

REPORT

# Chronic Pain Telehealth Pilot Project Evaluation Report 2016

ACI Pain Management Network



The Agency for Clinical Innovation (ACI) works with clinicians, consumers and managers to design and promote better healthcare for NSW. It does this by:

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# Contents

## Contents

<b>Contents</b> .....	<b>ii</b>
<b>Acknowledgements</b> .....	<b>iii</b>
<b>Executive summary</b> .....	<b>iv</b>
<b>1. Telehealth in Pain Management: A pilot study to support Implementation</b> .....	<b>1</b>
Background .....	1
<b>2. Process</b> .....	<b>3</b>
Implementation elements .....	3
Model Options included: .....	4
Evaluation .....	4
<b>3. Results</b> .....	<b>5</b>
3.1 Process.....	5
3.2 Promoting access .....	6
3.3 Benefits .....	7
3.3.1. Benefits to the patient .....	7
3.3.2 Benefits for the local primary care clinicians.....	8
3.3.3 Benefits for the pain team .....	9
3.3.4 Benefits to the service/system.....	9
<b>4.0 Limitations</b> .....	<b>10</b>
4.1 Clinical Limitations .....	10
4.2 System Limitations .....	11
4.2.1 Local/patient machine difficulty .....	11
4.2.2 LHD network issue.....	11
4.2.3 Healthdirect issues.....	12
<b>5. Discussion</b> .....	<b>12</b>
5.1 Enablers .....	12
5.2 Perceived Barriers .....	12
5.3 Summary .....	13
<b>6. Conclusion</b> .....	<b>13</b>

<b>7. Appendices .....</b>	<b>14</b>
Patient survey appendix 1 .....	14
Clinician survey appendix 2 .....	15
Telehealth logbook appendix 3 .....	1

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## Executive summary

In 2015, a six month pilot study evaluating the use of telehealth as a modality for chronic pain management was conducted at two of the NSW chronic pain clinics; the Children's Hospital Westmead and Orange Hospital (OHS). The two hospitals agreed to participate believing that telehealth would assist them to improve access to specialist multidisciplinary services for their patients who lived in rural and remote NSW. More particularly, they sought to provide improved support to the clinicians who manage these patients in the community.

This project was a collaboration between ACI, LHDs and specialty networks, Healthdirect Australia (HDA), and the Ministry of Health.

HDA was the platform provided to the two pilot sites. HDA has the following advantages over existing products available within NSW Health: Internet browser based, no licensing fees, no necessity to download software, no expensive cameras or screens required, driven by the patient or clinician at the far end, and enables direct access into General Practice and patient home environment.

The following tables demonstrate some key metrics collected throughout the pilot to measure the success of the implementation.

Table 1: Key metrics recorded for the pilot from July 2015-December 2015

Site	Number of ACI supported sessions to obtain business-as-usual	Total number of sessions	Total number of successful sessions	Total number of technical difficulties	Total number of referrals	Total number of repeat referrers	Average duration of session in minutes
OHS	3	18	15	3	15	4	51
CHW	3	14	11	3	11	8	50
<b>Total</b>	<b>6</b>	<b>32</b>	<b>26</b>	<b>6</b>	<b>32</b>	<b>12</b>	<b>50</b>

Table 2: Key metrics recorded for the pilot from July 2015-December 2015

Site	Total Number of KMs in patient travel saved	% of sessions achieving desired clinical outcome (clinician rated)	% of patients who reported they were happy to continue to receive telehealth	% completed documentation in medical record	% rate of consent obtained by patient for telehealth
OHS	5834	83	100	100	100
CHW	3346	75	100	100	100
<b>Total</b>	<b>9180</b>	<b>83</b>	<b>100</b>	<b>100</b>	<b>100</b>

The essential enablers of the project included the following:

- the simplicity and accessibility of the HDA platform, at no specific user costs, no licence fees
- the liaison and support of the ACI telehealth and Pain Network manager between the pilot sites and HDA
- the development of a **clinical toolkit**
- Provision of direct training and support to the pilot sites

The challenges included establishing communication pathways with LHD IT Staff, obtaining access to Google chrome and webcam, and establishing a web point entry for services.

