

Telehealthcare – Supporting People
to Live Safely and Independently at home:
An Australian Pilot Program



Evaluation Report
November 2010

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Purpose of Report

In 2009 there was already considerable evidence available from other countries that Telecare and Telehealth Technologies can provide the means to deliver improved and continuous quality care to the Aged and other Community Sectors. In addition to peoples' natural wishes, there was also a strong understanding of the financial benefits to Government and Health Funding bodies in assisting the Aged to remain in their own homes for as long as possible.

In the absence of significant deployment of these technologies in Australia, but with a preconceived view that Feros Care clients could benefit as evidenced overseas, Feros Care conducted a Pilot Program for the implementation of Telehealthcare. The aim was to evaluate whether it would be operationally and financially viable to incorporate Telecare and Telehealth Technologies into Feros Care service delivery plans as further service options.

The Pilot Program was not Clinical Research and the results are largely presented as descriptive statistics and commentary. However for the benefit of Feros Care, a serious attempt has been made to evaluate the impact of the technologies through studying Clients and their Carers, primarily to ascertain whether Telehealthcare could allow Clients to remain safely and securely at home for longer.

This report describes some of the experiences and key learnings from conducting the Pilot Program of Telehealthcare implementation by a small-medium Aged Care service provider, and has been prepared with the aim of sharing the experience with anyone with an interest in the Health and Aged Sectors.

Feros acknowledges the participation and support given by Pilot Program Clients, their Carers and General Practitioners and for the considerable effort and dedication of staff, suppliers and contractors in undertaking and supporting this implementation.

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EXECUTIVE SUMMARY

Introduction

Feros Care is a non profit Aged Care service provider operating on the East Coast of Australia, with a mission “to assist older people to live their life their way, by applying innovative thinking to create new opportunities to meet changing needs, expectations and challenges.” To help fulfil this mission Feros Care investigated Telehealthcare, and commenced a Pilot Program to determine the viability of deploying security, safety and health monitoring technologies in Clients’ homes.

In January 2010 Feros Care commenced the Pilot Program of 2 Telehealthcare Technologies:

1. Multi-sensor Telecare (smart home technologies) kits were fitted in 30 Clients’ homes. Telecare sensors included movement sensors, falls detectors, door sensors, medication reminders, smoke and other environmental sensors, and emergency pendants.
2. Telehealth home monitoring technologies were implemented in the homes of 15 Clients with chronic health conditions. Telehealth devices included Blood Pressure, Pulse and Oxygen Saturation Monitors, Weight Scales and Glucometers, as well as targeted “Interviews” customised for each Client’s conditions.

The purpose of the Pilot Program was to determine whether Telehealthcare Technologies could assist Clients to remain living at home longer by:

- Supporting and providing more continuous quality and targeted care of Clients in their homes;



- Improving safety, independence and generally lowering the anxiety of Clients, Carers and families; and
- Adding Telehealthcare services as operational and financially viable options for Feros Care Clients using Community Care Programs and services.

The Pilot Program involved the deployment of a substantial range of equipment over a period of 6-9 months. The Pilot Program was significant in that it was one of the first implementations of Telehealthcare in Australia; being undertaken with the view to mainstream these technologies as standard service provision options within the Australian Aged and Community Care service sector.

Key Findings

The initial findings from this Pilot Program identified:

1. A general endorsement that Telehealthcare Technologies can improve the likelihood of Clients being able to remain safely in their own homes for longer than would otherwise be possible with:
 - a. 80% of Clients reporting that Telecare had improved their quality of life during the program;
 - b. 69% of Clients reporting being less concerned about the daily severity of their condition;
 - c. 44% of Clients feeling that they need to visit their General Practitioner (GP) less frequently; and
 - d. 44% of Clients feeling that their quality of life had improved relative to the beginning of the program.
2. Telecare services reportedly increased Client confidence, and reduced the fear of both Clients and Carers that a Client's fall at home may be undetected;
3. Quality Telecare services can be delivered within reasonable operating cost models; and
4. Telehealth should be subjected to further trial implementation and evaluation.

The Pilot Program identified a range of potential benefits for Telehealthcare services which should be mainstreamed and included as standard Feros Care service options.

Due to the positive findings of the Pilot Program, Feros Care will increase its Telecare installations to 300 homes during 2011. Telehealth will be expanded to 30 homes during 2011, with the aim of achieving a reasonable operating cost model.

A number of wider industry conclusions and recommendations have also been made.

Furthermore, Carers, Health and Aged Care service providers need to be better informed about the operation and potential benefits of Telehealthcare.

To further investigate the advantages of Telehealthcare, Government funding should be made available to capable organisations to carry out further investigations to ensure the viability of Telehealthcare services by Health and Aged Care service providers.

1. Introduction

Introduction

1.1 About Feros Care

Feros Care (www.feroscare.com.au) is a non profit Aged and Community Care organisation, governed by a Board of Directors. The organisation has been providing residential and community services for 20 years. Feros Care's vision is "to be acknowledged as an industry leader focused on innovative community, lifestyle and aged care solutions".

The mission of Feros Care is "to assist older people to live their life, their way, by applying innovative thinking to create new opportunities to meet changing needs, expectations and challenges".

Feros Care currently operates 17 community care programs from Port Macquarie in New South Wales to Bundaberg in Queensland. Services include Packaged Care (EACH, EACHD, CACPS), Home and Community Care (HACC), Veterans Community Nursing (VCN), Veterans Home Care (VHC) and the National Respite for Carers Program (NRCP).

In addition to Community programs, Feros Care operates Residential Aged Care facilities at both Byron Bay and Bangalow in Northern NSW, and has a central contact and referral centre (Community Gateway) in Coolangatta, Queensland providing central communications and operational administration.

1.2 The Ageing Landscape

Like many other industrialised countries, Australian people are living longer and birth rates are dropping. The balance of the population between older people and younger people will undergo a dramatic change over the next 4 decades. This will have a significant impact on our



workforce, economy, business, housing, urban planning and health service provision:

- In 2015, the number of people in the world aged 65 or more, will outnumber children 0 - 5 years, for the first time in history¹;
- Australia has the 2nd highest life expectancy in the world, growing from an average age of 81 years currently, to 85 years in 2047²;
- By 2050 the number of people of working age people in Australia (20 to 64) relative to older people (65+), will fall from the current ratio of 5:1 to 2.7:1³;
- By 2047, the number of people over the age of 65 years in Australia will rise to 25.3% of the population²;
- By 2047, 1.6 million people in Australia (5.6% of the population) will be over the age of 85 years. This is the fastest growing group, and represents the frailest, with the highest incidence of disease and disability²;
- By 2040, People with Dementia in Australia will increase from 242,222 in 2010 to 619,000.⁴;

1. Source (US Department of State) "Why Population Aging Matters: A Global Perspective."
2. Source (Productivity Commission) "Trends in Aged Care Services: Some Implications."
3. Source (ATSE) "Smart Technology for Healthy Longevity."
4. Source (Access Economics) "Making choices: Future dementia care; projections, problems and preferences."

- Healthcare spending by the Australian Government is projected to grow from 4% in 2009/10 to 7.1% of GDP in 2049/2050³.

For many ageing Australians, the desire to remain living independently in their own homes is a strong priority. The various combinations of frailty, anxiety, disease and disability can place a considerable burden on the capacity of individuals to live independently. Carers and family members who provide informal care are constantly seeking solutions to help maintain the elderly in safety and comfort in their own home.

The impacts on healthcare spending and workforce reduction will increasingly put pressure on Government and health care providers to look for new and innovative models of health care delivery to meet the needs and expectations of older Australians and their Carers.



1.3 Feros Care's Response

Feros Care has seen the ageing demographic challenges as an opportunity to embark on a new way of thinking in the provision of Aged and Community Care.

Technology is a key focus for Feros, not just for efficiency of operation of care services, but also for providing broader opportunities in direct service delivery. The view of Feros Care is that technology can provide significant opportunities for Clients and their Carers, and can play a key role in safety, health, wellbeing, socialisation and the general ability to support and monitor Clients more closely.

