and do the PEPA placements 'cause I think they are really valuable." - Pharmacy staff

However, CHN did contribute to PEPA placements as part of the initial program start-up costs in 2017.

In the CHN contract, the contracted pharmacies received no subsidy from CHN for deliveries within 3 km of the pharmacies (i.e., these were unsubsidised). In contrast, CHN subsidised the contracted pharmacies for any delivery over 3 km away from the pharmacies with this subsidy determined by the distance from the pharmacy. The further the delivery, the greater the reimbursement. For all deliveries, both unsubsidised and subsidised, the contracted pharmacies were permitted to charge patients a $6.30 delivery fee. Logistically however, collecting the delivery fee proved challenging at times. During COVID-19, both pharmacies elected not to charge these clients the $6.30 delivery fee:

"…to trial if this increased access to the program. It is incredibly rewarding to be able to make this offer for free. It feels very natural not to charge in someone's hour of need." – Pharmacy staff

The impact of free delivery for this service is not yet known, but the importance of not charging this delivery fee and for the pharmacies to be remunerated accordingly was mentioned.

"I certainly do agree that even though it's not in the contract, the fact that [we] aren't charging patients at all for any delivery, that's made things easier. So, I'd like that to be recognised in the next contract. So that's $ 6.30 delivery fee has gone. They [the client] still pay for their medications." – Pharmacy staff

It is possible that pharmacies could batch deliver medications to clients for palliative care medications and non-palliative care medications within the same delivery run and prioritise the delivery for the palliative medications.

Key qualitative findings

- Pharmacy staff were hesitant to promote the service when their contract had not been renewed. This led to a drop in deliveries during this period and accounted for some of the variation in the quarterly reports across a given year.
- Interviewees had different perceptions of the growth of the service over time. Senior pharmacy staff perceived a plateau in deliveries in Wanniassa Capital Chemist and not in Charnwood Capital Chemist.
- Interviewees perceived that the number of deliveries increased with COVID.
- Distance from the pharmacy was not a factor in deliveries. All requests were honoured.
- There was clear and consistent evidence across multiple stakeholder groups that the After-hours service was reliable and provided home-based palliative patients with timely access to medications.
- Two key drivers of the service were awareness amongst prescribers and workforce changes that impact prescribers.
- The PEPA workshops are invaluable to ensure a high-quality service. This carries an ongoing financial investment which is not currently budgeted in the CHN contracts and is presently absorbed for the most part by the contracted pharmacies.
- Running the After-hours service without a contract has raised concerns amongst pharmacists about budget which paradoxically results in an increased likelihood of delivery KPIs not being reached.
- Irrespective of budget concerns, contracted pharmacies have still elected not to charge the $6.30 delivery fee to clients. This was done for administrative purposes but also to support increased access to needed palliative care medications.

Section C. Integration of the quantitative and qualitative findings

- The quantitative findings show a decline in the total number of deliveries over time. The decline is due to the reduced number of deliveries by Wanniassa Capital Chemist. This finding is corroborated by the qualitative data where a senior pharmacy staff member from Wanniassa indicates that the number of deliveries plateaued after a strong start and were not sustained due to a number of barriers. One barrier is the delay in contract renewal, which impacts the deliveries in Q1 of 2019 and 2020 for Wanniassa and Q1 2019 for Charnwood. For Wanniassa Capital Chemist, the delayed contract impacted deliveries into Q2 2020. They do not want to promote a service which may not be sustained. Note, however, that Wanniassa Capital Chemist is a smaller pharmacy and despite this, they were making a similar number of deliveries to Charnwood up until Q2, 2018.

- Most deliveries (75.6%) were within 10 km of the pharmacies. There were gaps in deliveries to suburbs within 10 km and 11 to 20 km from each pharmacy. The interviews suggest that geographic gaps in service delivery were not from clients being turned away. Distance was not a determining factor in responding to requests as all requests were honoured. Moreover, the interviews did not identify any issues with pharmacies maintaining the stock list. Gaps in suburb coverage were likely due to multiple factors including: 1) clients and referral agents not being aware of the After-hours service; 2) other pharmacies having medications available; 3) other pharmacies having an existing relationship with a patient and ordering the medication in to ensure its ongoing availability; 4) longer opening hours of other pharmacies (e.g., some are open until 11 pm); and 5) differences in the demographic profile, population density and land use mix of suburbs giving rise to differences in the demand for palliative care medications.

- Delivery to distant clients may be influenced by pharmacies focusing on how to support a client rather than coordinating the delivery with the other contracted pharmacy. It may be client preference to work with the distant pharmacy because of a pre-existing relationship; the client may have called multiple pharmacies and is relieved to finally have contacted a pharmacy with the medication.

- Drivers of demand relate to awareness of the service, and to some extent, workforce changes (e.g., rotations in and out of Calvary Specialist Palliative Care Services and new GPs in the ACT community) that impact the prescribers. Both awareness and workforce changes suggest a need for ongoing service promotion efforts.

PART 2: CLIENT/ CARER BENEFITS & AFTER-HOURS IMPACT

This part addresses the following evaluation objectives:

4. Is the service value for money? To what extent has the service helped keep clients out of ED?
5. To what extent are client needs being addressed by the service?
6. What has carers/clients experience with the program been like?
7. To what extent has the service improved client quality of life? To what extent did the service improve or alleviate associated symptoms of palliation and reduce avoidable ED presentations?

Addressing these objectives requires integrating quantitative evidence with qualitative evidence. The evaluation design cannot determine whether the timely delivery of medication to palliative clients at home, after hours, prevented actual ED and hospital admissions. However, the relevant cost of ED and hospital admissions for palliative patients in the ACT and nationally are presented from existing National Hospital Cost Data collection reports (Independent Hospital Pricing Authority, 2021). In addition, the average delivery cost from CHN's annual financial investments in the After-hours service can be determined. The average delivery cost can then be compared to state and national ED and hospital admissions to determine value for money. However, a determination of value for money is only worth considering ***IF*** the qualitative data provides reasonable evidence that the medications provided palliative clients with sufficient symptom relief and comfort for them to stay at home.

Section A presents the financial cost of the service to CHN and comparable costs for the health care system to quantitatively determine value for money.

Section B presents qualitative evidence on client needs, experience, and impact on quality of life and avoidable ED presentations.

Section C integrates the quantitative with the qualitative findings.

Section A. Quantitative findings

The Financial Cost of the Program and the Comparative Costs for the Health System

The program commenced in April 2017. The total program financial cost until June 2021 constitutes $201,372.10. This includes $5,000 service delivery cost for each financial year. *Unfortunately, we do not have consistent information from the pharmacies on their number of deliveries during April 2017 to June 2018; therefore, in estimating the average cost per delivery we excluded the delivery cost incurred in that period.* Nevertheless, we included other program set-up costs incurred during that period (e.g., support for PEPA training, service promotion) which are an important part of the overall program implementation cost. Table 5 shows

- A total program cost to CHN of $201,372.10 for 4,569 unsubsidised and 3,052 subsidised deliveries (from July 2018).
- Between July 2018 and June 2021, the overall average cost per delivery including both the subsidised and unsubsidised categories was $40.61.
- Between July 2018 and June 2021, the average cost per delivery in the subsidised category was $60.79.

Table 5: Cost of the After-hours service and average cost

Program Cost to CHN, April 2017 - June 2021	Total Deliveries July 2018 - June 2021	Average Delivery Cost
$201,372.10	4569 (subsidised & unsubsidised) 3052 (subsidised only)	$40.61 (subsidised & unsubsidised) $60.79 (subsidised only)

Table 6 and

Table 7 present the palliative care hospital separation and ED costs for the 2016-17, 2017-18, and 2018-19 financial years (Independent Hospital Pricing Authority, 2021) from the National Hospital Cost Data Collection (NHCDC).

Table 6: Palliative care cost

Palliative care cost	ACT			National		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Number of hospitals	2	2	2	277	276	276
Separations	1224	2125	953	53401	68489	77812
Total Expenditure ($)	11348237.83	9921702.47	11044681.44	411936792.53	436090109.83	557683425.48
ALOS	7.90	4.10	9.23	6.12	4.89	5.39
Average cost per separation ($/sep)	9271.44	4669.04	11589.38	7714.03	6367.30	7167.06

Table 7: Emergency department cost

Jurisdiction	Average Cost per presentation ($)		
	2016-17	2017-18	2018-19
ACT	705	744	799
National	666	705	732

- These tables reveal that the average cost per palliative care separation/ ED presentation was increasing over this period in the ACT from $9,271.44 to $11,589.38 (for palliative care separations) and from $705 to $799 (for ED presentations).