Over the six month period, 32 sessions were conducted across both sites with an average of 50 minutes of contact time per session. Of these, 26 were successful to the point that they were rated as good as a face to face session by the clinicians and the patients, with 83% achieving the desired clinical outcome. Benefits were delivered to the patient, staff, service, to primary care and the system as a whole. Over 9000 kilometres in travel was saved, and cancellations were reduced. Referring clinicians were more likely to refer a second patient following a successful telehealth intervention. Compliance with the essential documentation and process aspects of telehealth were reported to be 100%. Only three ACI supported sessions were required per site

Telehealth via HDA videocall© provides a feasible modality to deliver specialist services in chronic pain. The toolkit developed to support the process, is relevant and easy to use. HDA videocall© enabled clinicians to access GPs and patients in their own home with good outcomes in the majority of cases.

The chronic pain telehealth model has now been extended to three other hospitals seeking to develop telehealth and outreach models linked to new funding in 2015. All chronic pain clinics in NSW will be offered the telehealth model in 2016. Other services and LHDs have expressed interest in applying this approach to other clinical disciplines.

# 1. Telehealth in Pain Management: A pilot study to support Implementation

## Background

The Agency for Clinical Innovation (ACI) places high importance on providing access to treatment and care for people living in rural and isolated communities across NSW. The provision of specialist care can be a challenge due to workforce availability and geographic isolation. Telehealth can assist in breaking down the barrier of distance. It can also build local staff capacity by providing a platform to link, network and mentor staff with developing expertise and interest. This project has been a collaboration between the NSW ACI, the NSW Ministry of Health, Health Share Services, Local Health Districts (LHDs) and Specialty Health Networks (SHNs) that has enabled Telehealth to be utilised as a modality for the delivery of care to communities that might not otherwise have received this care.

In 2012, NSW Health Minister Skinner, committed 26 million dollars over four years towards the enhancement of pain management services across NSW, and to support implementation of the NSW pain plan. The state plan was developed in alignment with the National Pain Strategy and the recommendations of a NSW Ministerial Taskforce.

The objective of the pain plan and model of care was to provide equitable and evidence based services that improve quality of life for people living with pain and their families, and to minimise the burden of pain on individuals and the community.

In 2014, the ACI commissioned O'Connell Advisory to conduct a **formative evaluation** to assess progress against the NSW pain plan and implementation of the model of care. An area for further focus was service delivery, specifically in three Local Health Districts (LHDs), that were identified as having significant gaps in access to chronic pain services. These three districts were not recipients of funding in the initial round of funding, nor did they have any prior capability or expertise to manage people with chronic pain. These identified areas were Southern NSW, Murrumbidgee and Western NSW LHD. A recommendation from the ACI Pain Management Executive was stated as follows:

*“Further resourcing (in some form) is required to support development of local pain management services in the three identified LHDs without a pain service. This may be best serviced via telehealth/videoconferencing providing specialist metropolitan based expertise to local services and providing a mechanism for training in pain management via webinar.”*

Concurrently, a specialised pain management clinic in spinal cord injury funded by the Lifetime Care and Support Authority was established at Greenwich Hospital. This service was established to provide specialist multidisciplinary pain management consultation and support to individuals with persistent Spinal Cord Injury related pain. Telehealth was offered as an integral component of the model of care, in order to optimise accessibility of the program on a state-wide level. A Telehealth package was developed by ACI to support the establishment of this service. This was trialled over a 12 month period and modified accordingly. The results from the **evaluation** were favourable and provided clues as to how the package would need to be modified as a toolkit for chronic pain for implementation in the chronic pain network more broadly. The toolkit included a model, checklists,

patient consent, patient information sheet, patient evaluation sheet. This toolkit was distributed across the network.

In addition to the work conducted by the Pain Management Network, the NSW Ministry of Health commissioned a *Strategic Review of Telehealth in NSW* (the *Strategic Review*). Many stakeholders were consulted during this process, including ACI and the Pain Management Network. The results of the review found that the level of integration of telehealth across the state is relatively low, and that significant investment in telehealth has centred on infrastructure. One of the barriers to implementation was a need for adequate administrative support to assist with the logistics and technological aspects of available telehealth options. Having a local telehealth coordinator/manager was also found to be a key enabler of telehealth in NSW. NSW Health is developing an implementation strategy in response to the findings of the Strategic Review.

The Spinal Cord Injury Chronic Pain clinic at Greenwich hospital was profiled as successful case study in the NOUS review. This case study examined the enablers to support implementation of the model.

