



# Buller Health Telehealth Evaluation Framework

V 4.0 FINAL

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## National Institute for Health Innovation

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## Change Record

| Version   | Date        | Authors      | Notes                                                                                |
|-----------|-------------|--------------|--------------------------------------------------------------------------------------|
| 3.0       | June 2010   | K Day/P Kerr | First draft for distribution to WCDHB and MoH and for commencement of pilot          |
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# 1 Executive summary

This document outlines and explains a framework that was used to evaluate the use of the videoconferencing and biometric equipment in the structured pilot involving Buller Health Clinic in Westport and Grey Base Hospital in Greymouth. The purpose of the evaluation was to provide West Coast DHB (WCDHB) and the Ministry of Health with data and analysis to enable policy and business case development with respect to the ongoing use of this kind of equipment, and the potential for extending its use within WCDHB and elsewhere. Details about the pilot itself and findings of the evaluation are available in the report 'Buller Health Telehealth Pilot: Evaluating an opportunity whose time has come.'



## 1.1 The evaluation framework

The principles of Action Research form the foundation for the evaluation framework, using cycles of Plan, Act, Think and Improve. In addition to that, a generic framework was taken from the research literature and the Inputs, Process and Outputs of the pilot project were mapped into it, producing Figure 1: Outline of the evaluation framework for the Buller telehealth pilot Figure 1. In this way, evaluation can be conducted continuously (how are we doing, or 'formative evaluation') and at the end of the project (how did we do, or 'summative evaluation').

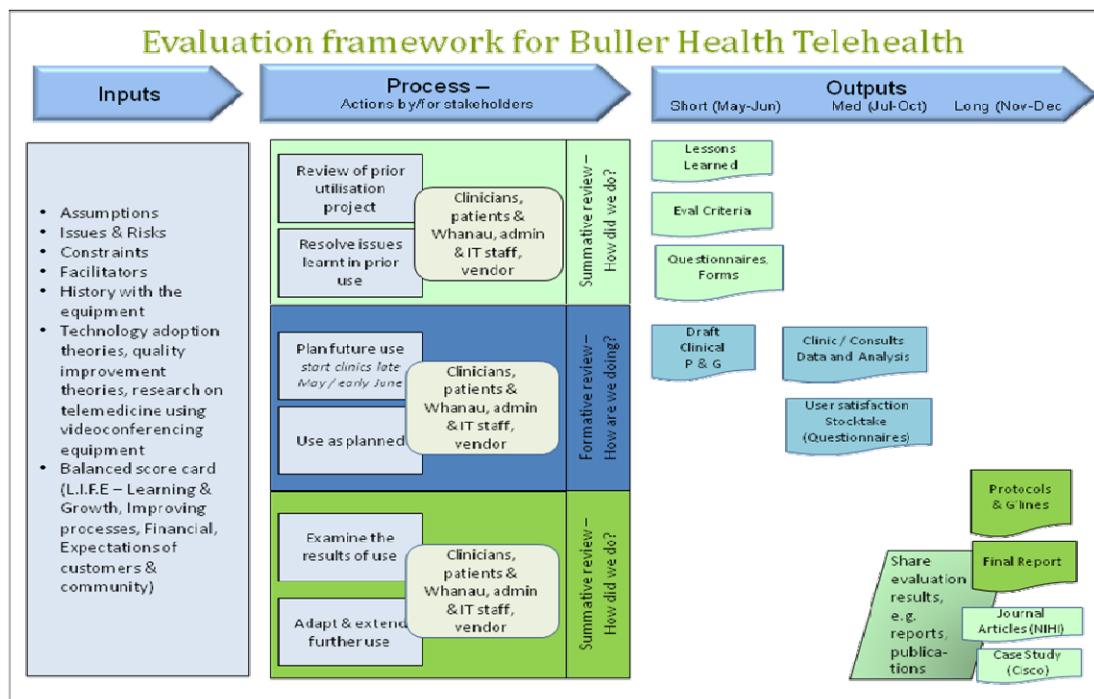


Figure 1: Outline of the evaluation framework for the Buller telehealth pilot

## 1.2 Evaluation criteria

Regarding the content, research shows that evaluations of health information and communications technology (ICT) projects can favour one or another part of an implementation and in particular technology dimensions. A scan of the literature revealed a wide range of excellent questions to include in the evaluation. In order to limit the effect of bias we used a Balanced Score Card approach to map these questions to the five components of an organisation[1]. These were:

1. Expectations of customer
2. Learning and growth
3. Improving processes
4. Expectations of the community and
5. Financial aspects.

