Evaluation of Intensive Home Based Support Services

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Glossary

CALD	Culturally and Linguistically Diverse
CARS	Consumer Activity Reporting System
CBIS	Community Based Information System
CCCME	Central Country Information System
COAG	Council of Australian Governments
ED	Emergency Department
HoNOS	Health of the Nation Outcomes Scales
IHBSS	Intensive Home Based Support Service
K10	Kessler Psychological Distress Scale
LOS	Length of stay
LSP-16	Life Skills Profile
NGO	Non-Government Organisation
NOCC	National Outcomes and Case-mix Collection

Summary of key findings

- As at October 2014, 535 consumers had entered the program.
- The program is achieving all outcomes within budget.
- For consumers who have exited the program, there has been a significant reduction in:
    - psychiatric hospital admissions
    - hospital bed days
    - presentations to EDs.
- There are also indications that IBHSS has reduced hospital stays for people who enter the program during hospital stays.
- A significant number of consumers considered that IHBSS program support helped avoid inpatient admission and presentation to emergency departments.
- IHBSS responds rapidly and enables some consumers to avoid hospital admissions and spend fewer days in hospital.
- The IHBSS program was considered flexible, responsive to needs, and focused on the individual and their goals.
- The partnership management committee (PMC) is effective.
- The sub-acute coordinators are central to the program and the role is strongly supported by all stakeholders.
- Reduced and avoided hospital service usage is producing substantial cost offsets estimated at $5.7 million as at September 2014, representing approximately 67 per cent of total program funding.
- The cost-effectiveness base case indicates the program is approaching a cost neutral position and becomes increasingly cost-effective in the likely case that consumer outcomes are maintained beyond the 6 months for which program data are available.

Executive Summary

Program establishment and development

The IHBSS program has been established under Commonwealth policy frameworks and related COAG specifications. These are aligned with South Australia Health's strategic planning for community based early intervention mental health services.

Since commencement in June 2013, the IHBSS program has delivered consistent growth across geographic and demographic dimensions. A total of 535 consumers have entered the program as at October 2014.

Program development has been achieved through a strong partnership between South Australia Health and the non-government organisation (NGO) sector. This utilised NGO experience, capacity and geographical locations.

Program capacity and funding

After consistent growth during the initial 9-month establishment phase, the program maintained high levels of concurrent consumer utilisation for the following 8 months in both metropolitan and country regions reflecting strong demand for IHBSS services.

The program has supported a total of 535 consumers with an established high level of concurrent utilisation of approximately 150 consumers, including:

- 420 consumers in metropolitan Adelaide (78.5% of total) with a level of concurrent utilisation of approximately 120 consumers
- 115 consumers in country areas (21.5% of total) with a similar high level of established concurrent utilisation of approximately 30 consumers.

Through utilising established NGO service provider capacity and experience, the program was initiated and developed without the need for significant additional up-front investment by SA Health.

The program is achieving all outcomes within budget. The budget was originally $19.2 million over four years, which was later adjusted down to $15.02 million the 25-month period from June 2013 to June 2015.

The program is reaching planned target populations including particular focus on Aboriginal and Torres Strait Islander communities and younger people:

- 5.5% of consumers identify as Aboriginal or Torres Strait Islander compared with 1.9% of the South Australian Population.
- 18.8% of consumers are aged 16 to 24 years compared with 13.0% of the South Australian population.

- 11.6% of metropolitan consumers are from culturally and linguistically diverse (CALD) backgrounds compared with 12.7% of the South Australian population.

Commonwealth bed occupancy targets and reporting

All program targets specified in the Commonwealth Implementation Plan for South Australia are being achieved within the total forward funding to 2014-15. This includes:

- Providing 37 bed equivalents across the metropolitan and country area to support people with mental illness in the community
- Targeting support to people who are leaving acute care or sub-acute facility based care, with the primary psychosocial service delivery through the NGO sector
- Avoiding long stays in acute units, both through reduced admissions and lengths of stay post program, as well as avoiding admissions on program entry through responsive preventative support services
- Reducing admissions to emergency departments (ED), as for inpatient admissions, both post program following stabilisation and substantially through ED avoidance when consumers commence program support services
- Meeting sub-acute service and bed gaps for people with mental illness by improving patient health outcomes, functional capacity, and quality of life through more appropriate and timely out of hospital care.

Consumer outcomes

There has been a significant reduction in the number of psychiatric hospital admissions and hospital bed days for consumers who have exited the program. This includes:

- An average reduction in the number of psychiatric hospital admissions of 10.3 days per consumer in the first quarter after exiting the program (from 16.6 to 6.3 days)
- The reduced level of admissions was sustained at an average 10.4 days per consumer in the second quarter post program.

Additionally a significant number of consumers considered that the IHBSS program helped avoid inpatient admission:

- In metropolitan Adelaide, 51.4% of consumers (216 of 420 consumers) indicated that the program helped avoid hospital admission.
- In country regions, 60.7% of consumers (68 of 115 consumers) indicated that the program helped avoid hospital admission.

IHBSS community based support also resulted in earlier than expected discharge, which in turn resulted in reduced lengths of hospital stays.

There has also been a significant reduction in the number of presentations to EDs, including an average reduction in the first quarter after exiting the program of 0.29 emergency department presentations per consumer.

Similar to inpatient admissions, a significant number of consumers considered that the IHBSS program helped avoid presentation to emergency departments:

- Of the 420 consumers in metropolitan Adelaide, 265 (63.1%) indicated that the program helped avoid presenting at an emergency department.
- Similarly, of the 115 country consumers an equally significant majority of 72 (62.6%) indicated that the program helped avoid emergency departments.

The consumer interview series and qualitative data are consistent with the quantitative analysis, indicating that IHBSS responds rapidly and enables some consumers to avoid hospital admission or spend fewer days in hospital.

Process findings

Consumer experiences of support:

- The IHBSS program was considered flexible, responsive to needs, and focused on the individual and their goals.
- Psychosocial support and assistance in meeting goals related to activities of daily living are highly valued.
- Support included social contact, establishing routines and setting goals, re-integration into the community, connection to local community activities (e.g. walking, gym visits, art group, cafés and volunteering), support taking public transport, support at medical appointments, visiting a consumer in hospital, negotiation with neighbours and family members, diet and menu planning, and strategies/ tools to cope with negative thoughts.

In terms of governance:

- The partnership management committee (PMC) is effective in providing strategic oversight of the program, including planning and communication between program partners.
- The sub-acute coordinators are central to the program and the role is highly valued by all stakeholders.
- IHBSS is driven by relationships between consumers and support workers as well as between NGOs and SA Health. The success of the program is the result of these effective relationships.

Cost-effectiveness

In terms of program objectives and budget, consumer outcomes are being achieved in line with Commonwealth delivery targets and within the allocated budget.

Program funding and cost offsets

The IHBSS NGO service providers, as at September 2014, have delivered a total of 66,876 hours of service support at an average cost of $128 per hour. This equates to a total of $8.6 million in funding. This amount includes an administration component for health service planning through sub-acute coordinators of approximately $10 per hour.

In addition to the broad range of consumer outcomes being achieved by the program, reduced and avoided hospital service usage is producing substantial cost offsets. As at September 2014, these are estimated at $5.7 million, representing approximately 67% of total program funding.

- The proportion of cost offsets is increasing as lagged outcomes provide reduced health service usage over 6 months following exit from the program.
- The proportion of cost offsets are further estimated to increase to 87% as at the end of the 2014-15 financial year as benefits flow through for high utilisation levels over the rolling 6-month post program period.

The cost-effectiveness base case indicates the program is approaching a cost neutral position and becomes increasingly cost-effective in the likely case that consumer outcomes are maintained beyond the 6 months for which program data are available.

Projections based on a further 3 months (9 months in total) indicate the program is plausibly generating cost offsets above program costs with an estimated $1.2 million as at June 2015, and $5.5 million a year later in June 2016.

Further reported cost offsets resulting from the program include enabling closure of flexi-beds and substitution of established hospital discharge support services.

In addition to the measurable cost offsets, core consumer outcomes are implicit in the program effectiveness and cost-effectiveness. These include consumer wellbeing as well as potentially significant components outside the evaluation specification, i.e. return to education, training, and employment for consumers as well as carers.

Conclusion

Overall, this evaluation has found that the IHBSS program has been a valuable component of mental health provision in SA.

1 Introduction

This is the final report of the evaluation of the Intensive Home Based Support Services (IHBSS) program. The program is funded and managed by SA Health under the Commonwealth 2010 National Partnership Agreement on Improving Public Hospital Services.

The evaluation team from the Social Policy Research Centre (SPRC) at UNSW Australia (the University of New South Wales) conducted the evaluation in collaboration with Époque Consulting and the Julia Farr Group.

1.1 The Intensive Home Based Support Services (IHBSS)

The mental health reform agenda in Australia is set out in national policy frameworks. These reflect the potential social benefits of reform and the directions governments are taking to achieve them. Central to this, the Council of Australian Governments' (COAG) roadmap for National Mental Health Reform outlines key priorities and approaches focusing on collaboration and cooperation among Commonwealth, State and Territory governments to deliver a coordinated mental health service for all Australians.[1]

The overarching objective is for wide access to appropriate support services, early in life, early in the course of illness, and early in episode. Service delivery is increasingly through partnerships with government and the non-government sector to provide effective community based reach of better models of care, and targeted outcome focused interventions that are effective and by extension cost-effective.

The IHBSS program has been established within the Commonwealth strategy for community based mental health services and the framework of the South Australia Health Care Plan 2007-2016. The State Government has committed to the reform of the mental health system in South Australia.

The reform of mental health services also aligns with recommendations from the Social Inclusion Board report *Stepping Up – A Social Inclusion Action Plan for Mental Health Reform 2007-2012*. The report found that the limited options available for the provision of facility-based care resulted in people with a mental illness being cared for in high-cost hospital beds. In this context the overarching Social Inclusion Board's conclusion was that the problems facing the mental health system were not caused by demand, but rather that the limited mix of services provided did not serve consumers' complex needs.[2]

[1] The Roadmap for National Mental Health Reform 2012 – 2022, An initiative of the Council of Australian Governments (COAG), 2012.
[2] SA Health's response to the Review of the South Australian Stepped System of Mental Health Care and Capacity to Respond to Emergency Demand. October 2013.

Within this framework, the centrepiece of the mental health reform agenda is the stepped model of care including:

- Support in the Community
- Supported Accommodation
- Community Rehabilitation Centres
- Intermediate Care
- Acute Care; and
- Secure Care

This range of support options enables consumers to 'step up' or 'step down' through the system to receive the level of care that best meets their needs and facilitates their recovery. In this stepped care context, the IHBSS program is intended to provide responsive and flexible short term community based support, tailored to meet individual consumer needs and facilitate early recovery.

Through these tailored and responsive early intervention programs, the mental health system reform aims to reduce the need for people with mental illnesses to be admitted to hospitals. This is facilitated through the provision of a greater range of community support services meaning that people will be able to access help at an earlier stage of illness and avoid repeated hospital admissions.

1.2 Development of IHBSS program

The Australian Commonwealth, State and Territory Governments have recognised the need for growth in the mental health sub-acute sector. As part of this commitment the Commonwealth Government provided funding under the 2010 National Partnership Agreement on Improving Public Hospital Services. As part of this initiative, South Australia Health have established and developed the Intensive Home Based Support Services (IHBSS) program. The program received an original funding allocation of $19.2 million over 4 years for the planned supported accommodation packages; however, this funding was subsequently revised downwards to $15.02 million for the 25-month period from June 2013 to June 2015.

The IHBSS initiative commenced in June 2013 and is delivered in a partnership approach between the non-government and the state mental health service sectors. As at the end of October 2014 it provided state-wide support services to 535 people. With the established program capacity and reach across metropolitan and country regions, this provides concurrent ongoing support services to approximately 120 people in metropolitan areas as well as around 30 people in country regions.

1.2.1 Objectives of the IHBSS

The IHBSS program provides individually tailored, short term psychosocial support of generally 3 months although in exceptional circumstances this has in a small number of

cases extended up to 12 months. The support includes both clinical and non-clinical support, case management and coordination, with a focus on maximising consumer resilience and protective factors. The overall objective is to avert a crisis, prevent relapse, promote recovery, and enable people affected by mental ill-health – in particular those who have recently been admitted or at risk of being admitted to mental health specialists and hospitals (acute care) – to return to their usual 'wellness state' and living environment.

The program aims to:

- improve mental health, quality of life, housing and tenancy stability, independent living skills, socio-economic and community participation of people affected by mental ill-health
- reduce reliance on acute and specialist mental health services, including hospital admissions
- reduce the need for emergency services, in particular the number of presentations to EDs
- enhance effective inter-agency planning and service delivery of psychosocial rehabilitation and support.

1.2.2 Target groups

The IHBSS service model describes the target groups for the program as follows:

General

Intensive home-based support services are targeted at men and women who:

- have serious mental illness and functional disability
- have recently been discharged from an acute care setting
- have suitable accommodation in which support can be provided
- are at risk of relapsing without support
- require support for a time limited period
- require intensive support (daily if necessary) to re-engage with community living
- would benefit from transitional support whilst awaiting commencement of a longer term service
- have complex needs (including co-morbid disabilities and drug and alcohol issues)
- have the capacity to benefit from home-based support and would benefit from an assertive approach to engagement and support
- have needs that cannot be met within other programs.

Specialist focus

Young people

Intensive home-based support services will be targeted at young people who:

- are in transition to adult mental health services or are highly likely to require adult mental health services in the future
- are at risk of requiring acute care or at risk of crisis
- are under the guardianship of the minister
- may be engaged with a child and youth mental health worker
- are experiencing a situational crisis or family situation of stress
- have an emerging illness or serious mental health issues
- require support for a time limited period.

Aboriginal and Torres Strait Islander People

Intensive home-based support services will be targeted at Aboriginal and Torres Strait Islander people who:

- are at risk of requiring acute care or at risk of crisis
- may be engaged with local Aboriginal health services
- are experiencing a situational crisis or family situation of stress
- may have recently been discharged from an acute service in Adelaide and would benefit from transitional support
- are resident in Port Augusta or Murray Bridge
- require support for a time limited period.

SA Health (2012) *National Partnership Agreement: Sub-Acute Initiatives: Intensive Home Based Support Services Service Model*

IHBSS teams are based in metropolitan and regional locations and are a multi-disciplinary partnership consisting of government and non-government providers. The service is supported by a government mental health service coordinator position which is situated within the local community mental health service team. Services are provided to individuals living in their own homes, whether the home is public or private housing, a family or shared home, a boarding house, or a supported residential facility.

1.3 Commonwealth IHBSS Implementation Plan

The Commonwealth Implementation Plan for South Australia specifies the overarching program as a state wide service partnership between South Australia Health and the NGO sector. [3] The Implementation Plan also provides details of funding and the delivery targets and improvements that are expected from the program:

- The program is state-wide, providing care packages in both metropolitan Adelaide and country locations.
- There will be 37 bed equivalents provided across the metropolitan and country area to support people with mental illness in the community.
- The IHBSS services will be targeted to support people who are leaving acute care or sub-acute facility based care, with the primary psychosocial service delivery through the NGO sector.
- The expected improvements from the IHBSS program include:
    - reducing admissions to EDs
    - avoiding long stays in acute units
    - meeting subacute service and bed gaps for people with mental illness in South Australia by improving patient health outcomes, functional capacity and quality of life through more appropriate and timely out of hospital care.
- The provision of total forward funding to 2014-15 of $15.02 million.

As presented throughout this report, all of these delivery targets and improved outcomes have been achieved by the program within the reduced budget allocation.

1.4 Program outcomes and evaluation objectives

The evaluation had four overall areas of focus; the implementation of the program, current operation, targeting and governance, the outcomes for consumers, and the cost-effectiveness of the program. The following overarching evaluation questions were addressed:

1. The extent to which the services are achieving the aims and objectives of the program.
2. The extent to which consumer outcomes are being achieved and service delivery reflects a recovery orientation.

[3] Commonwealth Implementation Plan for South Australia, Project E1.

3. The extent to which the services are accessible to the target population and in particular specific populations such as Aboriginal people and people from a culturally and linguistically diverse background.

Collectively the objectives are assessed in terms of the core program objectives of averting crisis, preventing relapse, promoting recovery, reducing hospital and ED service usage, and reducing mental health specialist needs.

With regard to Question 2, the intended outcomes for the IHBSS include:

- improved mental health as measured by recognised mental health instruments
- enhanced capacity to live independently and participate in community life
- enhanced quality of life as experienced and perceived by the consumer
- achievement and maintenance of appropriate housing as determined by the consumer
- reduced frequency, severity and impact of crisis through enhanced self-management and provision of responsive, flexible supports
- reduced reliance on acute sector and community specialist Mental Health Services; including a reduction in the number of unplanned psychiatric hospital admissions and hospital bed days
- reduced need for emergency services, including a reduction in the number of presentations to Emergency Departments and/or unplanned hospitalisation
- effective inter-agency relationships between the government and non-government services in the provision and management of psychosocial rehabilitation and support services at the local and regional level.

2 Methodology

2.1 Overall approach

The evaluation used a multi-method approach, including both quantitative and qualitative methodologies. The quantitative components involve analysis of administrative data, in particular IBHSS program information including service use data, cost data, assessments of consumers' wellbeing, hospital stays, and presentations to EDs. Changes over time were measured by comparing outcome with time periods before the introduction of IHBSS for consumers who accessed the program. The qualitative component included interviews with stakeholders, consumers and carers, as well as focus groups with stakeholders. The analysis involves combining the qualitative and quantitative analyses to form a more holistic picture of the successes and challenges of the program and to provide conclusions about its effectiveness and appropriateness.

2.2 Quantitative analysis and cost-effectiveness

The quantitative analysis is based on data collected through the operational systems used by SA Health for the IHBSS program. This includes all consumers from program commencement in June 2013 to 31 October 2014, a total of 535 consumers.

In line with the service delivery targets and expected improvements specified in the Commonwealth Implementation Plan, this evaluation examines outcomes for consumers for the currently available post program follow-up period focussing on 3 and 6-month follow-up timeframes. The outcomes examined include the implementation plan targets in terms of establishing and developing the program across the State, as well as delivering bed day equivalent targets across both metropolitan and regional areas. At a consumer level the evaluation assessed hospital service use for both inpatient admissions and emergency department presentations.

Additional aspects examined include the interrelated offsets supported by the IHBSS program, for example flexi bed changes and alternative hospital discharge support services.

Separately, the outcomes evaluation examines available data of recognised mental health instruments including Health of the Nation Outcomes Scales (HoNOS), the Kessler Psychological Distress Scale (K10), and the Life Skills Profile (LSP-16). These instruments have been used to assess the impact of IHBSS on participants in the areas of quality of life, physical and mental health, and community participation.

The evaluation also examines the effectiveness of the program in supporting specific target groups, specifically Aboriginal and Torres Strait Islander people, young people, and people with different diagnoses.

The cost-effectiveness analysis examines IHBSS against health service cost offsets, primarily for hospital inpatient admissions and ED presentations.