In 2009, Feros began to explore Telehealthcare Technologies which could potentially assist in providing

more quality and targeted care for Clients in their homes within the community by:

- Continuous monitoring and timely intervention and support for Clients with chronic health conditions (Telehealth);
- Twenty-four hour monitoring of Clients' safety in relation to falls, health emergencies and inactivity (Telecare); and
- Closer monitoring of Clients with dementia in relation to wandering and environmental emergencies (Telecare).

3. Source (ATSE) "Smart Technology for Healthy Longevity."

Feros carried out a review of communications-based technologies and providers in Australia, examining the state of deployment of Telehealthcare Technologies for the Aged in Client homes. It was apparent that apart from demonstrating Telecare “Smart Homes” and some small-scale Telehealth trials, that the main Telehealthcare deployment into community homes in Australia, was generally restricted to single device, pendant-style alert and response systems. No significant mainstream live implementations were identified.

Feros also looked at possible overseas suppliers, and particularly gained an insight into deployment of these technologies in the United Kingdom (UK), as investigation and utilisation of these technologies were much more developed in the UK.

Feros located all known credible suppliers in the Australian market at the time, and identified monitoring equipment, associated Therapeutic Goods Administration (TGA) approved peripherals, and back-end monitoring software and services.

Following an evaluation of supplier equipment, software and support, and other compatibility issues, Feros entered into a relationship with Tunstall Australasia, as a supplier to conduct a Pilot Program of both Telecare and Telehealth products and systems.

The Pilot Program commenced in January 2010, using an extensive range of products within both Telecare and Telehealth Technologies, deployed to aged Clients who were receiving Feros Care Community services. The Pilot Program was planned for 9 months, with the first data analysis to be completed by mid October 2010.



1.4 Telecare Overview

Telecare: The use of communications-based technologies to address safety and security issues.

Telecare uses sensors and other devices which can monitor and respond to emergencies which might occur in the home.

The heart of the system is the base alarm which can automatically raise an alert from any Telecare sensor or personal alarm trigger such as the pendant, belt or wrist devices. Telecare also includes automated sensors for water, gas, lighting and door exits. Sensor products can detect a fall, or alert the response centre and/or Carers to a lack of movement in the home.

How does Telecare work?



Figure 1: How does Telecare work?

1.5 Telehealth Overview

Telehealth: The use of communications-based technologies to monitor chronic and degenerative conditions.

The Telehealth monitor along with various health peripherals are installed in a Client's home.

At an agreed time the monitor signals that it is time for the Client to measure their vital signs and answer symptomatic health questions related to their condition.

The monitor then guides the Client; using its clear text display and audio announcements, through a series of measurements and health-related questions.

This information is automatically sent to a Registered Nurse who monitors the readings via a secure website and liaises with the Client's GP or health representative if necessary, depending on the predetermined acceptable range of measurements and responses.

Each Telehealth monitor is customised according to the needs of the individual, and is best suited to monitor long-term conditions such as Chronic Obstructive Pulmonary Disease (COPD), Chronic Heart Failure (CHF), Diabetes and other conditions like Asthma and Hypertension.

How does Telehealth work?



Figure 2: How does Telehealth work?

2. Approach To Pilot Program

2.1 General

Benefits of Telehealthcare Technologies had been documented with large scale trials in the UK and other countries. The Feros Care Pilot Program was undertaken to assess an intuitive position that Telehealthcare Technologies can be effective and operationally and financially feasible for Feros Care in Australia. The technology used in the Pilot Program was not new nor innovative, but was significant in Australia because it:

- Was one of the first times that Telehealthcare had been implemented with the view of mainstreaming these technologies as standard service options within an Australian Aged and Community Care service;
- Targeted elderly Clients whose level of care was comparable to Clients in Residential Aged Care;
- Used an extensive range of security, safety and health monitoring equipment;
- Deployed communication-capable health monitoring peripherals which bypass the need for Clients to manually enter vital signs information; and
- Explored the viability of a mainstream operation from the perspective of a small-medium Aged Care service provider in the Australian funding environment.

The Pilot Program consisted of case studies examining the outcomes for a known equipment set, a single supplier and a known Client population. The Pilot Program did not assess generic devices. Conclusions relate primarily to the feasibility of Feros Care undertaking live deployment of Telehealthcare solutions to provide better care for its Clients.



Feros Care Project Team

Two Pilot Program Client groups were established; one for Telecare, and one for Telehealth. Some of the Clients used both categories of technology. In January 2010 Feros Care began rolling out Multi-sensor Telecare devices in 30 Client homes, and 15 Telehealth “kits” in homes in reasonable proximity to the Feros Care Community Gateway.

2.2 Aims of the Pilot Program

The overall aims were to assess whether:

- Continuous quality and targeted care can be provided for aged Clients in their home;
- Clients can remain safely in their own home for longer than would otherwise be possible;
- Quality of Client care can be improved;
- The care burden and anxiety for Client Carers can be eased; and
- Operational and Financial Viability can be assured for subsequent “live” deployment by Feros Care.

Generally Telecare aims included the following:

- Defer residential aged care admission;

- Prevent hospital admissions;
- Reduce the need for in-home or day respite;
- Reduce the resource impact of undertaking in home wellbeing checks;
- Reduce accidents and provide automated emergency assistance;
- Reduce the incidence of unattended falls;
- Reduce Hospital stay admissions and duration;
- Reduce Client anxiety; and
- Reduce Carer anxiety.

Specific Telehealth aims included the following:

- Defer residential aged care admission;
- Prevent unplanned hospital admissions;
- Reduce routine GP visits and allow better utilisation of medical services;
- Allow improved self-management of chronic conditions and minimise consequential damage;
- Allow better care management by Feros Care staff and Care Managers;
- Reduce Client anxiety; and
- Reduce Carer anxiety.

2.3 Planning and Organisation Developments

- **Funding:** With the elimination of the Health and Ageing funding pool for trial implementation of assistive/smart technologies in the 2008 Federal Budget, Feros Care embarked on a self-funded Pilot Program with the financial support of a capital grant for the purchase only, of the equipment component.
- **Peak Body Support:** In the absence of any support or interest groups in Australia, Feros gained membership of the UK Telecare Association peak body (www.telecare.org.uk) which develops best practice standards in Telecare.
- **Development of the LifeLink Operation:** Feros Care established a new operational LifeLink Team.



Tunstall Project Team

This team of 4 people is responsible for customer service, equipment inventory, maintenance, installation and equipment operation, and clinical Telehealth triage by a Registered Nurse.

- **Project Team:** The Project Team included the Chief Executive Officer (CEO) as the project sponsor, Information Technology (IT) Contractor, LifeLink Team Manager, Registered Nurse and a representative from the technology vendor, Tunstall Australasia.
- **Client Eligibility:** The Project Team developed Client eligibility criteria to determine the Client groups for the Pilot Program from the existing Feros Care Client base.
- **Internal Systems and Procedures:** New services required development of systems, procedures and documentation in relation to Client assessment, Client documentation, equipment operations, ordering, installation, maintenance, triage, follow-up and discharge processes.
- **Accounting:** Given the new range of services and activities, new activity tasks were created to identify resource demands including breakdown of staff time to help monitor where effort was spent and where costs needed to be examined closely.
- **Supplier Liaison:** Feros worked with Tunstall Australasia to establish preferred supplier services and agreements, equipment inventory management, ordering and maintenance, repair and replacement procedures and ongoing support arrangements.

- **Staff Training and Skills Development:** Staff had to quickly become familiar with products, software, Client assessment, technical issues, cabling, installation and trouble-shooting.
- **Survey Instruments:** Existing published survey tools were reviewed, new surveys and instruments were developed, and collection and analysis tools were created to enable effective evaluation of the Pilot Program.

2.4 Pilot Program Clients

Pilot Program Clients were selected from existing Feros Care Clients, already receiving care at home. Feros Care Clients are broadly characterised as:

- Very elderly;
- Often living on their own;
- Often having poor mobility and at risk of falling; and
- Often having multiple chronic conditions.