Key Quantitative Findings

- A total program cost to CHN of $201,372.10 for 4,569 unsubsidised and 3,052 subsidised deliveries (from July 2018).
- Between July 2018 and June 2021, the overall average delivery cost for both subsidised and unsubsidised categories is $40.61 and the average delivery cost for the subsidised category was $60.79.
- The average cost per palliative care separation/ ED presentation increased in the ACT from $9,271.44 to $11,589.38 (for palliative care separations) and from $705 to $799 (for ED presentations).

Section B. Qualitative findings

Qualitative findings on client needs, experience, and impact on quality of life and avoidable ED presentations.

Carers and Palliative Care Clients (clients) benefit from the reliable and timely delivery of medication from the two contracted pharmacies. As outlined in the sections below, the outcomes owing to the high reliability of delivery, as expressed by all stakeholder groups, were positive, for both palliative care patients and carers.

To what extent has the service improved client quality of life?

For palliative care clients at home, the timely delivery of medication made them feel more comfortable by alleviating pain symptoms, alleviating side effects of medications or treatments (e.g., vomiting), allowing for the timely treatment of secondary infections (e.g., bladder infection), alleviating mental health symptoms associated with illness (e.g., panic attacks) and promoting a sense of independence. The impacts and benefits of the medications are outlined in Table 8.

Table 8: Perceived palliative patient benefits

Relieved pain symptoms, as illustrated in the story shared by a pharmacist dropping off the medication:	*"We changed over. I [pharmacist] said, "Okay, is there anything else you need?" It was just, "Thank you so much. We were so stressed about this. We were worried we were not gonna have medicine and she was gonna go through the whole night in pain." [carer] And I think a nurse came over to change it that – over night or something like that to change the syringe driver over and they got the medicine and the care they needed. And just thank God we do it. Thank God we had the – I'd like to think any pharmacist would be able to pick up the phone and do similar, but maybe not and it might not be as easy, and they might not have the medicine in stock."* – Pharmacy staff
Relieved side effects of medications or treatments (e.g., nausea, constipation, vomiting).	*"I need to go very soon to give, like – who hasn't had [bowels moved] *0:26:29 for 11 days, so I'm going out to give him a subcut Relistor injection, which is great that I'm able to access that quickly [from the contracted pharmacy] because he is obviously in a lot of trouble. So that's how good it is, yeah*." – Home Based Palliative Care Nurse
Allowed the timely **treatment of a secondary infection**, so the patient can stay at home rather than go to the hospital because the infection has worsened and may require IV antibiotics shared by a pharmacy staff member:	*"But it has been absolutely so beneficial having the chemists on side in that we can go in, a patient may have run out of medication, for instance, or have developed an infection and, in which case, we can ring the doctor. The doctor rings and does a verbal prescription with the pharmacist and then the – either the Pharmacy 2 or Pharmacy 1, and they deliver the medication. How good is that? I've had it that within half an hour, I've had somebody starting an antibiotic, who's had a chest infection, and I can't tell you how good that is for a person who is unable to leave their home, that are feeling really unwell with a chest infection and they've already got a symptom burden that is making them feel unwell. So just to relieve that symptom, that one symptom is just so beneficial for the family and for the patient mainly and for the family who are caring for them and so that is fantastic."* – Pharmacy staff

Alleviated panic attack symptoms arising in palliative patients with COPD and respiratory conditions who felt like they were drowning:	*"I think mostly it's got to do with the stress for both the patient and the family. For example, I remember delivering lorazepam to one person because he had some things going on with his lungs and so every time he bent over he would have a panic attack because he would feel like he was drowning. And so, he was just super on edge all the time and then it was just like when he would have a panic attack, it would freak his family out because he's on oxygen, but it's just like he's still just freaking out the fact that he's like – it's like "I can't breathe, I can't breathe!" So when we were able to help him with – lorazepam is just lorazepam, you know what I mean? But for them, for him to know that he could take something that was going to help him prevent those panic attacks or even help to alleviate the panic attacks was like – for that night, he was just like "I've had 10 today" and he was like "I just can't do it anymore. I would rather die" and he said it in front of his family, he was like "I'd rather just all of a sudden die than keep going through the cycle." And that's super confronting for a family to hear 'cause they're all sort of like "Oh, my gosh. What do you mean?"* – Pharmacy staff
The delivery of medications also contributed to **preserving a sense of independence**, particularly in clients who were living with a debilitating condition but not quite at the end-of-life stage:	*"Let's use an example of a patient who has COPD. So, they've got emphysema, they're not end-stage emphysema, they might be on a little bit of home oxygen, but just even walking into a pharmacy, just that distance from a disabled car park even is excessive for them. In those sorts of situations, I feel like it's almost independence-keeping, having a service because people who know that their end-of-life is not 30 years away, it might be three years away, they're cognisant that at some point – and this is not a word that I would ever use but they feel like they're gonna be a burden. They use that word a lot, that they don't wanna be a burden on their family. They don't wanna cause them unnecessary angst. They don't wanna ask them to pick up their medicines because I think they know that one day it's gonna be assumed that they're gonna have to. So they see a program like this as a way of them keeping their independence from people in their lives that they know probably are gonna have to step up a little bit in the future but also it doesn't cost them any extra. They can go about their life without feeling any guilt about asking for another thing on top of their groceries and all these other things being arranged for them."* – Pharmacy staff

Carer needs and experiences

The interviews strongly suggest that carers were satisfied with the After-hours services that were offered – the medications and the additional support provided by the pharmacists, who seemed to go the extra mile to ensure that clients were receiving the best medication in the best form (i.e., quality medicines). There were no stories of negative experiences or dissatisfied customers. The perceived benefits of carers are summarised in Table 9.

Table 9: Perceived benefits of carers

Providing '**peace of mind'** for carers who were managing the palliative care needs of their family members	*"I think the knowledge that the services are available certainly provides a lot of peace of mind for a lot of carers, to know that they can access these services rather than go through a hospital or attend in ED."* – Home Based Palliative Care Nurse

Carers **felt supported and respected** by the two pharmacies, at a time that was particularly challenging The pharmacies understanding of the palliative care process led to the family member being **provided a better-quality medicine**.	*"The pharmacy he was going to didn't offer dosage administration aids. He didn't even know what one was. He was struggling trying to look after his kids, his wife's medication, his own mental health. So, he'd been prescribed some antidepressants. She was deteriorating rapidly. He just couldn't get out of the house. He didn't have any family support in Canberra. So we were able to – she was still having some regular oral medications, some Dexamethasone and titrating doses of all kinds of crazy stuff. It was really challenging for him. So we got him onto – got her onto a Webster-pack. Part of our Webster-pack service in our business is that anybody on a Webster-pack gets them delivered weekly if they need them and that's a free delivery during business hours. So, she only lived for four weeks. But I have text messages from that guy who sent them through – so he would often communicate with us sending screenshots or photos of the prescriptions and he'd text them through to our pharmacy mobile. And he said,* ***"The care I have received from this pharmacy in the last two weeks has been better than any care I received in this whole process."*** *And he said he felt very well-supported and respected through all this and we've made life so easy for him. And we made such a huge difference for him. Every time she needed medication, we had it. Every time they needed a delivery, they got it. We improved her qualities of medicines through the use of dosage administration aid, which was free for them."* – Pharmacy staff
Carers being grateful of the support provided	*"We said, "Well, if you ever get stuck, we do have all these medicines. If her regular pharmacy runs out, you just let us know, we'll sort it out."… So the sister would occasionally do medicine delivery but we would pick up, but we would see that the husband was always really stressed, he'd have to bring his kids into the pharmacy because he didn't wanna exhaust his wife at home. And one time we're just like, "We could just drop it off. It's no big deal," and he was just so relieved"* – Pharmacy staff

Emergency department avoidance

The timely delivery of medication to palliative care clients at home had the effect of alleviating clients' symptoms and making them feel more comfortable, and improving carers' experience with end-of-life by reducing their stress and the burdens associated with medication administration. This contributed to patients being able to spend more quality time with their family members at the end-of-life and for the palliative client to stay at home and avoid an ED presentation or hospital admission.

As a result, patients were able to spend more quality time with their family members at the end-of-life, at home and avoid an ED presentation or hospital admission.