Key enablers included:

- Strong governance, and senior management commitment to the model
- The model addressed a specific clinical need; the model design was collaborative and iterative to ensure it was fit for purpose and supported clinician ownership of the model
- The availability of specialist resources to support the implementation of the model including access to ACI clinical network managers (Pain and Spinal Cord Injury), an ACI project officer and ACI telehealth implementation officer

Another successful enabler to telehealth as noted in the NOUS review was that:

*“reliable user-friendly and convenient technology is critical to ensuring successful telehealth enabled models of care”.*

Whilst telehealth has been an established feature of many health services in Australia, traditionally this has been between hospitals using specialised video-telecommunications-based hardware. More recently, desktop telehealth solutions has been occurring between private health care providers and patients (at their home or in General Practice), using technologies such as Skype, FaceTime, or GoToMeeting. This increasing accessibility of the technology is changing consumer expectations. At the same time, traditional telehealth technology has proven costly for providers, challenging for users, and can be restricted by the limitations such as the need for a dedicated room and coordinator to use the technology.

Accordingly, ACI engaged in a partnership with HDA to provide the videocall© solution for telehealth pain clinics. HDA is jointly owned by the Council of Australian Governments and NSW Health. HDA currently provides over 1.4 million on-demand and scheduled health encounters per year via telephone or video call, via their GP After Hours and Pregnancy, Birth and Baby service. HDA recognised the need to support video access in a manner that mimics typical clinical workflow, that is: patients and/or carers initiate the encounter, and arrive in a waiting area. They developed Video Call ©, a solution that combines freely-available web technologies, familiar to patients and consumers.

The ACI Pain Network manager and Telehealth Implementation officer collaborated to develop the model, process and all aspects of the implementation phase. Both staff members were actively

involved in the pilot stage of the project, and facilitated wider implementation with chronic pain clinics across NSW.

## 2. Process

### Implementation elements

All of the design phase of this project was driven by an awareness of the critical elements for successful implementation, including ....

1. An expression of interest was circulated for sites wishing to explore telehealth as an adjunct to the current service provision. The criteria included an interest in providing services to those people at a distance from the parent site or outside the LHD boundaries. Evidence of Executive support and telehealth/ICT support was required.
2. The two successful sites were selected; Orange Pain clinic and The Children's Hospital Westmead's Complex Pain Clinic. The Orange Pain clinic wanted to become more efficient at providing services to people living outside of Orange (up to 8 hours drive). The Children's Hospital Westmead, having a statewide role, were looking to support and follow up children and their families who live in rural and remote NSW.
3. The ACI Pain Management Network Manager and the Telehealth Officer attended site visits where aspects of the model were established, suitable patients were identified, communications and an evaluation plan developed.
4. Following the visit, a signed letter of agreement, between HDA and the LHD was obtained. It was preferable that a senior LHD executive member signed the agreement, to allow for a spread of video call© to other services within the LHD.
5. The ACI telehealth officer provided liaison between HDA and the LHD facilitating access to appropriate infrastructure; the main element was the ability for clinicians to access Google Chrome from their desktop within their consulting rooms. Other aspects that needed to be negotiated/achieved included;
  - o Identification of people and computers where Google should be downloaded
  - o IT support to download google chrome
  - o Ensure webcam availability
  - o Establish web entry point (a web page) and language for service website
  - o Completed HAD's service configuration sheet, to enable code to be developed
  - o IT support to upload video button on the Pain Clinic's website
  - o Test calls with outside network to eliminate any network/firewall issues
6. The ACI staff provided implementation support, via process mapping to articulate the clinical and administration activity flow including billing, and supporting the patient or end user through telehealth
7. Training was facilitated by the ACI team with service users.
8. User guides for clinicians, patients and primary care providers were also created to by ACI staff to assist with familiarity of the technology.
9. Both sites went live in July 2015.
10. The ACI telehealth officer continued to facilitate communication between the pain clinic and HDA
11. After six months of proving telehealth services, the pilot was evaluated.