From the Feros Care Client base, two Pilot Program groups, one for Telecare and one for Telehealth, were selected over a rolling period of several months. Inclusion in one or both groups was dependent upon living conditions, mobility, proximity of their primary carer (if deemed relevant) and from assessment criteria included in the following instruments:

- Telecare Assessment Test;
- Telehealth Assessment Test; and
- Cognitive Skills Test.

Informed consent for participation in the Pilot Program and access to medical records were gained from the Client or the Client's Primary Carer. Client demographic data had previously been recorded in Feros Care records. Client GPs were contacted to obtain personal information including vital signs parameters (limits) and other relevant patient summary information. An Extended Care Plan was developed for each participating Client at the time of assessment. This included all home services and details of family support.

2.5 Data Collection and Measurement Instruments

Data, which is largely qualitative, was collected under the following categories:

Clients:

- Perceived Wellbeing Impact (beginning and end of Pilot Program survey);
- Use of Technology (end of Pilot Program survey);
- Extended Care Plans (prepared by the Client's current Care Manager or Pilot Program Registered Nurse); and
- Incident Reports (from the Telecare Contact Centre and Client's case notes).

Carers:

- Perceived Client and Carer Impact (beginning and end of Pilot Program survey).

Care Managers (Feros Staff):

- Client Impact (beginning and end of Pilot Program survey); and
- General Impact of Telehealthcare Technologies on staff in caring for Community Clients (end of Pilot Program survey).

Clinicians:

- GP Impact Survey (end of Pilot Program)

3. Implementation

Delivery of the Telehealthcare Technology within Clients' homes required:

- Selection of the Client demographic;
- Determination of the Client's needs which would benefit from Telecare and Telehealth Technologies; and
- Selection of the appropriate devices and peripherals to meet those needs.

The services were provided additional to current services and there was no cost to Clients.

3.1 Clients

3.1.1 Telecare Client Group

The selected Telecare Pilot Program participants included 33 Clients ranging from 65 to 96 years of age as detailed in Table 1 below. Three of the Clients with Dementia were living alone.



Age Group	Male	Female	Living Alone	Dementia	High Falls Risk	Severe Anxiety
60-69	1	1	1			1
70-79	2	4	5	1	5	1
80-89	6	11	8	4	15	4
90-99	6	2	7	1	7	
TOTAL	15	18	21	6	27	6

Table 1: Telecare Client Group Characteristics

3.1.2 Telehealth Client Group

The Telehealth Client group was selected upon individual medical conditions/factors which would benefit from the technology as outlined in Table 2 below. The Telehealth group included 18 Clients ranging from 65 to 90 years of age, with 11 of the Telehealth Client Group also being provided with Telecare equipment, and being included in the Telecare Client group.

Age Group	Male	Female	Living Alone	Diabetes	COPD	CHF	Unstable BP	Severe Anxiety
60-69		1	1	1			1	
70-79	3	2	3		2	1	5	1
80-89	2	9	8	3	3	1	10	2
90-99		1					1	
TOTAL	5	13	12	4	5	2	17	3

Table 2: Telehealth Client Group Characteristics

3.2 Carers

The proximity of Carers' living arrangements to Clients' homes is outlined in Table 3. Primary Carers are typically a partner living with the Client, or a daughter, son or family friend, who may or may not live close by.

Carer Lives				
Group	With Client	Within 5kms	Within 20 kms	Distant >20kms
Telecare	9	6	4	3
Telehealth	3	3		1
In both	3	5		3
TOTAL	15	14	4	7

Table 3: Carer Proximity to Client

3.3 Products Used

As part of the Client assessment process, a selection of appropriate Telecare and Telehealth products was made to meet the assessed needs of individual Clients, rather than use of a standard “kit” approach. Telecare included 24 hour emergency monitoring, while Telehealth monitoring was carried out on weekdays only.

3.3.1 Telecare Devices



Figure 3: Telecare Devices

Some devices required manual activation whilst others were programmed to automatically detect a predefined scenario which would initiate an alert.

3.3.2 Telehealth Peripherals

Telehealth monitoring devices included:



Figure 4: Telehealth monitoring devices

All monitoring devices were able to transmit Client readings to the Telehealth hub without the need for Clients to enter them manually. Client “Interviews” were customised for each Client’s conditions.

4. Detailed Findings

4.1 The Client Experience

The following data was obtained from pre and post Pilot Program surveys of Clients, Carers, Feros Care Managers and Registered Nurses. In many cases it was not possible to gather all the data as in some instances, participants elected not to answer the survey questions, while other circumstances prevented gathering all information. These included “No Response”, cognitive limitations and Clients being discharged from Feros Care services. Results from surveys outlined below only consider responses which were fully completed by the survey participant.

4.1.1 Telecare.

Of the 33 Telecare Clients, 18 provided Telecare survey responses.

4.1.1.1 Client Wellbeing

Client perceptions of various sentiments at the beginning of the Pilot Program were compared to those at the end, by using the Telecare Client Wellbeing Impact Survey with the results outlined in Table 4.

Significantly, of the Clients who were able to supply survey responses:

- 33% felt that they could better care for themselves independently at home;
- 76% were less fearful of having an undetected fall; and
- 47% felt that they could better manage household tasks and that their quality of life had improved.

Client Sentiment	Client Responses	Yes	No	No Change
Improved independent care	18	33%	22%	44%
Reduced fear of undetected falls	17	76%	12%	12%
Improved ability to manage household tasks	17	47%	12%	41%
Improved quality of life	17	47%	18%	35%

Table 4: Impact of Telecare on Client wellbeing

“My pendant and alarms in rooms has improved my anxiety and that of my daughter”

4.1.1.2 Impact of Telecare on Client

The impact of Telecare Technology, as perceived by Clients, was assessed by undertaking a survey at the completion of the Pilot Program, and was generally measuring the level of both acceptance and intrusion imposed by the Telecare sensors and alarm operation. Results are summarised in Table 5.

Significantly, of the Clients who were able to supply survey responses:

- 94% felt that the technology was easy to use;
- 93% felt the devices were not intrusive;
- 94% felt that the technology improved their independence and security; and
- 90% felt their quality of life was improved with the technology.



Client Sentiment	Client Responses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Technology is easy to use	15	67%	27%	7%	0%	0%
Devices are intrusive	13	8%	0%	0%	31%	62%
Monitoring service calls have prevented serious problems	15	47%	27%	27%	0%	0%
I can manage better with the technology	15	53%	33%	7%	7%	0%
The technology allows me to be more independent	15	67%	27%	7%	0%	0%
The technology improves my security	15	67%	27%	7%	0%	0%
The technology gives me increased confidence for household activities	15	67%	20%	7%	0%	7%
The technology has improved the quality of my life	15	47%	33%	20%	0%	0%

Table 5: Client Use of Telecare Technology

“The emergency devices give me more confidence and make me feel safer at home by myself...”

4.1.1.3 Telecare Incidents

There were 40 Telecare-initiated alarms received by the Emergency Response Centre during the Pilot Program

in response to an incident/emergency. Table 6 below summarises the interventions triggered by Telecare sensors or Client-initiated alarms.

Nature of Incident/Emergency	Number of Incidents	How initiated	Emergency Response Centre Action
Client Falls	8	Falls Detector or Client pressed button	Ambulance called or family alerted.
Inactivity Alerts	7	PIR failed to detect expected Client activity	Family alerted (1 transported to hospital)
Client wandered (dementia)	3	Door Exit sensor	Family alerted and Client located
Client potentially about to wander	10	Door Exit Sensor	Family attended and found Client
Client anxious or concerned about pain	4	Client pressed button	Ambulance called or family alerted
Failure to take scheduled medications	1	Client did not acknowledge medication reminder	Operator discussed with Client
Other Client anxiety or confusion or false alarm	7	Client pressed button	Operator discussed with Client

Table 6: Telecare Incidents

"I don't continually worry now that I will have a fall and nobody will know since I have my alarms. I've got it on now"

4.1.2 Telehealth

Client perceptions of various sentiments at the beginning of the Pilot Program were compared to those at the end by using the Telehealth Client Wellbeing Impact Survey. Of the 18 Telehealth Clients involved in the Pilot Program, 16 were able to supply Telehealth survey responses.