> *" … logic tells me that if the suffering continues or increases, then they would end up in ED".* – Pharmacy staff

> *"That would've result in patients not having their symptoms controlled which would've resulted in patients ending up in emergency and the whole of ACT to the whole of – world knows that palliative care in emergencies dealt with really badly. And then I know because I've spoken to the prescribers."* – Pharmacy staff

> *"It just means people can start treatment quickly as opposed to waiting another 12 to 24 hours. So that makes a big difference in that a patient can stay at home and have oral*

antibiotics versus having to be taken away from their home environment when their time is little, maybe, at home and go into a hospital system, through emergency, to have to end, because the infection's exacerbated further and needs IV antibiotics. So that – in that holistic sense, that is far better outcome to be able to do that quickly, to start that quickly." – Home Based Palliative Care Nurse

The After-hours service also avoids clients from being transported to the hospital in their final moments and experiencing a bad death.

"S*o, this is a peaceful death with your family and friends gathered around, being kept comfortable is much more desirable than flashing lights, screaming down the highway to the hospital, people sticking things in you and fracturing any interactions between you and your family especially when the outcome of that kind of intervention is likely to be death anyway*." – Palliative Medicine Staff Specialist

In summary, the interviews suggest that the service *did* keep home-based palliative clients out of the hospital system.

Key qualitative findings

- The timely delivery of medication made palliative care patients feel more comfortable by alleviating their pain symptoms, alleviating the side effects of medications or treatments (e.g., vomiting), allowing for the timely treatment of secondary infections (e.g., bladder infection), alleviating mental health symptoms associated with illness (e.g., panic attacks) and promoting a sense of independence.
- Carers were satisfied with the medications and the additional support provided by the pharmacists, who went the extra mile to ensure that clients were receiving the best medication in the best form (i.e., quality medicines).
- Carers felt supported and respected and were grateful of the support provided by the pharmacies. The After-hours service gave carers, who were managing the palliative care needs of their family member, peace of mind.
- Palliative care patients were able to spend more quality time at home with their family members at the end-of-life and avoid an ED presentation or hospital admission due to the timely delivery of medication which met their needs.

Section C. Integration of the quantitative and qualitative findings

- In the ACT, the average emergency department palliative care separation cost ranged from $9,271 to $11,589. The average delivery cost for all deliveries and subsidised deliveries was estimated at $40.61 and $60.79, respectively.
- The qualitative data provides evidence consistent with the After-hours service alleviating client symptoms and improving carer's experience with end-of-life by reducing their stress and the burdens associated with medication administration. This allowed palliative care patients to stay at home and avoid ED presentations or hospital admissions.
- Based on the palliative care separation costs compared to the average After-hour medication delivery cost, the service is deemed to be value for money. In the absence of the After-hours service, palliative home-based patients may have been transported to the hospital, incurring cost to the health care system.

PART 3. REFERRAL PATHWAYS

This part addresses the following evaluation objective:

8. What referral pathways are being used by palliative care patients and carers? To what extent are referral pathways working as intended?

This section utilises data from the 2020-21 financial year (i.e., 1 July 2020 to 30 June 2021) on the types of referrals reported by the two contracted pharmacies. The interviews explored the referral pathways in detail to gain insight into how they were working and who the service was reaching through promotion activities.

Section A provides a descriptive summary of the referrals for the last financial year of the program.

Section B provides qualitative insights into what referral pathways are used.

Section C integrates the quantitative with the qualitative findings.

Section A. Quantitative findings

Descriptive summary of type of referrals

From 1 July 2020 to 30 June 2021, quantitative data on the types of referrals were reported by the two contracted pharmacies. The data in Table 10 provide a snapshot of referrals during COVID-19. The total number of deliveries in the 2020/21 financial year for Wanniassa Capital Chemist and Charnwood Capital Chemist are 444 and 1051, respectively. Referral data are provided for 44.1% and 33.8% of all deliveries and thus the breakdown of referrals may not be representative of all deliveries in that year.

Table 10: Type of referrals (%) by pharmacy and pharmacies combined

Type of referrals	Wanniassa (n=196)	Charnwood (n=355)	Combined (n=551)
Pharmacy	31.1% (61)	8.5% (30)	16.5% (91)
Carers	19.4% (38)	33.8% (120)	28.7% (158)
GPs	16.3% (32)	14.1% (50)	14.9% (82)
Calvary Specialist Palliative Care	25.5% (50)	36.9% (131)	32.8% (181)
Hospital	7.6% (15)	6.8% (24)	7.1% (39)

- For the subset of reported deliveries, Table 10 reveals that the most common referral pathways overall were from Calvary Specialist Palliative Care Services staff and carers.
- There were differences between pharmacies with Wanniassa Capital Chemist having a greater proportion of referrals generated from the contracted pharmacy and Charnwood Capital Chemist, from carers.
- Referrals from other community pharmacies does not appear to have been reported during the 2020/21 financial year.
- The least commonly reported referral pathway was from hospital staff.
- The proportion of referrals from GPs was also relatively low.

Section B. Qualitative findings

Qualitative insights into referral pathways

What referral pathways are being used by palliative care patients and carers?

The qualitative interviews identified that the After-hours service has two overarching referral pathways, those that are ***externally initiated*** or ***internally initiated***, as depicted in Figure 5. External referral pathways are those in which a health professional, or client/carer (i.e., someone external to an after-hours service pharmacy), requests the service. In these cases, the prescribers or client/carer are aware of the service at the time a prescription was requested. Internal referral pathways are those in which pharmacy staff identify that the service may be beneficial from a health professional or client/carer contacting the pharmacy (i.e., the prescriber or client/carer was unaware of the service until made aware of the service by pharmacy staff).

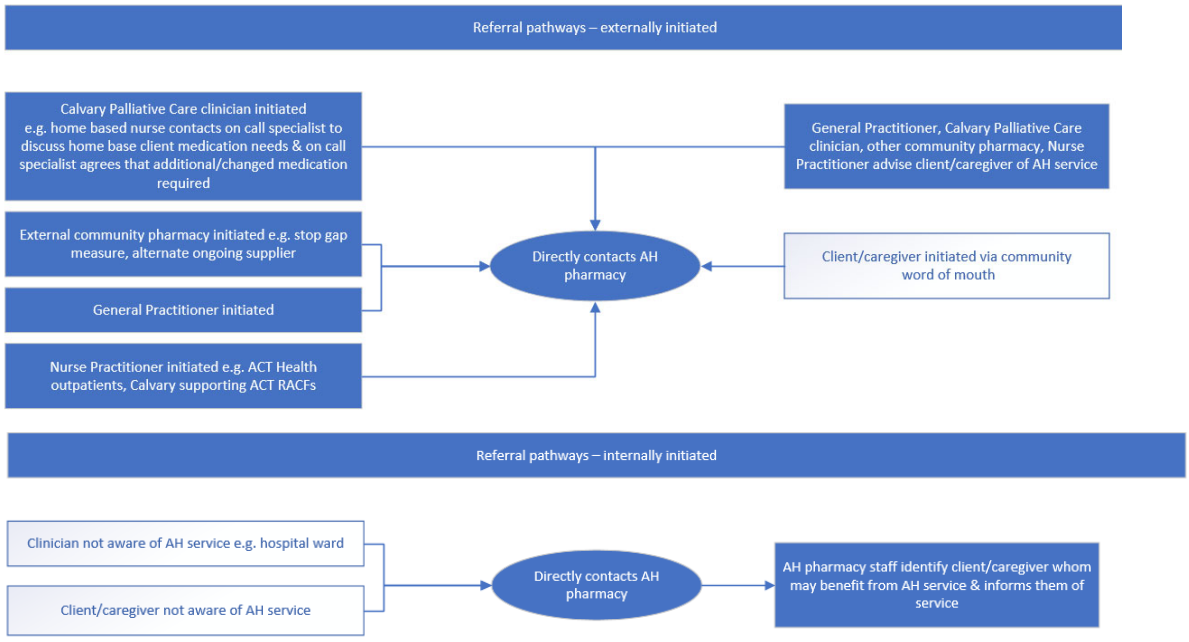


Figure 5: Referral pathways supporting the After-hours service

Externally Initiated Referral Pathways

The following six externally initiated referral pathways were identified: 1) Calvary Specialist Palliative Care clinician-initiated referral; 2) General Practitioner initiated referral pathway; 3) External community pharmacy initiated; 4) Nurse Practitioner initiated referral pathway; 5) Client or carer being advised of the service by a health care profession; and 6) Community word-of-mouth. Each pathway is reviewed below.

