

MICAH PROJECTS



Breaking Social Isolation  
Building Community

# Integrated Care Demonstration Model

Homefront — an evaluation *(August 2021)*



**Inclusive Health Partnerships — Accessible healthcare for all**



# Integrated Care Demonstration Model

Homefront — An Evaluation

May 2021

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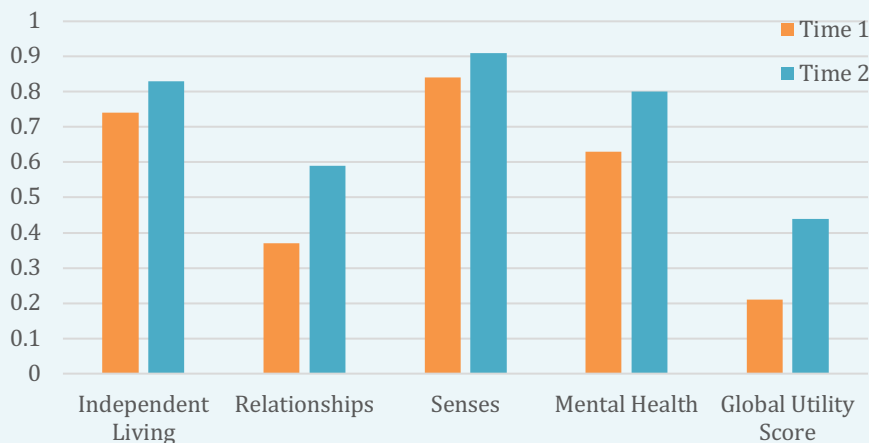
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## Homefront Evaluation – Baseline Characteristics

						
<b>44.3</b> Average Age	<b>63%</b> Identified as Homeless	<b>75%</b> Depression	<b>66%</b> Anxiety	<b>75%</b> Dehydration	<b>66%</b> Dental Problems	<b>75%</b> Hospital
<b>13%</b> Identified as Aboriginal/ Torres Strait Islander	<b>59%</b> Avoided Seeking Help	<b>28%</b> Brain Injury	<b>38%</b> PTSD	<b>28%</b> Hepatitis C	<b>28%</b> Foot/skin infection	<b>25%</b> Community Services

### Individual Outcomes



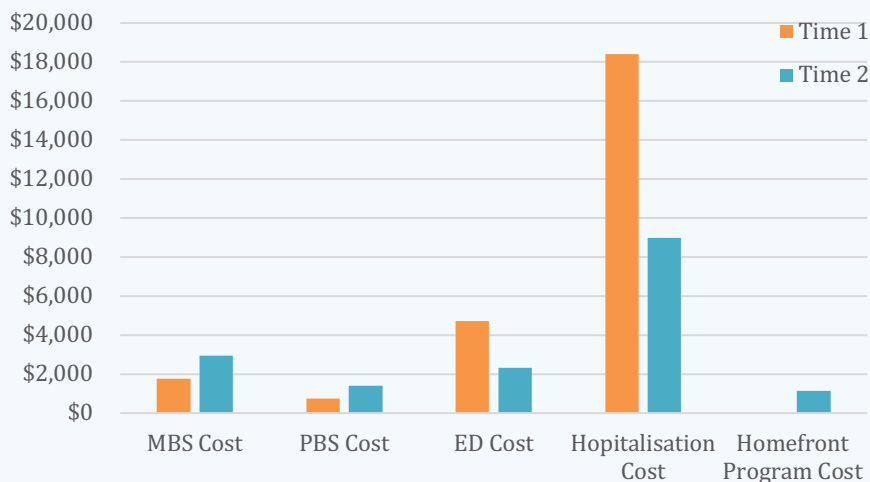
**Significant increase** in quality of life across all measured dimensions.

**Significant increase** in self- efficacy and self-management of health condition(s) across all measured dimensions.

**Significant decrease** in feelings of depression, anxiety and worry.

**Significant decrease** in feelings of isolation, avoiding help and sleeping rough.

### Healthcare System Outcomes



Better health management skills which in turn led to a shift to PBS/MBS usage and costs, resulting in more effective use of primary care and **significant decrease** in usage and costs in tertiary care.

**Decrease** in costs to health system of over \$7,500 per person enrolled in the Homefront Program.

## 1. Background

With the current pandemic that the world is currently experiencing and its impact upon the Australian economy, it is predicted that the number of people becoming at risk or experiencing homelessness in Australia will increase dramatically in the foreseeable future<sup>1</sup>.

Homelessness affects men and women, young and old, singles and families and comprises people of all ages<sup>2</sup>. It is well-documented that homelessness is associated with poor mental and physical health outcomes<sup>3</sup>. Being homeless puts an individual at increased risk of many health problems including psychiatric illness, substance use, chronic disease, musculoskeletal disorders, and infectious diseases such as hepatitis C, HIV infection, and tuberculosis<sup>4</sup>. For example, in a sample of 1,158 people who were homeless and living in Western Australia, 50% of the sample had tri-morbidity (i.e., the co-occurrence of substance use, serious medical problem, and mental illness)<sup>5</sup>.

Emergency Department (ED) is often the de facto health care provider for many people who experienced homelessness. A study conducted by O'Toole et al.<sup>6</sup> have found that approximately 25% of people who first became homeless in the USA seek care in ED. Similarly, in Australia, people who are homeless are also highly prevalent in seeking care in ED rather than using primary care services<sup>7,8</sup>. They are also more likely to have repeat ED presentations compared to the non-homeless persons<sup>9,10</sup>. Frequent ED users are particularly vulnerable to poor health outcomes. In part, these patients experience fragmented care, leading to unnecessary tests and procedures<sup>11</sup>. They are also more likely to require continuous care because of their physical and psychological comorbidities, which increase the likelihood of hospitalisation<sup>12,13</sup>. People who are homeless not only present to ED for their health conditions but also for vital basic resources such as food, water and shelter that are necessary for the homeless person's survival and subsistence<sup>14,15</sup>. For example, a study conducted by Rodriguez et al.<sup>14</sup> have found that nearly one-third of people who were homeless reported that hunger, concerns for their safety, and a lack of shelter were the reasons for their ED presentations.

The prevalence pertaining to the number of ED presentations associated with the homeless population are likely to be higher than the current estimate because homeless status is often not identified when a homeless person visits ED<sup>8</sup>. This may be due to reasons such as a lack of assertive housing screening, the patients providing addresses that are fictitious, and the stigma that are often associated with homelessness<sup>15,16,17</sup>.

Frequent inappropriate and preventable use of ED can significantly increase costs to the health system. Davies and Wood<sup>4</sup> reported that in the first 8 months of 2017 alone, approximately 30% (900) of clients of the 'Homeless Healthcare' (a charity organisation dedicated to providing healthcare to people who are homeless and marginally housed in Perth, Western Australia) accounted for 3135 presentations to ED at the Royal Perth Hospital, equating to an estimated cost of \$2.4 million (based on an average presentation cost of \$765).

Although homeless patients have complex health care needs leading to the person to take to emergency and hospital care to fulfil their health care and subsistence requirements, many of these ED presentations could be better and more efficiently managed in primary care settings.<sup>4</sup> Hospitals and ED handle acute health issues well but they are not well equipped when having to manage the chronic multi-morbidities which require continuous care<sup>3</sup>. Primary health care services on the other hand, can provide continuous care for existing medical and psychosocial conditions as well as delivering preventative health care to this population. The Integrated Care Model Demonstration Model (Homefront) Program described below aim to address and overcome the issues described above pertaining to the overuse of EDs for non-urgent health care.