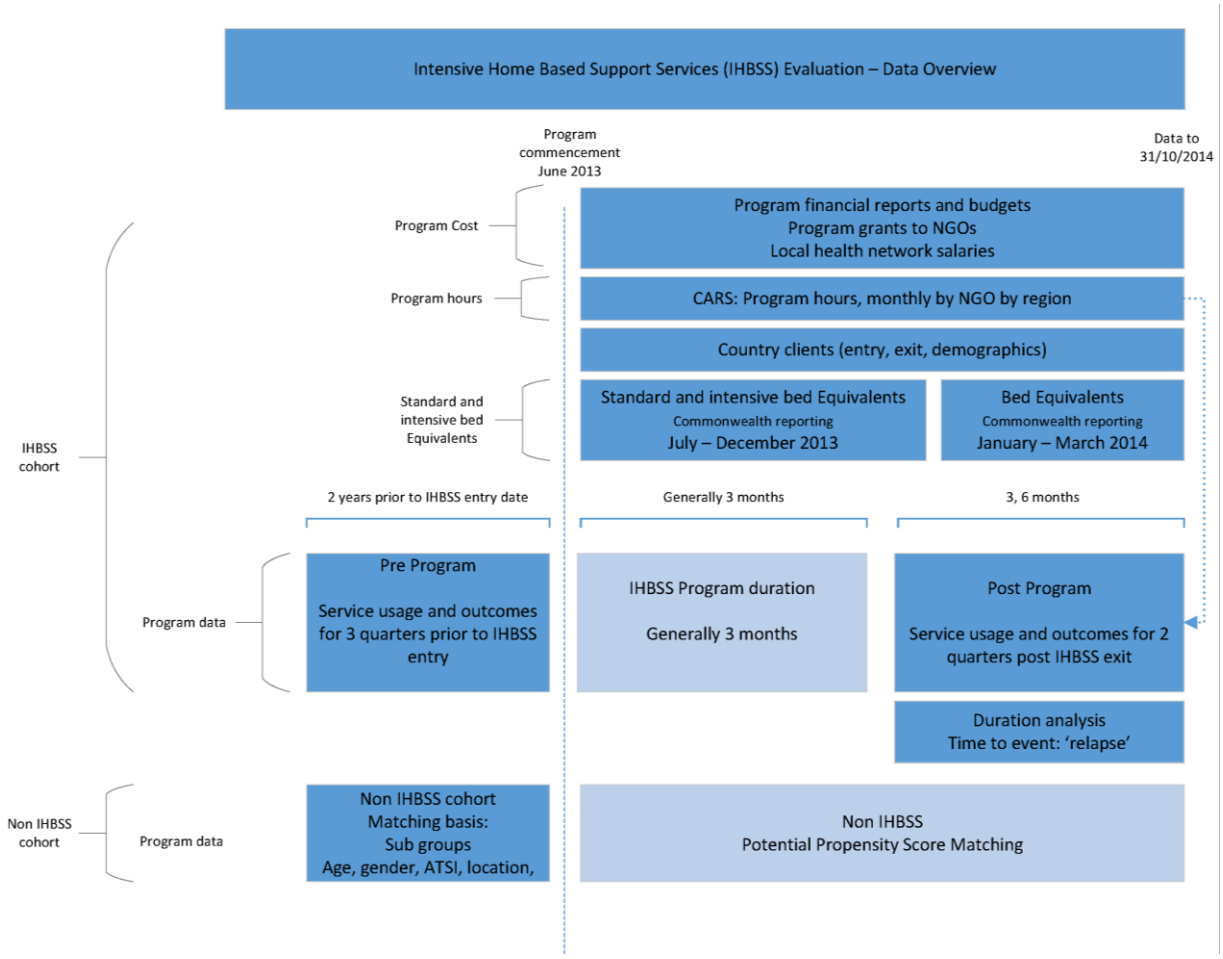
The program data does not include consumer level cost records and correspondingly average cost per consumer is derived using monthly reported service hours. As program funding is provided to NGO service providers through block grant transfers, the total program costs are aligned and compared to service use and corresponding cost offsets in order to indicate cost-effectiveness in broad terms.

2.2.1 SA Health Data Sources

The quantitative analysis is based on multiple data sources covering NGO program service delivery, program funding, and Commonwealth reporting. The datasets are separate for metropolitan and regional country areas. The Community Based Information System (CBIS) covers metropolitan Adelaide while a summary Microsoft Excel dataset records regional IHBSS consumers. Each data source was separately reviewed and structured to align activity and outcomes, both in monthly and quarterly timeframes, and also in a time series framework relative to when consumers entered and exited the program.

All data sources were available from program commencement in June 2013 to October 2014. As presented in Figure 1, pre-program data were also available for the prior two years for metropolitan Adelaide consumers' service usage and outcomes. Given the variation in consumer entry timing, this was necessary because the analysis involved comparing data about service use in the three consecutive quarters (9 months) before entry, and 3 and 6-month periods following program support. The longitudinal framework is further described in Section 3.2.1 below, with further details on each data source provided in following sections.

Figure 1: IHBSS evaluation – data sources



Additionally, post program data were assessed for duration analysis given that some consumers had only recently exited the program and did not have sufficient post exit duration to evaluate outcomes. The post program duration was also used to construct comparison groups for consumers that had completed one or two full quarters after exiting the program.

Separate data were additionally collated using propensity score matching to investigate the possibility of undertaking a comparison with a group of similar metal health consumers who did not use IHBSS.

Community Based Information System (CBIS)

The Community Based Information System (CBIS) is the core system used by SA Health in metropolitan areas to capture in-patient data as well as a wide range of service delivery information, demographic and outcome measures, under the National Outcome and Casemix Collection (NOCC) reporting procedures.

The CBIS consumer dataset provided a comprehensive sample for all current and former metropolitan consumers (6,795 records) and was used for the quantitative analysis including:

- demographics, age, gender and cultural status (e.g. Aboriginal or Torres Strait Islander, culturally and linguistically diverse)
- episode type (inpatient or ambulatory)
- SA Health metropolitan sector and Local Health Networks
    - Northern, Central (Eastern and Western) and Southern
- primary diagnosis
- IHBSS program start and end dates
- recognised mental health instruments (where available on entry, periodically and on exit
    - HoNOS
    - K10
    - LSP-16.

Preliminary data preparation derived supplementary structure and variables including:

- duration in the IHBSS program
    - including multiple blocks of consumer activity grouped for total program time and overall entry and exit dates
- episode duration
    - length of stay for each inpatient admission
    - allocation of assumed 1 day for each ED presentation
- post program and censor duration
- time series grouping by relative before and after quarter
    - including each mental health instrument
- age-band grouping.

ED records are recorded as the date of presentation and frequently include an exit or discharge date. The system close date was commonly not recorded or in many cases

included a date of a few or several days. SA Health advised that ED stays longer than 1 day do occur in some cases while assessment and inpatient admission are being arranged. Given that the presentation date is accurately recorded, and exit dates were not always clear, it has been assumed that each ED presentation was equal to one day. This is a somewhat conservative approach and will slightly understate the total ED number of days.

The time consumers spent in the program was also derived as CBIS routinely captures multiple records for individuals resulting from the timing and quarterly processing in NGO source systems. The duration details are accurate, but required the grouping and review of each client, generally identifying consecutive start and end date records to identify the first start date and last end date for each client as the basis to derive total duration in the program. Exceptions were separately reviewed and identified for cases where consumers had actually exited the program and subsequently re-entered at a later date.

Consumer Activity Report System (CARS)

The Consumer Activity Report System (CARS) is the SA Health contract management system used to manage all IHBSS contractual arrangements with NGO service providers. CARS is also used to coordinate the subsequent processing of quarterly block funding payments. The CARS system has been used since commencement of the IHBSS program in June 2013 to record service delivery hours as a quarterly total per consumer.

In order to provide further IHBSS program details, the system has subsequently been enhanced to extend system functionality. As of June 2014, the CARS system also includes a separately recorded number of both intensive and standard contacts and hours. This provides the basis for deriving estimated bed day equivalent figures for ongoing program management and Commonwealth reporting.

In context of the current IHBSS evaluation, the majority of records are prior to the system enhancements. Approximately 5% include the separate intensive and standard hour split. The approach used the available total number of hours combined with proportions per month of intensive versus standard hours, as prepared for previous Commonwealth reporting.

The CARS data items used in the quantitative analysis are provided in Appendix D.

CARS data limitations:

Data entry guidelines for the CARS system specify that NGOs are allowed to count consumer-attributable time including travel time in service hours provided. The IHBSS Service Activity Guideline for consumer hours recorded in CARS is provided in Appendix C.

An additional limitation relates to consumer ID coding between systems. SA Health advised that there are a significant number of CARS consumers where the system consumer ID, recorded by the IHBSS NGO, does not have a matching CBIS IHBSS package, recorded by the public mental health service IHBSS sub-acute clinician.

In these cases the following assumptions have been made:

1. The CARS record is for a legitimate IHBSS consumer.

2. The packages should be counted as ‘Standard’ as a default for purposes of converting CARS hours to bed day equivalents.

Country consumer dataset

SA Health inpatient and service delivery data is managed in two core systems; CBIS covering metropolitan areas, and the central country system (Consolidated Country Client Management Engine - CCCME) in country regions.

During the IHBSS implementation phase of the program, country consumer details have been summarised in a separate Microsoft Excel dataset, which provides program entry and exit dates as well as basic demographic details. Although it is possible to identify these country consumers separately within the CCCME system, at the time of the evaluation, IHBSS details were not captured in this primary country region dataset.

The regional country IHBSS data are in the process of being integrated with the CCCME system. This means that future IHBSS consumer activity will be recorded with integrated access to service use and other outcomes data, which is similar to records currently established in CBIS.

For this reason, the country consumers are not linked to service usage data for inpatient and ED presentations, or to other outcome data such as HoNOS, K10 or LSP-16. It is likely in any case that the country consumer numbers would have provided insufficient sample sizes for quantitative analysis considering the smaller consumer numbers over the 6-month post program timeframe.

Country data limitations:

The available country data have been used in the quantitative analysis to identify consumer entry and exit timing as well as demographic details. This supports total program consumer numbers and alignment with service delivery hours reported through the CARS system.

The outcome analysis is therefore based on available CBIS data, which provides detailed service usage and mental health details for the majority of IHBSS consumers. The proportion of country consumers is currently 115 of the total 535 (22%). The before and after analysis is undertaken using metropolitan CBIS data as it provided sufficient post program consumer samples to support statistically significant results.

Commonwealth Reporting

The IHBSS program is included in Commonwealth reporting procedures on improving hospital services.[4] To date, two reports have been submitted including an initial six-month report for July to December 2013, and a further quarterly report for January to March 2014.

Details of previous IHBSS Commonwealth reporting are provided in Section 0.

2.2.2 Analysis approach

The quantitative analysis combines longitudinal comparisons with benchmarks (where available), expected outcomes, and program timing in terms of avoided and reduced service use. In this context, the base time series analysis is the initial core comparison, but does not capture some aspects of the program benefits.

The following sections provide an outline of each component of the quantitative approach.

Time series framework

The preliminary stages of the quantitative analysis developed a time series framework as the basis of comparative analysis of consumer ED presentations and hospital admissions before and after being in the IHBSS program.

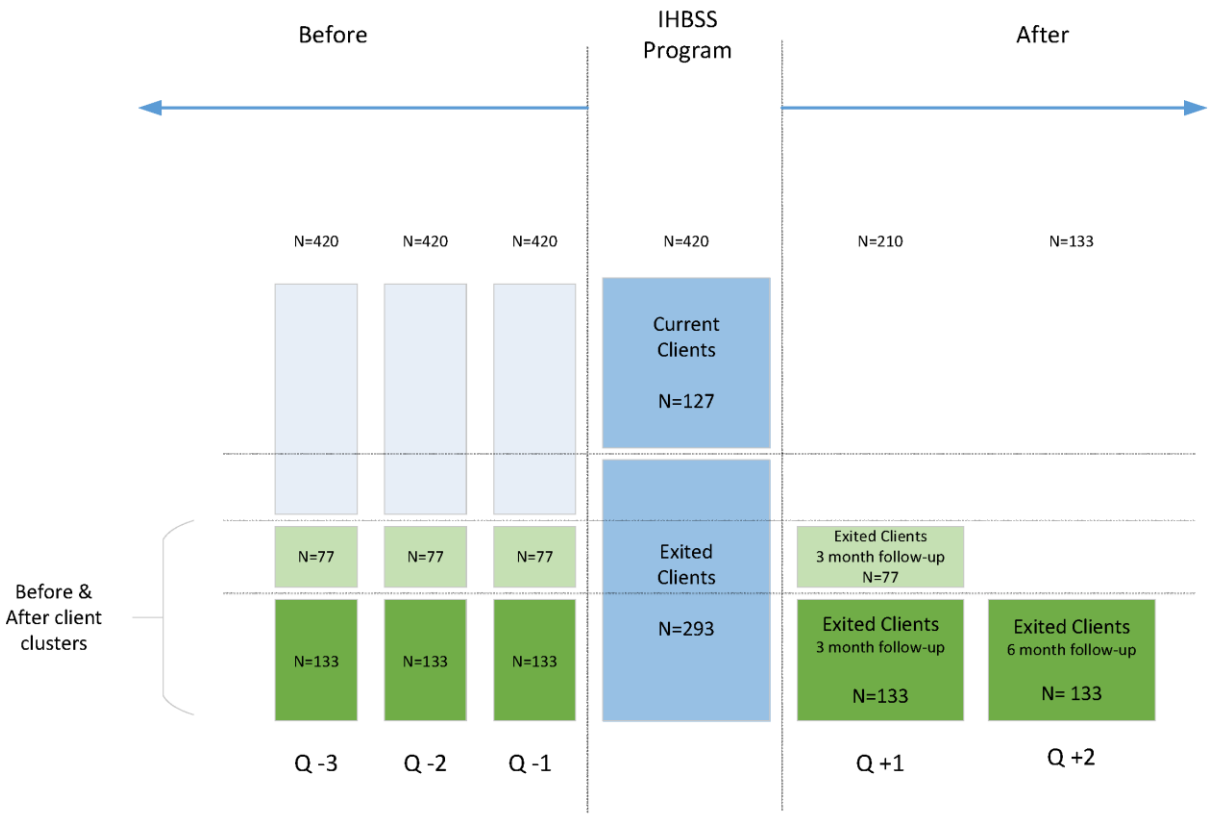
The primary CBIS dataset records a high number of events per consumer, a total of 6,795 records for the 415 consumers. There were similarly multiple records for NGO start and end dates, which reflected quarterly updates from NGO source systems. In order to verify the duration that consumers were in the IHBSS program, the initial step was to group consumer records across each successive entry and exit to establish the overall time of support provided. Consumer durations in the program are presented in Section 0 below.

For the time series approach, this provided the total duration each consumer spent in the IHBSS program, taking into account the number of months as well as the entry and exit month. The analysis aligns the program period for all consumers, as presented in Figure 2, and compares the consumers' service engagement for three complete quarters prior to program entry and two complete quarters after program completion.

This step also grouped cases where consumers were recorded with multiple adjoining NGO start and exit dates, which result from administrative processing steps.

[4] Commonwealth budget reporting Project E1 relates specifically to the IHBSS program.

Figure 2: Time series before and after framework



Note: CBIS (metropolitan Adelaide consumers only)

As described previously, the CBIS data for metropolitan consumers includes acute inpatient, ED, and mental health data, and provides the primary dataset for the time series framework. This is reflected in the sample sizes shown in Figure 2, which includes all metropolitan consumers who had entered the program as at 31 October 2014 (n=420). The sample sizes are reduced for those who had exited the program, firstly because of the group of consumers who had not yet exited at the time of the data extraction (n=127), and subsequently for consumers who had not yet exited the program for complete quarters of follow-up time. As presented, the data provided a consumer group of 210 that had completed one full quarter and 133 that completed two full quarters of post program follow up. The horizontal clusters indicate the sample sizes as used for the paired statistical analysis, in all cases based on individual matched consumers before and after the program.

Matched comparative outcomes

Paired analysis (i.e. comparisons of outcomes for consumers in the period before they entered the program with their outcomes after accessing the program) provides greater statistical power than comparison with other consumers.[5] The sources of variation that may typically occur in separate sample groups are removed. The source of potential confounding factors are reduced or eliminated as repeated measures on the same individual consumers are effectively being controlled by themselves.

The paired statistical tests were based on both the 3 and 6-month post program groups which provided sufficient sample sizes of n=210 and n=133 respectively.

The paired analysis is based on a 'balanced' before and after group of consumers, that is, consumers who did not have sufficient post program duration were eliminated from the analysis on the before intervention side. In larger and longer timeframe evaluations this may introduce issues with consumers dropping out from follow-up. This was, however, not relevant for IHBSS consumer groups where only consumers within the duration groups with sufficient follow-up were included.

The paired before and after clusters control for consumer covariance in baseline characteristics. This allows analysis to focus on the timeframe directly before and after IHBSS support and the only explicit change is participation in the program.

This characteristic short timeframe also restricts confounding variation that might affect longer multiyear studies, with the focus specifically on 3 months prior to program entry and 3 or 6 months directly following IHBSS support.

Duration analysis

Because of the short period of time in which the program has been operating, the data are right censored. This means that some consumers have only exited recently and, therefore, outcomes cannot be determined for two complete quarters after exiting the program. For this reason the analysis includes a duration analysis framework to individually derive consumers' number of months between leaving the program and the end of October 2014, the point to which service use and outcome data are available.

The process also includes the number of months that consumers continued post program without recording a 'relapse'. For the preliminary analysis, relapse was defined simply as the point at which a consumer either returned to hospital, or presented to an ED. This definition is conservative given that consumers may have a baseline average number of admitted days over pre-program quarters, so relapse is reasonably the point that a consumer exceeds this longer term average service usage. In each case, the analysis enables evaluation of post IHBSS outcomes in terms of total relapse free periods.

[5] The best analysis would be provided by random assignment to the program but this method was not available for this evaluation.

The right censoring has also been incorporated into the statistical analysis as described in the time series framework. Consumers are only included in a cluster if they have left the program and completed full quarters of post program follow-up. The censoring is also conservative in being defined as 'full' quarters of follow-up, that is, consumers who are in month three after exiting the program are not included in the Q+1 group, having not completed a full quarter. This establishes clearly defined post program durations with sufficient time having passed to fully assess the impact of the program on hospital admission patterns and mental health outcomes.

Propensity score matching

It is well recognised that mental health episodes are complex and specific to a wide range of individual factors and diagnoses. In this regard, identification of sufficiently similar consumers who did not access IHBSS, as the basis of a propensity score matched quasi control group, is correspondingly complex.

Propensity score matching (PSM) is an approach increasingly used in observational studies to estimate the treatment effect of an intervention when potential program participants have not been randomly allocated to treatment and non-treatment groups. In this case, the propensity score is the probability of entry to the IHBSS program conditional on a range of observable baseline characteristics.

Due to a range of factors, the propensity score estimates were insufficient to predict a matched sample of consumers who shared similar characteristics to consumers receiving IHBSS program support.

Mental health outcomes

The preliminary mental health outcome analysis is based on HoNOS, as the score most frequently recorded for IHBSS consumers. The HoNOS is used by clinicians to measure outcomes for consumers with a mental illness. It is a general measure of severity of symptoms based on 12 relevant dimensions that may be experienced by people with a mental illness. Each item is rated from 0 (no problem) to 4 (very severe problems), resulting in individual item scores, subscale scores, and a total score.[6]

The K10 and LSP-16 measures have been reviewed but have not provided sufficient before and after matched consumer sample sizes.

Bed day equivalents

Bed day equivalents are calculated based on conversion factors tabled for Health and Ageing Senate Estimates.[7] Separate formulas are provided for intensive and standard home based subacute care. In summary the formulas are:

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[6] Review of standardised measures used in the National Outcomes and Casemix Collection (NOCC),
[7] Senate Community Affairs Committee, Answers to estimates questions on notice, Health and Ageing portfolio, Budget Estimates 2013-14, 5/6 & 7 June 2013, Question: E13-204, Definitions and counting methodology for the

- Home-based subacute care (intensive)

  An occasion of interdisciplinary care provided to a non-admitted patient as a direct substitute for an inpatient admission and with the same level of clinical intensity as care on an inpatient unit. This care is typically provided as a component of a broader program and typically includes care:

  - by more than one discipline
  - of at least three hours duration and
  - that is provided in the person's usual place of accommodation or similar.

- Conversion factor for intensive home-based subacute care:
  - 1.5 occasions of service = one hospital bed day
  - 465 occasions of service = one hospital bed year
  - A hospital bed year, a hospital bed that is available for the full year (365 days) with an occupancy rate of 85%, is to be used for the purpose of calculating bed year equivalents.

- Home-based subacute care (standard)

  An occasion of interdisciplinary care provided to a non-admitted patient as a component of a program that directly substitutes for an inpatient admission. This typically includes care:

  - by more than one discipline
  - of at least one hour's duration and
  - that is provided in the person's usual place of accommodation or similar.