For the ***Calvary Specialist Palliative Care clinician-initiated referral pathway***, this usually relates to home-based clients accessing home-based palliative care services provided by Calvary Health. This home-based service supports clients requiring palliative care medication who have requested that their home be their place of death. For these clients, if it is identified that additional medication, or a change in medication dose or route of administration may be required to assist with symptom management, a home-based nurse will first contact the on-call specialist to discuss the client's medication needs. After this conversation, if any changes are required (e.g., new medication, increase supply of existing medication), the on-call specialist will call a contracted pharmacy to make an over-the-phone order and the medication will be delivered to the client's home if required.

> *"Well, I just think it works really well. You ring the doctor. You tell them what's going on. He says "Right. Let's get this and this and this." I say "Right. Can you ring Pharmacy 2 and give them the number?" And they do that, and then the medication arrives. How good is that? I just think that process is so easy and so it's just a matter of two phone calls really, isn't it?"* – Home Based Palliative Care Nurse

> *"I'll get a call from one of our home-based palliative care nurses who are visiting a patient. They may have formed a view that it's appropriate to change medication, that might be a dose increase or that might be a rotation of particular medication from one kind to another, that might be the institution of a syringe driver. In any of those situations, there's a discussion between me and the nurse, and if we agree that a change of that nature is required, then the question is, "Are there sufficient supplies at home for that person to be supported?" and if the answer to that is no, then I'm asked if I'll write a prescription which I always do, and then I will ring the pharmacy. Often it is the after-hours pharmacy."* – Palliative Medicine Staff Specialist

Interview participants identified that the Calvary Specialist Palliative Care clinician-initiated referral pathway was a commonly accessed referral pathway. In this pathway, Calvary Specialist Palliative Care clinicians are aware of the after-hours service, and directly contact one of the after-hours service pharmacies to facilitate timely access of medication for a client requiring palliative care medication. As indicated by pharmacy staff, they call and say, *"I've got an order."*

The ***General Practitioner initiated referral pathway*** is also utilised within the ACT.

> *"Generally, most doctors know that we're the pharmacies to go to now…but I think it's been around for long enough now that they've personally experienced having a patient who's had this happen and realise that we're the pharmacy to go to."* – Pharmacy staff

External community pharmacy initiated was another referral pathway mentioned. This referral pathway is either used as a stop gap measure (to allow time for the other community pharmacy to order and receive the palliative care medication) or for alternate ongoing supplier of palliative care medication depending upon the client or care giver's preference.

> *"But what has happened is the other pharmacies in Canberra know that we stock these medications and that we're open after-hours. So sometimes they'll refer to us."* – Pharmacy staff

From the qualitative interviews it was identified that the ***Nurse Practitioner initiated referral pathway*** is utilised by ACT Health and Calvary Specialist Palliative Care Nurse Practitioners, for outpatient clinic clients as well as Residential Aged Care Facility (RACF) residents. Both Nurse Practitioners utilised this service during business hours (Monday – Friday, 9am – 5pm) consistent with their work schedules.

> *"So, what I just recently did was I rang and I gave a phone order, gave the patient the script. They went home with their community transport and then the pharmacist took the medication to the patient, and there was a little bit of education that I wanted done again about that medication and to make sure that they are okay setup at home, and so they did that which is brilliant. It's like that second check. It's a little bit more education when they're out of the hospital environment. They're in the home environment. They're not as stressed."* – Palliative Care Nurse Practitioner

Two referral pathways for clients/carers to directly access the After-hours service are described in the qualitative interviews. The most common of these relates to the ***client or carer being advised of the service by a health care profession***, such as a GP or Calvary Specialist Palliative Care staff.

> *"I'd say the more common scenario is that we have a patient come to us and they'd been referred to us by the palliative team after not being successful at their pharmacy."* – Pharmacy staff

The final external referral pathway is one where the client/care giver becomes aware of the after-hours service through ***community word-of-mouth***.

> *"… cause the program has been going for such a long time now, Nancy next door might've used the program when her husband was dying and then Rhonda down the street is having trouble and she's like, "Oh, there's this program."* – Pharmacy staff

The **internally initiated referral pathways** reflect two clinician and client/carer-initiated options. 1) client/carer not aware of service contacts pharmacy; 2) clinician not aware of service contacts pharmacy.

The interviews identified that ***clients or carers may contact an after-hours pharmacy*** to obtain timely access to the required palliative care medication without being aware of the service. They are either existing customers of the pharmacy or come to the pharmacy after unsuccessfully visiting a number of other pharmacies.

> *"And that's how we pick up a lot of local people. So, it might be that you've known Mr and Mrs Jones forever, but his dementia is getting worse and he's just been diagnosed with renal failure and he's not having dialysis, and so his wife is in there, who you've known for 10 years, and she's crying and she goes, "I just can't – I can't leave him." And you're like, "Hey! Well, we've got this program.""* – Pharmacy staff

"And I mean, the people who do come here, as I said before, often it will be that they've been to five different pharmacies and then they come to us and we see the script and you say, "You've come to the right place," and then they'll cry. And you'll be like, "Okay, I can see what's happening here. Let's just do whatever we can."" – Pharmacy staff

A second, less commonly accessed, internally initiated referral pathway is when a ***clinician not aware of the service contacts an after-hours pharmacy***.

"… occasionally [we] get bizarre phone calls. I say bizarre because they're often unexpected, from various wards of the hospital where it's just like, "Is there any chance you have this random medicine?" It's very odd but we're discharging someone, and we don't know, and then you're like, "Well, you actually called the right place, so yes."" – Pharmacy staff

To what extent are referral pathways working as intended?

The externally initiated referral pathways reflect six clinician and client/carer-initiated options. The referral pathways we have identified in this evaluation are broadly supportive of the After-hours service referral pathways working as intended. However, two referral pathways, the GP referral pathway and the community word-of-mouth pathway do not appear to be working to the extent originally intended. *Please refer to Section B. Qualitative Findings Perceptions of awareness and support for the After-hours service for further details. Areas of strength and improvement, and recommendations in relation to these findings are detailed in the final section of this report*.

Noting the After-hours service logic model, it appears that stronger GP uptake was envisioned, but based upon these qualitative interviews there appears to be limited uptake, and this might be related to service promotion activities and their awareness outlined in Section 5.

Key qualitative findings

- There are a range of referral pathways available to access the After-hours service.
- The referral pathways are accessed during business hours (i.e., Monday – Friday, 9am – 5pm) and outside of normal business hours.
- The Calvary Specialist Palliative Care clinician-initiated referral pathway appears to be working to the extent as originally intended.
- The GP referral pathway does not appear to be working to the extent as originally intended.
- The external community pharmacy-initiated referral pathway provides an alternate stop gap measure or ongoing supply option for clients and care givers.
- There were examples of the community word-of-mouth referral pathway being accessed but examples were also provided where the client or carer contacted a contracted pharmacy and had initially not been aware of the service.
- The community word-of-mouth referral pathway appears to be partially working to the extent as originally intended.
- A less commonly accessed referral pathway was when a clinician (in particular, a hospital clinician) was not aware of the service and contacted a contracted pharmacy. This referral pathway was not identified a priori in the After-hours service program logic.

Section C. Integration of quantitative with qualitative findings

- A range of referral pathways were available for palliative care patients/ carers to access the after-hours service.
- The Calvary Specialist Palliative Care clinician-initiated referral pathway appears to be working to the extent as originally intended and is the most common referral pathway.
- The GP referral pathway was not working as intended and was the less commonly accessed referral pathway.

Part 4. SERVICE PROMOTION

This part addresses the following evaluation objective:

9. To what extent are key stakeholders aware of and support the After-hours service?

Section A outlines information from quarterly reports on service promotion activities.

Section B provides qualitative insights on perceived support from different stakeholder groups.

Section C integrates the quantitative and qualitative findings of this part and the previous part, as whether the referral pathways are working as intended may be influenced by stakeholder awareness and support for the After-hours service.

Section A. Quantitative findings

Descriptive information on service promotion activities from the quarterly reports.

Details on service promotion activities were not consistently provided as part of the quarterly reports. Table 11 summarises information on service promotion activities in relation to the number of deliveries reported quarterly and cumulated annually, combined for both pharmacies.

- Service promotion activities were the most intense in the 2017 start-up period and in year 1. The highest number of annual deliveries is reported for year 1, which may have been influenced by the service promotion activities in the start-up.