### 1.1. The Integrated Care Model Demonstration Model (Homefront) Program

The Integrated Care Model Demonstration Model (Homefront) (most commonly referred to as the Homefront Program) is a collaboration between Micah Projects, Queensland Health's Princess Alexandra Hospital, and primary care providers. The Homefront Program is designed to deliver person-centred admission and discharge planning to achieve an integrated response across health, housing, and community service providers (Figure 1).

A key aim of the Homefront Project is to improve the services provided to vulnerable populations typically experiencing homelessness, unstable housing, social isolation, disability, and poorly managed multiple health conditions. These vulnerable persons are primarily referred to the Homefront Program due to hospitalisation or emergency department presentations at the Princess Alexandra Hospital. Some are also referred to the Homefront Program by community-based providers including Salvation Army and Street to Home. Specifically, the Homefront Program aims to:

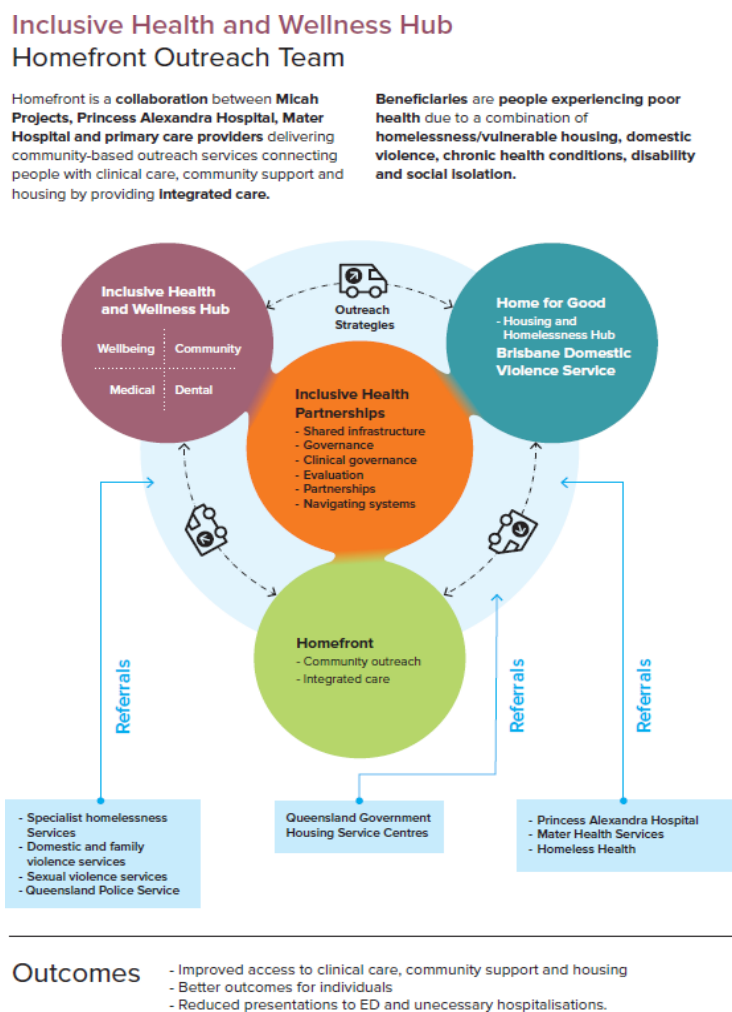
- » Provide an integrated care response for individuals with complex care needs that are not currently managed
- » Improve access to appropriate and timely health and community care services
- » Improve individual health outcomes



- » Improve individual experience and satisfaction with care
- » Increase self-management
- » Increase social support
- » Increase housing uptake
- » Reduce costs to the health system
- » Reduce emergency department presentations by people with a combination of health issues (e.g., chronic disease, mental health issues, drug and alcohol addiction, challenging behaviours)
- » Reduce the number of re-hospitalisations

Overall, this program seeks to provide a sustainable model of care that provides continuity, integration, and coordination of care to improve health and well-being at lower costs to the health system for vulnerable clients with complex and comorbid conditions.

Figure 1. Inclusive Health and Wellness Hub.



## 2. Methods

### 2.1. Data Analysis

Three key data sources were identified as important to the evaluation of the cost effectiveness and the health outcomes associated with the Homefront Program, and were used for analysis. These are:

1. Data collected during the operation, and by members, of the Integrated Care Mode Demonstration Model (Homefront) Program.
2. Medicare (MBS) and medications (PBS) utilisation data, (Federal Department of Human Services).
3. Patient hospital utilisation information (Queensland Health).

Fifty-five (54) participants consented for their data to be collected from MBS, PBS, and Health Information Services.

Initially, an exploratory descriptive analysis was undertaken for all key variables. This included descriptive statistics, identification of outliers, and plotting key variables over time. In addition, all cost and health outcome variables over the intervention period were examined.

Participants served as their own comparators for the pre-post program analysis. The two key areas of comparison were:

- » **Utilisation of health services.** Past usage was compared to the utilisation of services and medicines for prior to when a patient was enrolled in the program.
- » **Health and social measures.** Participants Homefront entry responses (Time 1) were compared to their exit responses (Time 2). Paired samples t-tests were conducted to evaluate the extent of the impact of the Homefront Program upon various individuals' health outcomes.

The appropriate tests of association (e.g. Pearson  $\chi^2$  test, logistic regression) were conducted to determine differences in the current standard of care and the Homefront Program.

### 2.2. Economic Evaluation

An alongside trial economic evaluation was undertaken, with primary outcomes of cost benefit/net benefit analysis and cost effectiveness analysis (formulated as the incremental cost-effectiveness ratio (ICER)) in the form of incremental cost per hospitalisation avoided, incremental cost per ED admission avoided,

incremental cost per integrated care response and incremental cost per quality-adjusted life- year (QALY) gained. Methodologies and techniques for analysis included:

- » To standardise costs, all costs were converted into a common year (\$2021) to account for spurious effects of inflation. This evaluation is the primary analysis which indicates if the Homefront Program is cost saving.
- » Quality-adjusted life years (QALYs) were estimated by scoring the AQoL-4D (using the standard Australian preference-based algorithm) and multiplying survival by the time in each health state (i.e. between survey time points). QALYs were also adjusted for confounding demographic and practice characteristics, and changes over time were assessed. Quality of life scores were collated with health state predictive factors such as age, frequency of admissions to hospital, recency of admission to hospital, social support, and so forth.
- » The Incremental Cost Effectiveness Ratio (ICER) was estimated from analyses above as difference in costs divided by the difference in QALYs. This analysis will indicate if the service provides value for money at an acceptable level (i.e. if the service is not cost-saving or cost- neutral). Analysis of costs to the Homefront Program and to MBS/PBS will be undertaken to identify increases/decreases in expenditure for the participants. This analysis will include retrospective data (4 years) to allow a sufficient history and trajectory of these patients.

### 3. Results – Section 1: Individuals Health Outcomes

#### 3.1. Total number of individuals who received any level of support from Homefront

Between October 2019 and May 2021, a total of 234 individuals received various levels of support (episodic care for 139 individuals and continuous care for 95 individuals) from the Homefront Program. Of these, 145 individuals agreed to have at least some data collected for use in the evaluation. This included 54 females and 89 males (prefer not to say = 2); 17% (n = 25) identified as Aboriginal and/or Torres Strait Islander (ATSI) (Table 1).