- Conversion factor for standard home-based subacute care:
  - 4 occasions of service = one hospital bed
  - 1,250 occasions of service = one hospital bed year
  - A hospital bed year, a hospital bed that is available for the full year (365 days) with an occupancy rate of 85%, is to be used for the purpose of calculating bed year equivalents.

As outlined in the data source section, the CARS system was enhanced in June 2014 to separately capture standard and intensive service delivery hours. Periods prior to this point will be supplemented using the IHBSS bed day equivalent calculation previously reported to the Commonwealth.

National Partnership Agreement on Improving Public Hospital Services, Centre for Health Service Development Australian Health Services Research Institute, The University of Wollongong, 30 June 2011, pages 12-13.

Program cost and cost-effectiveness

The economic evaluation is based on the quantitative analysis and aligns cost data with service delivery content to estimate the cost-effectiveness of providing IHBSS services from the perspective of SA Health. The overall IHBSS funding figures are available at an aggregate level, in line with Commonwealth reporting, and are combined with program service delivery hours by location from the CARS system to derive average cost per consumer reference rates.

These average cost estimates have then been aligned with program utilisation patterns. This has been done in the context of timing the cost of offsets including reduced hospital lengths of stay and reduced ED presentations post program, as well as avoided health service usage, both inpatient and ED, resulting from the responsive provision of support when entering the IHBSS program.

In broad terms, the program cost-effectiveness implicitly includes a wide range of consumer outcomes, positioned against the total program funding. The focus of the cost-effectiveness estimates are, however, based on the specific service use measures that can be quantified in terms of cost savings or 'offsets' to related services, predominantly hospital services including admissions and ED presentations. In this context, the cost-effectiveness perspective for the IHBSS is focused on measurable health service cost offsets. It is, however, emphasised that there are substantial program outcomes, in terms of consumer wellbeing and life pathways, that provide the overarching perspective of program effectiveness and overall cost-effectiveness.

2.2.3 Data limitations

The data for IHBSS consumers in metropolitan Adelaide sourced from the CBIS system provide the primary dataset for the quantitative analysis as they include all available before and after records of service use and outcome measures.

The country consumer Excel based dataset does not provide consumer level details of service usage or outcomes. The proportion of consumers in metropolitan locations, however, is 420 of the total 535 (78.5%) and provides sufficient sample sizes for key service use and outcome measures.

As the available CBIS metropolitan data represents nearly four fifths of the total IHBSS consumers (78.3%) and is relatively similar in consumer characteristics to country consumers, the CBIS data are considered representative and provide sufficient sample sizes for the quantitative analysis. However, the extent to which outcomes for country consumers differ from those of consumers in Adelaide is not reflected in the analysis.

2.3 Qualitative analysis (consumers, staff and stakeholders)

2.3.1 Interviews with consumers

SA Health sub-acute coordinators in metropolitan and country (Barossa Valley) areas were asked to contact NGO providers of IHBSS programs in their areas to determine potential interviewees. An expression of interest form was provided for NGO use.

Each sub-acute coordinator was asked to contact three consumers and two carers, and invite them to participate in an interview. Interviews were conducted in a variety of locations to suit consumers' preferences and distance from home: park, café, CAMHS (Child and Adolescent Mental Health Services) office, NGO office (Neami, Mind, and Life Without Barriers), phone, or consumer's home (accompanied by an NGO support worker).

All interviews followed the same format:

- welcome and explanation of the evaluation process
- reading and signing the consent form
- permission to voice record
- commencement of recording for questions
- thank you and gift card.

Interviews generally took 50-60 minutes. Voice recording totalled approximately 30 minutes for each interview and covered the specific IHBSS focused questions. The welcome, explanation, consent form signing, and thank you were not voice recorded. The field interviewer made notes to accompany the voice recordings to assist in the transcription process. The gift cards were presented to each consumer/carer who participated in the interviews as an acknowledgment of their time and contribution.

Topics included:

- experiences of the program (duration, type of support)
- effectiveness and impact (the extent to which the support meet needs, impact on specific areas of life)
- relationships with staff
- suggestions for change/improvement.

The interview questions were framed around IHBSS; however, some consumers were not clear on what IHBSS was (either in full or the acronym). On those occasions, it was apparent that IHBSS was the only service being received from the particular NGO. The interviewer therefore reframed the questions, where appropriate, in terms of support from the applicable NGO provider, i.e. support from Life Without Barriers, Mind or Neami, which expedited the questions and responses.

Interviews were conducted with individual consumers, individual carers, or consumers and carers together. This latter group comprised 'youth' consumers and a parent. On four occasions a support worker from the NGO was also present at the request of the interviewee.

One interview was terminated by the interviewer after 15 minutes as the consumer became distressed about the memories the interview brought back. The consumer had attended the interview with a family member so immediate support was available.

Eighteen interviews were arranged in metropolitan and regional areas. On two occasions, an unexpected additional family carer (parent) also attended the interview. Consent forms for the additional carers were obtained so their input could also be included as appropriate. The location of the interviews and demographics of the interview participants are summarised in Table 1.

Table 1: Interview location and demographics

	Male	**Female**	**Total**
Metropolitan consumers	3	3	6 (+1 extra family carer – female)
Metropolitan carers	0	3	3
Regional consumers	5	1	6 (+1 extra family carer – male)
Regional carers	1	2	3
Total	9	9	18 + 2

Of the 12 consumer interviews, four consumers (two metropolitan and two regional) were youth (24 years or under). The youngest of the youth consumers had recently turned 18. Four of the six carers interviewed (two metropolitan and two regional) were parents of youth consumers. Three of the youth consumers and their carers elected to have a joint interview, so 15 actual interviews were conducted. In total, approximately half of the consumers interviewed were under 30, and half in their 40s, 50s or 60s.

Interviews were spread out geographically as much as feasible but were dependent on expressions of interest from consumers and carers; for instance, there were no interested carers in the Central Adelaide Local Health Network.

The Barossa Valley was initially identified as the regional area of interest for interviews. Interested participant numbers in the Barossa Valley were lower than expected, with a number of consumers declining to be involved. Following discussion with SPRC and SA Health representatives, the focus for regional interviews was shifted to Gawler where there was both greater uptake of the IHBSS program and interested potential interviewees. One consumer and two carer interviews were also conducted in an NGO office in Mt Barker, in the Southern Country region of SA to complete the required number of regional interviews.

2.3.2 Interviews with staff

The research team, with the evaluation sub-committee and other key stakeholders, identified IHBSS service provider and departmental staff to be interviewed for this evaluation. The research team conducted a face to face workshop and telephone interviews with IHBSS program staff to identify processes and governance arrangements that impact on the effectiveness of the initiative (its strengths and weaknesses), and how issues can be addressed for future service improvement. Topics included:

- implementing IHBSS, including the specific challenges of implementing the program, training, workforce, etc.
- targeting IHBSS, including different geographic locations, different consumer groups, and the engagement and retention of consumers
- delivering recovery focused home based support in multi-disciplinary teams, including inter disciplinary roles and responsibilities, coordination and information sharing
- implementing a program that is both inter-agency and inter-sectoral
- reporting, governance, and resourcing.

Stakeholders participated in the evaluation through either a focus group or telephone interviews.

A total of 18 people participated in staff/stakeholder interviews and focus groups.

3 IHBSS consumer profiles and service delivery

This section provides details of consumer demographics, sourced from the CBIS system for metropolitan Adelaide consumers and the Excel dataset for country consumers. The data have been merged where possible to present total comparative profiles.

This section also presents program establishment and development figures reflecting the program growth to full capacity as well as program pathways and durations of service support.

3.1 Demographics

In addition to support services for the broader community, the program targets particular populations; younger people under 18 years and Aboriginal and Torres Strait Islander people. It should be noted that comparisons are made here between IHBSS consumers and the demographics of the general population in South Australia. However, this analysis does not include a comparison between the demographics of IHBSS consumers and the population of mental health consumers in South Australia. This geographic comparison would perhaps provide a more accurate assessment of the representation of different consumer groups within the IHBSS consumer population.

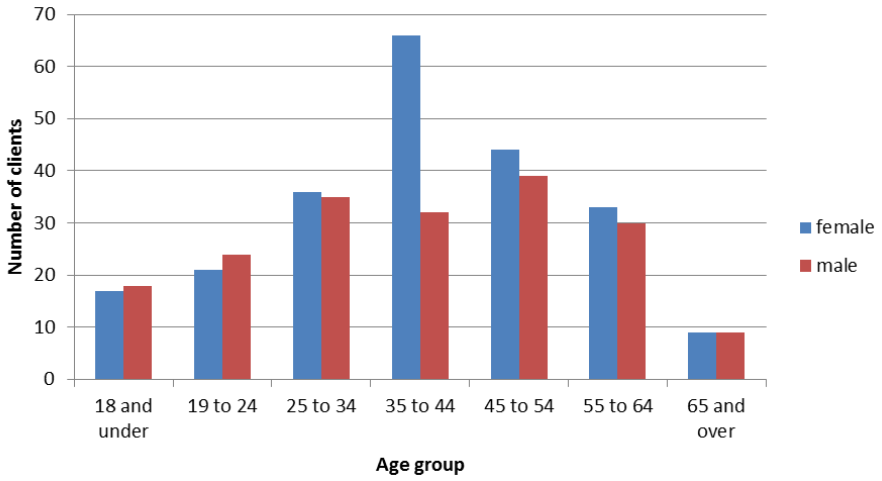
Interviews with managers and staff indicated that although IHBSS has been successful in reaching Aboriginal and Torres Strait Islanders and young people, there is room for improvement in engaging with these groups, especially as they are both specific priorities:

- The relationship between IHBSS and Aboriginal Community Controlled Health Organisations is not clear to key staff and this has been a barrier to the promotion of the program within the Aboriginal community.
- Young people have more complicated referral pathways and transitions to IHBSS (and other programs) than other consumers and this is also true for older (50 years and over) consumers.

3.1.1 Age and gender

Metropolitan Adelaide consumers (n=420) are relatively normally distributed across age bands as presented in Figure 3, with the exception of a notably high proportion of females in the peak frequency 35 to 44 age group.

Figure 3: Program consumer age and gender (Metropolitan Adelaide)



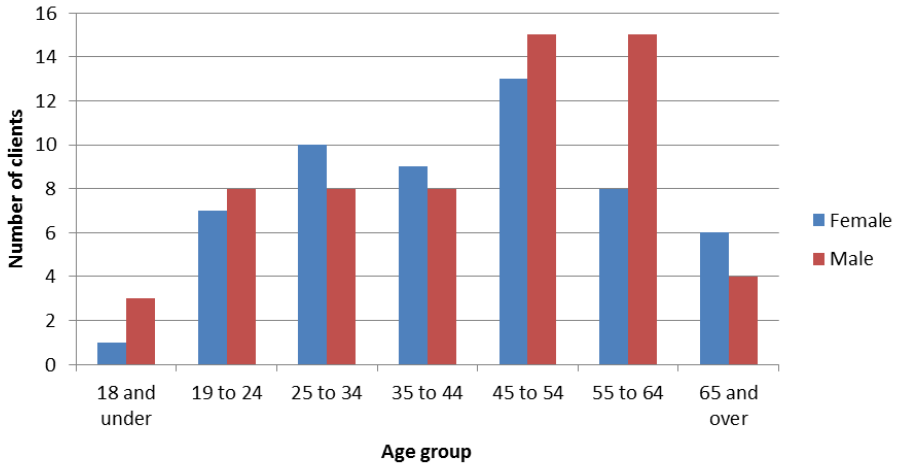
Source: CBIS

The under 18 age group is balanced in terms of gender; there are 35 consumers in this age group (8.5% of total metropolitan consumers) comprising of 18 male and 17 female consumers.[8]

Consumers in country areas (n=115) are also reasonably normally distributed with a slight skew towards older males in the 45 to 64 year age bands, as shown in Figure 4.

Given the relatively small sample sizes in the country, these variations are not statistically significant, with 2 additional females to males in the 45 to 54 band, and 7 additional females in the 55 to 64 age group. These proportions align with the metropolitan distribution when incorporated into total consumer age groups for the higher total consumer group.

Figure 4: Program consumer age and gender (Country)



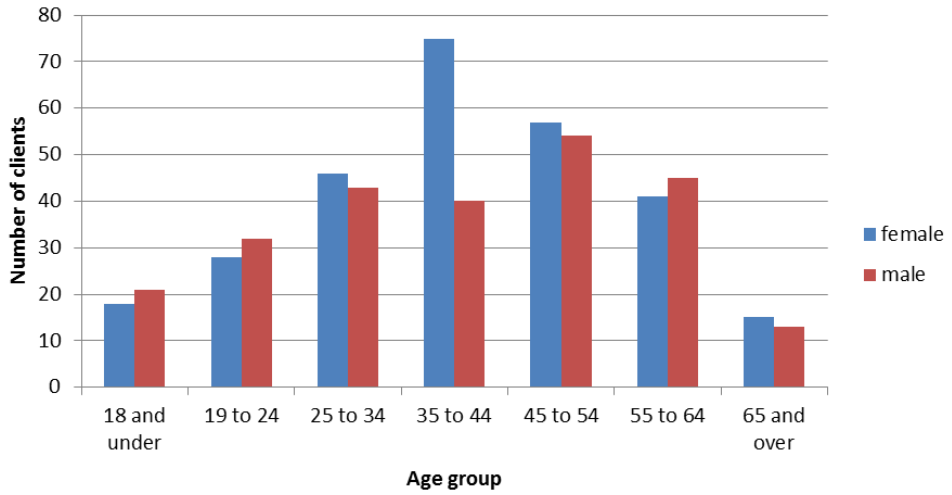
Source: CBIS

[8] Total metropolitan consumers based on 413 as age was not available for 2 consumers.

The statistical significance of the small samples of country consumers is reduced accordingly, with 4 consumers under 18 years, comprising 3.5% of total country consumers.

Combining both metropolitan and country consumers (n=535) smooths the age and gender distribution slightly, as illustrated in Figure 5.

Figure 5: Program consumer age and gender (Total)



Source: CBIS

The highest rate of mental health psychiatric care for patients in the 35 to 44 age group is consistent with national figures.[9]

Table 2: IHBSS younger people compared to general population

16 to 24 years	IHBSS			South Australia	
	Consumers	Total	Consumers %	Population	Population %
Greater Adelaide	80	413	19.4%	170,267	11.2%
Rest of SA	19	115	16.5%	42,574	13.5%
Total	99	528	18.8%	212,841	13.0%

Source: CBIS and Australian Bureau of Statistics

The IHBSS consumer group aged from 16 to 24 years represents 18.8% of total consumers, compared with 13.0% of the population.[10] Only a small number of 16 consumers (3.0%) were under 18 years of age.

It is important to note that since this evaluation commenced, the targeting of mental health services has changed impacting on the definition of 'young people'. Adult programs now

[9] Australian hospital statistics 2012–13. Health services series no. 54. Cat. no. HSE 145. Canberra: AIHW.
[10] Australian Bureau of Statistics, 3235.0 - Population by Age and Sex, Regions of Australia, 2013

provide services to consumers aged 18 to 64 years of age. In line with the IHBSS guidelines, ‘young people' are defined in this report as those aged 16 to 24 years.

3.1.2 Aboriginal and Torres Strait Islander consumers

In South Australia, 1.9% of the population identified as being of Aboriginal and/or Torres Strait Islander origin in the 2011 Census.[11] In this context the IHBSS program is successfully targeting people who identify as Aboriginal and Torres Strait Islander, with 29 consumers of the total program of 535 (5.5%). However, in South Australia (as in other jurisdictions), Aboriginal and/or Torres Strait Islander populations have very high rates of poor mental health, and this needs to be taken into account.

Aboriginal South Australians report a high to very high rate of psychological distress at almost three times the rate of the wider South Australian population and the highest of any Australian jurisdiction. Aboriginal and Torres Strait Islander people represent 7.5% of mental health related ED presentations, compared to 5.2% of total emergency department presentations.

Aboriginal and Torres Strait Islander people in SA metropolitan areas use mental health services at a higher rate than in country regions. The proportion of Aboriginal and Torres Strait Islander people using mental health services within metropolitan areas is an estimated 15.5% of the Aboriginal metropolitan community, significantly higher than country regions at 4.5%.[12] This distribution between metropolitan Adelaide and country is more pronounced in the IHBSS consumer group with 14 of the total 115 (12.2%) in country areas, and 15 of the total 415 (3.6%) metropolitan consumers identified as Aboriginal or Torres Strait Islander.

As noted in Section 0, NGO and SA Health staff expressed concerns about whether IHBSS is meeting the needs of Aboriginal communities.

[11] Australian Bureau of Statistics, 2075.0 - Census of Population and Housing - Counts of Aboriginal and Torres Strait Islander Australians, 2011
[12] State of Our Health: Aboriginal Population Compendium Data Volume, Health Performance Council, Government of South Australia, October 2014

Table 3: IHBSS consumers by Aboriginal and Torres Strait Islander status

IHBSS consumers	Metropolitan Adelaide		Country		Total	
	Consumers	Consumers (%)	Consumers	Consumer (%)	Consumers	Consumer (%)
Aboriginal and/or Torres Strait Islander	15	3.6%	14	12.2%	29	5.5%
Not Aboriginal or Torres Strait Islander	352	84.8%	100	87.0%	452	85.3%
Status not stated	48	11.6%	1	0.9%	49	9.2%
Total	415	100.0%	115	100.0%	530	100.0%
South Australia population	Metropolitan Adelaide		Country		Total	
	Population	Population (%)	Population	Population (%)	Population	Population (%)
Aboriginal and/or Torres Strait Islander	15,597	1.3%	14,671	4.0%	30,433	1.9%
Not Aboriginal or Torres Strait Islander	1,162,524	94.9%	338,005	91.8%	1,503,203	94.2%
Status not stated	47,113	3.8%	15,584	4.2%	62,933	3.9%
Total	1,225,234	100.0%	368,260	100.0%	1,596,569	100.0%

Source: CBIS and Australian Bureau of Statistics

3.1.3 Consumers from culturally and linguistically diverse backgrounds

In metropolitan Adelaide, 48 consumers identified as being from a culturally and linguistically diverse (CALD) background, representing 11.6% of total metropolitan consumers. This compares to an estimated 12.7% of South Australians who were born in predominantly non-English speaking countries. South Australia is below the national average of 15.7%.[13]

CALD data were not available for country consumers.