4.1.2.1 Client Wellbeing

The changes of perceived Client wellbeing from the beginning of the Pilot Program were compared to those at the end of the Pilot Program as outlined in Table 7.

Even though most Clients in this pilot group have complex chronic and degenerative conditions which often give considerable pain and discomfort, of those who were able to respond to the survey:

- 69% were less concerned about the daily severity of their conditions;
- 44% felt that they needed to visit their GP less frequently; and
- 44% felt that their quality of life had improved relative to the beginning of the Pilot Program.

Client Sentiment	Client Responses	Yes	No	No Change
Improved independent care	16	38%	25%	38%
Decreased need for routine GP visits	16	44%	13%	44%
Decreased need for unplanned GP visits	16	50%	25%	25%
Decreased worry about not being aware of daily severity of chronic conditions	16	69%	19%	13%
Increased quality of life	16	44%	19%	38%

Table 7: Impact of Telehealth on Client wellbeing



"Yes, having people watch with the monitoring makes me feel safe"

4.1.2.2 Impact of Telehealth

The impact of Telehealth Technology, as perceived by Clients, was assessed by undertaking a survey at the completion of the Pilot Program, and was generally measuring the level of both acceptance and intrusion imposed by the Telehealth monitors and Registered Nurse monitoring. Results are summarised in Table 8.

Of the Clients who were able to respond:

- 100% felt that the monitors were easy to use;
- 87% felt the monitors and Interview process were not intrusive;
- 80% or more felt improved security, independence and quality of life; and
- 73% felt that Registered Nurse monitoring and follow-up prevented serious problems.



Client Sentiment	Client Responses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Monitoring devices are easy to use	15	87%	13%	0%	0%	0%
Monitoring devices are Intrusive	15	7%	7%	0%	40%	47%
Monitoring service calls have prevented serious problems	15	40%	33%	27%	0%	0%
I can manage better with the technology	15	67%	27%	7%	0%	0%
The technology allows me to be more independent	15	80%	13%	7%	0%	0%
The technology improves my security	15	53%	27%	20%	0%	0%
The technology has improved the quality of my life	15	40%	40%	20%	0%	0%

Table 8: Client Use of Telehealth Technology

"I need regular visits to my GP every 2 weeks. The daily readings are useful as this is the reason for the visits. The GP wants my Blood Pressure stable"

4.1.2.3 Telehealth Interventions

As a result of the use of the Telehealth Technology, there were 34 interventions during the Pilot Program period. All

interventions resulted in the Registered Nurse phoning the Client, with 15 of these further resulting in follow-up home visits. The results are outlined in Table 9.

Nature of Intervention	Triage RN Phoned Client	RN Visited Client
Readings out of range	28	13
Poor response to interview questions	7	2
Missed interviews	14	0

Table 9: Telehealth Interventions

“Mum loves the Telehealth Interviews at 10.00am every morning – she likes to see her results and she does understand them”



4.1.2.4 Telehealth Case Studies

Telehealth interventions are more complex than Telecare, and difficult to quantify. The following mini “case studies” provide examples of interventions and follow-ups which took place during the Pilot Program to better demonstrate the nature of Telehealth interventions.

Telehealth Intervention Case Study 1:

Following consistently low oxygen level readings, and phone follow-up to his distressed wife (Primary Carer), the Registered Nurse visited the Client and arranged for a GP home visit. The GP subsequently prescribed and arranged a home oxygen kit. Oxygen vital signs remained low, and after 2 days the Registered Nurse contacted the Client again and was informed that the home kit had not arrived. The Registered Nurse re-visited the Client at home and contacted the Respiratory Nurse at John Flynn Hospital to discuss options. Subsequent arrangements were made and home oxygen therapy commenced on the same day. The Client oxygen readings returned quickly to within the prescribed range.

Telehealth Intervention Case Study 2:

Following a trend of high blood pressure (BP) readings the Registered Nurse contacted the Client and identified that the Client had been non-compliant with the GP request to take medication for hypertension. After 3 weeks of monitoring, and seeing her own consistently high BP readings, the Client accepted the GP’s advice regarding the medication, and subsequently the BP levels came back to within the Client’s acceptable range.

Telehealth Intervention Case Study 3:

The Client’s constant low oxygen level readings resulted in several phone calls by the Registered Nurse and subsequent home visits to the Client. After assessment, the Registered Nurse advised the Client to consult with Client’s GP to seek appropriate treatment. A hospital visit ensued. Following further Telehealth low oxygen level readings, the Client was encouraged nevertheless to seek home oxygen treatment. The Registered Nurse involved Community Health Nursing services to support the Client who was reassessed, and home oxygen therapy was commenced.

Telehealth Intervention Case Study 4:

Telehealth monitoring showed consistently unstable daily Blood Sugar Levels (BSL) for the Client who has diabetes. Following intervention phone calls and visits, the Registered Nurse assisted the Client in developing healthy eating practices and medication compliance. The Registered Nurse also wrote to the GP requesting a management plan be developed to address unstable BSL readings. The GP subsequently referred the Client to a specialist who modified the Client’s insulin administration and dosage. Medication reminders (Telecare) were introduced to assist the Client with medication compliance. The Client’s BSL is now stable.

Table 10: Mini Case Studies.

4.2 The Carer Experience

Often the “live-in” Carers are themselves aged and frail, and anxious about the client’s condition. The Carers who live apart; particularly those who are distant, are primarily concerned about the risk of undetected falls by the Client who lives alone. Carers are also concerned about other aspects of care not specifically addressed by Telehealthcare Technologies (such as pain management, general mobility, transport and shopping). In the context of the Feros Care experience during the Pilot Program, it is reasonable to say that not all distant Carers and family members were fully aware of the operations of the Telehealthcare services, especially the role played by Telehealth vital signs monitoring.

“His wife stated that she now feels more comfortable going out and leaving him alone now that he has Telecare. They would not have been able to afford to put this equipment in privately.”

4.2.1 Telecare

Of the 33 Carers of Telecare Clients, 19 responded to the survey regarding the perceived impact of Telecare on both the Client and the Carer. To enable comparison, the survey was undertaken at both the beginning and end of the Pilot Program with the results summarised in Table 11.

Most significantly, of the Carers who were able to respond to the Surveys:

- 44% of Carers felt that their concerns about undetected Client falls had improved;
- 28% of Carers perceived that the need for respite or permanent care for the Client had diminished to being “less required than initially”; and
- 44% of Carers stated they were less anxious generally about the Client and were more able to pursue their own activities.

Carer Sentiment	Carer Responses	Improvement	Decline	No Change
Improved Client independence	18	56%	11%	33%
Reduced need for Respite or Day Care	18	28%	28%	44%
Need for permanent care	18	28%	28%	44%
Need to visit Client routinely	17	12%	18%	71%
General Carer anxiety about Client	18	44%	22%	33%
Carer anxiety specifically re undetected falls	18	44%	11%	44%
Carer able to pursue own activities without concern	18	28%	11%	61%
Able to care adequately for Client for next 6 months	18	6%	33%	61%

Table 11: Impact of Telecare on the primary Carer

“I can’t provide much assistance myself, but with the Feros visits and Telehealth services I think Mum can remain at home for years”



4.2.2 Telehealth

The perceived impact of Telehealth on both the Client and the Carer was assessed by surveying the Client’s primary Carer at both the beginning and end of the Pilot Program to enable any improvement to be recorded. Of the 18 Carers of Telehealth Clients, 13 provided survey responses. The results are summarised in Table 12.

Of significance:

- 69% of Carers felt that the Client’s capacity to be independent had improved;
- 25% felt that the need for respite or day care had diminished; and
- 15% felt that the need for permanent care had diminished.