Since measurement of clinical outcomes is out of scope for our pilot, related questions were not included in the evaluation criteria in Table 1 below.

**Table 1 Evaluation Criteria**

| Evaluation domains | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clinical           | <ul style="list-style-type: none"> <li>• Patient &amp; clinician satisfaction (of technology as part of clinic visit)</li> <li>• Trust among clinicians, change in interaction styles (clinician2clinician, clinician2patient)</li> <li>• Perceptions of quality of care</li> <li>• Change implications to referral triage process</li> <li>• Patient safety</li> <li>• Influence of patient/clinician preferences (teleconsult vs f2f)</li> <li>• Clinical reasons/rationale for virtual consultations</li> <li>• Sense of distance between patient &amp; clinician</li> <li>• Privacy and security</li> <li>• Continuity of care (patient seeing same consultant for chronic conditions)</li> <li>• Effects on referral rates</li> <li>• Note: Identification of health outcomes is out of scope for this project</li> </ul> |

| Evaluation domains                | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Service utilisation and provision | <ul style="list-style-type: none"> <li>• Process changes for booking clinics, identifying candidate patients</li> <li>• Impact of location of equipment on departmental priorities</li> <li>• Changes in clinician workloads/patterns</li> <li>• Resource implications where nurse/GP/admin accompany/present patient</li> <li>• Changes in services utilisation per patient – hospitalisations, transfers between Westport and Grey</li> <li>• Change in service demand</li> <li>• Impact on clinic waiting lists</li> <li>• Linked to clinician availability</li> <li>• Mix of clinics in Grey and Buller for Buller patients</li> <li>• Impact on clinician travel costs, ambulance/helicopter costs</li> </ul>                                                                                                                                                                        |
| Technology infrastructure         | <ul style="list-style-type: none"> <li>• Training and frequency of technology use (including confidence)</li> <li>• Usability of the technology in the chosen location</li> <li>• Actual usability of technology vs intended usability of technology</li> <li>• Fit of technology into clinical and admin processes</li> <li>• User satisfaction</li> <li>• Day-to-day problems/difficulties using the technology</li> <li>• User attitudes (clinician, admin, patients and companions)</li> <li>• Perceived usefulness of the technology in clinical context</li> <li>• Assessment of fast, intuitive, robust, trustworthy</li> <li>• Infrastructure for continued support for the technology, including network infrastructure requirements for continued use over time</li> <li>• Equipment (main system and peripherals including monitors, printers, biometric equipment)</li> </ul> |
| Financial                         | <ul style="list-style-type: none"> <li>• Sustainability in terms of costs and benefits over time and potential for telehealth to become business as usual. Includes ongoing technology infrastructure costs and support, supplies, staffing, and training</li> <li>• Scalability</li> <li>• Sense of impact on costs for patients (travel costs)</li> <li>• Costs of network, hardware, licenses, facilities</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

A list of activities associated with using the evaluation framework was developed and is set out in the Timelines and Activities section of this report. The list indicates who was responsible for the outcomes. Resources for these activities mostly came from the WCDHB personnel who were likely to be using telehealth equipment in the future.

## 2 Introduction

This document provides a description of the evaluation framework that has been developed for the ***Buller Health telehealth evaluation*** project in WCDHB. It includes detail about what the data criteria are and how they were derived. The balance of the document provides detail on how the data was gathered. This framework has been successfully used in the Buller Health telehealth evaluation and the outcome of the evaluation is provided in the report, 'Buller Health telehealth pilot: Evaluating an opportunity whose time has come.'

