Telehealth to the home

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Hunter New England Local Health District has developed, implemented and evaluated two telehealth models designed to improve the health outcomes of people isolated from health services. Both telehealth models developed presented innovative approaches to delivering a health care service. The models placed the consumer at the centre of the design and have elements that are scalable across other service disciplines and disease processes.

The chronic disease *Telehealth to the Home* telehealth model and the *Working Together: Life Beyond Cancer* telehealth models were trialled in the New England region of NSW and both models demonstrated positive health and social wellbeing outcomes for the clients involved.

The first trial, the chronic disease trial was conducted over a twelve month period; all participants had a diagnosed chronic disease such as chronic obstructive pulmonary disease, diabetes or heart failure. Of the 56 consented to participate 46 people completed the program. All participants were enrolled in the NSW Chronic Disease Management Program *Connecting Care in the Community* upon discharge from the trial for ongoing monitoring and self-management support.

The chronic disease *Telehealth to the Home* model was able to implement the following model of care:

- care coordination activities via telehealth

- in-home remote monitoring of biometric measures and self-reported health status

- in-home clinical consultation and case conferencing via telehealth

- education for patients and their carers delivered via telehealth

- preventative health care including education, self-management support and health coaching.

The technical solution for the chronic disease trial consisted of the following components:

- In-home monitoring devices

    – A touch screen tablet PC (Windows OS)

    – peripheral monitoring devices (BP/HR, weight, oxygen saturation, temperature) bluetooth enabled

    – Tunstall Icp Triage Manager (Integrated Care Platform Triage Monitoring Software) used for monitoring of bio-feedback data and self-management questions

    – HD videoconferencing including multiparty if required.

- Broadband

    – all participants had fibre to the home broadband (NBN)

    – participants enrolled on the program were provided with broadband speeds of 25Mbps/5Mbps by the RSP (Skymesh) which was more than adequate to produce excellent quality videoconferencing.

- Electronic medical record

    – CHIME was used as the participants electronic medical record (Local Health District community health electronic medical record)

–   Care Coordinators accessed the Tunstall Icp Triage Manager for the monitoring data that was downloaded as a report and attached to the participants electronic medical record.

The chronic disease *Telehealth to the Home* trial was an opportunity for the Local Health District to develop and implement a model of care that focused on providing traditional treatments via a technology.

The following data represents some of the activity of the trial over a twelve month period:

- 46 people completed the program (56 enrolled)

- 10 people reported an unscheduled GP visit as a result of trial intervention, this was for review of problems identified by the in-home monitoring or medication reconciliation

- There were 14 unscheduled ED visits relating to a chronic disease issue, on 3 occasions these resulted in a hospital admission (7 bed days)

- 2873 occasions of telehealth service conducted over the trial duration (average 5 consultations/participant/month)

- 25 videoconferences conducted per month.

The second trial, the cancer care coordination trial was conducted over a twelve month period, all participants had a current or previous diagnosis of cancer and several participants were carers of people living with cancer. Of the 100 people enrolled in the program 76 completed and a complete evaluation data set was obtained from 57 of the participants.

The cancer care coordination telehealth service *Life Beyond Cancer* was able to implement the following model of care:

- assignment of a *Health Companion* (clinician) for the duration of the intervention

- care coordination via telehealth

- health behaviour change coaching via telehealth

- a whole person assessment with a focus on health behaviours and health literacy conducted face to face

- participation in focus groups or individual health coaching relating to their agreed goals of care or learning needs, delivered face to face or via telehealth

- participation in virtual support groups or virtual education groups

- access to specialist consultation via in-home videoconferencing

- access to health and social welfare apps for self-monitoring of health behaviours and biometrics.

The technical solution for the cancer care coordination trial consisted of the following components:

- In-home monitoring devices

    –   iPad with pre-loaded apps (appropriate to their agreed health goals)

    –   Optional hardware including Fitbit, BP monitor, scales, pulse oximeter, glucometer. All optional hardware was bluetooth enabled

    –   Scopia was the videoconferencing platform.

- Broadband

  – A variety of internet platforms were trialled including; fixed fibre to the home (NBN), wireless and satellite NBN, ADSL and 3/4G network

- Electronic medical record

  – CHIME was used as the participants electronic medical record (Local Health District community health electronic medical record)

The cancer care coordination telehealth service *Life Beyond Cancer* was an opportunity for the Local Health District to understand the lived experience of cancer and the suitability of telehealth models to address the physical and psychological needs of people and their carers following a diagnosis of cancer.