**Model Options included:**

A variety of models were discussed, explored and used by both sites during the pilot. Such models included:

- 1:1 patient support with GP in attendance –initial assessment
- 1:1 patient support with GP in attendance - follow up
- 1:1 multi-disciplinary assessment or treatment in the patient's home with usual correspondence back to the GP after the consultation
- Follow up by individual disciplines eg telecounselling, physio in home with local physiotherapist in attendance
- Upskilling local allied health and medical practitioners

**The Model at Orange**

The Chronic Pain Clinic at Orange, quarantined one Thursday per month for a dedicated multidisciplinary telehealth pain clinic. All patients were seen initially face-to-face at the education day. Patients targeted for the telehealth service included patients who were located far away from the clinic. Patients were also included if they elected for the telehealth session to occur following the education day. To assist with recruitment, the Clinical Nurse Consultant (CNC) also targeted clusters of GP practices, well known to the Orange Pain clinic, in an attempt to build the capacity of these GPs to manage chronic pain locally. These GPs were located in Wellington, Kandos and the Aboriginal Medical Service in Coonamble. Initially Orange Health Service (OHS) advertised to GPs who had appropriate patients, with a long term view to provide education to local/isolated clinicians once the staff at OHS become more familiar with the technology. Patients with complex pain and/or serious comorbid conditions were initially excluded from the pilot and as the pilot progressed, bariatric patients with chronic pain, became prioritised for this service.

**The Model at The Children's Hospital Westmead (CHW)**

The clinicians at CHW initially provided the service to patients living in rural areas and who had reported difficulties travelling to CHW. The initial intention was to provide an assessment/follow up to these patients and carers using telehealth. The Complex Pain clinic, also provided follow up telehealth sessions to Paediatricians, located in regional, and remote locations in an attempt to assist in local management. After three months of offering the telehealth service, the clinic extended the telehealth service to metropolitan patients for telephysio and telepsychology so that patients and their families did not have to take time off work/school to travel for their appointment. The technology is also being considered to be used for group sessions with children and adolescents with complex pain.

**Evaluation**

The pilot was evaluated at 3 and 6 months. The following tools were used:

- Patient survey – appendix 1
- Clinician Survey- appendix 2
- A clinician logbook – appendix 3

The objective of the evaluation was to determine if a telehealth model for chronic pain was feasible and generalizable to other pain clinics across the network. The data also helps us to understand the patient profile that is best suited to this intervention, and the best clinical workflows. All these evaluation tools are provided in the **Chronic Pain Telehealth toolkit**. They were designed to be simple and time efficient to complete. The logbook was designed to measure process outcomes, and also served as a prompt for the clinicians to follow the minimum telehealth processes and requirements as outlined in the Chronic Pain Telehealth model, and ACI Telehealth Guidelines. The aim was to facilitate the adoption of telehealth into business as usual practices.

### 3. Results

#### 3.1 Process

Table 3 demonstrates some process data collected by both sites during the pilot period from 30<sup>th</sup> July 2015 - 20<sup>th</sup> December 2015.

**Table 3: Process data collected during the pilot**

Site	Number of ACI supported sessions to obtain business-as-usual	Total number of sessions	Total number of successful sessions	% of sessions achieving desired clinical outcome (clinician rated)	Average duration of session in minutes	% rate of Consent Obtained by patient for telehealth	% completed documentation in medical record
OHS	3	18	15	83	51	100	100
CHW	3	14	11	75	50	100	100
<b>Total</b>	<b>6</b>	<b>32</b>	<b>26</b>	<b>8</b>	<b>50</b>	<b>100</b>	<b>100</b>

Both sites required only 3 ACI supported training sessions, before they could independently administer the telehealth model (i.e. technical and clinical). Following these three sessions, both sites began to provide telehealth sessions on a frequent basis; initially once a month, progressing to weekly by the end of the pilot.

Whilst technical difficulties were experienced at both sites (i.e. 3 times for OHS, and 3 times for CHW) a total of 83% (i.e. 26/32) of the sessions were rated by the clinicians as achieving the desired clinical outcome. In total 26/32 or 83% sessions were rated as 'equal' or 'better' than the 'face-to-face' modality by the clinicians. For the six sessions that were rated as 'inferior' than 'face-to-face', technical difficulties were reported, and these sessions were either discontinued and continued by telephone. See 4.2 below for more detail on the technical difficulties.

The average length of the session was 50 minutes for both clinics, with a range of 30-120 minutes.