### 2.1 Background

The ***Buller Health telehealth evaluation*** project involved a pilot implementation and exploration of the uses of telehealth in a remote community. The history of this project is that telemedicine equipment was installed, connecting Westport to the WCDHB base hospital in Greymouth. The purpose was to deliver services remotely from Greymouth to Westport using high specification videoconferencing equipment.

During 2009 the equipment was used in two outpatient clinics (general surgery and nutrition) and some acute care (shared decision making between clinicians) originating from Westport. The clinicians were in Greymouth when they saw patients in Westport during the clinics. Practical technical issues occurred, drawing to a close the familiarisation period in 2009. This prevented the uptake and continued use of the equipment.

Telemedicine is defined as “the process by which electronic, visual, and audio communications are used to:

- Provide diagnostic and consultative support to practitioners at distant sites
- Assist in or directly deliver medical care to patients at distant sites
- Enhance the skills and knowledge of distant medical care providers.” [2]

The ***Buller Health telehealth evaluation*** project fits well into the telehealth definition as can be seen in its business objectives, which were to

- Demonstrate (understand) benefits of telehealth technology to overcome barriers of distance and communication imposed by West Coast topography
- Evaluate /measure the contribution of telehealth to the provision of safe and sustainable after hours acute care in Buller Health
- Evaluate / measure the provision of telehealth support for nursing staff and clinicians providing health services to a remote and rural population (in the context of WCDHB's services)
- Reduce travel, avoidable transfers and associated costs for patients and clinicians
- Reduce clinical risk and improve patient journey
- Demonstrate contribution of telehealth in an environment with a variety of skill mixes.

A structured pilot commenced in July, 2010. This was preceded by detailed planning, the development of an evaluation framework (as described in this document) and development of draft Protocols and Guidelines (completed in a different document). It took into consideration issues identified during the familiarisation period in 2009, and formally evaluated the utilisation of high definition videoteleconference equipment in the care of patients using services in both Greymouth and Westport (Buller Health).

## 2.2 Developing the evaluation framework

It is easier to conduct an evaluation if there is a framework to accommodate inputs, process and outcomes [3]. The National Institute for Health Innovation (NIHI), part of The University of Auckland, developed a framework setting out what should be evaluated, by whom, how, when and where (as per Figure 1). The philosophy behind this framework is that the people using the equipment and those who support the users are best suited to evaluate its use.

Bearing this in mind, people naturally do things in cycles of Plan, Do, Think, and Improve. [4] This cycle is also known as Action Research, and lends itself to evaluation. Action Research uses the steps deliberately, as can be seen in Figure 1 where the cycle has been built into the evaluation process. For example, the 'Improve' step raises the game to a new level where people can aim for and deliberately achieve new outcomes. Actively reflecting on what could be improved, throughout the duration of the project, adds value.

In this evaluation framework, the first cycle consisted of the 2009 implementation of the equipment, its use until June 30<sup>th</sup> and the Lessons Learned Workshop in May 2010. This is a form of summative evaluation (how have we done?). Problems that had already presented themselves were address at this stage and informed the 'Plan' step in the next cycle, which started in July 2010 when the telehealth equipment was integrated into outpatients clinics (or 'doing the plan'). At the end of the period of concurrently doing and measuring ('process' and 'outputs' in Figure 1), the project was reviewed and recommendations are part of the final report (Think and Improve).