Variables	Number of Participants (%)^
Female	54 (37)
Male	89 (61)
Prefer not to say	2 (1)
Aboriginal	20
Aboriginal Torres Strait Islander	3
Both Aboriginal and Torres Strait Islander	2
Total ATSI	25 (17)
Neither Aboriginal nor Torres Strait Islander	88 (60)
Don't know	32 (22)

Table 1. Characteristics of participants who received any support during the Homefront trial (n = 145). ^Percentages rounded to the nearest whole number.

It is important to note that for the purpose of this evaluation we used data collected between October 2019 and November 2020. However, the Homefront Program is ongoing and to date (as of 8 March 2021), the program has provided support to 196 vulnerable individuals.

#### 3.2. Participants who completed baseline measures prior to participating in Homefront

67 individuals (male = 35, female = 30, prefer not to say = 2) who were homeless or at-risk of homelessness completed the baseline measures (VI-SPDAT, Assessment of Quality of Life – 4D (AQoL- 4D), Self-Efficacy for Managing Chronic Disease Scale). Of these participants, 17% (n = 11) identified themselves as ATSI (Table 2).

<b>Ethnicity</b>	<b>Number of Participants (%)</b>
Aboriginal	8
Aboriginal Torres Strait Islander	2
Both Aboriginal and Torres Strait Islander	1
Total ATSI	11 (17)
Neither Aboriginal nor Torres Strait Islander	34 (52)
Don't know	21 (32)
Missing data	<5

*Table 2. Characteristics of participants who completed baseline measures prior to participating in Homefront (n = 67).*

### 3.3. Participants receiving 'episodic care' from Homefront

The 'episodic care' group comprised 79 participants who had received some level of support from the Homefront Program through referrals from community outreach programs. Participants who declined ongoing support are often supported by other Micah Project teams. This group of participants provided written consent for accessing their Medicare Benefit Schedule (MBS), Pharmaceutical Benefit Scheme (PBS), and hospital data. This data, together with the data from the people who participated fully in Homefront, was used to conduct the economic evaluation of the program.

As shown in Table 3, 14 individuals from the episodic care group identified themselves as being ATSI. We have not presented further information for self-report measures for this group of participants (i.e. VI-SPDAT, AQoL, Self-Efficacy for Managing Chronic Disease Scale) as this data is not available.

<b>Ethnicity</b>	<b>Number of Participants (%)</b>
Aboriginal	12
Aboriginal Torres Strait Islander	1
Both Aboriginal and Torres Strait Islander	1
Total ATSI	14 (18)
Neither Aboriginal nor Torres Strait Islander	54 (68)
Don't know	11 (14)
Missing data	<5

*Table 3. Characteristics of participants receiving episodic care (n = 79).*

### 3.4. Data analysis for participants who completed self-report information at Time 1

In the following sections (3.4 and 3.5), we present analysis of participants' responses to self-report measures. Section 3.4 presents findings for all participants who completed the self-report measures at Time 1 (entry point) for the Homefront Program (n = 67). Section 3.5 presents the findings for participants who completed self-report measures at both Time 1 (entry) and Time 2 (exit) (n = 32).

#### Reasons for not completing the Time 2 measures

Of the 67 participants who completed the baseline measures at Homefront entry (Time 1), 35 did not complete the measures at exit point (Time 2). The most common reasons for not completing the measures at Time 2 were: interstate relocation, loss of contact, and, for some, due to their complex health conditions it was deemed inappropriate to have them complete a list of measures at Time 2.

#### Referral Points

Princess Alexandra Hospital was the organisation who referred the most participants to the Homefront program, followed by the Street to Home Service (Table 4).

Organisations	Number of participants (%)
Princess Alexandra Hospital	43 (64)
Street to Home	10 (15)
Other community-based services	14 (21)

Table 4. List of organisations and number of referred participants to the Homefront Program (n = 67).

#### Participants Characteristics

The findings presented below are self-reported information provided by participants prior to participating in the Homefront Program. Key characteristics of participants (n = 67) included:

- » 67 individuals (male = 35, female = 30, prefer not to say = 2) who were homeless or at-risk of homelessness.
- » Participants had an average age of 45.6 years (standard deviation (SD) = 13.46 years, range = 20 to 72 years).
- » All participants were fluent in English.
- » 11 participants (16%) identified as ATSI.
- » 65 participants (97%) indicated that they received various government income support (e.g., Disability Support Pension, NDIS, Newstart Allowance, Youth Allowance).

- » 41 participants (62%) stated that they were receiving social support prior to participating in Homefront. However, 43 participants (66%) indicated feeling isolated where they were living.
- » 53 participants (80%) stated that they were able to take care of their basic needs such as bathing, getting food and clean water, using a restroom, etc.
- » 41 participants (61%) reported feeling bored on most days and missed doing enjoyable activities.
- » 47 participants (73%) reported a history of abuse or trauma, with over half of these participants (53%) indicating not seeking help for the abuse/trauma they experienced.

### **History of homelessness**

- » 48 participants (71%) indicated that the reason for being homeless was caused by relationship breakdown, an unhealthy or abusive relationship, or because family or friends caused them to become evicted.
- » 32 participants (47%) identified as being homeless at the time they entered the Homefront Program. Of those, 12 (37%) indicated sleeping rough.
- » Although 11 participants (16%) stated that they were not homeless in the past year, 47 (70%) indicated they experienced homelessness between 1 and 5 times in the past year; 9 (13%) participants experienced homelessness more than 5 times in the past year.

### **Living independently**

- » 24 participants (37%) reported being unable to live independently due to a physical disability; 14 participants (21%) because of their mental health or brain injury.
- » Emergency Department (ED) and/or hospital use in the past 6 months
- » In the previous six months:
  - 59 participants (97%) reported having received some form of healthcare in ED, with 20 (34%) of those participants indicating that they had attended ED more than 5 times.
  - 53 participants (79%) indicated that they were taken to an ED by ambulance at least once. Of those, 40 participants (68%) reported between 1 and 5 times; 13 participants (22%) reported more than 5 times.
  - 45 participants (67%) reported being admitted as inpatient at least one time. Of those, 36 (80%) participants between 1 and 5 times, and 9 (20%) participants more than 5 times.
  - 19 participants (25%) reported being hospitalised as an inpatient in a mental healthcare facility. Of those, 17 participants (89%) 1 to 5 times, and 2 participants (11%) more than 5 times.

- 49 participants (74%) had used a crisis service, including phone hotlines. Of those, 37 participants (75%) between 1 and 5 times; 12 participants (25%) more than 5 times.
- 40 participants (60%) reported presenting to ED because they were feeling emotionally unwell.

### Physical health issues

As shown in Table 5, the five most common physical health issues reported by participants were dental problems, dehydration, asthma, hepatitis C and foot/skin infections. 34 participants (52%) reported that they avoided or were unable to seek help or care when they were sick or feeling unwell.

Physical Health Issues	Number of Participants (%)
Dental problems	30 (46)
Dehydration	22 (34)
Asthma	17 (25)
Hepatitis C	17 (25)
Foot/skin infections	15 (23)
Heart disease, arrhythmia, or irregular heartbeat	13 (20)
Liver disease, cirrhosis, or end-stage live disease	10 (15)
Diabetes	10 (15)
Cellulitis	8 (12)
History of stroke/heat exhaustion	7 (10)
Convulsions	7 (10)
Emphysema, COPD, or chronic lung condition	7 (10)

Table 5. Participants' reported physical health issues.