The following data represents some of the service outcomes:

- 74% of participants had a positive experience of the technology used on the trial

- 87% of participants were able to achieve their health goals

- There was a 50% decrease in the risk of first stage depression in participants (SF 36)

- For participant with pain as a problem, there was decrease in pain interference scores but no change in severity (BPI)

- Overall anxiety, depression and distress was reduced (Kessler 10, Distress Thermometer)

- 88% of participants rated their Health Companion as the most important component of the service

- Of the four current smokers on the program one participant quit as a result of the intervention

- Of the 17 participants indicating they wanted to lose weight, 11 did. A total of 98.5 kilograms was lost averaging 8.9 kilograms per person

- 46 participants developed a cancer survivorship plan as a result of the intervention

- Total savings due to video consults including clinical meetings was 285 hours for clinicians and 164 hours for clients, and 17,862 kilometres, with a vehicle cost saving of $13,218 (based on Australian Tax Office rate)

The following is a summary of the key learnings from both telehealth trials

- Technology:

  – As far a possible, fit-for-purpose technology should be used for telehealth models. Limiting the hardware and software applications will reduce flexibility in the ability to offer a telehealth service across a broad geographical region or participant demographic

  – Use of proprietary software and services should be carefully considered. As far as possible retain operational control of technical aspects of any telehealth service, outsourcing the technical or clinical solution to a third party can expose the service to an unacceptable level of risk from escalating costs, poor product selection and suboptimal deliverables

  – Broadband speeds play an important role in the architecture of telehealth services. Broadband download and upload speeds will influence the quality of the experience and the type of model deployed

  – There was no difference in the experience of patients using high versus standard definition videoconferencing

- – Confidence in the service was significantly reduced where the reliability of in-home monitoring equipment was compromised

- Workforce:

  - – Building the capacity of the workforce to provide telehealth models needs to include not only clinical skills but technology skills and knowledge. This includes the ability to understand how the technology operates and be able to work with participants to problem solve technical issues as they arise

  - – Health behaviour change, health coaching and behavioural interviewing were essential skills for clinicians working in this space, most of the goals of care related to individual health behaviours health behaviours such as smoking

  - – Clinicians valued the technology as it allowed them to reach more people in less time by eliminating the need to travel.

  - – Including the use of technology into routine care practice requires the need for additional clinician training in the management of the equipment, technical support is also essential to support telehealth care providers and cannot be avoided

  - – Providing health care via telehealth is an emerging role for clinicians and this requires a specific skill set, it also creates an new clinical-client relationship where the focus is on shared decision making and being the navigator of health care rather than only providing treatment regimes

- Primary Health Care:

  - – Involvement of the participants GP in the trial was variable. Most chose to participate by way of receiving an update of their patients progress following completion of the trial and were happy to problem solve with the team issues that arose during the trial. None were interested in receiving monitoring data or participating in videoconferencing

  - – Some participants expressed a disconnect between themselves and their General Practitioner, in many cases the Care Coordinator or Health Companion was able to provide the conduit communication between both parties to assist with resolution of communication issues

- Participant selection (key characteristics):

  - – People contemplating or ready to make a health behaviour change

  - – People in the pre-contemplation stage would be suitable however, the Care Coordinator needs to spend some time working with the person to assess their knowledge of their condition, identify intrinsic motivational factors and readiness to change

  - – An interest in the technology and a willingness to receive health services under alternate models

  - – People who are isolated from health care services either by geography or an inability to access care e.g. disability

  - – People who self-manage their chronic condition well and have a good rapport/access to their GP were less likely to achieve any meaningful outcomes from the trials

  - – Partnering with consumers was an important approach to providing telehealth services, creating a shared understanding of the problems to be addressed and methods through which to achieve change was essential to achieving good outcome for the participants

Aboriginal participants

Aboriginal participants were involved in both trials. For the chronic disease trial Aboriginal people engaged well with the technology, an Aboriginal Health Education Officer actively participated with the trial team to provide a culturally appropriate learning environment for the participant and their family. The Aboriginal participants had no problems managing the technical equipment that included the tablet PC and in-home monitoring devices.

During the cancer trial an Aboriginal family fun day was held to engage the Aboriginal community in the telehealth trial. An outcome of this day was the enrolment of Aboriginal people living with cancer or who had a previous diagnosis of cancer into the program. The day created an opportunity for the Aboriginal community to have an open dialogue around cancer and they were able to interact with health care providers to tell their story of the effect of cancer on their community. The Aboriginal family fun day was a positive experience for both Aboriginal families and also the broader health care community.

In summary, both telehealth trials afforded the Local Health District the opportunity to trial the delivery of health care services in new and innovative ways. The trials facilitated the establishment of telehealth infrastructure for in-home health care that has now been permanently established in rural areas of the district. The trials were able to build upon telehealth infrastructure in a way that added value to the existing telehealth strategy and created valuable learning opportunities for both health care workers and participants and their families.

This report is a summary of the finding of both telehealth trials, a full comprehensive report can be obtained upon request.

Presenter

Angela Morgan has worked in health care since 1990 and her background is in Nursing and Midwifery. Currently, Angela works as a Practice Development Officer for Hunter New England Local Health District, her main focus is on redesigning existing and implementing new models of care. Angela's experience and skills in project management, practice development and the formation of new and innovative approaches has driven improvements in access to health services and better health outcomes for the community. Angela has a keen interest in chronic care, technology and Aboriginal and rural health issues.