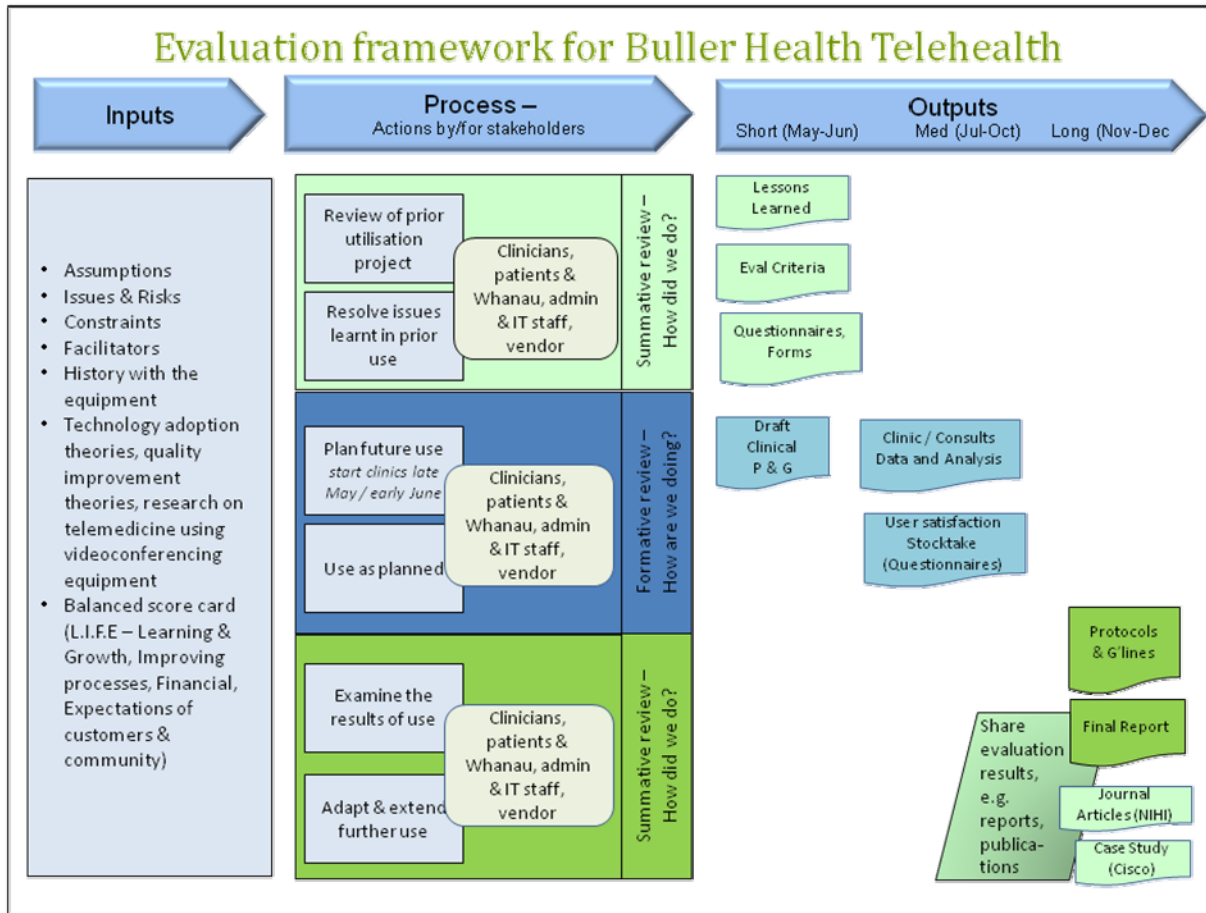


Figure 1 – Outline of the evaluation framework for the Buller telehealth pilot

### 2.3 What was evaluated and how?

Figure 1 shows a list of 'Inputs' in which assumptions of those involved in the evaluation, and contributing theories from the research literature help frame what should be measured. These contribute to the evaluation as follows.

- During the pilot's planning phase and the Lessons Learned activities, assumptions that were brought into the project by the participants were uncovered and informed project planning. Constraints and facilitators of success were identified, assumptions uncovered and history with the equipment was described. Processes were documented to inform the development of Guidelines and Protocols.
- Risks and issues, and constraints and facilitators were identified as part of standard project management and addressed in the pilot planning process.
- History with the equipment already installed at WCDHB informed the Lessons Learned activities. This fed into the 'Plan, Do, Think, and Improve' cycle resulting in improvements in the next stage of the pilot, i.e. use of the telehealth equipment in outpatients clinics.
- For planning of the formative review (as part of the middle block in the process section), the evaluation criteria were derived for the Buller Health telehealth evaluation. These

criteria were derived from the research literature and mapped against five dimensions using a Balanced Score Card approach.[5] This was done to ensure that a balanced combination of perspectives contributes to the evaluation, i.e. to avoid bias to one or another stakeholder in the evaluation. The five dimensions were grouped into three that were relevant for the Buller Health Telehealth Evaluation.