### Alcohol and drug history

- » 55 participants (83%) reported having an alcohol problem, and 16 participants (25%) stated that they had injected drugs in the past six months.
- » 34 participants (50%) stated consuming alcohol on a daily basis in the past month.
- » 31 participants (47%) reported that they went back to consuming alcohol after receiving treatment for alcohol dependency.



### History of brain injury and mental health

- » 16 participants (23%) indicated having had a serious head injury or head trauma.
- » As shown in Table 6, most participants reported having depression (76%) and/or anxiety (68%), with a relatively high number of participants suffering from PTSD compared to the general population (37%).
- » 22 participants (34%) reported being brought to hospital against their will due to mental health issues.

Mental Health Issues	Number of Participants (%)
Depression	51 (76)
Anxiety other than PTSD	46 (68)
PTSD	25 (37)
Bipolar Disorder	15 (22)
Schizophrenia	12 (18)
Psychosis	11 (16)
Borderline Personality Disorder	8 (12)
Obsessive Compulsive Disorder	2 (3)
Eating Disorder	6 (9)

Table 6. Participants' reported mental health issues.

### Self-Management

The Self-Efficacy for Managing Chronic Disease Scale is a 6-item measure used to assess individuals' level of self-efficacy/confidence in managing their health condition(s). Scores range from 6 to 60, with higher scores representing greater level of self-efficacy in managing health conditions.

Sixty-six (66) participants completed the Self-Efficacy for Managing Chronic Disease Scale at Time 1. The average score at enrolment in the Homefront Program was 27.7 (SD = 11.07, range = 6 to 60), indicating that participants on average displayed low to moderate level of confidence in managing their health conditions.

## Summary

- » Most participants were referred to the Homefront Program by the Princess Alexandra Hospital.
- » All participants were fluent in English and most received various government income support.
- » A significant number of participants reported a history of abuse or trauma, with over half of these participants reporting not seeking assistance to help them manage the long-term issues that are often associated with traumatic events.
- » Over 70% of the participants reported that the reasons for being homeless were caused by various forms of relationship breakdowns. Many participants (84%) indicated that they were chronically homeless, with some participants (13%) finding themselves homeless more than 5 times in the past year.
- » Prior to the Homefront Program, participants reported using emergency departments as a de facto healthcare provider (97% indicated receiving some form of healthcare in ED in the past six months).
- » Alcohol and drug use are significant problems that many participants indicated experiencing difficulty managing.
- » In terms of mental health, levels of depression, anxiety, and PTSD are very prevalent in this cohort, with 76% and 68% reporting feeling depressed and anxious, respectively, and 37% reporting suffering from PTSD. As well, 23% of participants indicated a history of brain injury.
- » Dental problems and dehydration were the two most common physical health issues that participants reported.
- » The significant number of physical and mental health issues reported prior to taking part in the Homefront Program were reflected in the low quality of life levels reported in the AQoL, especially in the 'relationships' and 'mental health' dimensions.
- » Participants lacked confidence in managing their chronic conditions.

### 3.5. Data analysis for participants who completed self-report information at Time 1 and Time 2

This section provides participants characteristics and detailed comparison of individual health outcomes generated by the self-report measures (VI-SPDAT; AQoL-4D, Self-Efficacy for Managing Chronic Disease) at two time points: Homefront Program entry (Time 1) and exit (Time 2). In addition, participants completed the Short Assessment of Patient Satisfaction (SAPS-7) at Time 2.

#### Referral Points

As shown in Table 7, most participants who completed the self-report measures at Time 1 and Time 2 were referred from the Princess Alexandra Hospital.

Organisations	Number of Participants (%)
Princess Alexandra Hospital	24 (75)
Street to Home	3 (9)
Other community -based services	5 (16)

Table 7. List of organisations and number of referred participants to the Homefront Program.

#### Participants characteristics at Time 1

The findings presented below are self-reported information that participants provided prior to participating in the Homefront Program.

Key characteristics of participants (n = 32) included:

- » The sample included 32 participants (male = 17, female = 15).
- » Participants had an average age of 44.25 years (SD = 13.84 years; range = 21 to 67 years).
- » 4 participants (13%) identified as ATSI.
- » 20 participants (63%) identified as being homeless.
- » 28 participants (87%) indicated that the reason they were homeless was caused by a relationship breakdown, an unhealthy or abusive relationship, or because of family or friends caused them to become evicted.
- » The four most common physical health issues reported were:
  - Dental problems (63%)
  - Dehydration (41%)
  - Hepatitis C (31%)
  - Foot/skin infections (31%)

- » The three most common mental health problems reported were:
  - Depression (75%)
  - Anxiety (66%)
  - PTSD (38%)
- » 9 participants (28%) reported that they have had a serious brain injury/head trauma.
- » 23 participants (72%) reported a history of abuse and trauma, with over half of these participants (56%) indicating not seeking help for the abuse/trauma they have experienced.

### Participants' characteristics collected at Time 1 and Time 2

As shown in Figure 2, participants reported the following changes from Time 1 to Time 2:

- » 18 participants (53%) indicated having some level of support prior to participating in the Homefront Program. At Time 2, the number of participants reporting feeling supported **significantly increased** by 23% of participants,  $\chi^2(33) = 6.87, p=.009$ .
- » The number of participants who reported feelings of isolation **decreased** by 49%,  $\chi^2(32) = 1.16, p=.281$ .
- » The number of participants who reported sleeping rough **significantly decreased** by 10%,  $\chi^2(29) = 6.72, p=.010$ .
- » The number of participants who reported who reported avoided help or care **decreased** by 10%,  $\chi^2(31) = 3.88, p=.143$ .

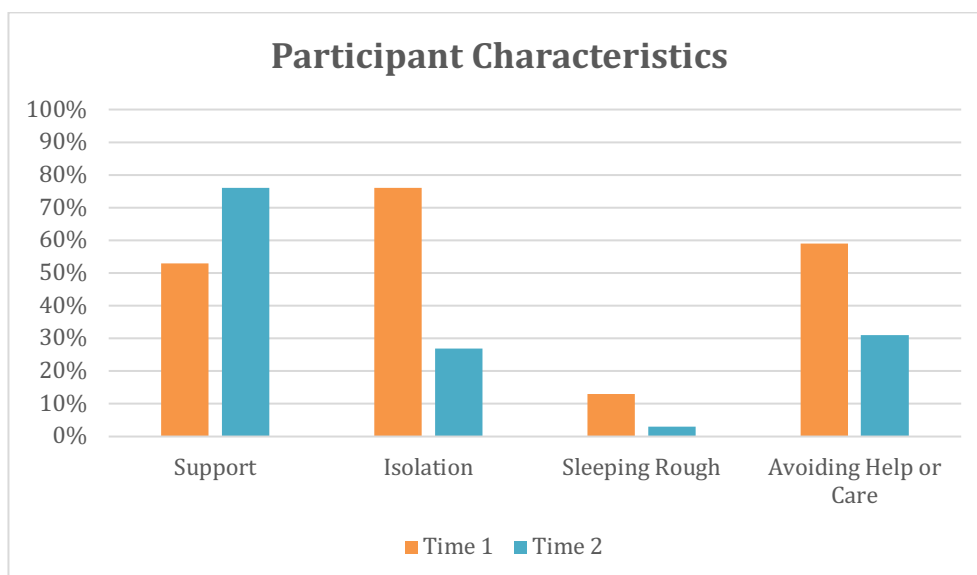


Figure 2. Participants characteristics at Time 1 and Time 2.