The main purpose of the telehealth consultations was to provide multidisciplinary follow up care for a patient with their local primary health care professionals and or to provide follow up consultations into the patient's home with their primary caregiver (parent) located either with the child, or at work. Other objectives of the telehealth consultation included:

- Medication reviews
- Review assessments
- Education
- Support for a local practitioner (no patient present)
- Telepsychology sessions
- Physiotherapy assessment
- Psychology assessments
- Multidisciplinary assessments, with all staff from the pain clinic
- Medical only assessment

Compliance with the telehealth requirements were also measured during the pilot. Verbal consent from the patient is mandatory for all consultations. A template consent form patients has been provided in the toolkit. Consent from the patient and/or caregiver was obtained 100% of the time across both sites. For telehealth consultations, it is essential that documentation in the patient medical record is completed by clinicians at both ends of the telehealth consultation, (if there are clinicians at both ends), in accordance with medico-legal requirements. For scenarios where there is only a treating clinician and no one is with the patient at the time of consultation, it is the responsibility of that treating clinician to enter the notes into the patients' medical record and also notify others of the outcome of the consult. For consultations where a telehealth consultation was provided without another clinician (i.e. to patient's home) correspondence was sent to the local GP/referral source 100% of the time. Documentation of the telehealth consultation was recorded in the patient's medical record at both sites 100% of the time. Both teams used the suggested template provided in the telehealth toolkit for every telehealth consultation.

### **3.2 Promoting access**

The Telehealth service provided increased access to patients living in rural and remote NSW. The telehealth clinic was provided to patients and primary care health practitioners who resided in the following towns:

- Coonamble 620 return kilometres from provider site
- Wellington 200 return kilometres from provider site
- Kandos 294 return kilometres from provider site
- Dubbo 300 return kilometres from provider site
- Bathurst 200 return kilometres from provider site
- Peak Hill 298 return kilometres from provider site
- Tottenham 498 return kilometres from provider site

- Tullamore 784 return kilometres from provider site
- Lake Cargelligo 588 return kilometres from provider site
- Eugowra 160 return kilometres from provider site
- Cobar 892 return kilometres from provider site
- Parkes 540 return kilometres from provider site
- Dunedoo 406 return kilometres from provider site
- Taree 610 return kilometres from provider site
- Canberra 1662 return kilometres from provider site (3 consultations)
- Griffith 1128 return kilometres from provider site

A total number of **9180** Kms of patient travel was saved during the course of the pilot.

During the pilot period, 32 referrals were received for telehealth consultations, across both sites. At Orange, all of the referrals came from local General Practitioners (i.e. 18/18), while at the Children’s Hospital Westmead, the referral sources were General practice and specialists. Three out of the fourteen referrals came from Paediatricians, whilst the remaining eleven came from parents who elected to use the telehealth modality for follow up appointments. Out of the 18 referrals received at Orange, 14 of the referrals were from different GPs, where 4 referrals were from the same GP. At CHW, 75% of referrals were received from the same Paediatrician in Canberra.

### 3.3 Benefits

#### 3.3.1. Benefits to the patient

Table four below, demonstrates the results obtained from the patient evaluation survey.

**Table 4: Results from the patient evaluation survey**

Site	Total number of KMs in patient saved	% of patients who reported that the telehealth session was convenient for them	% of patients who reported that the telehealth session was as good as face-to-face	% of patients who reported they would be happy to travel continue with telehealth sessions
OHS	5834	100	90	100
CHW	3346	100	83	100
<b>Total</b>	<b>9180</b>	<b>100</b>	<b>88</b>	<b>100</b>

A total of 9180 kms of patient travel was saved through the provision of telehealth.

Patients reported that their GP was able to receive specialist information ‘quickly’, and that they were able to see the entire pain team ‘all at once.’ A reduction in the ‘flaring up’ of pain associated with, and preventing travel and attendance at such clinic appointments was also reported. Some patients felt the telehealth session was ‘more private’ than a face-to-face session. Only three patients reported they experienced technical difficulties with audio and ‘freezing’, however despite these inconveniences, they were happy with the session. One patient reported she would prefer a face-to-face consultation for a physiotherapy assessment only.

Case Study: A 50 year old female from Tullamore, received a telehealth session from the Orange Chronic Pain clinic. This patient elected to have the consultation directly into her home. No technical difficulties were reported on either end. The primary purpose of this session was to provide a follow-up session following her initial assessment. Her medication was reviewed by medical and nursing staff, and appropriate intervention was provided. She was offered further telepsychology sessions, and referred to local physiotherapy services. This patient is no longer required to physically travel to OHS for clinic appointments. She has received a combination of local services, and telehealth care from Orange pain clinic.