3.2 Program establishment and development

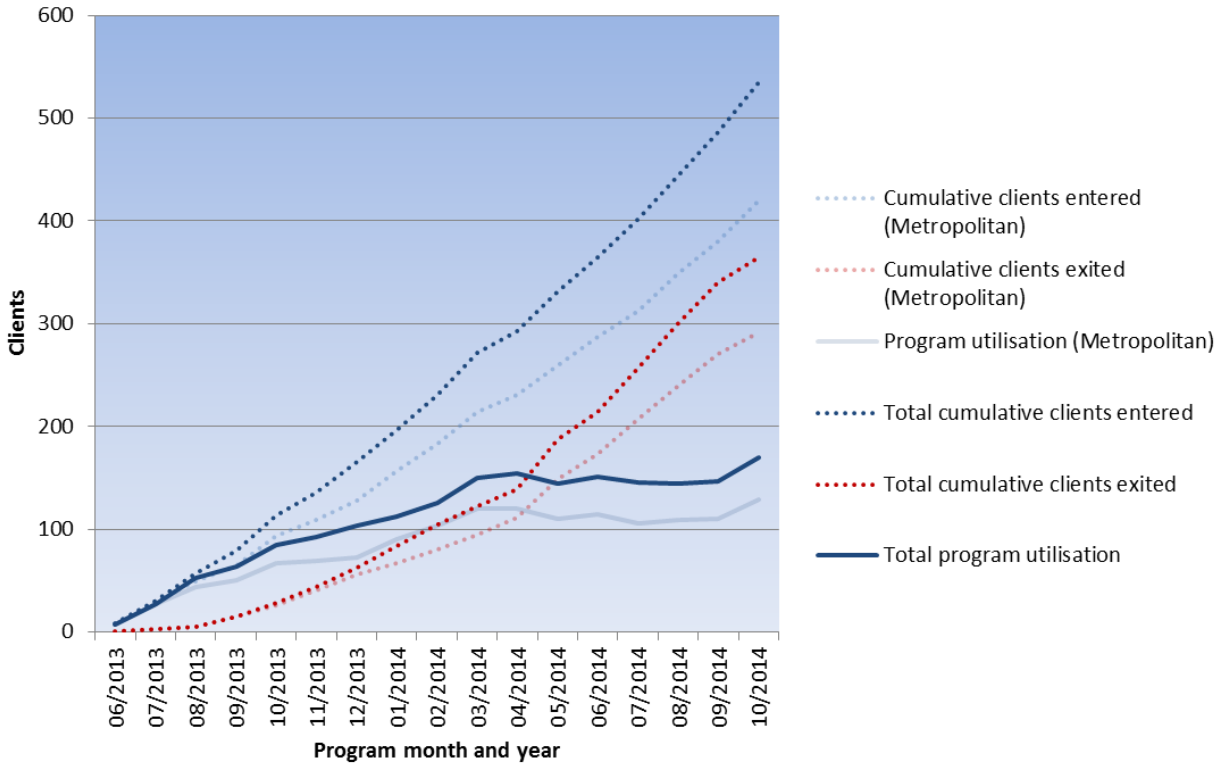
Since commencement in June 2013, the number of consumers entering the program has risen consistently over the 17 months of the evaluation period. As presented in Figure 6, the total number of cumulative consumers for the combined metropolitan Adelaide and country areas (dotted dark blue line) increased to 535 in October 2014.

[13] State of Our Health: Health Status and Health Determinants of South Australians Working Draft for Discussion (May 2013), figures based on Australian Bureau of Statistics, 2011 Census of Population and Housing, Basic Community Profile, B09 Country of Birth of Persons by sex. Latest Issue Released at 11.30am (AEST) 21/06/2012.

As consumers ended their support periods and exited the program, the residual number of people left in the program at the end of each month also increased consistently during the initial development phase.

During the first six months, from June 2013 to December 2013, program utilisation increased to 100 consumers (solid dark blue line), and further extended over the following three months to March 2014 to 150 concurrent consumers. This high utilisation level has been maintained for seven consecutive months, indicating strong ongoing program demand.

Figure 6: Program development and utilisation - Total



Source: CBIS and country consumer dataset

The faint lines represent the total metropolitan Adelaide figures; the faint blue dotted line shows total cumulative consumers, the faint red dotted line shows exits, and the corresponding faint solid blue line shows the number of concurrent utilisation reaching a high capacity level of over 100 concurrent consumers. This high level of program utilisation is sustained for several months. This illustrates the similar overall program development in metropolitan and regional areas, and also the relatively high proportion of total consumers within the metropolitan Adelaide area. As linked outcome data are not available for country consumers, the high proportion of metropolitan consumers provides perspective for the quantitative analysis, which although based exclusively on metropolitan (CBIS) data, represents the substantial majority of program consumers, 420 of the total 535 (78.5%), with a similar strong development pathway and a sustained level of high program capacity.

Total country consumers comprise 115 of 535 (21.5%), which is slightly below initial program budgeting proportion of 30% for country consumers.

The qualitative data (Section 0) indicates that some mental health clinicians were initially hesitant to refer to IHBSS, and that encouraging referrals remains an ongoing priority for IHBSS team leaders. Notwithstanding the growth in the program and consistent utilisation, which exceeds the 80 places specified in the 2012 service model, interviews reported that reluctance to refer, or lack of knowledge about the program, remains in some areas. The targeting of the program to people who identify as Aboriginal and Torres Strait Islanders and young people has also been complicated by the referral pathways and providers for these groups.

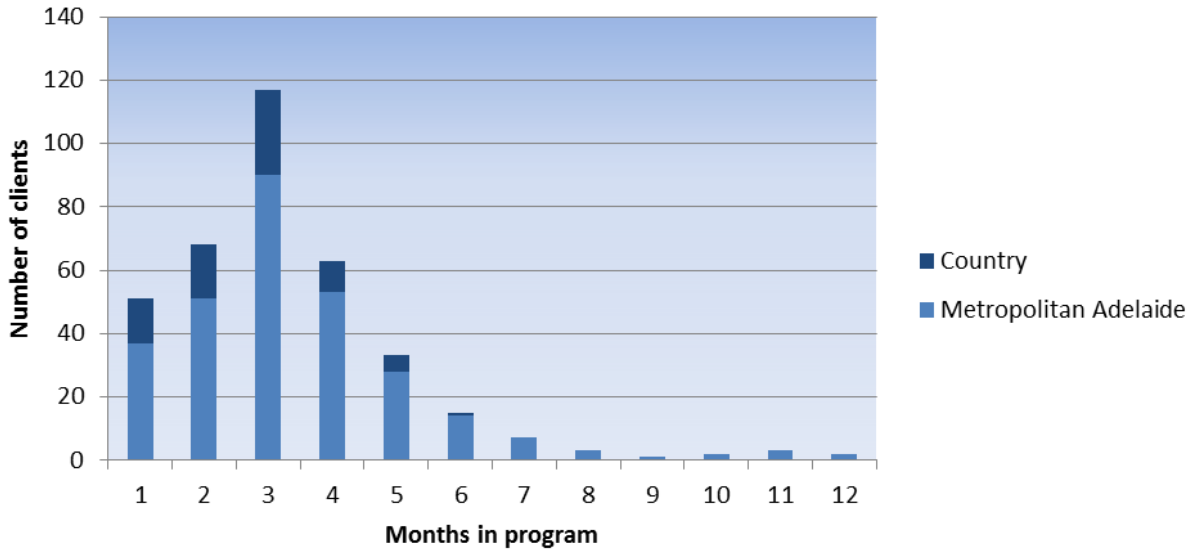
Separate program development figures for metropolitan Adelaide and country regions are provided in Appendix A.

3.3 Program duration and service delivery

The IHBSS initiative is a short-term intervention, typically intended to be three months. However, in exceptional circumstances consumers can receive extended services, in a small number of cases up to 12 months.

The variation in program support duration, Figure 7, reflects the short-term focus of the program with the clear majority of consumers receiving support for three months or less. Consumers reported as being in the program for four months mainly exit within the first part of the month, possibly reflecting an administration lag rather than an extended support period.

Figure 7: Duration in IHBSS program



Source: CBIS n=291 exited consumers, IHBSS country consumer dataset (n=74)

Relatively few consumers continued program support beyond 4 months, with very few continuing after 6 months.

Feedback from the interviews included comments that additional periods of support would have been valuable in some cases.

Consumers that received less than three months of support include some who were admitted to hospital while in the program. At that point, this group was considered to have ‘exited’ the program on the basis that they no longer received community based support while they were inpatients.

4 Consumer outcomes

This section presents the preliminary primary consumer outcomes using both program data and interview data from consumers, carers and staff. Consumer outcomes can be considered in terms of:

- reduced inpatient admission and lengths of stay
- reduced ED presentations
- early discharge from inpatient admission
- avoided inpatient admissions
- avoided ED presentations
- improved patient mental health outcomes (based on HoNOS)
- relapse based on duration analysis
- corresponding use of community mental health services.

It is important to note that the outcome analysis is based on available metropolitan Adelaide CBIS data only.

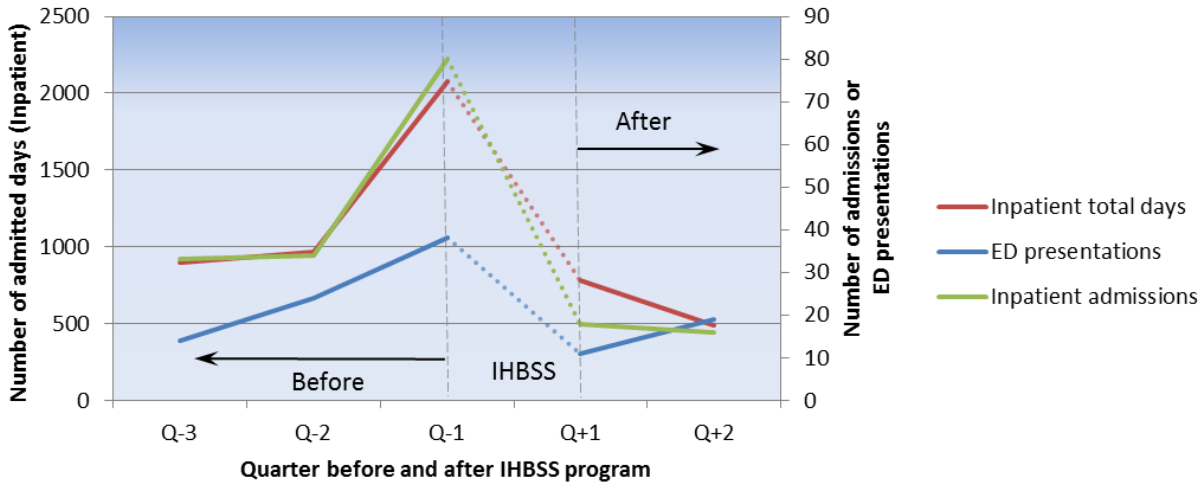
Each section of the quantitative analysis is based on de-identified program and administrative data using the before and after time series framework and is extended using interview data.

4.1 Inpatient admissions and lengths of stay

Overall, consumers who had been admitted in the quarter prior to entering the program experienced a significant reduction in the number of admitted days in the quarter following support from the program, as indicated in

Figure 8. This partially reflects the referral pathway of consumers, many of whom are inpatients in need of transitional support. A similar pattern occurred for ED presentations pre and post involvement in the program although there were a substantially lower number of ED episodes compared to inpatient admissions. The figure presents total number of admitted days per quarter (left axis), and the total number of inpatient admissions and ED presentations per quarter (right axis).

Figure 8: IHBSS – Inpatient and ED presentations before and after



Source: CBIS

Statistical analysis of before and after service usage changes was undertaken using Stata® statistical software (Special Edition Version 13.1 2014, College Station, Texas). Analyses are based on paired before and after figures for matched consumers, as presented in Table 4.

The results indicate a relatively unchanged average length of stay of less than eight days per quarter for Q-3 and Q-2 prior to entering the program. The quarter prior to entry reflected a statistically significant increase in average inpatient length of stay prior to the program, more than doubling from 7.7 to 16.6 average days per quarter.

Following support from IHBSS, the average length of stay per quarter reduced to below the immediate pre-program level (Q-1 to Q+1), from 16.6 to 6.3 days, a statistically significant reduction of 10.3 days per quarter on average per consumer. The post program average LOS in Q+1 is not significantly different from the period prior to the episode, indicating a return to the 'normal' rate of inpatient usage prior to the crisis supported by the IHBSS intervention.

Table 4: Average inpatient length of stay – First quarter post program

	Number of matched consumer	Quarter Prior	Quarter Post	Change	p-value
Mean Inpatient LOS					
Q-3 to Q-2	125	7.2	7.7	+0.5	0.783
Q-2 to Q-1	125	7.7	16.6	+8.9	< 0.001
Q-1 to Q+1	125	16.6	6.3	-10.3	< 0.001
Q-2 to Q+1	125	7.7	6.3	-1.4	0.574

Source: CBIS
Consumer cluster 1 and 2 n=210, paired t-test on matched before and after consumers

The matched sample used for inpatient days is based on 125 consumers who had an inpatient contact in any of the three quarters prior to using the program, or in the two quarters post using the program.

The total number of patient days of 2,077 in Q-1 involves 80 consumers, giving an average length of stay (LOS) for those who had an inpatient episode of 26 days with a maximum LOS of 63 days. The remaining 45 consumers were not admitted during the quarter prior to admission. Of the 80 consumers who were inpatients in the quarter prior to entering the program, only 10 were admitted after the program during Q+1 (88% experienced no inpatient service usage in the quarter following the program).

There were a total of 17 consumers of the same 125 matched sample who had an inpatient episode in the quarter following the program; 10 who had been inpatients during Q-1, and 8 separate consumers that had been inpatients in earlier quarters. This group of 18 had a total number of days of 782 giving the overall average LOS of 6.3 days (782/125), and an average LOS per inpatient of 46 days. This figure is based on a smaller sample and is skewed by a small number of cases of long admissions. Two cases of 169 (the maximum LOS) and 120 days make up 37% of total days. Excluding these two cases, the average LOS was 32.9 days, closely aligned with the median LOS of 30 days.

This is consistent with the conservative approach undertaken in the modelling, as the average LOS would be 4 days if the outliers where excluded. However, the full right skewed average figures have been used in the cost effectiveness model to reflect the full LOS cost basis.

As described in the time series methodology, Section 0, two consumer cluster groups are defined to capture the maximum possible sample size for outcomes; first, for consumers who had completed 1 full quarter post program (n=210), and second, for consumers who had completed 2 full quarters since exiting the program (n=133).

The figures for the first quarter above include both clusters 1 and 2, as both groups had completed at least 1 quarter since exiting the program.

The inpatient average length of stay was separately tested for Q+2, compared with pre-program figures, as provided in Table 5. These figures confirm that the reduction resulting in Q+1 are maintained into the second quarter post program, showing a statistically significant decrease of 10.4 days on average per consumer.

Table 5: Average inpatient length of stay – Second quarter post program

	Number of matched consumers	Quarter Prior	Quarter Post	Change	p-value
Mean Inpatient LOS					
Q-3 to Q-2	83	7.1	8.2	+1.1	0.679
Q-2 to Q-1	83	8.2	16.1	+7.9	0.005
Q-1 to Q+1	83	16.1	8.4	-7.7	0.029
Q-1 to Q+2	83	16.1	5.7	-10.4	0.001

Source: CBIS
Consumer cluster 2 n=133, paired t-test on matched before and after consumers

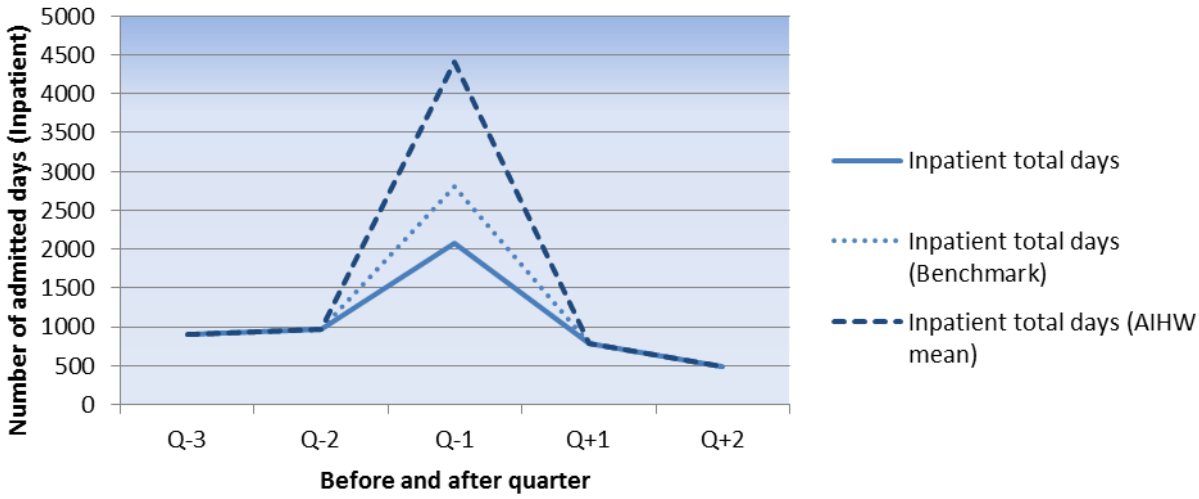
4.1.1 Reduced length of stay with IHBSS support

The previous section presented the change in reported lengths of hospital stay based on actual inpatient activity as a result of IHBSS. An additional program outcome may arise where the length of stay (LOS) is reduced where consumers would have remained as inpatients until they were sufficiently well to return home, but were able to leave hospital early by being discharged into the IHBSS program.

It is recognised that psychiatric inpatient LOS are characteristically highly variable with extended LOS, in some cases for several months or years. Despite this variation, the Australian national average LOS provides a broad context. In summary, average LOS, excluding same day separations (days) in public psychiatric hospitals, have increased from 55.0 days in 2007-08 to 74.2 days in 2011-12, an average annual increase of 7.8%, with an increased average since 2010-11 of 18.7%.[14]

In this perspective, IHBSS consumers are at the lower end of inpatient lengths of stay at 16 days in the quarter prior to program entry, Figure 9 (solid blue line). This figure is for reference to represent the reduced length of stay components. However, in line with the conservative approach taken for the cost-effectiveness estimates, the only figures included explicitly in the estimated cost offsets are the lowest inpatient day figures, which in turn are based on the matched consumer program data.

Figure 9: Early hospital discharge and reduced length of stay



Source: CBIS

The dark blue dotted line represents the lower AIHW average LOS of 55 days, and the light blue dotted line shows potential number of inpatient days that may be expected. This is in line with a typical benchmark, in this case 35 days. The gap between the estimated total

[14] Australian Institute of Health and Welfare (2013) Australian hospital statistics 2011-12. Health services series no.50. Cat. no. HSE 134 Canberra: AIHW. Table 2.12: Patient days and average length of stay, public and private hospitals, 2007-08 to 2011-12.

inpatient days and the LOS captured in the consumer outcome data reflects the cost saving from early exit.

This indicates that a significant number of consumers avoided inpatient admission completely on entry to the program and that the consumer LOS captured in Q-1 is understated. This is in effect a component of the program reducing inpatient admissions.

The reduced length of stay due to consumers feeling able to safely return home is consistent with findings from the qualitative research reported below.

4.1.2 Avoided inpatient admissions

Further to the reduced inpatient admissions post program and reduced LOS resulting from early discharge, a significant proportion of consumers targeted as at risk of inpatient admission avoided hospital completely as a result of the program. The program responsiveness and capacity enables rapid intervention of developing episodes and is diverting consumers from hospital events altogether. This is an additional component to the saved LOS and is also not reflected in the figures in the quarter prior to program entry.

Consumer data for both metropolitan and country consumers captures the likelihood of the IHBSS package assisting in an avoidance of inpatient admission. Assessments are made by a clinician as to whether offering an IHBSS package may avoid an inpatient admission. The assessments include a discussion with the consumer and consideration of the past history of the consumer's utilisation of inpatient admissions.

As at 30 October 2014, of the 420 consumers admitted to the program in metropolitan Adelaide, 216 (51.4%) indicated that the program helped avoid hospital admission. This was consistent with the consumer and staff interviews, which confirmed the positive effect of the program on hospital avoidance and reduced lengths of stay, as described in Section 5.1.3.

In country areas (n=115), a greater majority (68 people) indicated that the program helped avoid an inpatient admission (60.7%). This question records a subjective judgement by the clinician and is accordingly presented as a suggestive figure. Despite this, the fact that a majority of consumers are considered to have avoided hospital health services suggests the program is contributing to a significant number of avoided hospital admissions.

4.1.3 Hospital admissions and length of stay: qualitative data

Interviews with staff from NGO service providers and SA Health indicate that IHBSS is meeting its aim of avoiding admissions to hospital and reducing the length of hospitalisations. They described a number of reasons for this:

- IHBSS provides post-hospital support that assists consumers in re-establishing routines and transitioning from the hospital environment, reducing the risk that this transition will result in new episodes of distress that lead to re-hospitalisation. This support can begin while the consumer is still in hospital.

- As IHBSS responds rapidly to referrals, and support from the program can start within 32-48 hours, it can reduce risks of re-hospitalisation and the length of hospital stays.

Without IHBSS, it would take longer for support to be put in place, and the consumer would be sent home either without support or with more limited support than they need, and so at elevated risk for re-hospitalisation. Alternatively, they would stay in hospital until support could be organised.

- If hospitalisation is needed despite participation in the program, the support from IHBSS can continue while the consumer is in hospital. This means that rather than support ceasing on hospitalisation, the consumer and support worker can maintain their relationship and continue working towards their recovery goals.