Carer Sentiment	Carer Responses	Improvement	Decline	No Change
Client Independence	13	69%	8%	23%
Need for Respite or Day Care	12	25%	8%	67%
Need for permanent care	13	15%	23%	62%

Table 12: Impact of Telehealth on primary Carer

“Maybe as Mum deteriorates she will need more frequent services, but she has a strong desire to stay at home”

4.3 Service Provider Experience

Feros Care assessed the business impacts for Care Managers who have direct responsibility for the management of care for Community Clients, and for wider impact on the operational and financial viability of Telehealthcare services.

4.3.1 Care Managers

4.3.1.1 Impact of Telecare on Care Managers

Care Managers responded to surveys at both the beginning and end of the Pilot Program to assess the perceived impact of the technology for 32 Telecare Clients. Not all questions in the surveys were fully answered; therefore were not included in the results as summarised in Table 13.

Of significance the Care Managers reported that:

- 22% of Clients had improved their independence at home;
- 23% had a diminished requirement for Respite or Day Care;
- 30% had a diminished requirement for Permanent Care;
- They were able to provide an improved holistic Care strategy for 38% of Clients.

Care Manager Sentiment	Care Manager Responses	Yes	No	No Change
Improved Client Independence	27	22%	37%	41%
Reduced Need for Respite or Day Care	26	23%	19%	58%
Reduced Risk of undetected falls	26	35%	27%	38%
Reduced Need for permanent care	27	30%	26%	44%
Improved Ability to manage Client care at home	27	19%	30%	52%
Improved Ability to provide holistic management strategy for Client	26	38%	31%	31%

Table 13: Impact of Telecare as seen by Care Managers

“Jack has the support of his wife who is very ... appreciative of the Telecare equipment. Jack can also mobilise at ease with his home oxygen with peace of mind due to his falls detector and personal alarm”

4.3.1.2 Impact of Telehealth on Care Managers

Care Managers responded to surveys at both the beginning and end of the Pilot Program to assess the perceived impact of the technology for 18 Telehealth Clients. Not all questions in the surveys were fully answered, therefore were not included in the results as summarised in Table 14.

Of significance Care Managers reported that they:

- Felt they could better monitor Clients' chronic conditions in 65% of cases;
- Were better able to manage Clients at home in 29% of cases;
- Believed that 35% of Clients were less likely at the end of the Pilot Program to require permanent care; and
- Were able to provide an improved holistic Care strategy for 41% of Clients.

Care Manager Sentiment	Care Manager Responses	Yes	No	No Change
Improved Client independence	17	29%	18%	53%
Decreased need for respite or day Care	17	18%	6%	76%
Decreased need for community nursing	17	18%	12%	71%
Decreased risk of undetected falls	17	53%	12%	35%
Improved ability to monitor Client chronic conditions	17	65%	6%	29%
Decreased need for permanent care	17	35%	12%	53%
Improved ability to manage Client care at home	17	29%	12%	59%
Improved ability to provide holistic management strategy for Client	17	41%	18%	41%

Table 14: Impact of Telehealth as seen by Care Managers

"The medication prompts are particularly good, as people are just forgetting to take their meds".

4.3.1.3 General Impressions of Care Managers

The Care Managers were surveyed at the end of the Pilot Program to seek their general impression regarding the impact of Telehealthcare services on Client Care. As can

be seen from Table 15 below, there was strong sentiment by Care Managers that the technologies improved their quality of service, and helped Clients in being more independent and secure.

Care Manager Sentiment	Care Manager Responses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Surveyed
Daily monitoring provides Client peace of mind and security	6	80%	20%	0%	0%	0%	0%
Daily monitoring increases service quality	6	80%	20%	0%	0%	0%	0%
Involving Clients in their own care improves Client compliance	6	80%	20%	0%	0%	0%	0%
Routine trend reports are useful in developing Client care plans	6	40%	60%	0%	0%	0%	0%
Home monitoring helps in early detection and interventions	6	80%	20%	0%	0%	0%	0%
Daily monitoring helps reduce A&E visits and rehospitalisation	6	60%	40%	0%	0%	0%	0%
I would recommend continuation of daily home monitoring	6	80%	20%	0%	0%	0%	0%

Table 15: Care Managers' impressions of Telehealthcare technology

"It is a wonderful system to implement and support staff member services; however it is important that consultation with the client and family is undertaken re appropriateness and use of devices, and that adequate training is provided to staff"

4.3.2 Financial Findings

4.3.2.1 General

The Pilot Program has shown that technology is proving to be an affordable cost model and a viable service option for Feros Care who believes there is significant potential cost savings for both the Health and Aged Care service sectors, compared to the cost of providing direct care.

During the Pilot Program, Feros Care developed a

financial model for the provision of Telecare and Telehealth services which provides affordable options to Clients and service providers. The model includes the following features:

- Feros has been able to attract capital funds from Government funding submissions and community donors for the purchase of initial Telecare and Telehealth kits.
- Feros Care purchases the equipment outright, and provides the equipment and monitoring service to the Client.

- Feros Care charges the Client a “Daily Rental and Monitoring fee”. The daily fee factors in a capital payback period of 3 years, to enable Feros Care to build funds for the long term replacement and maintenance of the equipment.
- Feros Care charges the Client a one-off “Installation fee” which provides a qualified technician to install the technology in the Client’s home.

4.3.2.2 Telecare

The ongoing cost to the Client or service is from \$9 to \$28 per week or \$1.28 to \$3.99 per day, depending on the installed Telecare package. Comparatively, 1 hour of direct service delivery currently costs Feros Care approximately \$33 per hour. The Telecare Package costs are outlined in Table 16.

Telecare Package	Daily Rental and Monitoring Fee	Installation Fee	Purchase Price of Technology
Bathroom Safety Sensors	\$1.78	\$175	\$483
Inactivity Monitoring Package	\$1.57	\$ 175	\$504
Advanced Falls Detection (including night lighting)	\$2.83	\$ 235	\$829
Night Exit Seeker Package (for Clients with dementia)	\$3.46	\$405	\$1426
Environmental Safety Package (for Clients with dementia)	\$3.99	\$ 235	\$1256

Table 16: Telecare Costing Model

“His wife stated that she now feels more comfortable going out and leaving him alone now that he has Telecare. They would not have been able to afford to put in this equipment privately.”



4.3.2.3 Telehealth

The aim for Feros Care for the next 12 month period is to provide Telehealth services including the daily monitoring by a Registered Nurse for \$50 per week per Client.

During the first 9 months of the Pilot Program however, the frequency of technical visits has been high, resulting

in a unit cost much higher than \$50 per week. It is thus proposed to field-test the technology more over the coming year as Feros Care aims to reduce the weekly cost to this target figure. The cost of the Telehealth packages is outlined in Table 17 below.

	Daily Rental and Monitoring Fee	Installation Fee (Includes 3 RN visits)	Purchase Price of Technology.
Telehealth Package	\$7.14	\$300	\$2603

Kit based on the inclusion of the Telehealth Hub, BP monitor, Oximeter, Weight Scales, Glucometer, Daily RN monitoring Monday – Friday, Triage Phone Follow-up

Table 17: Telehealth Costing Model

“With Telehealth the RN is monitoring Mum’s vitals everyday. No hospital admission this winter – the first time in 3 years.”

4.3.2.4 Broader Implications

Though there is no direct benefit to the service provider, it can be seen from Table 18 that if Telehealthcare can help in reducing hospitalisation, the savings in Health

spending could be substantial with the reported cost of an acute hospital bed being \$967 per day.⁵

Average Service Cost	Telecare	Telehealth	Average Acute Hospital Bed Cost
Per Day	\$3.46	\$7.14	\$967

Table 18: Comparative Service Costs

“I was anxious but am OK with it all now, and fewer visits” (to my GP)

5. Source (Australian Commonwealth Government) “New Directions for Australian Health. Taking responsibility for ending the blame game on health and hospital care.”

4.4 GP Experience & Health Professionals

At commencement of the Pilot Program, GPs were requested to supply individual Client vital sign limits to provide guidelines for the Registered Nurse monitoring. Vital signs limits were provided for 10 out of the 18 Clients.