### 3.3.2 Benefits for the local primary care clinicians

Table five, illustrates the results from clinician survey questions,

Table five: Results from clinician survey questions

Site	% of local clinicians who reported that the telehealth session was convenient for them	% of local clinicians who reported that the telehealth consultation helped to support their patients with pain management	% of local clinicians who reported that they were comfortable using the technology	% of local clinicians who reported that they were happy to continue using telehealth consultations
OHS	100	100	100	100
CHW	100	100	100	100
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Clinicians present on the other end of the consultation (i.e. local health professionals) were also surveyed during the pilot. A total number of 8 local health professionals completed the Clinician

Evaluation Survey (in the toolkit) during the pilot. All agreed or strongly agreed that the telehealth session was convenient for them. All clinicians surveyed, 'strongly agreed' that they were comfortable using the technology, happy to continue to have ongoing consultations via telehealth, and now have a range of information and skills they could use to assist their patients. Five clinicians surveyed reported technical difficulties, however all of these clinicians would continue to use telehealth consultations in the future. Both teams at CHW and OHS reported an increase in enquiries from the same local health professionals if they had a previous patient participating in a telehealth consultation.

A paediatrician rang the Complex Pain clinic, after participating in a shared telehealth consultation. This paediatrician requested a telehealth consultation for a patient on a case unknown to the Complex Pain Clinic. The team at CHW were able to provide a joint multidisciplinary telehealth consultation with this patient, the GP and the local paediatrician. The local paediatrician was able to establish a pain management plan for this patient and provide follow up care.

### **3.3.3 Benefits for the pain team**

In total, 6 clinicians and administration officers from both pain clinics were interviewed about their experience providing telehealth. These clinicians were either interviewed by the ACI staff and/or their own LHD. All staff reported that offering telehealth brought many benefits to their clinical practice including:

- Increasing the reach and access of their service to patients based in rural and remote locations.
- Better access and increased networking with local healthcare professionals. Both teams reported that sessions with GPs or Paediatricians were more likely to generate subsequent referrals and improved relationships
- The staff at Orange reported they were able to provide multidisciplinary assessment with all staff in the pain team present concurrently with the telehealth modality. This was a service that had not been previously offered. The staff at Orange reported they found this session more convenient and beneficial for their professional development.
- All staff reported they liked to be able to promote telehealth as part of the service they offer to patients.
- All staff reported that they were confident and comfortable using the technology, and would continue to provide telehealth consultation following the completion of the pilot.

### **3.3.4 Benefits to the service/system**

There was a variety of service benefits reported / discovered during the project:

- Increased reach of the current service.
- A reduction in cancellation of appointments due to pain flare ups and associated travel requirements.

- The multi-disciplinary format for the consultation saved both patient and staff time, and cost. It reduced the number of appointment times required by the patient and released more appointment times for other patients
- Telehealth MBS telehealth items numbers for staff specialists were claimed. Currently consultant physicians and pain specialists can claim an extra 50% of their regular consultation fee if they provide a telehealth consultation (subject to some conditions: see the toolkit for more information). In most cases this incentive flowed through to the pain service.
- Both services noticed an increase in referrals from the same local health professionals who experienced a successful telehealth consultation.
- Eleven of the patients surveyed reported they did not have to take time off work or school to attend their pain clinic appointment. There are productivity gains for the system as a whole.
- Increased networking and upskilling of primary care professionals in their management of chronic pain.
- ACI staff have also been able to share their learning's with other networks. Currently, the Spinal Cord Injury Network has adopted and implemented a similar model for 2/3 of its state-wide services.