- More regular reporting of service promotion activities is needed.

Table 11: Summary of service promotion activities by financial year/ reporting period

Financial Year	Quarter	Reported Yes/No	Activities Yes/No/ Unknown	Nature of Service Promotion Activities	Combined Quarterly	Combined Annual
	2017-Q4	Yes	*Yes*	All ACT medical centres contacted; in-services to Clare Holland House, medical & community nursing, palliative care team at Canberra Hospital, National Health COOP (7 sites across Canberra), My Medical Practice Charnwood	*239*	*239**
	2017-Q1	Yes	*Yes*		*471*	
	2017-Q2	No	Unknown		missing	
	2017-Q3	No	Unknown		missing	
	2018-Q4	No	Unknown		missing	*471**
Year1	2018 - Q1	Yes	Yes	Regular contact and attendance at Clare Holland House	538	
	2018 – Q2	Yes	Yes		520	
	2019 - Q3	Yes	Yes	2 CHN facilitated education events attended 13 meetings at Clare Holland Hours attended	458	
	2019 - Q4	Yes	Yes		373	1889
Year 2	2019 - Q1	Yes	No	0 CHN facilitated education events attended 0 meetings at Clare Holland Hours attended	132	
	2019 - Q2	Yes	No		292	
	2020 - Q3	No	Unknown		325	
	2020 - Q4	No	Unknown		436	1185
Year 3	2020 - Q1	Yes	Yes	1 CHN facilitated education events attended 1 Meeting with Clare Holland House	291	
	2020 - Q2	Yes	Yes		301	
	2021 - Q3	Yes	No		392	
	2021 - Q4	No	Unknown		511	1495

Section B. Qualitative findings

Perceptions of awareness and support for the After-hours service.

Evidence across multiple interviews indicates widespread awareness and support for the service amongst ***Calvary Specialist Palliative Care clinicians***.

> *"Yes, it's (the After-hours service is) talked about regularly… It tends to be around particular patients rather than abstract, so it tends to be, "Here is a particular person with a particular set of needs. If we run out of medication over the weekend, here is a plan as to how we might address that. The usual pharmacy is such and such a pharmacy. If for any reason they can't secure the medication via them, the after-hours services (is) available."* – Palliative Medicine Staff Specialist

> *"Oh, it's been absolutely fabulous... The doctor rings and does a verbal prescription with the pharmacist and then (pharmacy) …. they deliver the medication. How good is that?"*– Home Based Palliative Care Nurse

This finding is supported by the quantitative referral data and the service promotion activities which feature meetings with Clare Holland House staff.

Similarly, ***external community pharmacies*** in the ACT also appear to be broadly aware of and supportive of the service.

> *"Clare Holland House knows that we do the things that we do but, also, I've noticed that some other pharmacies have also started taking notice."* – Pharmacy staff

> *"But what has happened is the other pharmacies in Canberra know that we stock these medications and that we're open after-hours. So sometimes they'll refer to us. And we've got beautiful working relationships with them in they might do their regular Webster-packs, but eventually, they go, "No more oral medication." They go on a syringe driver but they might still get their Movicol or something through them or something. I don't know. But there's no stealing of patients. It's all very – if you need this medication at this time, I know that I can send you to Pharmacy 1. They're not gonna steal you. So, commercially, that goes quite well."* – Pharmacy staff

From the perspective of contracted pharmacy staff, ACT pharmacies appear to be broadly aware of the After-hours service. The attendance of a senior pharmacist (or pharmacists) at PEPA workshops, such as the Community Pharmacist Workshop, would likely support ongoing awareness of the After-hours service

General Practitioners, once aware of the service, anecdotally appear to support it, as evidenced by ongoing referrals.

> *"And I think that it's been really helpful that the doctors all know that we're the pharmacy to go to, 'cause often when doctors don't know, they – people do go from pharmacy to*

pharmacy, and that would be really difficult with COVID, and then we're the fifth pharmacy they come to and we go, "Oh, you've finally come to the right place. We can help you. We've got it all in stock." So, it's been really good that the doctors kind of know that we're the go-to place and that we can deliver anywhere in Canberra" – Pharmacy staff

"When they've experienced having a dying patient, then they've probably – whether it's been promoted to them, or they've found from Clare Holland House, or whatever, but I think it's been around for long enough now that they've personally experienced having a patient who's had this happen and realise that we're the pharmacy to go to" – Pharmacy staff

The attendance of a senior pharmacist (or pharmacists) at PEPA workshops, such as the CHN GP Palliative Approach Workshop would likely support ongoing awareness of the After-hours service for GPs. While this approach would seem to be more effective compared with contacting individual medical clinics to promote the after-hours service it is possible that these types of workshops are only attended by GPs with an existing interest in palliative care.

This is supported by participants who noted that there is room for improvement in relation to General Practitioner awareness of the service.

"I'm not quite sure about the familiarity that GPs have with the after-hour service" – Palliative Care Nurse Practitioner

"So, sometimes GPs would ring me and say, "Oh, look, we need to get this. Do you know how we can do it?" And so, I then give them that information. But I think that the GPs that I work with could've known more about it. I think they would've accessed it more, if they'd have known." – Palliative Care Nurse Practitioner

"it's just getting new prescribers on board that I think is an area we could focus much more on to bring about wider benefit." – Pharmacy staff

The qualitative data align with the quantitative data in that GPs only accounted for 14.9% of all reported referrals, despite being targeted by the service promotion activities as part of the meetings at Clare Holland House, CHN education events and the visits to the medical clinics at the start of the service. As noted by the pharmacies,

"Uptake of face-to-face in-services in medical centres has been relatively low. despite several offers. Particularly spreading the word and gaining access to GPs has been difficult. Most GPs are happy to receive information via fax or in the post." – Pharmacy staff

From the perspectives of the participants interviewed, there was variation as to ***client and carer*** awareness of the service.

"So, I think if she hadn't come to our pharmacy, she just wouldn't have been aware of what we can do for her" – Pharmacy staff

"So, the community talks about it as well." – Pharmacy staff

For clients and carers who became aware of the service, there was evidence to suggest that they supported the service.

> *"So, not a lot of patients are aware of that. And usually when we do tell them, they go, "Oh, that's great. That's one less thing I have to worry about. Thank you." And I've had that conversation over and over for a couple of years now."* – Pharmacy staff

> *"… the family didn't even really know about our program to support them so they were happy to know that there was something in Canberra that is helping families that are going through these tough times and that it went so seamless and it was all good. They were also happy that other side, 'cause they lived on the south side, so it was good to know that there was two sides of Canberra that could do that. They were just amazed"* – Pharmacy staff

The quantitative referral data suggest that 28.7% of referrals were from clients/ carers, however, we do not know whether they were referred to the contracted pharmacies by other pharmacies, found the After-hours service themselves through community word of mouth or from unsuccessfully contacting other pharmacies. The service promotion activities may have influenced community awareness.

Key qualitative findings

- There was awareness and support for the After-hours service amongst Calvary Specialist Palliative Care clinicians and external community pharmacies.
- It appeared that GPs were supportive of the After-hours service once they became aware of the service.
- There remains room for improvement in relation to GP awareness of the service which is likely impacting those accessing the service via the GP referral pathway.
- There was variable awareness of clients and carers with respect to the After-hours service. However, once aware of the service, there was anecdotal evidence that they then supported the service.

Section C. Integrating quantitative with qualitative findings

- The highest volume of service promotion activities was undertaken when the After-hours service was initiated in the 2017 start-up period.
- Over the funding period, there was some inconsistent reporting of service promotion activities.
- The COVID-19 pandemic impacted recent service promotion activities and may continue to do so in the immediate future.
- An underlying assumption appears to be that after-hours pharmacy staff attendance and promotion of the After-hours service at meetings at Clare Holland House would support maintenance of existing relationships with Calvary Specialist Palliative Care Services. There is some evidence to suggest that this may support referrals from Calvary Specialist Palliative Care Services clinicians. However, it is possible that pharmacists participating in PEPA placements at Clare Holland House and directly interacting with clinicians might be a more significant factor informing awareness and support for the After-hours service.
- Another underlying assumption appears to be that after-hours pharmacy staff attendance and promotion of the After-hours service at CHN facilitated education events would support maintenance of existing relationships with other clinicians such as GPs and external community pharmacies. However, there is still room for improvement in relation to GP awareness and/or use of the service as evidenced in both the quantitative referral data and qualitative data.
- Service promotion activities to increase awareness amongst the community has not been captured as part of quarterly reports, so it remains unclear whether previous efforts to increase community awareness of the service have worked (or not).
- The quantitative and qualitative data broadly supports Calvary Specialist Palliative Care Services and external community pharmacy awareness and support for the After-hours service.
- Once aware of the service, the quantitative and qualitative data broadly supports GP and client and carer support for the after-hours service.
- The quantitative and qualitative data broadly supports the view that hospital clinicians are seldom aware of the after-hours service, and the extent of their support (or otherwise) for the after-hours service could not be established.