### Link to community services

Of the 32 participants, nine (28%) reported that the workers at Homefront connected them with other community services and of those, seven participants (78%) indicated that they were using the services that they had been referred to by workers at Homefront.

### Quality of Life

As shown in Figure 3, participants level of quality of life tended to improve after participating in the Homefront Program.

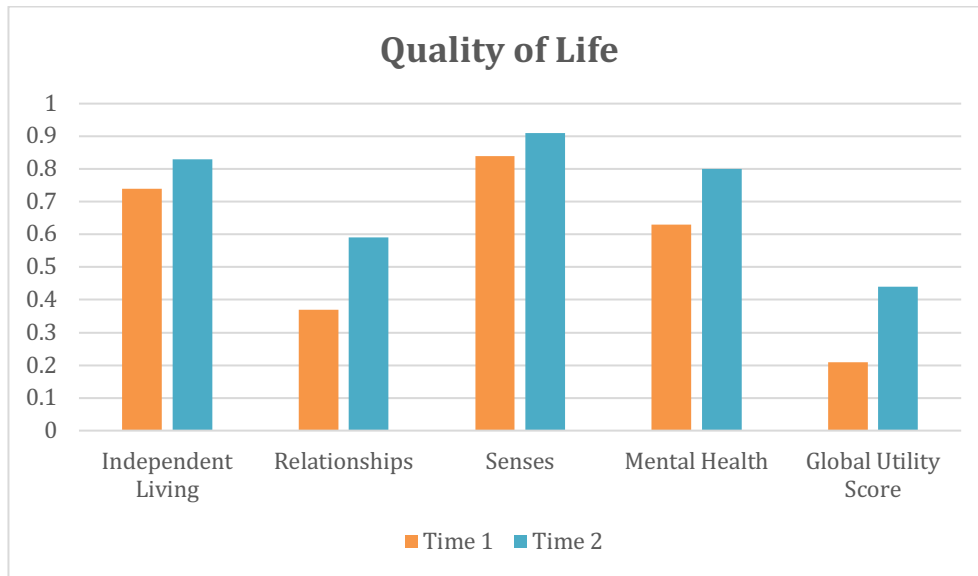


Figure 3. Quality of Life as measured with the AQoL-4D at Time 1 and Time 2 (n = 34).

Paired samples t-tests were conducted to assess the impact of the Homefront Program on participants' scores for each of the AQoL-4D dimensions. There were statistically significant increases in participants quality of life from Time 1 to Time 2 across all four dimensions and the global utility score of the AQoL- 4D:

- » 'Independent Living' **significantly increased** by 0.09,  $t(33) = 2.28$ ,  $p=.029$ .
- » 'Relationships' **significantly increased** by 0.22,  $t(33) = 3.56$ ,  $p<.001$ .
- » 'Senses' **significantly increased** by 0.07,  $t(33) = 2.33$ ,  $p=.026$ .
- » 'Mental Health' **significantly increased** by 0.17,  $t(33) = 3.47$ ,  $p<.001$ .
- » The AQoL-4D global utility score **significantly increased** by 0.21,  $t(33) = 4.36$ ,  $p<.001$ .

These findings indicate that the Homefront Program was very effective in increasing participants' quality of life, especially in the relationship and mental health domains.

### Depression, Anxiety, and Worry

Participants' feelings of depression, anxiety, and worry were assessed using Item 11 of the AQoL-4D: 'Thinking about how you generally feel'. Scores on this item range from 1 = 'I do not feel anxious, worried or depressed' to 4 = 'I am extremely anxious, worried or depressed', that is, higher scores indicate greater feelings of depression, anxiety, and worry.

A paired-samples t-test revealed a statistically **significant decrease** in depression, anxiety and worry scores from Time 1 (mean (M) = 3.1, SD = 0.9) to Time 2 (M = 2.2, SD = 1.0),  $t(33) = 4.05$ ,  $p < .000$  (Figure 4).

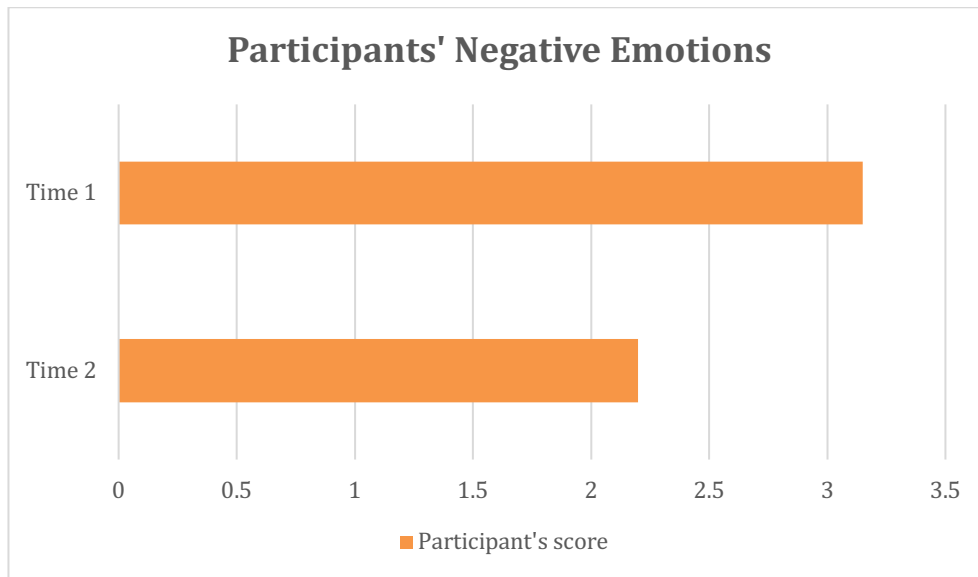


Figure 4. Participants' negative emotions at Time 1 and Time 2 (reported levels of depression, anxiety and worry).

### Self-Management

A paired samples t-test was conducted to evaluate the impact of the Homefront Program in increasing participants' level of confidence in managing their health condition(s). There was a statistically **significant increase** in scores on the Self-Efficacy for Managing Chronic Disease measure between Time 1 (M = 26.22, SD = 8.28) and Time 2 (M = 38.56, SD = 12.98),  $t(31) = 5.38$ ,  $p < .000$ .

As shown in Figure 5, participants' level of confidence increased in all six key areas that are critical in self-managing chronic condition(s). There were **significant increases** in each self-management and self- efficacy category between Time 1 and Time 2:

1. 'Fatigue' –  $t(31) = -3.96$ ,  $p < .000$  .
2. 'Physical discomfort and/or pain' –  $t(31) = -2.84$ ,  $p < .008$ .

3. 'Emotional distress' –  $t(31) = -5.52, p < .000$ .
4. 'Other symptoms and/or health problems' –  $t(31) = -.510, p < .000$ .
5. 'Activities needed to reduce the need to see a doctor' –  $t(31) = 4.00, p < .000$ .
6. 'Doing things other than just taking medication to reduce impact of illness on daily life' –  $t(31) = -4.82, p < .000$ .