The Clients' health summary and hospital discharge summaries were also requested to allow for comparisons to be made at the beginning and end of the Pilot Program. Unfortunately insufficient data was provided to allow proper quantitative analysis.

GPs were also requested to complete a final survey for each Telehealth Client at the end of the Pilot Program with 7 out of 18 requests completed. The results are outlined in Table 19.

Whilst the number of responses were limited, the following positive responses show a level of support for the program:


- 100% felt that daily monitoring eased the Client's mind and that Client involvement in the taking of vital signs readings, assists with Client compliance to prescribed regimes;
- More than 85% felt that Telehealth assists early detection and intervention and may reduce the need for hospital emergency visits; and
- 86% of GP respondents would recommend the use of Telehealth monitoring to other physicians.

GP sentiment	GP Responses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Sufficiently informed about Telehealth	7	71%	14%	0%	14%	0%
Daily Monitoring has enhanced Client services	7	57%	14%	14%	0%	14%
Daily monitoring assists Client peace of mind	7	57%	43%	0%	0%	0%
Involving patients in monitoring has a positive compliance impact	7	57%	43%	0%	0%	0%
Satisfied with communication of patient monitoring data	7	43%	43%	14%	0%	0%
Trend records are helpful in treatment plans	7	29%	29%	29%	0%	14%
Daily home monitoring assists early detection and intervention	7	43%	43%	0%	0%	14%
Daily home monitoring helps reduce A&E visits and rehospitalisation	7	29%	57%	0%	0%	14%
I would recommend monitoring services to other physicians	7	29%	57%	0%	0%	14%

Table 19: GP Assessment of Telehealth

"Daily monitoring of BSL and BP has assisted in stabilizing her medical conditions"

4.5 Summary Of Findings

- **The data** suggests that Clients at the end of the Pilot Program generally felt more secure, more able to cope independently and less anxious. In spite of sometimes severe and degenerating conditions (particularly chronic pain) several Clients felt that their quality of life had improved;
 - **Clients using Telecare** did not generally feel that the Telecare sensors were intrusive, so long as they were operating correctly;
 - **Clients using Telehealth** were generally less concerned at the end of the Pilot Program, about those chronic conditions being addressed by Telehealth, given a better understanding of their conditions, and knowing that a Registered Nurse was monitoring their vital signs;
 - **Telehealth Clients** generally felt that the vital signs monitors were easy to use, with the only irritation being equipment or communications malfunction;
 - **Carers** were generally less anxious about undetected falls, and several felt a diminished need for respite and permanent care for the Client;
 - **Care Managers** generally felt there was a diminished need for respite and permanent care, and that they were better able to manage their Clients in their homes. However it was felt that there was no significant drop in the need for personal care hours;
 - **Care Managers** felt that with certain Clients, Telehealth and daily monitoring with Registered Nurse intervention played a big part in improving Client compliance with medication, diet and other lifestyle choices which might put them at risk;
 -
- 
- **Incidents and Interventions** – The activation of certain alarms/sensors and subsequent intervention identified some significant outcomes for Clients during the Pilot Program for both Telecare incident responses and Telehealth Registered Nurse interventions;
 - **GP Involvement** was confined to a small number of practitioners. Although there was acknowledgement by GPs that Telehealth could play a significant role in assisting Clients with compliance and reduction in Client anxiety, there was not a general view by GPs that planned Client face-to-face visits could be reduced. However there was general endorsement by GPs that they would recommend Telehealth services to other practitioners;
 - **Feros Care** was able to supply Telecare services within the constraints of the target operating cost model prepared during the Pilot Program, however the Telehealth operating cost model could not be met. This was largely due to equipment and communications difficulties, requiring repetitive visits to Clients' homes and extensive liaising with the technology supplier.

5. Client Case Studies

Client Profile: Beryl



Assessment

Personal Situation:

- 86 years old, lives alone, no family members living close by
- Cognitively sound

Clinical Conditions:

- Unstable hypertension and cardiac damage
- History of Transient Ischemic Attacks (TIAs)
- Poor mobility owing to osteoporosis, with a moderate falls risk
- Chronic pain

Approach

In-home support:

- Provide Personal Care and Domestic Services.

Telehealth:

- Provide customised daily scheduled interview to check on pain levels and wellbeing
- Provide Telehealth devices to take her own daily vital signs, including Blood Pressure, Oxygen Saturation levels and Pulse.

Telecare:

- Existing alarm system with another provider was left in place for Client's convenience.
- A keysafe was added to allow access for approved Carers and Emergency Services.

Outcomes

Client and Carer Impact

- Improved peace of mind and anxiety knowing a registered nurse is monitoring her vitals. Speaks about her "safe cocoon".
- Better understanding of her daily condition, more pro-active with GP.
- Less anxious about living alone.
- Comfortable with the interview process and the equipment.
- Very positive response and support for technology by family.

Outlook for Client

- Improved likelihood of remaining at home for the foreseeable future.
- Strong acceptance from GP, who uses daily vital signs summary to assist with treatment and medication management. Has reduced her scheduled GP visits from fortnightly to monthly.

Client Profile: Betty



Assessment

Personal Situation

- 85 years old, lives alone, elderly sister lives close by. Other family very distant.
- Cognitively sound.
- Tendency to be anxious about her health and living alone, but wants to remain in her own home.

Clinical Conditions

- Chronic cardiac disease and has pacemaker.
- COPD respiratory condition.
- Chronic pain and is on pain management medication.
- Strong risk of falling, and a history of significant falls.

Approach

In-home Support

- Provide personal care, domestic care and nursing services.

Telehealth

- Provide customised daily scheduled interviews to check on pain and wellbeing
- Provide Telehealth devices to take her own daily vital signs, including blood pressure, oxygen saturation levels and pulse.

Telecare

- Provide Telecare equipment to aid safe and secure living: falls detector, smoke alarm, emergency buttons in shower and toilet and personal pendant.

Outcomes

Client and Carer Impact

- Reduced anxiety about living alone.
- Copes with the routine well on her own and is convinced the equipment will help her to remain in her own home.
- Has used her pendant following two separate falls incidents to obtain emergency assistance.

Outlook For Client

- Positive verbal endorsement from her GP about the use of Telehealth equipment for daily interviews and vital signs monitoring.
- Likely to remain at home for the foreseeable future.

"I'm not gardening but... happy attempting cooking and cleaning"

5. Client Case Studies (continued)

Client Profile: Daphne



Assessment

Personal Situation

- 75 years old, lives alone, family member close by.
- Cognitively sound.

Clinical Conditions

- Has had type-2 insulin dependent diabetes for 30 years. Recently very unstable with BSL readings outside advised levels.
- Unstable blood pressure.
- Falls risk with prior serious falls resulting in hospitalisation and surgery.

Approach

In-home support

- Provide domestic services and assistance with shopping.

Telehealth

- Provide customised, on demand Interview to check on diabetes and wellbeing.
- Provide devices to take her own vital signs including blood pressure, pulse and blood sugar levels.

Telecare

- Provide equipment to aid safe and secure living: emergency pendant, smoke detector, and emergency buttons in shower and toilet.
- Provide key safe because of risk of diabetic coma. Provide code to authorised neighbours and Emergency Services.
- Medication reminders following irregular self-administered insulin.

Outcomes

Client and Carer Impact

- Daphne's compliance has improved immensely. She has lost weight, stabilised her blood pressure, increased her mobility and significantly improved her diet.
- Comfortable with the equipment and use of the technology.
- Acceptance of approach by GP and specialist who used trend analysis reports to adjust insulin medications.

Outlook for Client

- Prior to the Pilot Program, Daphne was potentially heading for complications associated with uncontrolled diabetes, decreased mobility and weight problems.
- With much better management of BSL, and better diet and health compliance, Daphne's health has improved markedly.
- GP was very positive of the role played by Registered Nurse support and monitoring, and believes that Telehealth technology has improved Daphne's compliance.
- Unlikely to require Residential Care in the near future.