Part 5. AFTER-HOURS PHARMACY CONTEXT

This part addresses the following evaluation objective:

10. To what extent do the program staff feel supported to carry out the program activities?

Section A provides qualitative insight on the extent to which staff feel supported.

Section A: Qualitative findings

To what extent do the program staff feel supported to carry out the program activities?

Both pharmacies have invested time and resources to develop an organisational culture so that staff are supported and can support each other to carry out the program activities

> *"I'm really proud of the SOPs we've built and put in place to support our teams delivering this program. So it's not relying on just me and Pharmacist 1."* – Pharmacy staff

> "*Everybody just gets on with it and understands it and it doesn't become a big deal. Everybody just steps up and so I think that – I think both pharmacies have done a good job of developing that culture so that everybody understands the importance of the program*." – Pharmacy staff

This culture is led from the pharmacy managers:

> *"Leadership at both pharmacies creates a culture that is program is critically important. Everything is dropped to make sure the palliative care patient takes priority- we move mountains to make sure the patient and carer experience is seamless, and as easy as it can be."* – Pharmacy staff

This culture is maintained via SOPs (including maintenance of the stock list) as well as specific education and orientation to staff.

> *"At a store level, I think we have done a really good job of educating all of the staff about the program and the importance of the program so that even the pharmacy assistants understand the program and know what's going on. So, if someone does present or if they answer a phone call, they have an understanding and know to refer it to the pharmacist because that is something that we do."* – Pharmacy staff

For pharmacy staff, the PEPA training has been essential to support pharmacists. During the program, 19 community pharmacists completed a three-day PEPA Clinical Placements and spent time in different parts of Clare Holland House including the Renal Supportive Care Clinic, PEACE

(Aged Care Specialist Palliative Care Team), HBPC (Homebased Palliative Care Team), Clare Holland House Outpatient Clinic and Clare Holland House Inpatient Unit. The training provided staff with the understanding of the palliative care context, the additional needs for prescribing medications and communication skills required to be able to discuss sensitive issues when interacting with carers.

> *"I think the honest answer to that is you need to see people dying to understand what they need when they're dying. In our work, physically at the pharmacy, I don't see patients actively dying at home or in end-of-life care. I had a perception of what it might look like but I had never actually seen it unless it was my family member, but even then, while I've had grandparents pass and things, I haven't actually physically been the one that their primary care during that time of life. So that's why the PEPA Program is really important"* – Pharmacy staff

The culture supporting staff is evidenced within each pharmacy and across pharmacies, as demonstrated by their working together. If one pharmacy did not have the medication, they coordinated with the other pharmacy to obtain and deliver the medication.

> *"… we didn't actually have the medication that they needed because we'd filled a palliative script for it earlier in that day. And so, we were getting more the next day, but we didn't know if that was going to be timely enough for them. And I was able to arrange with Pharmacy 2, who did have it in stock, and one of their pharmacists lives further south side, so we sort of met halfway between [the pharmacies], swapped the medication and then [I] went to do the delivery, to drop it off to the patient…"* – Pharmacy staff

An organisational culture with SOPs and leadership from the pharmacy managers was critical to the reliable and timely delivery of palliative care medications by the two contracted pharmacies to home-based palliative care patients. The pharmacy context is a key driver of the success of the After-hours service.

Key qualitative finding

- The two contracted pharmacies, through the leadership of the pharmacy managers, created a culture that supported the timely and reliable delivery of palliative care medications to home-based palliative patients. Staff knew what to do (through the SOPs in place) when a script for a palliative patient came in.

AREAS OF STRENGTH & AREAS OF IMPROVEMENT

Based on the evaluation findings, this section highlights areas of strength and areas where the After-hours service would benefit from improvement, including improvement from future research. As the evaluation found that client demand for service was closely related with service promotion, the presentation of strengths and improvement have been integrated.

Client demand for service (Part 1) and Service promotion (Part 4)

Areas of Strength

- There is clear and consistent evidence across multiple stakeholder groups that the After-hours service is reliable and provided home-based palliative patients with timely access to medications during contracted pharmacy opening hours. This is a clear strength of the program. Services are offered to clients at any distance.
- There was excellent reach of the service to home-based palliative care clients in the first 6 months of the program. This is likely due to the service promotion efforts.
- The PEPA workshops are invaluable to ensure a high-quality service. This carries an ongoing financial investment which is not currently budgeted in the CHN contracts and is presently absorbed for the most part by the contracted pharmacies.
- The contracted pharmacies have elected not to charge the $6.30 delivery fee to clients. This was done for administrative purposes but also to support increased access to needed palliative care medications.
- There are no issues with stock list maintenance. The stock list is automated through the pharmacy's point-of-sales software. Any items sold are automatically re-ordered.

Areas for Improvement

- Uncertainty in the contract may impact service promotion efforts. Even though funding is built into the contract for service promotion, the uncertainty of the program may undermine promotion efforts by pharmacy managers and, by extension, pharmacy staff.
- There are gaps in deliveries to suburbs within 10 km and between 10 and 20 km of the contracted pharmacies. This evaluation cannot determine why these gaps in delivery exist. Gaps in suburb coverage are *likely* due to multiple factors including: 1) clients and referral agents not being aware of the After-hours service; 2) other pharmacies having medications available; 3) other pharmacies having an existing relationship with a patient and ordering the medication in to ensure its ongoing availability; 4) longer opening hours of other pharmacies (e.g., until 11 pm); and 5) differences in the demographic profile, population density and land use mix of suburbs giving rise to differences in the demand for medications.
- The current service is promoted as an after-hours service; however, the contracted pharmacies close in the evenings at 8 or 9 pm. There may be an expectation by some that the pharmacies are open until 10 pm, 11 pm or midnight.
- More research is required to determine why these geographic gaps exist and whether these gaps impact the service's reach to home-based palliative care clients. There may not be a demand for these services if existing after-hours pharmacies e.g., the pharmacy on

Northbourne, which is open until 11 pm, may cover off on these deliveries. More research is required to determine whether demand for these services is required after 8 or 9 pm.

- Note that delivery data by suburb were only provided for 10 months and may not be representative of deliveries across the funding period. More data may be required to determine whether the gaps in deliveries are 'real'.
- Delays in contract renewal by CHN impacts deliveries in the first and potentially second financial quarters of the new financial year. Although CHN has an intention to renew the contract, the pharmacies perceive a level of uncertainty with the contract renewal and this affects their promotion efforts i.e., they are hesitant to promote a service to GP's and other prescribers if it will no longer be available.
- Drivers of demand relate to awareness of the service, and to some extent, workforce changes (e.g., rotations in and out of Calvary Specialist Palliative Care Services and new GPs in the ACT community) that impact the prescribers. Both awareness and workforce changes suggest a need for ongoing service promotion efforts.

Client needs, experience, and quality of life & After-hours impact (Part 2)

Areas of Strength

- In the ACT, the average emergency department palliative care separations cost ranged from $9,271 to $11,589. The average delivery cost for all deliveries and subsidised deliveries was estimated at $40.61 and $60.79, respectively. The qualitative data provides evidence consistent with the After-hours service alleviating client symptoms and improving carer's experience with end-of-life by reducing their stress and the burdens associated with medication administration. This allowed palliative care patients to stay at home and avoid ED presentations or hospital admissions. Based on the palliative care separation costs compared to the average After-hour medication delivery cost, the service is deemed to be value for money. In the absence of the After-hours service, palliative home-based patients may have been transported to the hospital, incurring cost to the health care system.
- For palliative care clients at home, the timely and reliable delivery of medication made them feel more comfortable by: alleviating pain symptoms, alleviating side effects of medications or treatments (e.g., vomiting), allowing for the timely treatment of secondary infections (e.g., bladder infection), alleviating mental health symptoms associated with illness (e.g., panic attacks) and promoting a sense of independence.
- From the perspective of health professionals interviewed, carers were satisfied with the After-hours services that were offered. The pharmacists provided information and support to ensure that clients were receiving quality medicines.
- The timely delivery of medication to palliative care clients at home had the effect of alleviating their symptoms and making them feel more comfortable and improving carer's experience with end-of-life by reducing their stress and the burdens associated with medication administration. This contributed to patients being able to spend more quality time with their family members at the end-of-life and for the palliative client to stay at home and avoid an ED presentation or hospital admission.
- Palliative care patients were able to die at home and have a good death which also benefitted their family members.