- The program can prevent episodes of distress from escalating to the point that hospitalisation is needed.

As one stakeholder said:

> I love this program, because what it does is it is a hospital avoidance program. When we have got someone who is becoming maybe a little bit unwell but does not need a hospital admission, we can refer them to IHBSS and actually have that intensive daily support, and it could be around observing them take their medication for example. (SA Health interview)

In one LHN, IHBSS has recently been instrumental in supporting consumers who have had very long hospital stays by providing support while they are still in hospital to re-establish everyday activities in order to transition to supported accommodation. Consumers who have had long stays in hospital (more than 30 days) have been supported by IHBSS in their transition to an intermediate care centre and then home or to supported accommodation.

> So this is a very different way of using IHBSS. It follows the patient or consumer right through until when they're discharged from the Intermediate Care Centre and the IHBSS package is helping us transition long stay [consumers] back to the community. We've now worked through nine long stay patients and when you add up the bed days we've saved, we actually ended up closing two southern inpatient flex beds. (SA Health interview)

Because these patients received this support in the last months of 2014 and early 2015, these outcomes are not reflected in the administrative data analysed for this report.

4.2 Emergency department presentations

Similar to the reduction in hospital admitted days, ED presentations declined significantly following involvement with IHBSS.

4.2.1 Reduced emergency department presentations

Table 6: Average number of ED presentations by quarter

	Number of matched consumers	Quarter Prior	Quarter Post	Change	p-value
Mean ED presentations					
Q-3 to Q-2	93	0.15	0.26	+0.11	0.058
Q-2 to Q-1	93	0.26	0.41	+0.15	0.099
Q-1 to Q+1	93	0.41	0.12	-0.29	0.001
Q+1 to Q+2	93	0.12	0.20	0.08	0.131

Source: CBIS
Consumer cluster 1 and 2 n=210, paired t-test on matched before and after consumers
Assumed ED presentation = 1 day.

ED presentations are relatively low compared with inpatient days, showing a reduction of 0.29 presentations per quarter in the before and after comparison (Table 6).

The average number of ED presentations per month was 0.41 per consumer in the quarter prior to entering the program. The reduction to 0.12 per quarter in the quarter following the program represents a marginal change. However, these findings do not reflect the ED presentations avoided prior to entry, which is the more significant effect of IHBSS on ED presentations. CBIS data captures whether it was considered likely that consumers would have gone to the ED.

As at 30 October 2014, 265 of the 420 metropolitan Adelaide consumers (63.1%) indicated that the program had helped avoid ED presentation. This was again consistent with the consumer and staff interviews, which indicated the positive effect the program has had on hospital avoidance and reduced lengths of stay, as described in Section 0.

It is recognised that presentations to emergency departments are often complex and diagnoses in this emergency setting may mask underlying mental health conditions, or not be classified within established definitions for reporting mental health related ED presentations. This may lead to under-reporting of the actual number of mental health related ED presentations.[15]

4.2.2 Avoided emergency department presentations

Of the 420 consumers in metropolitan Adelaide, 265 (63.1%) indicated that the program helped avoid presenting at an ED. In country regions, similar to inpatient admissions, 72 of

[15] Australian hospital statistics 2011–12. Health services series no. 50. Cat. No. HSE 134. Canberra: AIHW.

the 115 consumers (62.6%) indicated that the program helped avoid an inpatient admission, again representing an equally significant majority.

Similar to avoiding inpatient admission, avoiding ED presentation is based on an assessment by the clinician, which includes consideration of discussion with the consumer and past history of the consumer's utilisation of ED, that IHBSS may help avoid an ED presentation. This is a subjective judgement by the clinician and is therefore presented as a suggestive figure. Despite this, the fact that a majority of consumers are considered to have avoided ED services suggests the program is contributing to a significant number of avoided presentations.

4.3 Community mental health services

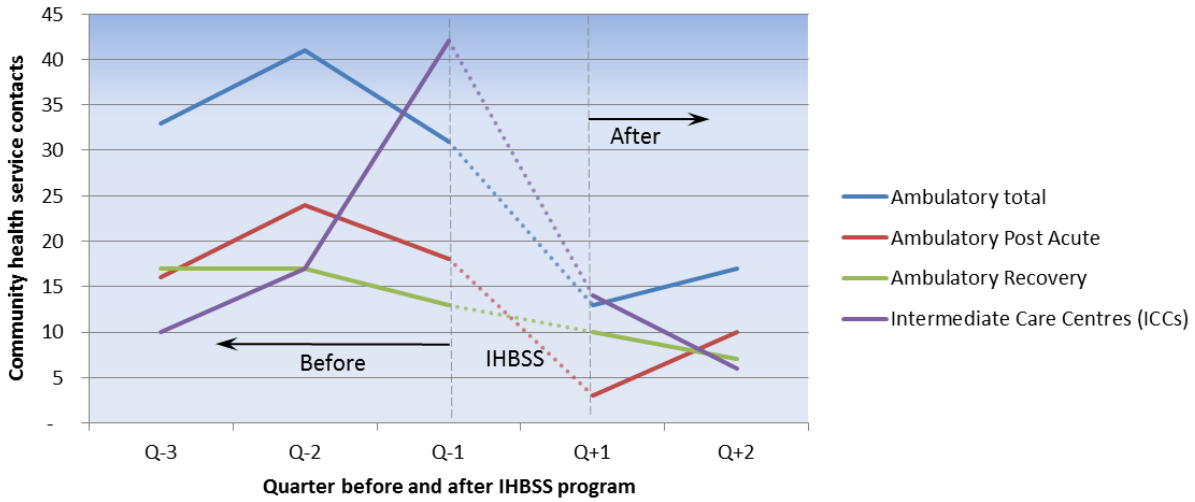
In addition to preliminary analysis of inpatient and ED service use, additional ambulatory services and Intermediate Care Centre (ICC) contacts have been reviewed.

As presented in Figure 10, ICC contacts reflect an increase prior to program admission and a reduction following IHBSS support. All figures are based on the matched before and after consumer group as used in the inpatient and ED analysis.

Ambulatory acute and recovery contact indicates a reduction post program, which is based on a relatively small sample size and is not statistically significant. However, this is consistent with post program declines for hospital admissions.

This service usage data indicates service use reduction; however, without a statistical basis, this has not been explicitly incorporated into the preliminary cost-effectiveness analysis. The extent to which these community mental health services are reduced provides an additional source of potential cost offsets to the program and would further contribute to the program cost-effectiveness estimates.

Figure 10: Community health service contacts before and after



Source: CBIS
Note: Duration between before and after, generally 3 months with minor variation

4.4 Mental health outcomes

The HoNOS instrument provided the highest number of matched consumers that had a score recorded before and after the program. As presented in Table 7, consumers reported a statistically significant improvement (i.e. lower total score) post program.

Table 7: Mean HoNOS scores pre and post program

	Number of matched consumers	Quarter Prior	Quarter Post	Change	p-value
Mean HoNOS Q-1 to during and Q+1	61	16.2	13.8	-2.4	0.012

Source: CBIS

Note: Figures do not include outcomes for country consumers.

The post quarter figures include the average for HoNOS scores, either while the consumer was still in the program or in the quarter following program exit, to maximise the number of comparable figures. This is seen purely as a timing factor as some consumers are recorded in the last week of the program and others are captured in the weeks following exit.

The K10 and LSP-16 instruments did not provide sufficient before and after matched sample sizes to assess pre and post program changes.

4.5 Relapse duration analysis

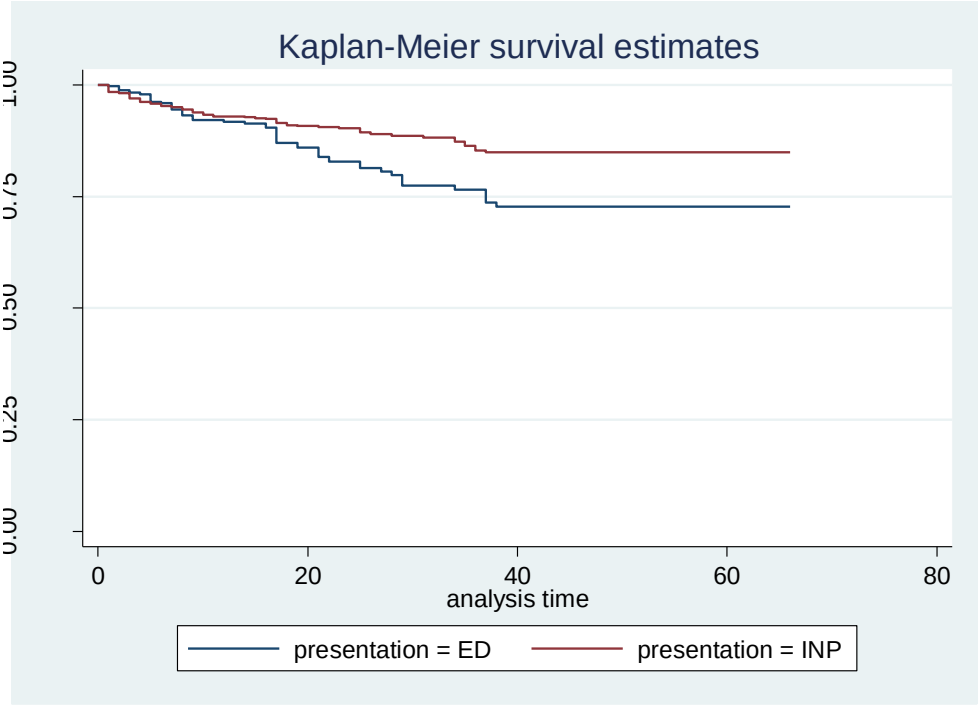
Relapse duration analysis provides articulation of time to event, where the event is defined as post IHBSS program relapse, either as an inpatient admission or presenting to an ED.

Due to consumer program entry and exit dates, the available consumer follow-up period varies and is limited. The resulting right censoring of post program data has been incorporated into the consumer cluster structure in order to focus on 2 subgroups of consumers that have completed either one or two full quarters since exiting the program.

Additional analysis has been undertaken for both ED presentation as well as inpatient readmission as reflected in the timing of each ‘relapse’ calculated using the Kaplan-Meier method(Figure 11).

The resulting ‘relapse’ back to inpatient or ED is subsequently presented as the proportion of consumers experiencing relapse per total consumer months of post program observation.

Figure 11: Kaplan-Meier duration follow up estimates in weeks



Source: CBIS
Note: Time = weeks post program exit

Figures have initially been based on any inpatient readmission or ED presentation. However, this is overly conservative given that consumers have some average level of inpatient and ED usage in the quarters prior to the program.

For this reason, further refinement of the 'relapse' definition to reflect a return to the pre-program mean would more accurately reflect the number of consumers experiencing a relapse, as defined by return to hospital or ED. Overall, results indicate a relatively low number of consumers returning to hospital or presenting to ED in the two quarters following program support, as presented in Section 0.

This indicates that from the time of exiting the program, the relapse rate is low for both inpatient admissions and ED presentations.

4.6 Consumer, carer, and staff views of IHBSS

4.6.1 Consumer and carer interviews

Consumers reported that the program had a profound effect on many aspects of their lives, and without exception reduced or eliminated the need for emergency or crisis service during the period of IHBSS service.

> The program has changed my life, I have so much confidence in myself, to find my feet, and work out who I am. (consumer interview)

> I have made so much progress in a short time. [Support worker] is here to fall back on if I had a bad day. A little trampoline to fall back on and pick myself up. (consumer interview)

> When I first came to [NGO], I had really bad depression and anxiety, which was making me sick all the time. Since working with [NGO] I feel like a new person. It has impacted on my life in such a positive way. (consumer interview)

For some, recovery included being able to undertake some studies. Five consumers have plans to complete school or undertake TAFE or University studies. Others plan to move back into the workforce. One consumer had registered with a disability employment support agency to continue receiving some support in obtaining and maintaining employment.

A number of consumers had previously made suicide attempts and reflected on their journey since then:

> So many young people don't know what help is available; suicide with young people is such a big thing. I'd shout [the program] from the rooftops if I could. People out there really need help and don't know where to find it. (consumer interview)

> Left to my own devices [before program], I had made suicide attempts. I honestly believe that's how it would have concluded [without the intervention of the program]. (consumer interview)

> I wouldn't be here now if it wasn't for [support worker]. I did attempt to take my life a couple of times [prior to program]. (consumer interview)

> I can now see the other side of suicide and what it would do to my family. (consumer interview)

Consumers and families were generally affirming of the NGO staff involved in providing support, and commended their professionalism. The use of NGO support workers as role models for appropriate social behaviour was highlighted.

The support through IHBSS enabled family carers to decrease the number of days of carers' leave taken from work. The support provided also reduced their anxiety about their family member, who would often be at home alone, while the carer is at work.

Carers of youth consumers (generally mothers) reported that the support worker would often provide similar information or advice to that provided by a family member, however, with much greater success as "no-one listens to their Mum".

Generally, where families were involved, IHBSS provided a transparent process where families were included in the planning and practices. This was particularly true for youth consumers still living in the family home.

> I had confidence [family member] was in good hands. (carer interview)

> Support worker was particularly empathetic and discerning. [They had] common ground and shared interests. Without stepping on [family member's] toes, [support worker] gave her space to be herself. (carer interview)

> Doctor said that [family member] needs predictability and clarity. Relationship between support worker and parent/ carer gives that predictability. (carer interview)

> When [family member] has a setback, instead of plummeting right down, they can get over it. (carer interview)

> A few months ago [family member] wasn't communicating, not dressing, eating or sleeping, aggressive, screaming at everybody, delusions. Now with the right medication and support worker input [family member] showers, dresses and cares about appearance when [support worker] comes. (carer interview)

> Maybe they could have involved me – without [family member] knowing. If [family member] was presenting differently at home to with the support worker, I don't know if they would have known. (carer interview)

One consumer reported their child as saying:

> Mum's happy again, mum's singing again to the radio. (consumer interview)

4.6.2 Staff interviews

Interviews with staff indicated that outcomes for consumers are mainly linked to improvements in social participation and the quality of daily life. For example, they reported that most consumers feel greater connection to the community, such as going to the library or out for coffee, which represents a significant change from being isolated and house-bound prior to the program. In some cases, participation in IHBSS is fostering particular skills and tasks such as job-seeking and training. In others, the program has prevented hospital admission. The interview participants emphasised the link between outcomes and the practical everyday assistance provided by the program. The program supported a number of consumers whose health was at risk because their home environments were unsafe. In other cases consumers were homeless or at risk of homelessness and the program assisted them to secure housing. In one of these instances, the consumer was a woman experiencing domestic violence. She was supported by the IHBSS program and the Domestic Violence Service to leave the perpetrator and move to emergency accommodation, followed by short-term transitional housing, prior to looking for secure and safe housing.

The flexibility of the program allows consumers and staff to plan for individualised outcomes and respond to the diverse needs of consumers. For some consumers that may relate to hospital avoidance by building living skills such as cleaning or cooking, as in the example given above, or another consumer whose low food hygiene and personal hygiene skills had led to multiple hospitalisations because of weight loss and gastroenteritis. For other consumers, the program led to benefits because it built confidence and reduced psychological distress.

The diversity of consumer needs is also reflected in the outcomes for consumers around ongoing support after exiting IHBSS. Some consumers are expected to benefit from longer term programs that provide less intensive support, such as Individual Psychosocial Rehabilitation Support Services (IPRSS), while others are not transitioned to formal long term support. As IHBSS is focused on supportive relationships and trust, it facilitates the process of assessing long term needs. One stakeholder, for example, described a consumer

with a long and difficult history of involvement with mental health services characterised by reluctance to receive assistance and involuntary treatment when they were unwell:

> So a very traumatic experience of mental health [services] unfortunately and we come along and have a go and that consumer really appreciated a different approach and actually engaged really well […] That's a huge difference in that particular person and, you know, just starting off slowly going, "Hi, how you going" looking for rapport building [and initially the response from the consumer was], "No, I'm fine I don't need anybody" and then it's like, "Well actually could you give me a little bit of a hand, I've been worrying that I can't use the washing machine properly" and then being more open and accepting of different types of support. (NGO interview)

Staff from SA Health and NGO casework agencies were very supportive of IHBSS, reporting that it contributed to supporting outcomes in ways that could not be done in the absence of the program. IHBSS is targeted at consumers who need intensive, immediate support. The interview participants stated that other programs can neither support those consumers to the same extent nor as successfully as IHBSS.

5 Governance, service model, and relationships

This section of the report describes the effectiveness of the IHBSS program in terms of the governance structure, stakeholder relationships, collaboration, inter-agency service delivery approach, and consumer/ carer experiences of receiving services and support.

5.1 Consumer and carer experiences

The IHBSS program was considered flexible, responsive to needs and focused on the individual and their goals. Support staff were available by phone and text between appointments as needed:

> Flexibility of hours available, and support is when you need it. It's tailored to your situation on that personal level. (consumer interview)

> [Support worker] was visiting five times a week, and that got too much. I asked for it to be reduced to twice per week, as I started to feel a bit ill. I find it a bit fast paced – the normal routine. (consumer interview)

The matching of IHBSS staff and consumers by age was consistently mentioned as a strength:

> [Family member] is better with [someone his own age]. It's different with professionals, or mum. He feels like he is being scrutinised by other adults, always asking questions. (carer interview)

> I don't know what [matching] process they go through. If it was random, it was really lucky! (carer interview)

Staff who were interviewed also emphasised the importance of gender and age in the relationships between consumers and support workers. They said that the capacity of the NGOs to place young male support workers with young male consumers was a strength of the program, especially as this demographic group is particularly vulnerable to mental health problems and the NGO workforce is typically female.

IHBSS was considered a 'different' type of mental health support program to those accessed previously by consumers and carers. Previously, consumers had seen psychiatrists or psychologists, either in hospital or in the community, but on a much more time-limited basis. The ad hoc support between appointments was considered a great strength of the IHBSS program, particularly in times of stress or potential crisis.

The common types of support provided included social contact, establishing routines and setting goals, re-integration into the community, connection to local community activities (walking, gym, art groups, cafes, volunteering), transport, support at doctors' appointments, visiting a consumer in hospital if required, negotiation with neighbours and family members, diet and menu planning, and strategies/ tools to cope with negative thoughts. Strategies were variously described as 'low key', 'no pressure' and 'laid back'.

One carer commented that:

> Sometimes the fundamentals get overlooked, and if you can have some assistance in establishing the fundamentals – getting up in the morning, sleeping at night – other things fall into place. (carer interview)

Many individual consumers had commenced the IHBSS program with a goal of 'getting back outside' as many had become housebound and unwilling to venture outside. A common strategy was the support worker accompanying the consumer on a short walk around the neighbourhood, gradually increasing it in duration. In addition to the benefit of getting out of the house, people found that it cleared their heads and gave them energy for other activities. Walking was often factored into the consumers' plan, so that it could continue on days they did not see the support worker.

> [Support worker] was good at getting me out of the house or I would have stayed in all day. It's an art form to get someone out of the house – it's a gift. [Support worker] won [getting me out of house] and I lost - but I won overall! (consumer interview)

One carer commented on the support worker teaching her family member to cook as part of the support received:

> Cooking has been phenomenal. It has given [family member] a sense of purpose and participation within the family. (carer interview)

The positive way in which the NGO support workers developed trust was also frequently mentioned; doing so in a step by step manner, gradually increasing the time and intensity of the visit, and showing interest in the consumer's interests.