A further two pain clinics have since implemented a telehealth model using HDA's videocall©. A further three pain clinics are due to 'go live' early 2016, with five clinics on a telehealth implementation waiting list

## 4.0 Limitations

### 4.1 Clinical Limitations

Some limited clinical limitations were noted across both sites:

- Initial physical assessments were judged to be difficult, particularly when there were technical difficulties such as pixellation. Hands on assessment is obviously limited available via telehealth, unless supported by clinical expertise at the patient end of the consultation
- Both sites reported that an initial face-to-face meeting was needed in an effort to establish rapport. Both sites reported that initial assessments at times were difficult, and the telehealth format was much more preferable to use for follow up care.
- Both sites reported it was more difficult to provide the service directly into the patient's home. This was because of the limitations of some home computers (older than 6 years), and lack of familiarity with the internet for some older patients
- Sites also reported that people with significant mental health, cognitive impairments or behavioural disturbances were unsuitable for this modality. There may be some limitation in paediatrics where family dynamics are complex

A 70 year old male patient, was provided a telehealth consultation from the Orange Pain clinic into his home. Whilst this patient was able to follow the telehealth tips information sheet provided in the telehealth toolkit, he had poor internet connection. This meant that he was 'dropping out' every 30 seconds. The session was diverted to the telephone, and a follow up physiotherapy face-to-face assessment was booked for January 2016. This patient was keen to persist with the telehealth despite the technical difficulties

## **4.2 System Limitations**

Whilst technical difficulties were reported for 6 of the sessions, these were considered minor for all participants. Analysis of these difficulties revealed they could be further categorised/diagnosed into the categories:

- local/patient machine difficulty
- LHD network issue
- HDA issue.

### **4.2.1 Local/patient machine difficulty**

Two of the technical difficulties that were reported were due to poor internet connection or old machines used at the patient end in their home. The difficulties noted included repetitive disconnection, severe pixilation and poor audio. In these cases, patients were using prepaid wifi and old webcams. In one of these sessions, the patient reported they were experiencing a severe thunderstorm. Patient information sheets have now been modified to specify ideal technology requirements.

### **4.2.2 LHD network issue**

Two of the technical difficulties experienced were isolated to LHD network issues. An upgrade was made to one of the LHD's network resulting in blocked access to the outside networks. This meant that one pain clinic could not connect to patients and primary care services. This upgrade occurred mid-way during the pilot. This issue was rectified within 24 hours using liaison support from ACI to problem-solve with HDA. The website is no longer whitelisted, and when upgrades are made, the ICT networking team are aware to permit access for outside callers to connect to clinicians with the LHD network.

### 4.2.3 Healthdirect issues

Two of the technical difficulties were isolated to a HDA videocall © configuration issue. Videocall © is upgraded every three months. The result of this upgrade was that only high definition calls could access the videocall© solution. Because these issues were occurring at both sites simultaneously, the ACI telehealth officer was able to report a systemwide problem. Settings were restored to standard definition options immediately, and the problem has been solved

## 5. Discussion

### 5.1 Enablers

The key enablers underpinning the success of this project include:

1. Support, training and liaison from ACI and between all stakeholders in the project
2. The chronic pain toolkit
3. The acquisition and sharing of knowledge arising from cross system coordination
4. The simplicity and ease of use of HDA technology specifically:
  - Access via web browser
  - No licensing/no fees
  - No software required
  - No equipment required
  - Driven by the patient
  - Intuitive browsing
  - Desktop access at the place of work
5. Clinical champions and a desire to change are important Both clinics reviewed their work practice and modified it accordingly to successfully adopt telehealth and incorporate it as a sustainable model. Criteria were established and specific telehealth times were allocated to conduct telehealth services on a regular basis.
6. The ACI staff worked closely with administration teams to ensure minimal disruption occurred to the billing and scheduling process. Both clinics were able to use usual billing and scheduling practices, enabling constant telehealth patient activity.

### 5.2 Perceived Barriers

The perceived barriers to the implementation of the telehealth model were predominantly related to the limited understanding and experience in LHDs with HDA technology. Therefore a lot of time continues to be spent on educating the system on webRTC IT applications and benefits.

- **Bandwidth**

Healthdirect's videocall © is web based and therefore bandwidth is far less of a barrier than for other software products. Many of the consultations were conducted in very remote parts of NSW, with little difficulty experienced.

- **GP reluctance**

It was perceived that it would be difficult to engage GP in the pilot. The results of the pilot suggest that this is not the case, and local GPs were more likely to re-refer to the service if the consultation was offered.

### **5.3 Summary**

Overall, the barriers to implementation have been minimal, and the success significant. There have been demonstrated benefits for the system, the service and the patient, and sustainability has been demonstrated.