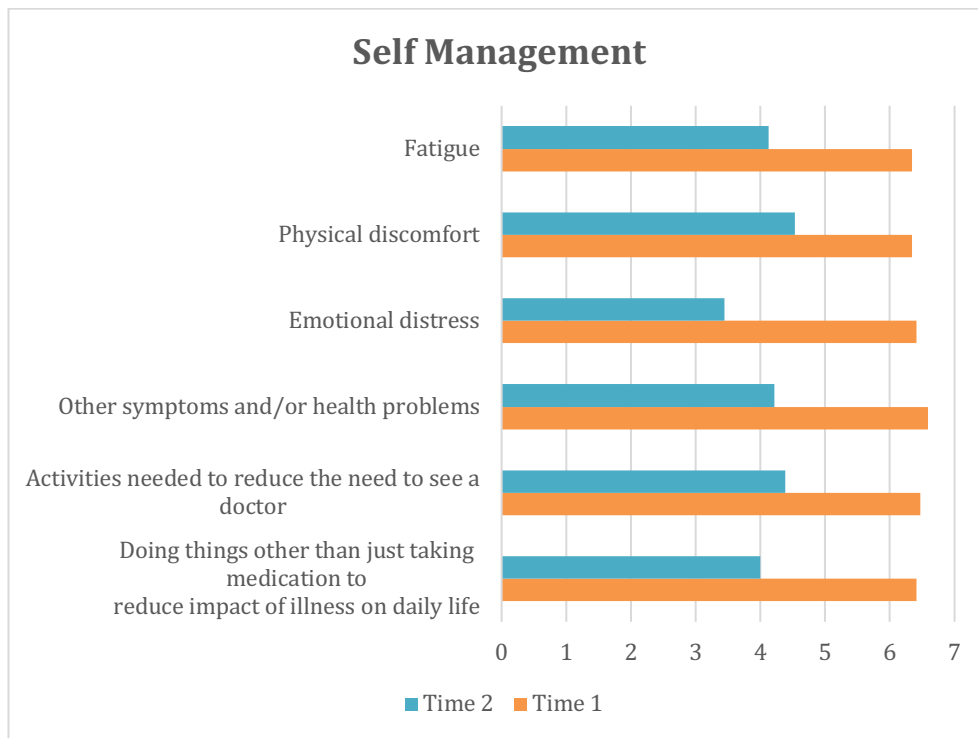


Figure 5. Self-Management as Assessed by the Self-Efficacy for Managing Chronic Disease.

### Patient Satisfaction

The Short Assessment of Patient Satisfaction (SAPS-7) is a seven items measure assessing the core domains of patient satisfaction including:

1. **'Treatment satisfaction'** – *i.e. due to your interaction with the Homefront Program, how satisfied are you with the effect of your treatment/care from the doctors, allied health professionals (including social workers) and other services (e.g. dentist, massage therapist)?*
2. **'Explanation of treatment results'** – *i.e. due to your interaction with the Homefront Program, how satisfied are you with the explanations the doctors, allied health professionals (including social workers) and other services (e.g. dentist, massage therapist) has given you about the results of your treatment/care?*

3. **‘Health professional diligence’** – i.e. the doctors, allied health professionals (including social workers) and other services (e.g. dentist, massage therapist) were very careful to check everything, when interacting with me during the Homefront Program.
4. **‘Participation in treatment decision’** – i.e. due to your interaction with the Homefront Program, how satisfied were you with the choices you had in decisions affecting your health care?
5. **‘Respect from the health professionals’** – i.e. due to your interaction with the Homefront Program, how much of the time did you feel respected by the doctors, allied health professionals (including social workers) and other services (e.g. dentist massage therapist)?
6. **‘Consultation time’** – i.e. due to your interaction with the Homefront Program, the time you had with the doctors, allied health professionals (including social workers) and other services (e.g., dentist massage therapist) was too short.
7. **‘Satisfaction with care received’** – i.e. are you satisfied with the care you received from the Homefront Program?

Scores on each item range from 0 to 4 and total scores range from 0 to 28, with higher scores indicating greater patient satisfaction. Participants’ average score on the Short Assessment Patient Satisfaction Scale at exit point was 20.2 (SD = 3.2, range = 14 to 26), indicating that participants were overall very satisfied with the Homefront Program. However, as shown in Figure 6, there are two areas that participants reported needed improvement – health professionals’ diligence and consultation time.

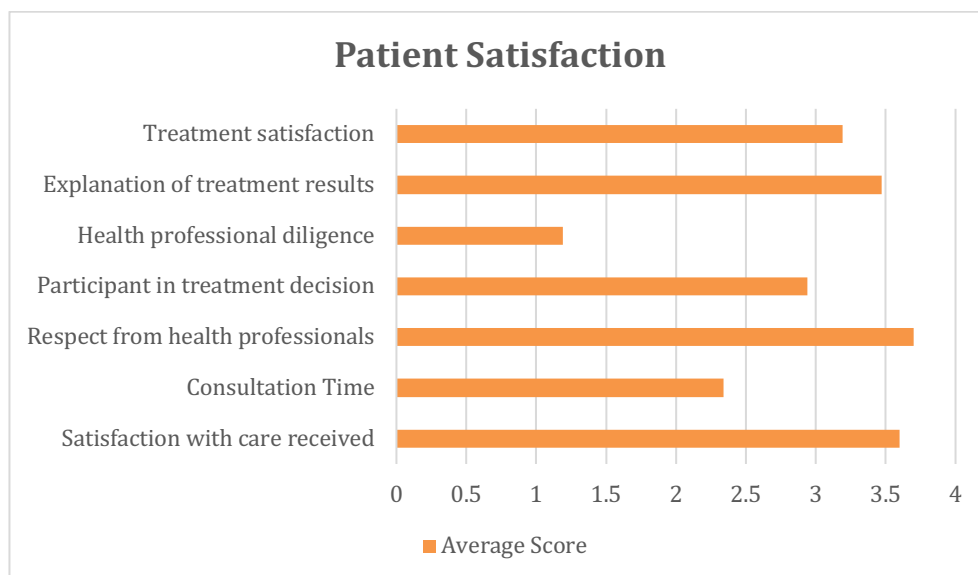


Figure 6. Patient Satisfaction as measured by SAPS-7 (scale of 0 to 4 for each domain).



## Summary

- » Overall, there were significant improvements in participants scores on all outcomes from Time 1 to Time 2. When exiting the Homefront Program, participants indicated feeling less isolated and were more likely to seeking help when needed. For those who were linked to other community services, most reported being engaged in using these services.
- » Participants reported higher level of quality of life post-Homefront, mainly in terms of the 'Relationships' and 'Mental Health' AQoL dimensions. In addition, participants reported feeling less depressed, anxious, and worried.
- » After participating in the Homefront Program, participants level of confidence in self-managing their health condition(s) were significantly higher in all aspects of self-management. They were confident in managing their level of fatigue, physical discomfort and pain, emotional distress, other health symptoms that they may be experiencing. They were also more likely to engage in activities to help them manage their health condition(s), so as to decrease the need to see a doctor and to engage in tasks that help to significantly reduce the impact of their illness(es) on everyday life.
- » Participants reported a high level of satisfaction with the Homefront Program, mainly in terms of feeling respected by the various health professionals they liaised with during the program, the level of explanation about their treatment provided by the various health professionals and services (e.g. dentist, massage therapist), and the level of satisfaction they felt regarding the treatment they received during the program.
- » Based on the current findings, it is clear that the Homefront Program is highly effective in significantly improving individual health and wellbeing outcomes of vulnerable people with complex physical and mental health condition(s).

### 3.6. Limitations

The information collected in the above evaluation is from the perspectives of the participants, based on self-report measures. Information gathered in this way may be impacted by self-report biases, e.g. participants may inaccurately recall information, or may exaggerate or under-report the severity and frequency of symptoms and other information. In addition, some participants may simply misunderstand or be mistaken by the content of the items on the surveys.