> [Support worker] provided time for me to practice being social in a controlled environment. (consumer interview)

> [Support worker] really understood me, and I really didn't understand myself – gave me ideas, tools to work it out myself. (consumer interview)

> [Support worker] gave me tools for emotional regulation – [I realised] I can take a step back… this is not my problem. I don't need to care about what you think. (consumer interview)

> [Support worker] has helped me to learn my value and strength, but has done it in a way that I've done it myself. (consumer interview)

> [Support worker] didn't say 'oh, I know what you're going through' when quite clearly they didn't [i.e. hadn't experienced it themselves]. (consumer interview)

One carer reported she was quite sceptical at the beginning:

> I wasn't sure support would meet [family member's] needs. How could someone coming in the morning, getting [family member] up and walking going to make a big difference. But it has. (carer interview)

5.2 Intensity and duration of support

IHBSS provides individually tailored, short term support, usually for around three months. There are circumstances in which support can be provided for a longer duration although the staff interviews indicate that NGO service providers plan for and keep to a maximum period

of three months. However, the interviewees described the program as flexible regarding duration. For example, one noted that it can take time, through very frequent short visits, for the support worker and consumer to establish trust and build rapport. This delays the provision of support around the consumer's needs. In those circumstances, and others of genuine need, the program can be extended.

Some consumers will not need support for as long as three months, and the flexibility to taper and exit is valued by staff.

> We've had very short packages where we've gone in [and] the consumer feels much better and they're "Oh, my goodness thank you so much for the support. That's fabulous. I feel like I'm able to do this on my own" […] and they've just gone off on their own merry way after, you know, six weeks. It is very individualised which I think is the key word. (NGO interview)

The program is also flexible regarding intensity, and this is also highly valued by staff. The fact that support can be provided in the evenings and on weekends, as well as every day for many hours if necessary, was described as appropriate due to the need for urgent support for the target consumers. However, this level of contact may be overwhelming for some consumers who benefit from less frequent visits.

The interviewees described risk management strategies that support agency staff over the duration and intensity of the program although we do not know how consistently these strategies are employed. Strategies include:

- reviews to monitor progress towards goals and plan for transition from the program (the most important mechanism)
- exit planning from the beginning of the program
- tapering contact visits from the support worker over time.

5.3 Recovery and goal setting

In the consumer and carer interviews, each person believed that the IHBSS program had explicitly helped them towards recovery, and each interviewee expressed their personal view of what recovery meant to them:

> Being able to engage in life as a normal adult should (consumer interview)

> You have to say enough is enough. Other people can't make choices for you. They can't make you wake up and smell the coffee so to speak! (consumer interview)

> Having someone believe in you when you've lost that belief in yourself is vital to making that step towards getting better. (consumer interview)

> I do drink (but not proud of it). I was told that if I drink the support will be scrapped, so that helped me to have self-control. I have meetings with [support worker] in the afternoons so I don't get drunk. It's given me confidence that I can do it and control the alcohol. When I was told that [services could be withdrawn if I was drunk], I was a bit scared. I didn't think I'd have the control. I just wanted the help that bad that I fight it [urge to drink]. (consumer interview)

For the carer of a person with dementia and mental health challenges, goal-setting toward recovery was not suitable as dementia is a disease with a continued downward trajectory. However, the support provided by IHBSS had enabled the consumer to remain in their own home for a longer period of time, which was his goal, prior to a transfer to a residential aged care facility.

> The inevitable was going to happen when [he] just could not stay at home. This gave him 3 or 4 months longer at home. (carer interview)

The focus on recovery and individualised goal-setting recurred in interviews with staff as a strength of IHBSS and this is a priority of each of the NGOs. Consumers may need support in setting goals as this is not a feature of other programs with which they have experience. Interview participants said that for many consumers, goals relate to social activities and community participation; however, IHBSS allows greater scope in setting goals than other programs. Rather than being limited to functional or task-specific goals, consumers and support workers can identify longer-term goals:

> It's an opportunity to get creative, asking someone, "What do you want to do? […] If you want to do dance classes do dance classes or if you want to go and sign up for university it really is an avenue to get, you know, it's not always that someone gets an opportunity that someone's there to go, "All right, what do you want to do? You lead the way. You're the driver, I'm just your crew". (NGO interview)

One participant noted that because isolation and anxiety about new social situations are problems for many consumers, their goals relate to improving their lives in those areas. The program can support these goals by support workers accompanying consumers to the supermarket, library, and other daytime activities. As the consumer becomes more confident, accompaniment is no longer necessary. The benefits to the consumer are two-fold; improved social participation and increased confidence through successfully meeting their goals.

In this sense, goals can be catalytic. Achieving goals can enable consumers to achieve more and support workers can retreat. However, one interview participant emphasised that sometimes goals are not met. They believed this may occur when there are obstacles other than mental illness to meeting those goals, or because the consumer has higher support needs than those that can be met in the community. This point was made as a broader argument about the suitability of IHBSS for some consumers:

> IHBSS is time limited really, three months maximum, and if the consumer is not able to demonstrate that they can achieve those goals those resources will need to be given to someone else. (SA Health interview)

As the above comment indicates, some stakeholders are sceptical about the potential benefit of IHBSS for some eligible consumers; for example, a few interview participants expressed anxiety around 'dependence', either as a vulnerability of consumers ('dependent personality types') or as a risk that the program may create reliance on the support worker. Unsurprisingly, it is more challenging for staff to work with some consumers in meeting goals than others, and these anxieties point to the importance of strategies and resources for support workers to work with these challenges.

However, it was notable that interview participants did not advocate different referral procedures to screen out consumers for whom it will not be effective. Even those who are concerned about the capacity of IHBSS to support all eligible consumers did not argue its eligibility criteria should be changed.

5.4 Governance and processes

The IHBSS service model sets out the partnership model and governance arrangements. Key elements of the model are; the partnership model between government mental health services and the non-government sector, with defined roles for each agency, and the pivotal role of the sub-acute care coordinator.

Overview of IHBSS service model

- Integrated home-based support services are delivered as a partnership between government mental health services and the non-government sector.
- Government and non-government mental health services will work together to deliver recovery oriented home based support and treatment for consumers with high level support needs. A coordinated service partnership of government and non-government providers will provide effective treatment options together with maximising the consumers' connection with, and capacity for, community living in line with the evidence base.
- **Government mental health services** will provide services to consumers, including mental health assessments, individual service planning in collaboration with stakeholders, therapeutic treatment and interventions, crisis intervention and referrals. Specific tasks include:
    - Undertake a partnership assessment of the support needs of consumers across life domains and including assessment and management of risk.
    - Participate in the development, planning, implementation, review and revision of support for each person.
    - Provide specialist mental health services that accommodates the individual needs of the consumer.
- **Non-government organisations** provide support within a person's home. These services are delivered within a recovery approach and are aimed at increasing a person's confidence in, and capacity for, community living.
- The mental health service coordinator will:
    - coordinate referrals to the program, including determination of eligibility and entry
    - liaise directly with the referral source and non-government provider
    - facilitate access to government mental health services
    - ensure relevant documentation is available to the non-government provider
    - participate in joint care planning processes
    - support the government care coordinator with exit planning
    - support the process of consumer reviews
    - meet with the non-government provider on a regular basis as part of program governance
    - attend and/or provide an update to the local community mental health allocation committee on a regular basis
    - ensure ongoing program development and resolve issues as they arise
    - facilitate integration with other programs including other National Partnership Agreement sub-acute initiatives.

SA Health (2012) *National Partnership Agreement: Sub-Acute Initiatives: Intensive Home Based Support Services Service Model*

The topics that recurred in the interviews as most important to IHBSS relating to governance and implementation were:

The role of the sub-acute coordinators

All interviewees were unanimous and emphatic that this role is critical and that the people in those roles have made significant contributions to the success of the program. A key part of the role is the liaison between SA Health and the NGO service providers. The coordinator needs to ensure both that the partnership is working smoothly at a program level and that individual cases are referred and managed well:

> I think that sub-acute coordinators work really well in terms of being liaisons between clinical and between us as well, and like I said, any issues that have come up they really facilitate negotiation between both. (NGO interview)

There was consensus that the role is essential to the program and the tasks performed by the sub-acute coordinator could not be taken on by other staff:

> The role of subacute co-ordinator [is] critical. If we lose that role we're going to lose a lot of traction because I can tell you people in [senior roles] will not have the time that will get delegated to it – not have the time to follow-up. It just will not happen. (SA Health interview)

The importance of interagency planning and governance

The partnership management committee (PMC) and allocations committees are valued by NGO practitioners and managers as well as SA Health because they provide strategic oversight of the program and coordinate planning and communication.

Referrals and demand management

In interviews, NGO and mental health staff said that when IHBSS commenced, some mental health clinicians were reluctant to refer consumers to the program. These and similar teething problems are typical of any new program and the IHBSS implementation experience seems to have been relatively smooth. One source of this reluctance was thought to be staff familiarity with IPRSS, a program with a similar service model to IHBSS, which supports consumers who need non-acute care. Because mental health staff were used to referring consumers who needed less intensive support, it took time for them to feel confident in referring people at risk of acute care. Although referrals have increased over time and the program is exceeding its target numbers (Section 0), NGO and SA Health staff reported that they still spend significant time promoting the program and engaging clinicians in attempts to build referrals:

> [Some] clinicians are just put off by the paperwork, or they feel that, "I'm the case manager and I'll do the work myself", [they're not] thinking more broadly, like let's work collaboratively, let's have four, five minds working with this person.(SA Health interview)

Waiting lists are not a feasible strategy for a program such as IHBSS, so other strategies for managing demand are used. The sub-acute coordinator in each local health network (LHN) manages referrals and allocations, and is therefore aware if a service provider is at capacity in an LHN and can refer to another. The NGO service providers can also reallocate staff

resources to meet local demand where needed. However, stakeholders reported that in some locations, insufficient referrals have been a more pressing concern to date than exceeding capacity. There was a suggestion that a reprise of the roadshow to build awareness of IHBSS could be beneficial as some clinical teams in country areas are still not familiar with the program.

Relationships

It was intended that IHBSS be driven by partnerships between NGOs and SA Health, at the levels of the PMC and of case management, and this has been achieved. Interview participants were clear that mutual respect and collaboration have been integral to the program.

The interviews and focus groups were largely supportive of the program's operations and governance structure, and only a small number of suggestions for improvement were made:

- To review the membership of the PMC and communication mechanisms between the PMC and caseworkers. One option may be to include representation from team leaders and operational staff on the PMC.

- To review the differences across the program in referrals and allocations. While interview participants recognised that these differences may reflect local needs, they thought the program may benefit from greater standardisation.

- To improve database and information management systems to enable sub-acute coordinators to identify entries and exits to the program across LHNs and service provider organisations.

These suggestions indicate a high level of engagement with the program from stakeholders and strong support for the program. Interviewees were keen to express the value of the service model and their ideas for refining its operations to ensure it continued to improve.

5.5 Discussion

Overall, the program appears to have been smoothly implemented and is generally well used. The current number of consumers allocated to the program is based on funding arrangements rather than need. There were some indications that the program could be extended to include a larger number of consumers; however, it is also important to ensure that the capacity of NGO service providers is not exceeded as quick response times are a strength of the program.

In terms of governance, the main strengths of the model have been the partnership arrangements involving clinical staff from SA Health and NGO service providers and the role of the sub-acute coordinators. Although some consumers and staff had suggestions for improving the program, there was a strong level of support for the service model, individualised support, flexibility of response, and recovery principles. The capacity of IHBSS to prevent hospitalisation and reduce the length of hospital stays is thought to be a particular

contribution to consumer outcomes, and its services could not be duplicated in the program's absence.

There were differences of opinion regarding whether the program should be more flexible. Some stakeholders, in particular some of the consumers interviewed, felt that they would have benefited from longer or more intense involvement. On the other hand, some stakeholders expressed concern that the program could result in dependency. On balance, the 3-month duration of the program, with a facility to extend this in exceptional cases, seems appropriate and should be maintained.

6 Case studies

The following case studies were provided by the NGOs and in one case constructed by the research team to illustrate how the IHBSS program operates in practice, and how it benefits consumers. These should not be read as representative of all consumers' experience, but are examples of the diversity of consumer needs, goals, and outcomes.

All names are pseudonyms.

6.1 Case study 1

Ed is in his early 20s, living in the family home, and a high achiever at school. During the previous six months he had withdrawn from life and refused all social interactions. Sleeping 18-20 hours per day, he was lethargic, unmotivated, and unable to make or carry out any plans. He described experiencing a 'breakdown' and was referred to the mental health unit at the local hospital. The hospital social worker referred him to a psychiatrist who diagnosed a mental health condition. The social worker suggested the IHBSS program to get him back on track and although initially reticent, he agreed to the program. His goal was to 'get back to what life used to be like'.

Initially, the NGO support worker visited five days a week at 8.45am to encourage Ed to get out of bed. Although resistant, he agreed to commence each day with a walk. While initially easily exhausted, Ed felt his energy levels picked up after a week or so of regular walking, and he did less daytime sleeping. The NGO support worker also assisted Ed with meal planning and cooking skills, which gave him a focus for the day. To increase his socialisation, the support worker suggested Ed say 'Yes' to any social invitations as a way to re-integrate with friends and the community.

It took six weeks of daily contact with the support worker to get back into a routine, and then daily visits dropped to three visits per week. After 2 ½ months of support, Ed feels more positive about himself and his future, has reconnected with his friends, is about to re-join the gym, is planning a holiday, has linked in with a job agency, and says his family is less concerned about his future. He commented: "I'm really stubborn and it worked for me! It's a fantastic program, and everything I needed was available."

6.2 Case study 2

Scott initially was unable to enter a shopping centre or do his banking, and would only leave the house on a few occasions, mainly to visit his parents. The IHBSS worker provided side by side support to Scott to help reintroduce him gradually back into the community to help him with shopping and banking. Scott can now do the shopping completely by himself, which he would not have done previously, and attends the bank to pay bills.

The support worker initially attended local community groups with him, including a Men's Shed, and as Scott became more confident the support was gradually reduced. Scott now attends a group at least once a week by himself and he also attends Alcohol Anonymous

meetings. Scott is continuing to see his Drug and Alcohol worker every 3 weeks, and has been attending Alcohol Anonymous meetings, which he has found useful.

Scott is now confidently able to engage with others within the community in conversation and is actively looking at opportunities to participate in the community. He plans to focus on going to TAFE next year. Scott's son is currently staying a few days with Scott and mentioned how he had noticed a difference in Scott.

6.3 Case study 3

Dylan was a 22 year old male with a history of THC (marijuana), alcohol and ice use when he started with IHBSS. He was admitted to hospital following a drug induced psychotic episode. At this point, his memory and concentration were poor; his self-esteem was very low; and he reported high levels of anxiety and feelings of worthlessness. He had trouble coping with daily activities and had no idea what he wanted out of life. He was, however, determined to stop using alcohol and other drugs.

Through the IHBSS program, the NGO worked with Dylan for 4 months (IHBSS 3-month package with a 4 week extension), and he made slow but significant progress. His main aim was to find meaningful work, but without any experience or qualifications he realised that this would be difficult. On his first visit to TAFE he had to leave the counsellors office after half an hour because of his anxiety.

The NGO assisted Dylan to put a Mental Health Care Plan in place by his GP, and Dylan started seeing a psychologist to work on his anxiety. This benefited him greatly and on the second attempt at TAFE, he coped well. The NGO also supported him with some outstanding legal matters.

By the end of the IHBSS package, Dylan reported that he was no longer anxious all the time and feels that he now has a direction in life. He is enrolled in a Cert I in Education and Learning at Elizabeth TAFE, starting in February, and hopes to do a Cert III afterwards. He is not using alcohol or other drugs, and said that he is no longer interested in them.

Dylan has recently transitioned to the Individual Psychosocial and Rehabilitation Support Service (IPRSS) team.

6.4 Case study 4

Len, an Aboriginal male elder from Adelaide, had no fixed address and was classified as homeless for a period of 10 years.

Len wished to return to his homeland where he grew up as a child. He would speak about his home town and how he played for the local football team as a youth. Len spoke about all the friends and relationships he had made as a child and his wish to reconnect with them. Len worked with the Country Mental Health team and was offered, and accepted, Mental Health Stimulus housing in his home town. Len was put on an IHBSS support package and support

commenced the next day. Len needed to furnish his home and engaged well with all agencies involved to do so.

The support worker liaised with Len's public trustee to arrange quotes for sundries for his home. Len chose all his own kitchen and homewares and chose earth colours to remind him of the country he had returned to.

As part of the 3-month IHBSS package many other areas identified in his Individual Recovery plan were addressed:

- Furnished whole home
- Independent living
- Community engagement
- Financially independent through the use of pin card
- Supply of an air conditioner, TV and DVD
- Neurological psychological report
- Health and fitness assessment
- Hearing and vision check-up, including order of glasses.
- Dental appointment
- Use of Aboriginal health services
- Reconnection with family, including monthly planned visits in Adelaide, with support
- Joined local Aboriginal Men's group
- Reengaged with local agencies
- AOD missuses minimized

Len completed the 3-month package and the goals he wished to complete and more. He now wants to give back to his community and become an Aboriginal story teller in order to share his knowledge and story with the youth of his country. Len was referred to IPRSS and is still doing well 6 months later. He continues to live independently and has had no hospital admissions for his mental health during this period.

6.5 Case study 5

Sharon, 56 years old, was diagnosed with bipolar disorder and had been in and out of mental health facilities in NSW for many years. She was living an itinerant lifestyle for many years, until she moved in with her sister and brother-in-law. While living in NSW, she received numerous electroconvulsive therapy (ECT) treatments and had numerous hospitalisations for her mental health.

On meeting Sharon, it was evident that she was a talented woman who had many life experiences to share, but due to her mental health she was unable to complete the most

menial tasks. Sharon wanted to meet other people and showed a fondness for children, especially those with special needs. This was due to having completed some training as a teacher when she was younger.

The support worker set goals for Sharon and worked with her three times a week over a three month period to address a range of areas. The support worker was able to assist Sharon to get some volunteer work at the library and preschool assisting in the classroom and helping with reading, writing and other tasks. Assistance was also provided to encourage Sharon to be responsible for her own medication, including purchasing Webster packs and also collecting medication from the pharmacy.

The support worker provided assistance to Sharon to help her manage her money, including setting up a personal account and assisting her to apply for the disability pension. Sharon learnt to drive her vehicle again with the support of a driving school to help her regain her confidence. She now drives independently and recently assisted her sister to drive to see her family.

In addition to providing assistance with day to day tasks, the support worker helped Sharon interact with people at a facility that supports people with mental health issues and introduces them to others in the same position. Sharon enjoyed the craft and social side and has now become part of the governing council of this facility. Since exiting the service, Sharon has become a valued member of this facility and a member of the governing council.

Sharon moved into a house with her sister, brother-in–law, and her great niece who had mental health issues. The support worker also assisted with a number of carer support and family issues.

She has since moved to independently rent her own property, continues to drive her car, and has established a supportive friendship group. Sharon has also applied to be a mental health mentor and is still involved in volunteering in the community.

Sharon reported in the past that she was very thankful for the IHBSS program and support workers and that if she had stayed in NSW, she would not have received the same level of service that she received from the NGO and Community Health Team.

7 Economic evaluation

The positive program outcomes presented in the previous sections of this report have been achieved within the allocated budget. In this context, the economic evaluation examines these outcomes in the perspective of total funding and, where relevant, includes cost offsets to wider health services generated by the program. The economic evaluation is based on the quantitative analysis and aligns cost data with service delivery content to estimate the cost-effectiveness of providing IHBSS services from the perspective of SA Health.

The overall IHBSS funding figures are available at an aggregate level, in line with Commonwealth reporting. The figures have been combined with program service delivery hours by location from the CARS system to derive average cost per consumer reference rates.

These average cost estimates have then been aligned with program utilisation patterns in the context of timing the cost offsets. The cost offsets include reduced lengths of hospital stays, reduced ED presentations post program, and avoided inpatient and ED usage.

7.1 Program funding

The IHBSS program originally received a funding allocation of $19.2 million over 4 years. This was, however, subsequently revised downwards to $15.02 million for the total 25-month period from June 2013 to June 2015. Program funding figures include service delivery grants to the NGO service providers as well as administration costs to SA Health to coordinate and manage the program. The program funding and aggregate service delivery hours are summarised in Table 8.

The actual grant transfers to NGO service providers comprise the majority of program funding of $7.9 million (92.2% of total funding) as at 14 November 2014. Additional salary costs and administration overheads were $658,400 for employment of sub-acute coordinators across SA Health regions. These coordinators process and manage referrals with the NGO service providers, representing the remaining 7.8% of total program funding, that is, approximately $10 per service hour delivered.