Client Profile: Gerome



Assessment

Personal Situation

- 76 years old, lives alone, no family close by.
- Cognitively sound.

Clinical Conditions

- History of artificial fibrillation.
- Unstable blood pressure.
- Chronic shortness of breath.
- Type 2 insulin-dependent diabetes.
- High falls risk with extensive history of dizziness and falls.
- Anxious about instability of his health, particularly shortness of breath.

Approach

In-home support

- Provide domestic services, assistance with shopping and transport.

Telehealth

- Provide customised daily scheduled interview to check breathlessness, diabetes and other conditions.
- Provide devices to take his own daily vital signs including blood sugar levels, blood pressure, pulse and oxygen saturation levels.

Telecare

- Provide Telecare devices to assist safe and secure living in the home; falls detector, emergency pendant, smoke detector and emergency buttons in toilet and shower.

Outcomes

Client and Carer Impact

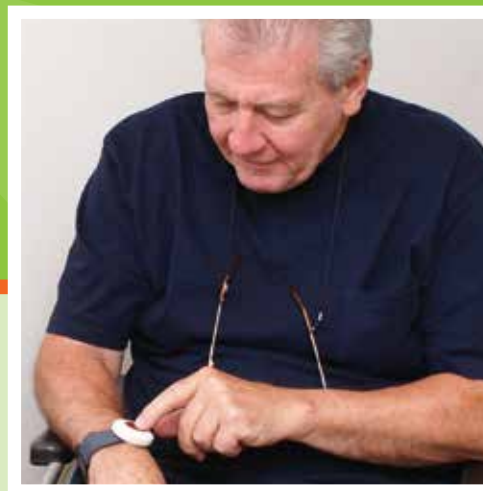
- Has better understanding of his conditions and how to correlate blood sugar levels with blood pressure and oxygen saturation levels. This helps Gerome to determine his daily level of activity.
- Combination of interventions by the Registered Nurse, use of the personal alarm, initiated medical testing by a respiratory physician and eventual delivery of in home oxygen equipment.

Outlook For Client

- Gerome has a challenging set of chronic conditions, however his comfort and safety have improved through interventions initiated by daily Registered Nurse monitoring of vital signs.

5. Client Case Studies (continued)

Client Profile: Leigh



Assessment

Personal Situation:

- 67 years old, lives with his wife, other supportive family close by
- Cognitively sound.

Clinical Conditions:

- Motor Neurone Disease (MND), little independent mobility, wheelchair-bound.
- Very strong falls risk, especially during transfers.
- Limited speech, and uses a 'speak easy' board to communicate.

Approach

In-home support:

- Provide personal care services to meet physical needs.

Telecare:

- Provide Telecare devices to assist with safer living; personal alarm with an easy press adaptor, smoke alarm, and help buttons in the shower and toilet.
- Because of verbal communication difficulties, a system of communication was established with the Response Centre to assist the operator to communicate when needed.

Outcomes

Client and Carer Impact

- Both Leigh and his wife feel more secure and relaxed knowing help is at hand. He feels that Telecare has supported his independence as he can be more safely left alone or attend to his transfers knowing there is help if he needs it.

Outlook for Client

- Given the nature of MND, the aim is to preserve Leigh's independence to the extent possible.
- Being surrounded by his family in his own home is vitally important to the family.

Client Profile – Brian



Assessment

Personal Situation:

- 73 years old, lives alone, supportive family close by.

Clinical Conditions:

- Affected by the onset of Dementia.
- Risk taking behaviour, such as wandering and becoming lost.
- Consequent high falls risk.

Approach

In-home support:

- Provide domestic and nursing services, and shopping assistance.
- Other Care and respite services are in place.

Telecare:

- Provide smoke detector because of prior fire alerts, personal pendant, falls detector and help buttons in the shower and toilet.
- Provide property exit sensors so staff and family are aware when Brian leaves the property.

Outcomes

Client and Carer Impact

- Brian has been prevented from wandering on many occasions.
- On those occasions where he has wandered, he has been located promptly.

Outlook for Client

- With the current support in place, he is as safe as a person living alone with dementia can be. It is difficult to predict his long term outlook because of the very high risk of mishap.

6. Lessons Learnt

6.1 Organisational

- Telecare and Telehealth are not “add on services” for current Health and Community Care providers. The implementation of such technology requires business planning, financial resource investment, extensive technical training, inventory management systems and a new set of documentation and assessment processes which have not traditionally been used within the sector. A high level of financial commitment and support is required from Executive Management in order for implementations to be successful.
- Care Managers and visiting staff should be able to assess the ongoing impact and benefit of each component of the technology in Clients’ homes, as the needs of Clients can change very quickly. Visiting staff members must be comfortable with the technology, and understand how to help the service provider to maximise the benefit of each component for the Client, and minimise the need for special “operational” trips (e.g. battery replacement, volume adjustments, positional changes and other minor operational issues).
- Consideration should be given to establishment of Client Service Agreements with respect to ongoing operation and maintenance of equipment to better manage the resource impact to Feros Care.
- The relationship with the technology supplier is critical to the success of the service provider’s Telehealthcare services. It is necessary to ensure the supplier has a fully committed and resourced “Telehealthcare Program” which encompasses all



technical aspects of equipment approval, quality assurance, reliability, maintenance, warranty and replacement. The Supplier must also have a suitably experienced level of technical support and a systematic problem resolution methodology. Service Level Agreements should be in place to allow the service provider to install equipment confidently (with supplier support), and to monitor Client services; trusting that the equipment (and software) work reliably.

6.2 Client Assessment and Selection

- The importance of sound assessment processes is a key to ensuring that the technology being implemented meets the needs of the Clients and their families. The technology is not a “one size fits all” approach. Close post-installation monitoring and support are critical in obtaining successful outcomes.

Daily home monitoring provides security and peace of mind for my clients “when the devices are appropriate for the client/family’s identified needs”

- Client assessment and selection processes are particularly critical for Telehealth Clients, where Clients are old and frail, to ensure that scheduled, routine wellbeing checks and close monitoring of vital signs actually reduce Client anxiety rather than elevate it.
- The current generation of Telehealth monitoring peripherals is not ideal for the frail aged. This means that when assessing Clients for possible Telehealth services, if Clients are living alone, they need to be willing to be compliant, cognitively sound, have good short term memory, be dexterous, reasonably mobile, and able to cope when things going wrong. If any one of these traits is not met, the Client may require assistance taking their vital signs, via regular visits by Carers, family, neighbours or visiting service provider care staff.

6.3 Liaising With General Practitioners

- Cooperation with GPs in Telehealth implementations is vital to gaining outcomes for the Client. However the level of support that GPs are able to reasonably provide without face-to-face visits in the follow-up of Telehealth, is limited because of their lack of capacity

- to be funded for phone-based consultations. This needs to be considered when viewing Telehealth as a tool to reduce unplanned GP visits.

6.4 Installation and Operations

- Any powered or telephone-based equipment should as much as possible, be isolated from the Client's own equipment to avoid the perception that the introduced equipment is a possible cause of faults in Client-owned equipment (such as computers, appliances etc.)
- Wireless communications at the Client's premises is preferable over communications using the Client's landline, if feasible. As well as isolation from Client facilities, this also allows for flexibility of placement and mobility of equipment within the house.
- Not all homes in Australia are ideal for wireless telephony. Pre-installation testing, assessment and positioning analysis for other equipment is critical to an efficient and cost-effective installation (power points, phone sockets, Client positioning habits).