Areas for Improvement

- Research with carers is required to gain first-hand insight into their stories and experiences with this type of service. Their experiences will provide further insight into the impact of the medications on palliative care patients. Due to the sensitivity of the topic and timeframe for recruitment made we were unable to interview any carers.

Referral pathways (Part 3)

Areas of Strength

- The Calvary Specialist Palliative Care clinician-initiated referral pathway appears to be working to the extent as originally intended and is an area of prescribing strength.

Areas for Improvement

- Referrals from GPs and hospital could be improved as this referral pathway is not working as originally intended.

Service Promotion (Part 4) (see also responses to Part 1 and Part 3, above)

Area of Strength

- Pharmacies having funding for service promotion built into their contracts with respect to prescriber and community awareness raising is necessary to reach prescribers and the broader ACT community.

Area for Improvement

- The current contract requires the pharmacies to undertake two facilitated CHN events and regular attendance at meetings at Clare Holland House. These requirements should be expanded to reach other prescribers such as GPs and hospital prescribers.

After-hours pharmacy context (Part 5)

Area of strength

- An organisational culture with SOPs and leadership from the pharmacy managers was critical to the reliable and timely delivery of palliative care medications by the two contracted pharmacies to home-based palliative care patients. The pharmacy context is a key driver of the success of the After-hours service.

Area for improvement - None noted

RECOMMENDATIONS

This section highlights recommendations which, if implemented, could enhance the delivery of the After-hours service and its benefits to clients.

- Consider supplementing the contracts to remunerate pharmacies for pharmacists to attend the PEPA training.

- Consider supplementing the contracts to acknowledge that clients are not being charged the $6.30 delivery fee.

- For CHN to reduce or eliminate the uncertainty and delays in contract management renewal such that the pharmacies are not promising to deliver a service without a contract. Longer-term contracts would allow for sustainability of ongoing efforts and enable better planning of service promotion efforts and PEPA training for staff.

- CHN to work with ACT Health, Calvary Health, and contracted pharmacies to identify ongoing service promotion opportunities with GPs and other health professionals, including, but not limited to CHN GP palliative care focussed events, Clare Holland House education events, PEPA Community Pharmacist workshops. For noting: these service promotion efforts will likely help to strengthen uptake of existing referral pathways.

- Based on the service being value for money, CHN should continue to support the After-hours home based service.

- CHN to work with ACT consumer groups (e.g., HCCA, COTA) and contracted pharmacies to identify ways to obtain feedback on the After-hours service from clients/carers perspective.

- The referral types reported by the contracted pharmacies could be strengthened so we can work out exactly what referral pathway is being used. For example, increased clarity around referral types and their definitions whilst acknowledging the potential workload impacts upon contracted pharmacies delivering this service. Specifically, it would be beneficial to include external community pharmacy as a referral type, and record whether the carer had been advised of the service by a health professional or via community word-of-mouth (but only if the carer volunteered this information).

- CHN to work with ACT Health, Calvary Health, and contracted pharmacies to identify ongoing service promotion opportunities with GPs and other health professionals

- The referral pathways could be strengthened through service promotion efforts targeted towards GPs and hospitals.

- Find channels for Wanniassa and Charnwood Capital Chemists to be recognised for creating an organisational culture to support the After-hours service. There are likely aspects of this culture that are transferable to other services.

Overall Recommendation

Based on the current evaluation, the After-hours service is deemed to be value for money. The service was implemented with sufficient fidelity (i.e., implemented as planned) to support carers to administer medications and benefit palliative care patients. The timely and reliable delivery of medications to home-based palliative care patients was found to alleviate their symptoms allowing them to spend quality time at home with their families and avoid an ED or hospital admission. Thus, they were able to die at home and have a good death, which also seemed to benefit family members. What remains unknown is whether the reach of the service could be broadened for greater benefit given the issues noted with contract uncertainty, service promotion and the limited use of some referral pathways by some prescribers.

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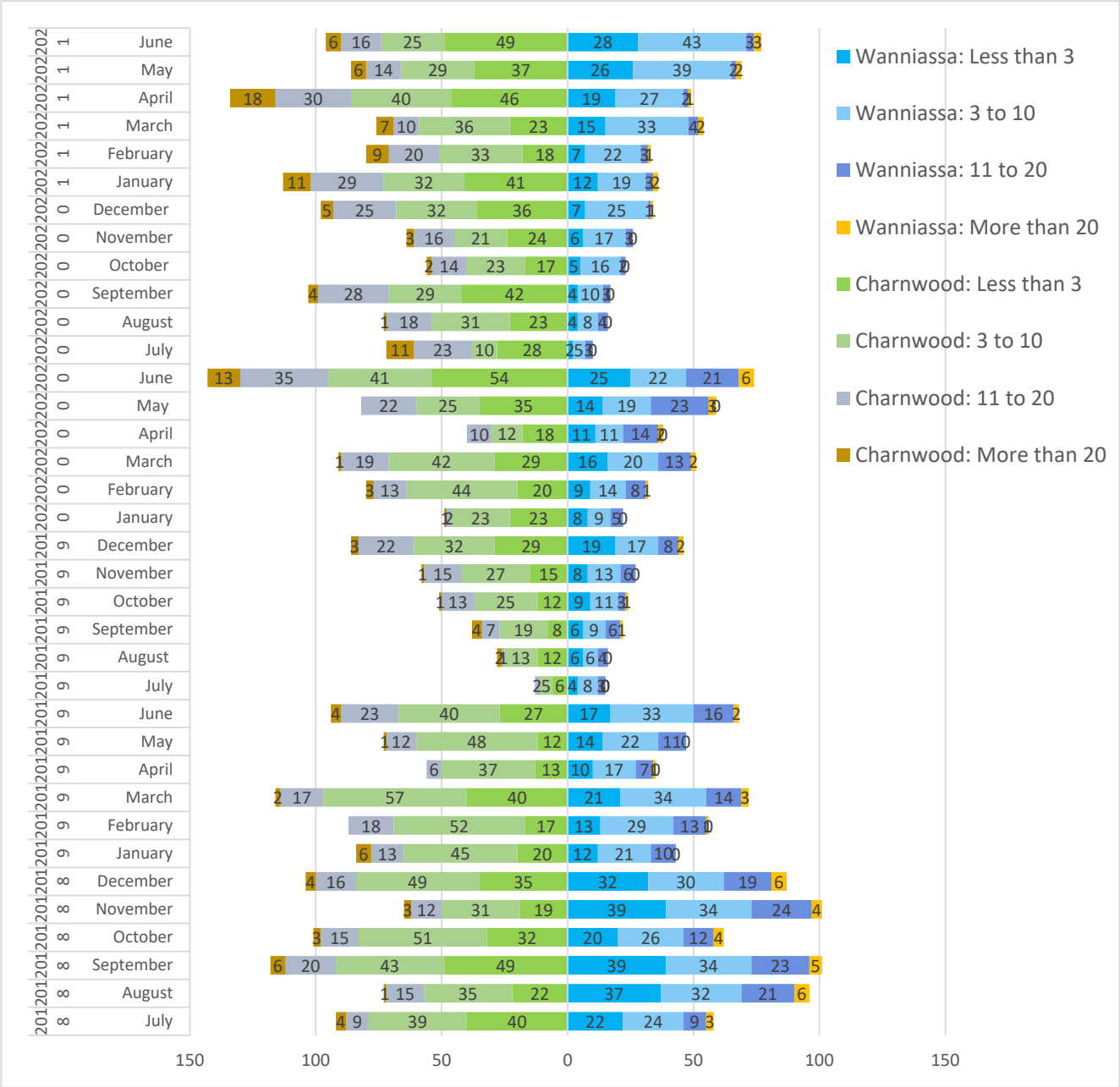
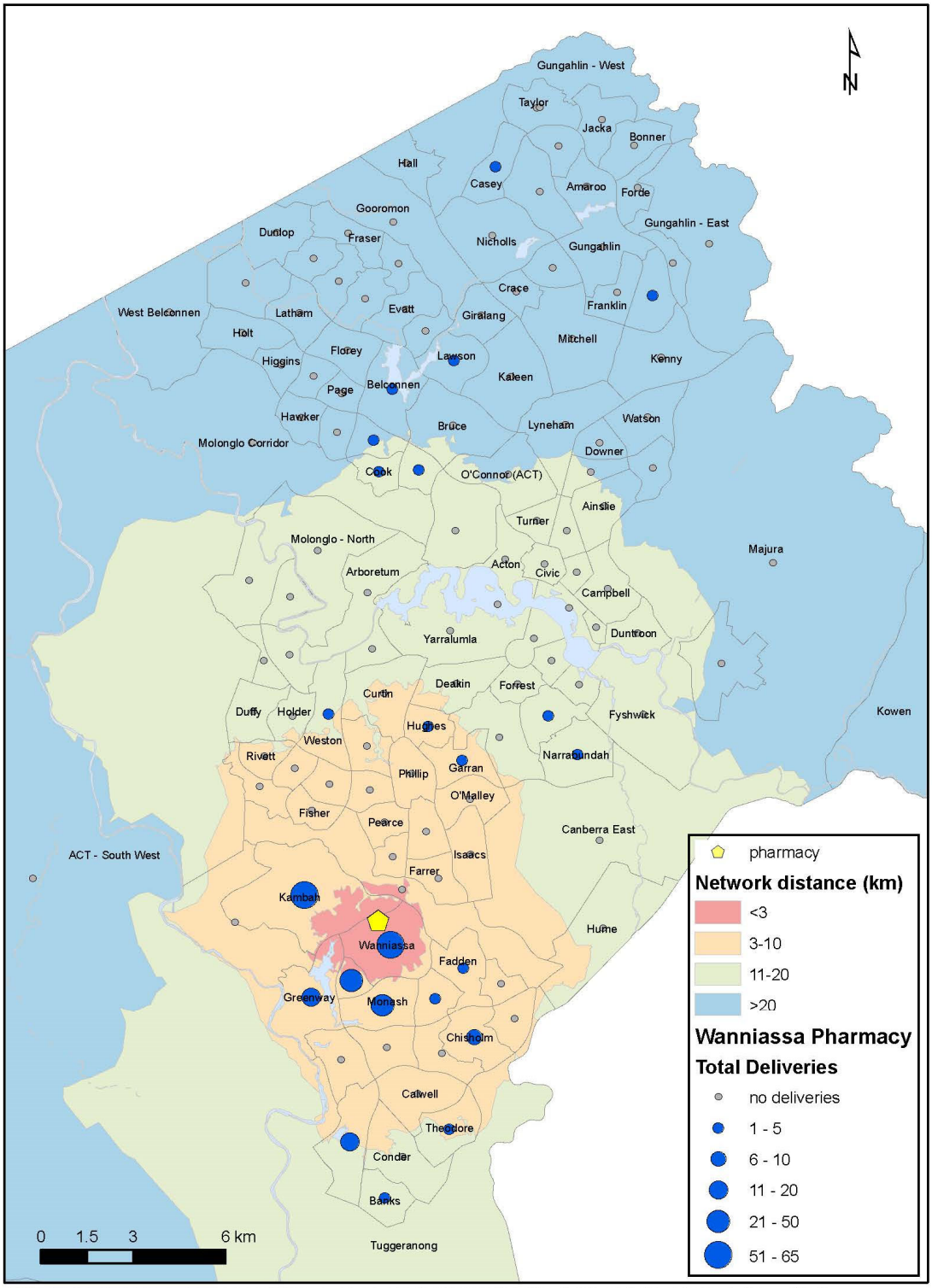
APPENDICES