## 4. Results – Section 2: Economic Evaluation

The second part of this report presents and discusses in detail the estimate of the cost effectiveness associated with the Homefront Program. These cost estimates will be based on the data provided by the Department of Human Services (Pharmaceutical Benefits Scheme and Medicare Benefits Schedule) and the Queensland Health data for patient hospital information.

### 4.1. Hospital usage

Across both hospital stays and ED presentations, length of **stay significantly decreased** from pre- Homefront to post-Homefront. Length of hospital stay was shorter after the program (M = 5.3 days, SD= 10.5) than before (M = 10.9 days, SD = 17.9); a decrease of 5.6 days (95% confidence interval (CI), -11.0 to -0.2, p=.042). Length of stay for an ED event **decreased** by 773 minutes (12.9 hours) (95% CI, -1464.0 to -83.9, p=.028) from pre-Homefront (M = 1573, SD = 2362) to post-Homefront (M = 800, SD = 1699).

The number of ED presentations also **significantly decreased** from pre-Homefront (M = 5.3, SD = 8.0) to post-Homefront (M = 2.6, SD = 5.2), representing an average decrease of 2.7 presentations (95% CI, -4.8 to -0.5, p=.015). Results are presented in Figure 7.

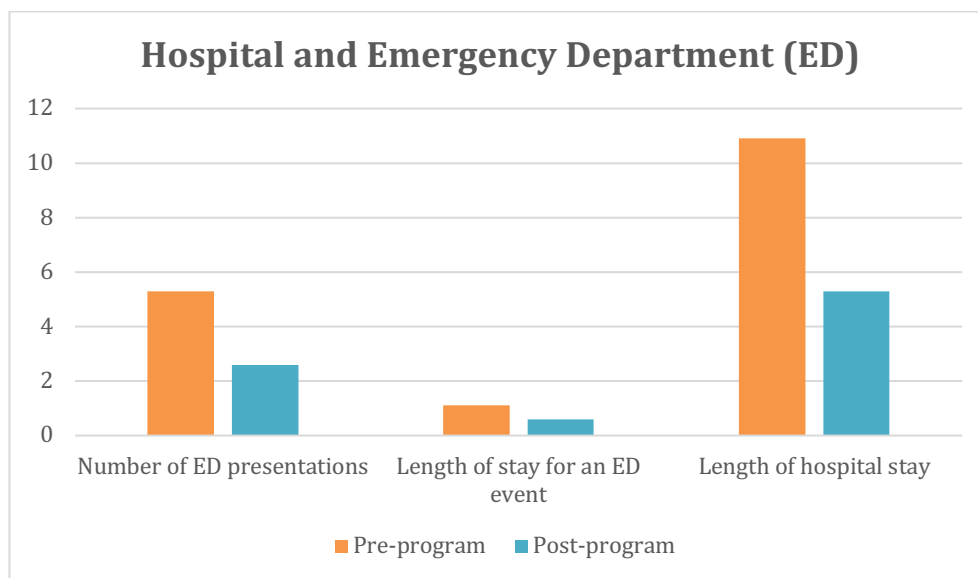


Figure 7. Hospital and ED events and lengths of stay pre- and post-Homefront.

## 4.2. Cost outcomes

Based on the cost data to December 2020, the average cost of hospital stay and ED event are presented in Table 8, due to financing processes the costs for 2021 was not available at time of writing the report. Therefore, the average costs were applied to the length of stay in hospital and the per ED event to calculate the pre-post Homefront difference.

Organisations	Number of Participants (%)	Organisations
Average ED cost per event	\$899 (49.9)	\$798 to \$999
Average hospital cost per day	\$1,687 (146.8)	\$1,390 to \$1,984

Table 8. Average costs of healthcare usage.

The breakdown of total costs pre- and post-program are presented in Figure 8 and Figure 9. The total cost decreased from \$25,621 (SD = \$35,955) pre-program to \$17,965 (SD = \$20,869), representing a decrease of \$7,656 (95% CI, -\$18,426 to \$3,112, p=.159).

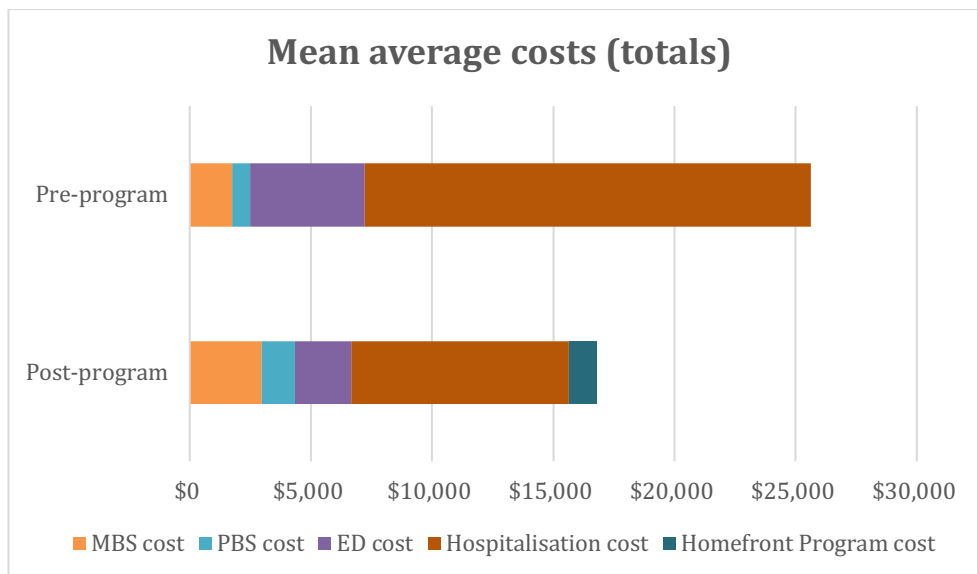


Figure 8. Mean average costs pre- and post-Homefront (totals).

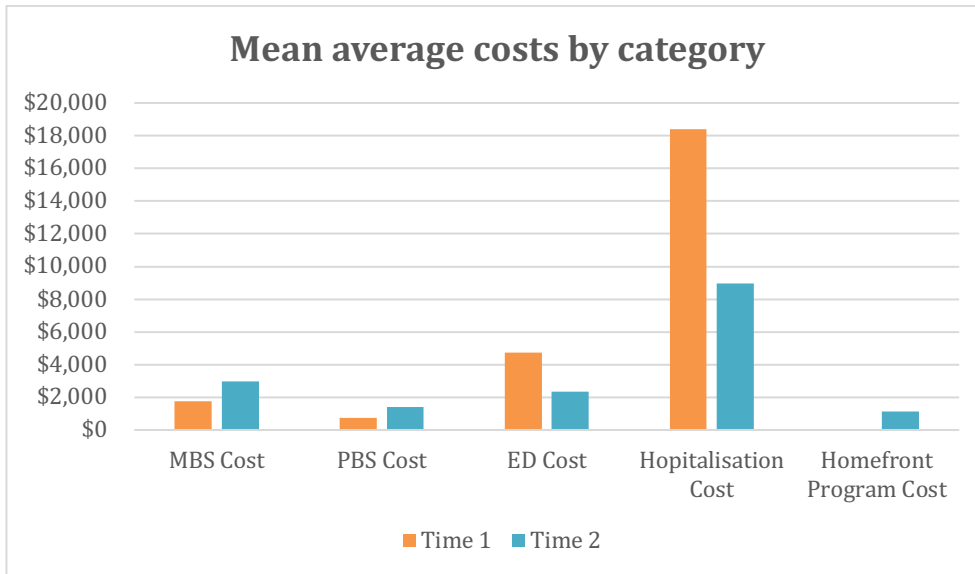


Figure 9. Mean average costs pre- and post-Homefront by cost category.