The learnings have been shared across the system, and on that foundation, four additional pain clinics have also commenced the process of adopting telehealth, with an additional 5 services on a waiting list. All pain clinics will be offered this support and modality during 2016. Interest has spread within LHDs that have been involved as well as across into other networks. Burns and spinal cord injury are currently embedding a telehealth model into their service. Psychiatry and renal services are also commencing discussions with HDA. WNSWLHD, WLHS and SCHN are all engaged in discussions with HDA to expand the system into other clinical areas.

The ACI experience has been positive, but it is essential to recognise that the technology on its own is not sufficient to support a sustainable change in clinical practice. Simultaneously, it is critical to review the workflow processes, criteria for patient suitability and the model for care, and ensure that these aspects are patient centred and outcome oriented. It is important to recognise that the model of care may be different when delivered via telehealth.

## **6. Conclusion**

Telehealth was found to be a feasible and effective model to deliver chronic pain services into primary care and patients' homes in NSW. The implementation support provided by ACI and the use of videocall© were found to be significant enablers of the model, in association with a toolkit and workflow support. This model will be continued to be spread across the ACI Pain Management Network, on the successful background of the pilot project. This will facilitate access to specialist expertise in the Murrumbidgee, Southern and Far West LHDs for people who live with chronic pain.

## 7. Appendices

### Patient survey appendix 1

#### Patient Evaluation Survey Questions

The information collected below will remain anonymous. It will be used to improve and evaluate the telehealth service offered to patients across the state. Completion of the information is entirely voluntary

Below are some example questions that can be tailored to your service to assess the patient satisfaction of utilising a telehealth service.

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The telehealth consultation was convenient for me?	<input type="checkbox"/>				
The telehealth consultation saved me time?	<input type="checkbox"/>				
The telehealth service I received was as good as face to face?	<input type="checkbox"/>				
I was comfortable using the technology?	<input type="checkbox"/>				
My safety and privacy was maintained during the consultation?	<input type="checkbox"/>				
I would be happy to have ongoing consultations via telehealth?	<input type="checkbox"/>				
I would prefer a face to face consultation?	<input type="checkbox"/>				
I have a range of information, skills and or knowledge that I can try	<input type="checkbox"/>				
What improvements can you suggest to be made to improve the telehealth service?					
What was the benefit of the service?					

Please forward responses to Julia Martinovich Telehealth Implementation Officer C/O NSW Agency for Clinical Innovation  
PO Box 699, Chatswood NSW, 2067

## Clinician survey appendix 2

### Clinician Evaluation Survey Questions

Below are some example questions that can be tailored to your service to assess the patient satisfaction of utilising a telehealth service.

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The telehealth consultation was convenient for me?	<input type="checkbox"/>				
The telehealth consultation helped me support my patient with pain management	<input type="checkbox"/>				
The benefit of the service I received through telehealth was as good as face to face?	<input type="checkbox"/>				
I was comfortable with the technology?	<input type="checkbox"/>				
I would be happy to have ongoing consultations via telehealth?	<input type="checkbox"/>				
I have a range of information, skills and or knowledge that I can try	<input type="checkbox"/>				
What improvements can you suggest to be made to improve the telehealth service?					
What was the benefit of the service?					

Telehealth logbook appendix 3

**TELEHEALTH SERVICE EVALUATION – CLINIC LOGBOOK- completed at the end of each activity**

<u>Date and source of referral/activity:</u>	<u>Consent Y/N/NA</u>	<u>People present</u>	<u>Duration of session</u>	<u>Location (Town) of the receiver</u>	<u>Describe Objective (patient assessment/review/upskilling/education)</u>	<u>Presenting Clinical Issues/Education topic</u>	<u>Immediate outcome</u>

<u>Describe any Technical issues</u>	<u>Was session completed/discontinued Why?</u>	<u>Correspondence out (Y/N)</u>	<u>Patient survey Collected (Y/N)</u>	<u>Clinician survey collected (Y/N)</u>	<u>Modality assessment (better than/ equal to/inferior to face to face) Why?</u>

**Questions – completed at 3 and 6 months post commencement of the pilot**

1. Where have the patient referrals come from or requests for education and upskilling?
2. What patients are most suitable for telehealth consultation? Eg consider distance, complexity, disability
3. What patients are least suitable and why?
4. What format works best for telehealth consultations
5. What benefits have telehealth brought to your clinical practice eg reduced DNA, improved access
6. Describe 3 case studies