7. The Future/Next Steps

7.1 For Feros Care

There has been strong support from Management and the Feros Care Board to mainstream Telehealthcare Technologies within Feros Cares service models over the next three years. To enable this, the following steps are envisaged:

- Scale up Telecare services currently being provided by Feros Care to enable Telecare to be included as a standard service option to all Feros Care Clients from Port Macquarie to Bundaberg. At the time of writing, there were 67 Client homes retrofitted with Telecare Technologies. Feros Care aims to increase this to 300 homes during 2011;
- Expand the current Telehealth Pilot Program from 15 to 30 Clients in 2011 with the view of partnering with a hospital based chronic care outpatient program;
- Pursue ISO 9001:2008 Quality Management System Certification and participate in development of Codes of Practice in the provision of Telehealthcare Technologies in a community based setting;
- Educate and lobby all levels of government on the benefits that both Telehealth and Telecare Technologies can play in supporting seniors to remain living safely, securely and more happily in their own home;
- Actively explore partnerships with health services in supporting post discharge, transitional care and chronic care programs through the provision of Telehealthcare Technologies for their Clients;
- Share the Feros Care experience with the Health and Aged Care industry through conference presentations and workshops, in order to build a broader awareness of the benefits, cost models and strategies in the implementation of Telehealthcare services;
- Become a preferred contract Telehealthcare provider for other Aged and Health Care service providers;
- Promote the advantages of Telehealthcare services to GPs and other clinicians providing care to people in the community;
- Participate in research activity regarding Telehealthcare Technologies;
- Support and participate in the creation of an industry interest group made up of organisations which are implementing Telehealthcare Technologies in Australia.
- Participate in interest groups, steering committees or other forums related to the use of technologies in the support of independent living.

7.2 For Policy Makers, Funding Bodies and Training Institutions

The Pilot Program identified the following key industry recommendations:

- Telecare should be mainstreamed and included as standard service options available to Health and Aged Care service providers;
- Funding should be made available to capable organisations to carry out further research to ensure the viability of Telehealth services by Health and Aged Care service providers;
- Telehealthcare technologies should be encouraged as an avenue to help service providers achieve continuous and high quality care for their clients; and
- Telehealthcare should be considered to provide significant benefit to post hospitalisation and may prevent hospitalisation, reduce GP visits and defer admission to Residential Aged Care facilities. Through keeping Clients living at home longer it is necessary



Installing Inactivity Sensors

to highlight the financial benefits to the relevant Government departments, Government funding incentives may encourage other service providers to participate and consider using Telehealthcare Technologies as part of their mainstream service delivery options.

The Australian Academy of Technological Sciences (ATSE) released a report “Smart Technology For Healthy Longevity” (Professor W.J.McG Tegart) in July 2010. Feros obtained approval from ATSE to include relevant summary information. (This ATSE approval does not imply any endorsement by ATSE of this Feros Case Study document).

The recommendations in the ATSE report address the wider issues and implications for these bodies to enable service providers like Feros Care to embrace new technologies with some confidence that there exists a sound foundation on which a service provider can sustain such a business approach.

The following “Next Steps” for the wider industry are addressed in detail in the ATSE document:

- Recognition of assisted independent living within

- the National Strategy for Ageing Australia;
- Government funding for systematic research and development, and broader trials by capable organisations;
- Application of Standards and the establishment of Centres of Excellence;
- Explore implications for tertiary institutions regarding training and certification for all aspects of technology operating in Clients’ homes;
- Understanding the financial benefits to Governments of keeping seniors at home; and
- Medicare and Health Insurance aspects to encourage the implementation of technologies and compensate medical practitioners for their participation.

Feros Care concurs with the thoughts and recommendations of this report, and would encourage readers to consult this document via the link:
www.atse.org.au/atse/activity/health-technology/reports/content/activity/health-content/reports.aspx

8. Conclusion

The Pilot Program undertaken by Feros Care has identified that the Telehealthcare can assist Feros Care to fulfil its mission “to assist older people to live their life, their way, by applying innovative thinking to create new opportunities to meet changing needs, expectations and challenges.”

Feros Care was able to:

- Demonstrate that Telehealthcare Technologies can assist service providers in delivering more continuous quality and targeted care for Aged Clients in their own homes;
- Demonstrate that sensor devices and routine monitoring services can play a part in easing the care burden and anxiety for Clients and Carers and generally improve safety and independence; and

- Integrate Telehealthcare services as an operationally and financially viable service option for Community Service Clients.

Furthermore:

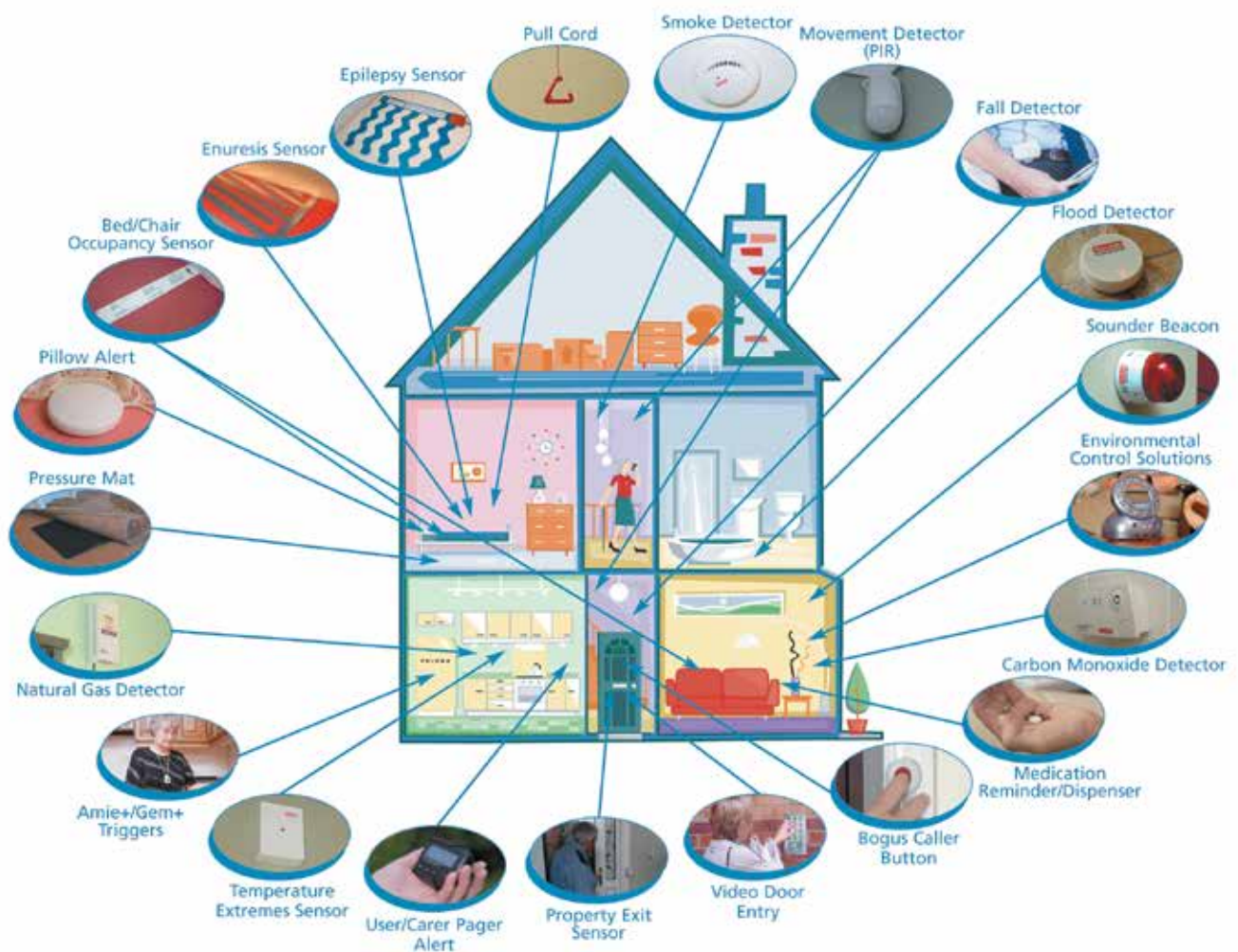
- It is likely that Telehealthcare Technologies and routine monitoring will allow Clients to remain safely in their own home for longer than would otherwise be possible; and
- Clients, Carers and Feros Care Management believe that Telehealthcare Technologies and continuous monitoring improve the quality of Client care.



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