The total program funding was $8.6 million as at 14 November 2014, which includes the NGO grant transfers and SA Health management costs. The aggregate funding figures have been aligned with total program service hours per month from the CARS system to provide the total cost per service hour of $128.

Table 8: Program funding 2012-13 to 2014-15

Financial Year	Grants to NGO service providers	Admin salaries	Total NGO funding	Budget	Budget variance	Regional sub-acute coordinators	Total Program Funding
2012/13	1,859,224	245	1,859,469	591,209	-1,268,260		1,859,469
2013/14	4,183,301	10,193	4,193,494	5,412,140	1,218,646	502,000	4,695,494
2014/15	1,859,245	155	1,859,399	1,980,667	121,267	156,400	2,015,799
Program totals	**7,901,770**	**10,593**	**7,912,362**	**7,984,016**	**71,653**	**658,400**	**8,570,762**
Total hours	66,876	66,876		66,876		66,876	66,876
Average cost per hour	**118**	**0**		**119**		**10**	**128**

Source: South Australia Health finance system, CARS
Note: 2014/15 figures as at 30 September 2014

Adjustments have been made to align funding with service hours in CARS to the end of September 2014, as a direct linear proportion.

Overall, as at 30 September 2014, the program is being delivered within budget and within estimated budget for the 2014-15 financial year, based on established service delivery levels.

A significant characteristic of the IHBSS program is the relatively low establishment cost. This is primarily due to the three NGO service providers having been previously established and being experienced in similar service delivery. This enables SA Health to utilise the reach and capacity of the NGOs across the state and scale up the program implementation without additional significant up-front investment funding.

The ‘hybrid’ nature of the program is reflected in the funding proportions with NGO staff primarily delivering core services and SA Health staff providing management and program coordination.

7.1.1 Program capacity and Commonwealth reporting

As part of Commonwealth reporting procedures, SA Health prepares periodic progress reports on improving hospital services, including specifically for the IHBSS program. To date, two reports have been submitted including an initial 6-month report for July to December 2013, and a further quarterly report for January to March 2014. The progress reports are prepared using consumer service hours recorded in the CARS system, combined with supplementary calculations for alignment of standard and intensive packages and the corresponding bed day equivalent figures as described in Section 0.

Table 9 shows that the effective IHBSS occupancy, against the COAG planned capacity of 37 bed equivalents, has increased from the initial 6-month period, at 86% occupancy, to full occupancy of 100% for the quarter from January to March 2014.

Table 9: IHBSS Commonwealth reporting July 2013 to March 2014

	Jul to Sep 2013	Oct to Dec 2013	Jan to Mar 2014
Standard Bed Equivalents	21	21	25
- % total bed equivalents	66%	67%	68%
Intensive Bed Equivalents	11	11	12
- % total bed equivalents	34%	33%	32%
Total Bed Equivalents	32	32	37
COAG IHBSS Capacity (Beds):	37	37	37
Effective IHBSS Occupancy:	86%	86%	100%

Source: South Australia Health IHBSS program Commonwealth reporting

The Commonwealth reporting is consistent with program development figures during the initial program establishment phase, from commencement to above 100 concurrent consumers by December 2013, after 7 months of operation. The reporting is also in line with the consistently high levels of utilisation since being fully established, indicating strong program demand and continuing high or full capacity. Further details of the development of consumer numbers are provided in Section 0.

7.2 Health service cost offsets

Program costs have been prepared using calculated average costs with aggregate service hours per month as recorded in the CARS system, providing the basis for timing of service delivery and the cumulative cost trajectory. The service delivery costs have then been aligned with consumer outcome and health system service usage from CBIS, as presented in the methodology section, and in terms of time series outcomes and each consumer's duration in the program.

7.2.1 Hospital service costs

For both inpatient and ED service use, there are multiple aspects resulting from the IHBSS program, which affect cost offsets at separate points relative to when consumers entered and exited the program. First, there is the reduced service use in the quarterly periods post program compared to the quarterly usage prior. As presented in Section 0, inpatient admissions and lengths of stay declined as consumers stabilised, recovered and returned to their community activities.

Second, and separately, consumers at risk of inpatient or ED presentation, as a target referral group, were able to be supported in a responsive short timeframe. Significant

numbers of consumers are reported as having avoided hospital admission or ED service all together. This is reflected through both the CBIS and country consumer datasets and has been used to separately estimate the number of avoided incidents for inclusion in the cost-effectiveness model. This captures an avoided component that, due to the program, did not occur, and is correspondingly not reflected in the pre-program average lengths of stay or the change between the pre and post program timeframes.

The third aspect results from consumers being discharged earlier than expected with the community home based support of IHBSS. Again, this results in the pre-program inpatient length of stay data being reduced by the amount of the early discharge.

Inpatient costs

The average cost of psychiatric inpatient care is subject to various estimates from approximately $800 per day to $1,200 per occupied bed day.[16] In line with the conservative approach taken, the lower estimate of $800 per day has been used in cost-effectiveness estimates.

Emergency Department costs

The average cost of an ED presentation used in cost estimates is $400, again with estimates above this level reported.[17]

7.2.2 Other program costs

Additional positive consumer outcomes also result from program support. Although these positive outcomes are evident, they are difficult to quantify, especially within the primary evaluation timeframe. The following examples provide preliminary evidence of broader health service offsets that potentially contribute further to the program cost-effectiveness.

Flexi-beds closed due to IHBSS program

As a result of IHBSS support, it has been reported that an initial two flexi-beds have been closed in the outer south sector. This is a positive preliminary result based on the role that IHBSS is playing in the context of an additional supported care pathway for long stay patients.

Specifically, this integrates with the Blue Dot project which commenced in March 2010 to support patients to be discharged, appropriately and safely, back into the community in a timely way. In the context of the IHBSS program, this integrates directly with the objective to move long stay patients out of inpatient units to sub-acute service settings. This is incorporated into a long stay/complex patient review process, which includes broad review across medical treatment, occupational therapy, social work, psychological care and nursing,

[16] SA Health Evaluation of the Intermediate Care Services, Final Report 2013. Mental health acute costs provided by System Performance SA Health and are based on RAH, FMC, Noarlunga and the Repatriation Hospital. Cost data for 2011/12 for Glenside, Lyell McEwin and TQEH was not available.
[17] Department of Health and Ageing (2013) National Mental Health Report 2013: tracking progress of mental health reform in Australia 1993 – 2011.

with consumer specific gap analysis of wrap-around service. The sub-acute planning flows through to Intermediate Care Centres (ICCs).

The implications reported in the outer south sector for flexi-bed reduction produces further cost offsets for this region in terms of staffing and running costs when these beds are in service, as well as potentially similar service demand reductions resulting from program support.

Hospital discharge support

There is an overlap with general post discharge support services for which IHBSS is substituting support. This represents a further positive cost offset resulting from the program.

Service delivery and NGO cost alignment

There is inevitably some variation between planned hours as the basis for monthly NGO engagement versus the actual number of service hours provided. Apart from some referral lags at start-up which were made up later, the estimates of consumer hours developed consistently. The actual hours delivered further reflect the variation in consumer support, which generally follows a pattern of more intensive and increased hours on initial contact, to assist in stabilisation, followed by a tapering of the intensity and number of hours in following months. Additionally, the referral process and specific number and timing of new consumers entering the program vary, which may result in the accumulation of service funding, in which case the estimated services would not be fully delivered in the service month. These would be available for following service provision.

Note: The available data relate to total hours per month per consumer so the daily or week to week variation and service patterns are not visible in the CARS data.

7.3 Cost-effectiveness

In line with consumer outcomes presented in Section 4, the broad perspective of program effectiveness is positive across target objectives. This is particularly the case for consumers in terms of responsive IHBSS support, recovery, and the related range of improvements in health and reengaging in their community activities, education, or employment.

In this context, the program cost-effectiveness implicitly includes this full range of consumer outcomes, positioned against the total program funding. The perspective from the Commonwealth and the South Australian Government as program and health system funders focuses on more specific service use measures that can be quantified in terms of cost savings or ‘offsets’ to related services, predominantly hospital services including admissions and ED presentations. The cost-effectiveness perspective for the IHBSS takes this focus on measurable health service cost offsets. It is, however, emphasised that there are substantial program outcomes in terms of consumer wellbeing and life pathways that provide the overarching perspective of program effectiveness and overall cost-effectiveness.

The IHBSS cost-effectiveness reflects core program development and timeframe characteristics. To begin with, the IHBSS did not require substantial establishment

investment to develop the program as the program was able to utilise established capacity and experience within the NGO network, which provided coverage across both metropolitan and country regions. There was slight forward funding to cover initial lags reported in some referrals during initiating months, but this was recovered in a short timeframe to establish the consistent growth in consumer numbers.

A key limitation of this cost-effectiveness analysis is the relatively short term perspective due to the recent establishment of the program and corresponding duration of post program outcome data. The time series framework is based on 3 consecutive quarters (9 months) before entering, generally 3 months support while in the program, and 2 consecutive quarters post program.

The primary consumer outcomes for inpatient admission and ED presentations focus on the quarter directly prior to entry and the 2 quarters following program support, which equals a 12-month timeframe including time in the program. These before and after periods provided sufficient consumer sample sizes and the changes in hospital service usage before and after are statistically significant.

On this basis, the cost-effectiveness model uses program costs directly aligned with service hours delivered and overlays the 6-month outcomes with the timing of consumer exits each month. The cost-effectiveness estimates are in this respect a rolling cycle of program funding during the IHBSS support period, i.e. 6 months of outcomes for each consumer, and then a turnover of new consumers flowing through the program cycle.

In the initial phases of the economic evaluation, scenarios were examined to model outcomes in relation to an extended timeframe based on the extrapolation of available intermediate outcomes. Although it appears likely that program benefits continue beyond the 6 months for which outcome data are currently available, the figures for the cost-effectiveness base case use only available, statistically significant figures. In this context, the base case cost-effectiveness estimates are likely to be a conservative estimate of the program cost-effectiveness and subject to verification when more post program data becomes available.

To investigate the potential scale of outcomes extending for a further period, a model scenario was developed based on an additional 3 months providing a 9-month post program horizon. This indicates the relative sensitivity of cost-effectiveness to the post program timeframe as the average program cost per consumer over a typical 3 months may potentially result in further months of ongoing benefit with no further funding.

This is in line with the duration and short term responsiveness of the program, and positioned within the separate longer term stepped support options and longer term outcomes of other programs such as the Individual Psychosocial Rehabilitation and Support Service (IPRSS).

The funding arrangement also provides a service control of total hours within the program budget, and there is no evident risk of cost overruns. This is reflected in program operation to

date, which is within program budget, and is projected to meet year end targets at the established service delivery levels.

Program funding

Funding grants to the service providers are based on expected hours of program delivery. These grants commenced low and scaled up during the initial 6-month establishment phase to December 2013 and settled to become relatively stable, as presented in Section 0.

The program funding on this basis is aligned with cumulative hours delivered, based on average cost, as shown in Figure 12.The cost-effectiveness figures presented combine cumulative program funding with identified service use offsets, in particular for reduced number of inpatient days and ED presentations post program. The perspective also includes inpatient admissions and ED presentations avoided as a result of the responsive commencement of program support.

Outcomes and cost offsets

The initial figures are based on evaluation timeframe data to October 2014 and then on corresponding projections to the financial year end in June 2015.

In this context, the consumer interview series for the evaluation also highlighted the risks of many mental health episodes, with a number of consumers indicating that they had considered suicide. This is to say that the program has a significant range of outcomes that are not captured, having been prevented, and in this context are implicit in program effectiveness and resulting cost-effectiveness.

Given the potential magnitude of these aspects, the modelled cost-effectiveness is considered to be a sub component of quantifiable health service usage.

7.3.1 Service delivery and utilisation

The program development as presented in Section 0 indicates consistent early consumer growth and sustained high concurrent usage.

The estimated bed equivalents reported to the Commonwealth also confirm established and sustained high program utilisation. The program is delivering the full 37-bed equivalent target specified in the Commonwealth planning.

Combined, both aspects provide the basis for cost-effectiveness projections, based on established consumer utilisation and the quantitative consumer outcomes over the available 6 months of post program data. From this base case, an additional model scenario has been developed to estimate the significance of further ongoing benefits that are likely to result over 9 months.

7.3.2 Inpatients and reduced lengths of stay

In line with Section 0 above, the cost-effectiveness includes core estimates based on the actual inpatient and ED activity both through reduced admissions and lengths of stay, as well as hospital service use avoided due to program support prior to the program, and in the

following two consecutive quarters. The base case uses two post program groups for which significant consumer samples were available; the first quarter (n=210) and second quarter program (n=133).

Additionally, the reduced lengths of stay component, resulting from consumers' early discharge, will contribute to estimated inpatient cost offsets. This element has not been explicitly included in the cost-effectiveness estimates due to the uncertainty of estimating early discharge against an expected or benchmark LOS. However, in line with interview feedback, consumers indicated that program support enabled early return to home, and reflecting these cases of early discharge, this would further contribute to total inpatient cost offsets.

7.3.3 Hospital admissions avoided

The Metropolitan Referral Unit (MRU) provides a single point of contact for referral to a range of hospital avoidance and early supported discharge services.

As IHBSS provides a substitute specialised support service, the cost of alternative established support represents a cost offset as it is funded through program service delivery. The proportion of IHBSS consumers that may have accessed MRU hospital avoidance services is not known, but potentially significant. Given the general conservative approach to estimated program cost-effectiveness and the uncertainty in this service substitution, this cost component is not explicitly included in the cost effectiveness figures although it would contribute to the collective cost offset total.

7.3.4 Cost-effectiveness model projections

The cost-effectiveness of the program is characterised by a focus on program hours delivered during the typical duration of 3 months in comparison to consumer outcomes for the relatively short post program perspective of 6 months. This is supported by the absence of significant establishment costs that typically may be compared to longer term outcomes to cumulatively deliver sufficient offsets to recover the investment.

The focused 6-month post program perspective reflects the short term responsive and early intervention approach of the IHBSS and aligns with the basis for quantifying outcomes, based on paired before and after figures for individual consumers.

The estimations as presented in Figure 12 are based on the statistically significant outcome results described in Section 4. The outcome data for the evaluation was available until October 2014, and projections are presented forward until the end of the 2014-15 financial year, covering the 25 months of the IHBSS project from commencement in June 2013 until June 2015.

This reflects the lag that results in the reduced inpatient and ED presentations which result over the 6 months following exit from the program. This is seen in the delayed reduction in

reduced inpatient days, which later align with the funding once stable program utilisation is achieved. This is because a stable number of entries and exits provide a more consistent return over each successive 6-month period.[18]

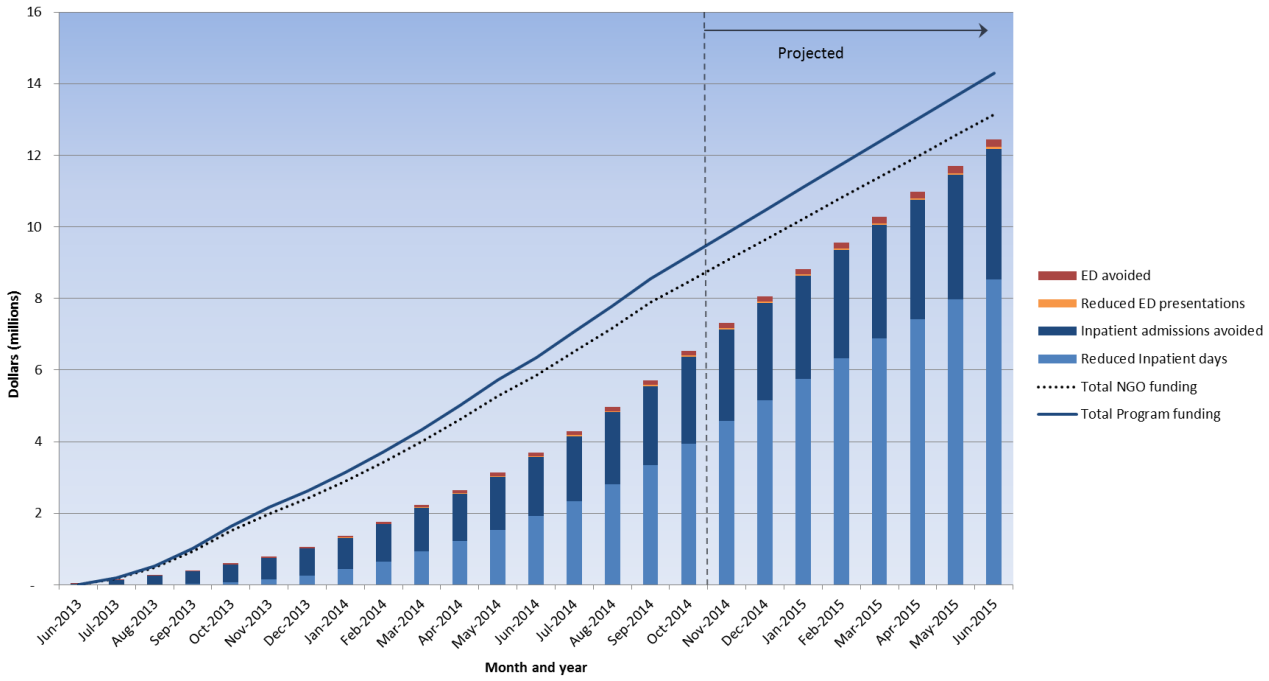
As described previously, the model is driven by rolling consumer throughput, with outcomes captured in a relatively short timeframe post program. On this basis, the program is approaching a cost neutral level in the base case, but with potentially significant ongoing upside benefits and corresponding cost-effectiveness.

The model uses entry dates to reflect avoided events of inpatient and ED presentations, and exit dates for commencement of post program reduced service usage levels. This is reflected in the lag for reduced inpatient days, which do not start to appear until the first group of consumers has completed the program, and then do not increase immediately as the reduced services are experienced over the following six months. The cumulative program funding is shown as for total NGO funding and total program funding. The margin shown between the NGO grants (dotted line) and the total program funding (solid blue line) reflects the Local Health Network salaries and overheads, estimated to be approximately $10 per service hour delivered. The NGO funding figures are derived using total grant figures transferred, combined with the number of service hours delivered by each service provider.

The number of ED episodes reported for consumers in the quarter prior to entering the program was relatively low on first assessment. This was in fact masked by the relatively high number of consumers reporting that the IHBSS helped them avoid going to ED all together as program support commenced. As presented in Section 0, 63.1% of metropolitan Adelaide consumers and 62.6% of country consumers indicated that the program helped them avoid the ED. This is consistent with figures showing that the first point of system contact for mental health related episodes is often an ED.

[18] Emergency department figures projected from November 2014 are based on the average of the previous 3 months from August to October 2014.

Figure 12: Cumulative IHBSS funding and service use offsets – base case



Source: CBIS, CARS, IHBSS financial reporting

There were minor referral lags during the start-up phase which is also reflected in the number of consumer entries in the initial months. As the program consumer development figures show, this lag was minor and the program gained momentum within the first few months of project start-up.

This initial perspective is based on the statistically significant outcome data for the evaluation period to October 2014. The data show that an estimated 75% of the total program funding resulted in offset costs to hospital services.

The outcomes to program consumers, as outlined in previous sections, include general improvements in returning to community life with a corresponding improvement in the most commonly recorded HoNOS mental health instrument. The primary consumer outcomes are largely achieving the key health and wellbeing objectives of the program, and the cost-effectiveness perspective is initially focused on the program funding needed to achieve these outcomes.

Program objectives that result in changes to service use are separately identified and presented as stacked bars to reflect cumulative estimated program cost offsets per month.

Additional potential cost offset items not explicitly included in the cost-effectiveness figures include:

- reduced length of stay as a result of early discharge, as outlined in Section 0
- flexi bed closures as a result of IHBSS program support

    - The reported closures occurred in the outer southern sector in October 2014, so are not material to the evaluation timeframe as shown. These closures would, however, likely contribute to further ongoing cost offsets, potentially including regions other than the outer southern.