This project evaluated a combination of how telehealth technology (the videoteleconference and biometric equipment), information (mostly clinical and service utilisation), business and clinical activities and processes, and social and geographic context come together in a form of delivering healthcare that is relatively new in New Zealand. These facets of the business of healthcare help guide the kinds of questions to ask when evaluating the impact of telehealth.

Some theories have been identified in the research literature to help frame other useful questions about the adoption of the technology in the WCDHB project. These questions have been adapted for the evaluation criteria (as per Table 1).

The data gathering instruments were derived as part of the ethics application process. These interviews, questionnaires, clinic utilisation forms and other lists of questions were used for both the formative and summative parts of the evaluation as indicated in Figure 1.

## 2.4 Evaluation criteria

A significant proportion of the data required for this evaluation was already available, e.g. nutrition clinic utilisation of the equipment, costs of face to face clinic appointments. During the pilot study day to day data were gathered regarding frequency, nature (clinical speciality) and duration of consultations using the equipment, in order to be able to answer the questions associated with the evaluation criteria.

For this project the evaluation domains that emerged from the literature (as depicted in Appendix B) have been collapsed into four domains in the interest of simplicity (as depicted in Table 1). The evaluation criteria were mapped to these domains, which are

- Clinical
- Service utilisation and provision
- Technology infrastructure
- Financial.

Resources are required for data gathering. It was assumed that the data would be provided (and gathered) by the WCDHB personnel as follows:

- Some personnel allocated time to collect data, e.g. cost of telehealth clinic appointment compared with cost of face to face clinic appointment
- Patients and the people who accompany them to appointments were asked to complete a questionnaire each after a telehealth clinic appointment – the clinic co-ordinator in Buller deliver these to the patients and their companions as part of their appointment

notice, and helped complete the questionnaires as required and store them safely once completed.

- Personnel, e.g. clinicians, using the equipment were interviewed in August and October towards the end of the pilot to answer process, clinical and organisational questions.

Evaluation domains and criteria were derived from the inputs to the evaluation framework described above. These are outlined in Table 2 below. Detailed data gathering tools (questionnaires, interview schedules, check sheets and information requests) have been developed on the basis of these criteria.

**Table 2 Evaluation Criteria**

| Evaluation domains                | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clinical                          | <ul style="list-style-type: none"> <li>• Patient &amp; clinician satisfaction (of technology as part of clinic visit)</li> <li>• Trust among clinicians, change in interaction styles (clinician2clinician, clinician2patient)</li> <li>• Perceptions of quality of care</li> <li>• Change implications to referral triage process</li> <li>• Patient safety</li> <li>• Influence of patient/clinician preferences (teleconsult vs f2f)</li> <li>• Clinical reasons/rationale for virtual consultations</li> <li>• Sense of distance between patient &amp; clinician</li> <li>• Privacy and security</li> <li>• Continuity of care (patient seeing same consultant for chronic conditions)</li> <li>• Effects on referral rates</li> <li>• Note: Identification of health outcomes is out of scope for this project</li> </ul> |
| Service utilisation and provision | <ul style="list-style-type: none"> <li>• Process changes for booking clinics, identifying candidate patients</li> <li>• Impact of location of equipment on departmental priorities</li> <li>• Changes in clinician workloads/patterns</li> <li>• Resource implications where nurse/GP/admin accompany/present patient</li> <li>• Changes in services utilisation per patient – hospitalisations, transfers between Westport and Grey</li> <li>• Change in service demand</li> <li>• Impact on clinic waiting lists</li> <li>• Linked to clinician availability</li> <li>• Mix of clinics in Grey and Buller for Buller patients</li> <li>• Impact on clinician travel costs, ambulance/helicopter costs</li> </ul>                                                                                                             |