Appendix 1: After-hour homebased palliative care unsubsidised and subsidised deliveries from Capital Chemist Wanniassa & Charnwood from July 2018 - June 2021



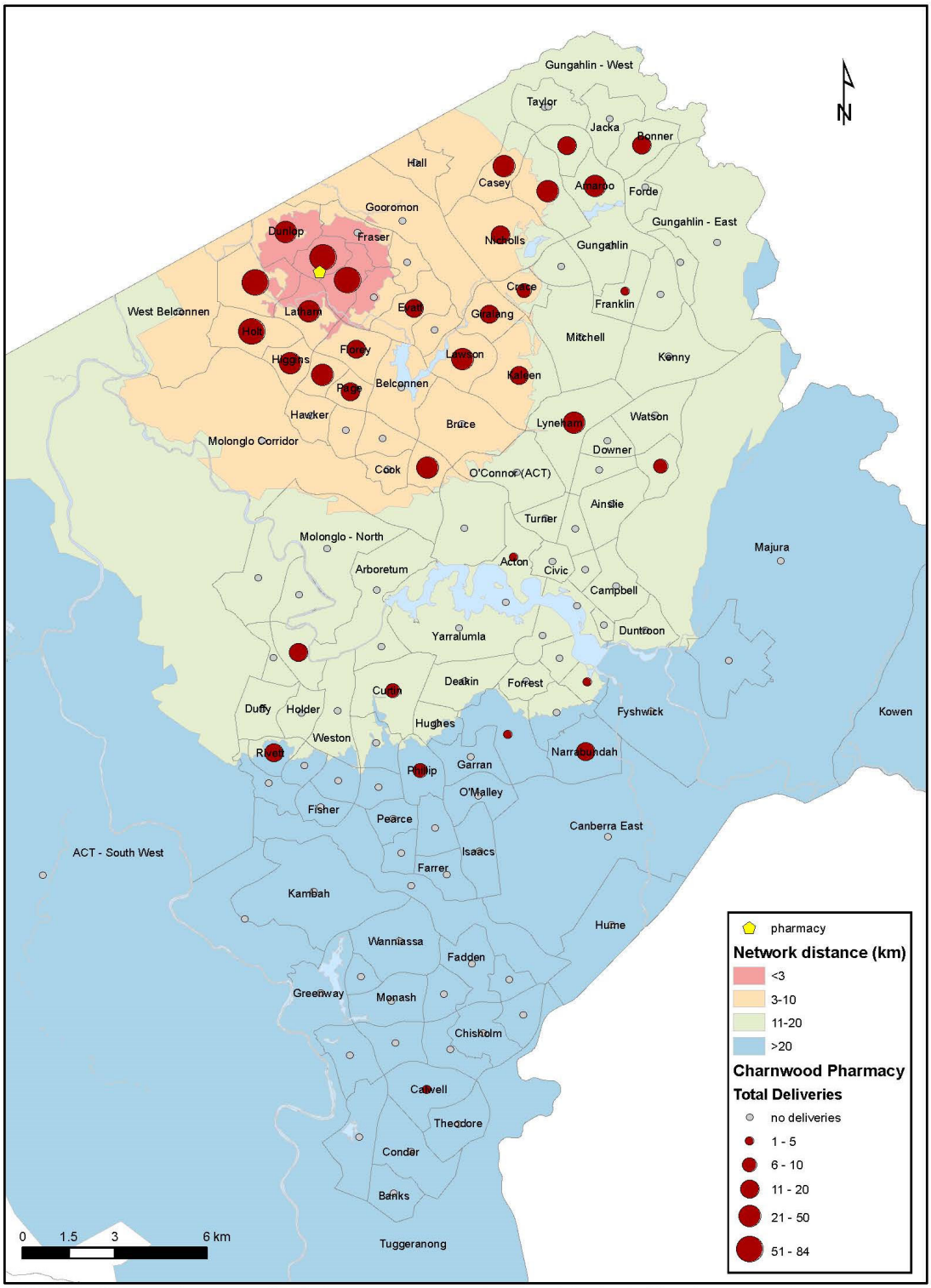
Appendix 2: Deliveries by distance category for Wanniassa Capital Chemist for 10 months spanning Year 3 (Q2, Q3, Q4) and Year 4 (Q1) quarterly reporting periods



NOTES: For Wanniassa pharmacy, data were aggegated for Kambah (<3km & >3km) & Wanniassa (<3km, >3km).

Author: V.Learnihan, UC HRI, 2021

Deliveries by distance category for Charnwood Capital Chemist for 10 months spanning Year 3 (Q2, Q3, Q4) and Year 4 (Q1) quarterly reporting periods



NOTES: For Charnwood pharmacy, data for Lawson were aggregated when deliveries to this suburb were coded across different distance categories.

Author: V.Learnihan, UC HRI, 2021