- hospital discharge support
    - A range of support services are available to support patients following discharge from hospital as well as hospital avoidance support. Where IHBSS community based support is substituting established alternative services, this will also contribute to total program cost offsets.

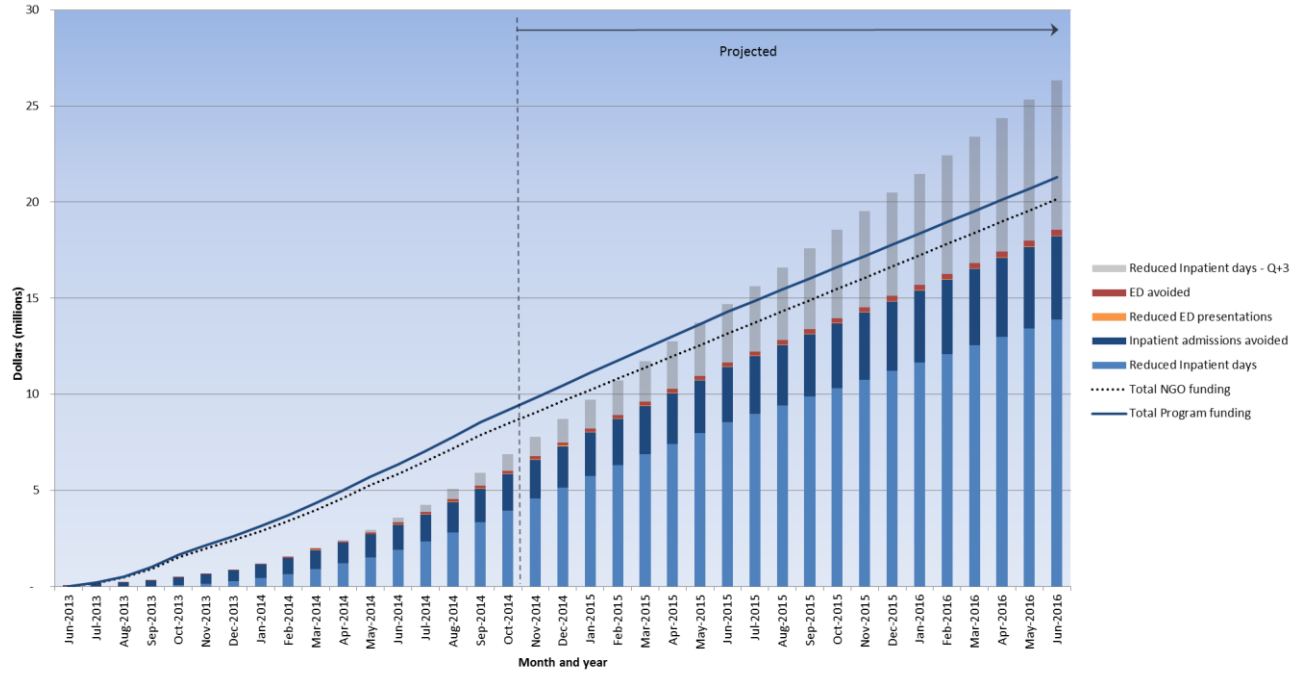
Extended benefits beyond 6 months

The 6-month timeframe has been used as a base case as it is the maximum post program timeframe available. However, in line with consumer feedback during the evaluation, it has been seen that consumers look back over longer periods, around a year, and recognise the importance that the program made in their condition at the time, their recovery, and the resilience the program helped them to develop to help manage future situations and relapse. This suggests that the positive outcomes, and associated reductions in health system service usage, are likely to continue beyond the 6-month horizon, at least for a substantial proportion of consumers.

In the case that outcome benefits are sustained over additional duration, the cumulative benefit will add further to program effectiveness and cost-effectiveness. To investigate the potential further offset, a model scenario was developed in which the reported reduction for the first and second quarter's post program were continued into a third quarter (9 months of reduced inpatient and ED service contact).

As presented in Figure 13, in the extended shaded grey bars, this suggests that the program would plausibly generate aggregate offsets above total program funding within the first two years of operation, to around June 2015. It follows that these cost offsets would continue to accumulate, potentially to one year and beyond. This is positioned against the extent that a proportion of consumers would potentially relapse at some point and their offsets would not eventuate. However, given the conservative assumptions used in the model, a relapse portion of consumers would delay the cost offset breakeven point, but would not eliminate the scale of the positive results and the overall cost-effectiveness of the program.

Figure 13: Cumulative IHBSS funding and service use offsets – 9-month outcome scenario



Source: CBIS, CARS, IHBSS financial reporting

Projected funding and cost offset figures for 2015-16 have been indexed using the 2014 consumer price index weighted for capital cities of 1.7% per annum, which is also the same rate reported specifically for Adelaide. [19] In line with other aspects of the cost-effectiveness estimates, this figure is conservative as health service costs are consistently reported to be increasing faster than the broad index. In the case that higher health service prices occur, this would add to the estimated figures as services of higher value are being offset.

These may be further tracked and validated as the program continues and further post program data of sufficient sample sizes become available. Over further years of operation the cumulative benefits will plausibly continue to accumulate.

Discussion

Overall the cost-effectiveness is balanced between cost per consumer, based on the average number of service hours provided, against the reduction and avoidance of inpatient and ED services over a relatively short term evaluation period.

As there are little or no substantial up front program investment costs to recover over time, the conservative estimate of cost offsets indicate that the program funding is substantially offset based on a relatively short 6-month timeframe post program. These offsets would be expected to be maintained over continued program operation as the rolling cost of new consumers entering is aligned with the moving post program outcomes.

[19] Australian Bureau of Statistics, 6401.0 - Consumer Price Index, Australia, Dec 2014December Quarter 2013 to December Quarter 2014 weighted capital city 1.7% health component was 4.4%.

While this further extended timeframe will require follow-up to verify the relationship between the cost of consumer support and the range and duration of ongoing benefits, these potentially further sustained outcomes are highly significant in the context of the IHBSS program cost-effectiveness. It is important to note that these calculations are based on easily quantifiable outcomes. The qualitative analysis shows that there are further benefits to the program which are less easy to quantify but could potentially be monetised. These benefits include increased participation of consumers in education and employment as well as participation by carers. These factors could add significant financial benefit to the program.

8 Conclusion

The IHBSS program has been established and developed by SA Health in line with Commonwealth strategic objectives for increased community based care for individuals facing short term mental health episodes. This is consistent with broader core principles of early intervention and community based support, aimed at reducing or preventing inpatient events and reducing corresponding use of health services.

All program target groups are being reached, in particular people who identify as Aboriginal or Torres Strait Islanders and younger people.

All outcomes are also being achieved within allocated program budget. Additionally, identified health system offsets are generating a substantial proportion of total program funding under the most conservative base case estimates. With probable ongoing benefits over longer timeframes, which could not be measured in this evaluation, the program is likely to be highly cost-effective. In addition, although not quantified in this evaluation, there are likely to be additional economic benefits from improvements in various aspects of consumer's lives and those of their carers'. These include health choices (for example reductions in health service appointment no-shows), access to education and training, housing continuity, family engagement, and connection with employment. All these benefits carry the potential for downstream savings for the public purse, as well as being of significant benefit to consumers and their families.

The program developed strong growth and has maintained high utilization, reflecting high demand for IHBSS services and potential cost savings in the future should the program be maintained or expanded.

The IHBSS program is not only successful in terms of its effectiveness (and cost-effectiveness) in reducing inpatient days and ED presentations. It is also an example of a successful model of inter-sectoral program development and sustainability. A noticeable feature of this initiative has been the extent of collaboration and communication between a number of agencies across the health and community sector. Effective communication has been a feature of the program not only at the level of case management but also in terms of program governance and sustainability. The ability of SA Health and the NGO sector in particular to work together to develop the program and maintain a tight governance structure, despite the fact that NGOs are subject to challenging service contracts, is a testament to the robustness of these structures but also the commitment of staff at both service delivery and management levels to work together. Positive working relationships across sectors and between agencies have been one of the key success factors in the program.

The use of sub-acute coordinators has been a particularly successful innovation for this program and has ensured that consumers are allocated places on the program as quickly as possible and to the most appropriate service package. This facility is essential for a program that relies on rapid response, where long waiting lists could severely undermine the effectiveness of the intervention.

Demand for the program is high in most areas of the State. It is likely that it would still operate at full capacity, should the program be expanded. This is further evidenced by the comments of some stakeholders that some groups of potential referrers are still reluctant to refer consumers into the program. However, the optimal sustainable size of the program will have to be determined through a separate analysis of demand, which we recommend should be conducted.

The data systems for the IHBSS program have been improved in recent months, but unfortunately not in time to feed into this evaluation. Having two datasets, one for metropolitan consumers and another for country consumers, is inefficient. In addition the low rate of completion for HoNOS, K10 and LSP-16 severely limits the capacity of this evaluation to assess how effective the program has been in maintaining the wellbeing of consumers. There is also a need for a more reliable 'real time' information system which can track the entries into and exits from the program so that potential program consumers can more easily be allocated a suitable place.

IHBSS is based on a service delivery philosophy that tailors supports around each consumer's particular circumstances. As such, there is likely to be a better fit than inpatient provision and arguably this is reflected in the benefits signalled in the findings. Consumers have enjoyed greater choice and tailoring in the elements of their support, including through attention to the matching of staff with clients. Inpatient services, though they may be a critical factor for some people in their journey to recovery from mental illness, are a profound interruption to the continuity of people's lifestyles and their contribution to community life and the economy.

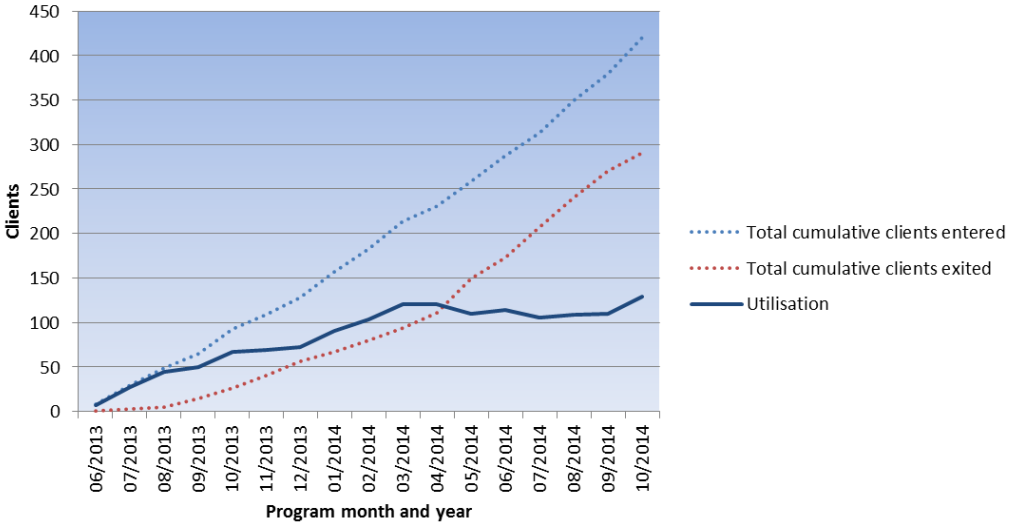
By contrast, home-based supports augment lifestyle continuity. This means the service participants avoid disconnection or have faster reconnection with their daily life roles. This is in line with the NDIS and other developments in the field that prioritise the need for tailored packages of care, and particularly care which is specifically designed to support the consumer's autonomy and participation in society and access to mainstream service provision rather than specialist services. Overall, IHBSS represents an example of successful implementation of this approach.

Appendix A – Metropolitan and country program development

Adelaide metropolitan

Program utilisation in metropolitan Adelaide (n=420), from program commencement in June 2013, increased in the first 3 months in September to 50 consumers, and by February 2014, after 10 months, to over 100. It has remained consistently stable above 100 consumers since February 2014 for 9 consecutive months at what is considered high and almost full program utilisation (see Figure 14).

Figure 14: Program development and utilisation – Adelaide metropolitan

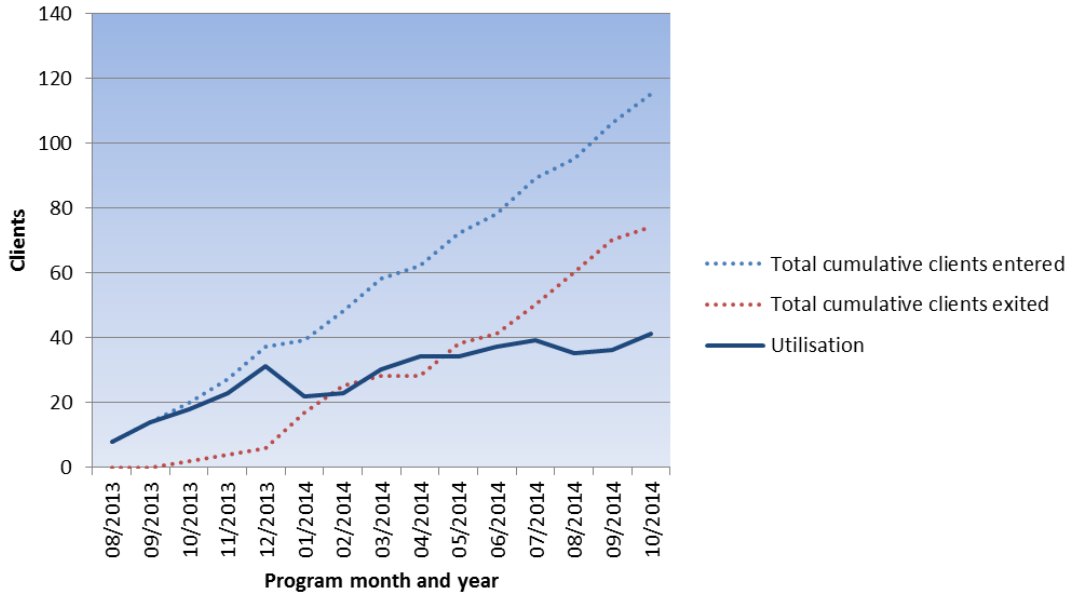


Month	Total cumulative clients entered	Total cumulative clients exited	Utilisation
06/2013	8	1	7
07/2013	30	3	27
08/2013	49	5	44
09/2013	65	15	50
10/2013	93	26	67
11/2013	109	40	69
12/2013	128	56	72
01/2014	157	67	90
02/2014	183	80	103
03/2014	214	94	120
04/2014	231	111	120
05/2014	259	149	110
06/2014	287	173	114
07/2014	313	207	106
08/2014	349	240	109
09/2014	380	270	110
10/2014	420	291	129

Country regions

In country regions, program development, while on a smaller group of consumers (n=115), followed a relatively similar development pattern, reaching a high utilisation of 30 consumers by December 2013, and maintaining this level since March 2014, as presented in Figure 15.

Figure 15: Program development and utilisation – Country



Month	Total cumulative clients entered	Total cumulative clients exited	Utilisation
08/2013	8	0	8
09/2013	14	0	14
10/2013	20	2	18
11/2013	27	4	23
12/2013	37	6	31
01/2014	39	17	22
02/2014	48	25	23
03/2014	58	28	30
04/2014	62	28	34
05/2014	72	38	34
06/2014	78	41	37
07/2014	89	50	39
08/2014	95	60	35
09/2014	106	70	36
10/2014	115	74	41

Appendix B – Program cost-effectiveness model figures

Year							Year 1												
Model period	1	2	3	4	5	6	7	8	9	10	11	12	13						
Month and year	Jun-2013	Jul-2013	Aug-2013	Sep-2013	Oct-2013	Nov-2013	Dec-2013	Jan-2014	Feb-2014	Mar-2014	Apr-2014	May-2014	Jun-2014						
Total NGO funding	9,921	180,975	485,539	928,874	1,507,981	1,992,674	2,409,631	2,889,149	3,416,653	3,997,929	4,617,994	5,280,233	5,859,091						
Total Program funding	10,762	196,312	526,687	1,007,592	1,635,776	2,161,545	2,613,837	3,133,992	3,706,200	4,336,736	5,009,349	5,727,711	6,355,624						
Reduced Inpatient days	-	2,747	10,987	24,720	65,920	142,827	263,680	431,227	653,707	928,373	1,222,267	1,527,147	1,919,920						
Inpatient admissions avoided	33,883	127,061	251,699	352,590	504,304	610,716	746,396	880,263	1,040,069	1,226,573	1,320,658	1,494,456	1,646,171						
Reduced ED presentations	-	39	155	348	928	2,011	3,712	6,071	9,203	13,069	17,207	21,499	27,028						
ED avoided	2,045	7,668	14,569	20,192	28,883	34,762	42,174	50,098	59,044	69,523	74,891	84,604	93,294						
Annual funding	1,859,469	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494	4,695,494						
Clients	7	27	52	64	85	92	103	112	126	150	154	144	151						
Year							Year 2												
Model period		14	15	16	17	18	19	20	21	22	23	24	25						
Month and year		Jul-2014	Aug-2014	Sep-2014	Oct-2014	Nov-2014	Dec-2014	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015						
Total NGO funding		6,516,240	7,176,806	7,891,452	8,475,028	9,058,604	9,642,180	10,225,756	10,809,332	11,392,908	11,976,484	12,560,060	13,143,636						
Total Program funding		7,068,463	7,785,010	8,560,219	9,196,785	9,833,352	10,469,918	11,106,485	11,743,051	12,379,618	13,016,184	13,652,751	14,289,317						
Reduced Inpatient days		2,337,413	2,812,587	3,348,187	3,946,960	4,567,707	5,150,000	5,751,520	6,328,320	6,880,400	7,416,000	7,976,320	8,536,640						
Inpatient admissions avoided		1,817,019	2,002,617	2,194,642	2,413,743	2,566,744	2,719,744	2,872,744	3,025,744	3,178,745	3,331,745	3,484,745	3,637,746						
Reduced ED presentations		32,905	39,595	47,135	39,878	39,878	39,878	39,878	39,878	39,878	39,878	39,878	56,917						
ED avoided		102,751	113,486	124,222	136,746	145,436	154,127	162,817	171,508	180,198	188,888	197,579	206,269						
Annual funding		9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601	9,093,601						
Clients		145	144	146	170	151	151	151	151	151	151	151	151						

Appendix C - CARS Service Activity guideline

IHBSS Service Activity guideline for consumer hours recorded in CARS

Providing services directly to the consumer may also include service/advice to the consumer's carer and/or family member/s.

- Arranging for services to be provided directly to the consumer (e.g. telephone contact with the consumer's General Practitioner in order to arrange an appointment for the consumer).
- Case discussion which relates directly to an individual consumer with, for example, a General Practitioner, SA Health Staff, Service Provider staff, and Medical Professional.
- Providing customer records or notes directly associated with a particular consumer.
- Preparation and/or review of an Individual Service Plan (ISP).
- Travel time to visit a consumer to be allowed for.

Non-reportable Activities:

- non-direct activities (e.g. case discussions between supervisors and service delivery staff or between the Service Provider and the referring mental health service about consumers in general, e.g. non-specific)
- recording of information into the Consumer Activity Reporting System
- general attendance at allocation committee meetings
- staff development and training.

Note: As prescribed above, the reporting of "hours of service" recorded in CARS should only be for service activity that can be directly associated to an individual consumer. All other organisational activity, inclusive of training, general supervision, and community networking/development are not to be entered as a suitable allowance for these costs are considered to have already been factored into and included in the hourly contracted rate for the services prescribed in this Service Agreement.

Appendix D - CARS IHBSS data items

The CARS data items used in the quantitative analysis includes the following:

- The NGO service provider
- Region
- Report date
- Month and year
- Consumer identification number
- Consumer date of birth
- Consumer age
- Consumer Aboriginal and Torres Strait Islander status
- Consumer CALD status
- Program referral date
- First contact date
- Exit date
- Number of standard hours (from July 2014)
- Number of standard contacts (from July 2014)
- Number of intensive hours (from July 2014)
- Number of intensive contacts (from July 2014)
- Total Hours