Individual cost centres changed from pre- to post-Homefront as follows:

- » The total average cost of MBS **significantly increased** post-program by \$1,210 (95% CI, -\$2,104 to -\$317, p=.008).
- » The total average cost of PBS **increased** post-program by \$718 (95% CI, -\$2,255 to -\$819, p=.356).
- » The total average cost of ED presentations **significantly decreased** post-program by \$2,396 (95% CI, -\$484 to -\$4307, p=.015).
- » The total average cost of hospitalisation **significantly decreased** post-program by \$11,833 (95% CI, -\$22,298 to -\$1,368, p=.027).

### 4.3. Cost analysis for overall project investment

The overall investment in the project was \$825,000 over 20 months. During this time, the Homefront Program saw 234 participants. This translates as an average cost to the Homefront Program of \$3,525 per participant. In a sensitivity analysis, this initial investment reduces the amount of cost savings, but still leads to a saving of \$6,213 per participant.

## 5. Discussion

Findings showed that the Homefront Program's multidisciplinary response model was highly effective in significantly improving individual health and wellbeing outcomes of vulnerable people with complex physical and mental health conditions.

After enrolling in the Homefront Program, the average length of hospital stay, number of ED presentations and length of stay for an ED event all decreased significantly for participants post- Homefront. Also, both the total cost of hospitalisation and total cost decreased, with the cost of hospitalisation decreasing significantly. These findings indicate support for the efficacy of the Homefront Program in terms of cost-effectiveness represented by a decrease in cost to the health system of over \$7,656 per person enrolled.

The initial clinical findings from the small sample of participants who completed the program at interim analysis are very positive. There were significant positive trends in levels of self-efficacy and quality of life. Participants also indicated greater level of support and a decrease in level of isolation since participating in the program, as well as greater stability regarding their housing situation.

While participating in the Homefront Program, all participants were very satisfied with the effectiveness of treatments and the services received by their health professionals, especially with regard to treatment satisfaction, being involved in decision making regarding their health condition and the respect of health professional towards them.

This analysis demonstrates that all outcomes from the program logic were met, that is, the Homefront Program resulted in:

- » Improved health outcomes.
- » Reduced health care costs.
- » Reduced number of avoidable hospital admission and ED presentations.
- » Improved patient satisfaction, and self-management.

## 6. Case studies

### 6.1. Case Study 1

#### **Health, Social and Housing History**

A 67-year-old woman was referred to Micah Projects after a relationship breakdown with her son and carer. She frequently presented to hospital with chronic mental and physical health concerns including suicidal ideation and chronic back pain. This participant had been living with her son and daughter-in-law who identified as her carers, which was exacerbating her poor mental health outcomes.

This participant has chronic pain in their back and shoulder, which has led to limited mobility, requiring a walker to mobilise. The hospital found that this participant had chronic mental health needs that impact her ability to live with her family, as well as her confidence to seek and attend health and housing appointments as an individual. In addition to mental health concerns, the participants physical health included hospital appointments for cancer diagnosis and treatment which was irregularly attended.

The participant was temporarily accommodated in a hotel by Micah Projects through the Emergency Housing Assistance Response (EHAR) due to COVID-19, as she was not considered appropriate for a boarding house or hostel due to her high vulnerability. The participant was supported with Department of Housing application and was subsequently offered a ground floor unit. Homefront assisted with housing set up and arranged transport for the participants belongings to be moved from her son's housing, to her own.

As this participant already had a good relationship with a GP, workers supported the participant in engaging with this practitioner. Assistance in specific housing and health documentation was clarified with the practitioner through staff. Homefront also assisted this participant to attend follow up health appointments at the hospital. This has ensured the participant continues to attend necessary health appointments as required and identified within the hospital and through health practitioners.

#### **Assessment of Individual Need**

The Homefront team have supported the participant across multiple systems, including advocating with social, community and private housing providers, in addition to liaising with multiple health providers to develop holistic wraparound support for long-term outcomes.

The teams' work has been assisted using our vulnerability assessment tool, a comprehensive nursing assessment, and a baseline questionnaire. The needs that were identified include:

- » Assistance to access and maintain long-term, safe and affordable housing,
- » Complex physical and mental health needs
- » Wellbeing and social support
- » Aged Care Supports - Islamic Women's Association

Promoting participant capacity to self-manage their healthcare and wellbeing through information provision and health literacy activities and communication with the participant and stakeholders.

The Homefront team have worked with the participant, and external stakeholders, to develop and coordinate plans that encompass the participants long term medical, community and housing needs. The team have supported the participant to actively participate in her planning and strengthen capacity for self-management.

Monitoring, adjusting and evaluation health outcomes for each participant  
The Homefront team have liaised and advocated for the participants identified support needs to be met both as an individual and with various service providers. The Homefront team have coordinated care and advocated for the participant to experience improved quality of life in all identified supports.

In the participant's time with Homefront, she has moved from uncertain tenancy to long-term stable accommodation, with appropriate cultural supports to manage health and wellbeing. The participant was supported by the Homefront team for three months.

## 6.2. Case Study 2

### **Health, Social and Housing History**

A 20-year-old male was referred to Micah Projects, Homefront Program by PA Hospital where he was undergoing treatment for Hodgkin's Lymphoma. The participant had been experiencing homelessness from 18 years old, since he left the care of the Department of Child Safety.

The participant also had significant MH issues (PTSD, Depression and Anxiety following major childhood trauma) and was medicated. He was not consistent in attending his appointments due to his unstable housing situation. He was then accommodated temporarily by Micah Projects in response to the Emergency Housing Assistance Response (EHAR) and was not considered appropriate for a boarding house or hostel due to his high vulnerability.

The participant was supported with a Department of Housing application and was subsequently offered fully self-contained unit. Homefront assisted with housing set up costs and arranged furniture for the participant and assisted them to settle into the property.

Homefront assisted to support the participant to attend health appointments at the hospital and linked him with the Inclusive Health Clinic. Homefront provided brokerage for a phone to help him to keep in contact with his key support providers. The participant now receives regular health care for his physical and mental health.

The participant also had ongoing legal issues in which he had not been able to resolve due to forgetting appointments which was a side effect from the treatment of his cancer. Homefront supported him to ensure he did not miss important legal appointments and to promptly resolve outstanding ones. He is now up to date with all appointments and has a system to help him remember future ones.

The participant has been linked in with an organisation that will help him access the community. He has expressed he feels that his secure accommodation and assistance with health appointments have had a significant positive impact on his life and he is sure he would not much worse off if he didn't receive the assistance from Homefront.

### **Assessment of Individual Need**

The Homefront team have supported the participant to access multiple systems, advocated with housing providers, linked the participant in with regular health and wellbeing practitioners, liaised with multiple health systems and professions to develop holistic wraparound support.



The teams' work has been assisted using our screening tool VI-SPDAT and baseline. The needs that were identified include:

- » Assistance to access and maintain long-term, safe affordable housing
- » Complex health needs
- » Mental health support
- » Access to dental care
- » Reduction of social isolation.
- » Legal support

Promoting participant capacity to self-manage their healthcare and wellbeing through information provision and health literacy activities and communication with the participant and stakeholders. The Homefront team worked with the participant and stakeholders to develop coordinated plans that facilitated clinical, community and housing needs. The team supported the participant to actively participate in his plans whilst strengthening capacity to build his own agency.

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