| Evaluation domains        | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technology infrastructure | <ul style="list-style-type: none"> <li>• Training and frequency of technology use (including confidence)</li> <li>• Usability of the technology in the chosen location</li> <li>• Actual usability of technology vs intended usability of technology</li> <li>• Fit of technology into clinical and admin processes</li> <li>• User satisfaction</li> <li>• Day-to-day problems/difficulties using the technology</li> <li>• User attitudes (clinician, admin, patients and companions)</li> <li>• Perceived usefulness of the technology in clinical context</li> <li>• Assessment of fast, intuitive, robust, trustworthy</li> <li>• Infrastructure for continued support for the technology, including network infrastructure requirements for continued use over time</li> <li>• Equipment (main system and peripherals including monitors, printers, biometric equipment)</li> </ul> |
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## 2.5 Ethics approval

Evaluation is a form of research and as such requires ethics approval.[3] The **Buller Health telehealth evaluation** project was a low risk project, according to the ethics guidelines available from the New Zealand Health and Disability Ethics Committees website. However, this meant that questionnaires, interview schedules, data gathering forms and charts were subject to approval by the Upper South A Regional Ethics Committee. An application was submitted to the Upper South A Ethics Committee. Once approval was granted data collection began and analysis was conducted as planned.

## 2.6 Gathering the data

As soon as ethics approval had been granted, the data gathering and generating phase began. Once the domains were clear and specific detailed questions were allocated to each domain, it was important to ensure that the data were gathered and able to be verified. Data, by definition, is raw fact or uninterpreted content [6]. Not all data are equal. There is a real risk of collecting too much data for analysis, resulting in confusion, difficulties in analysis, and some data being discarded as spurious and uninformative for the evaluation at hand. It is essential to build rigour in data gathering. This can be done using 'triangulation' and 'saturation' [7]. This means that three ways of collecting data is adequate, e.g. interview

plus observation plus database report. Although people are generous in providing data, e.g. in terms of long and frequent interviews full of rich pictures, it is useful to stop collecting data when nothing new is being learnt.

Table 3 was an outline of the data gathering activities. The activities are linked to the business and project objectives for this project, focusing on Stage 1. Primary resources for the evaluation and analysis were personnel using the equipment or supporting its use.

**Table 3 Evaluation objectives, timeline and associated activities**

| Objective                                                                                                                  | How                                                                               | When            | Data gathering                   | Responsible person                                             | Requires protocols or guidelines?                   |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------|----------------------------------|----------------------------------------------------------------|-----------------------------------------------------|
| Ethics application                                                                                                         | Via Upper South A Regional Ethics Committee                                       | May/June        |                                  | Karen Day                                                      | Will support the Protocol and Guideline development |
| Identify and confirm candidate outpatient clinics for telemedicine                                                         | Via Steering Group in conjunction with clinical leaders and clinic administrators | May/June        | Tally sheet                      | Lynne Southon, Clinic Administrator, Buller Health, to collate | Yes – process diagram                               |
| Add step to Consultant referral triage process for including video consultations in clinics                                |                                                                                   | May/June        |                                  | Lynne Southon and Central Booking Unit (CBU)                   | Yes – process diagram                               |
| Confirm period for booking tele-clinic appointments. (Recommended minimum apts = ave of 5/week attendances for 3 months)   | Steering group                                                                    |                 |                                  | Julie Lucas                                                    |                                                     |
| Use existing waiting list as starting point and book apts for participating clinicians, taking DNA rate into consideration | CBU (Central Booking Unit)                                                        | June – Sept     |                                  | Lynne Southon/CBU                                              | Yes – clinic booking guidelines                     |
| Assess impact on waiting list                                                                                              | CBU                                                                               | Summative - Oct | Utilisation report, waiting list | Lynne Southon/CBU                                              |                                                     |

| Objective                                                                                                                                                                                                          | How                                                                                             | When                                              | Data gathering                                                | Responsible person                                                      | Requires protocols or guidelines? |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------|
| Assess impact on clinic utilisation<br>Potential use (clinic utilisation form)<br>Actual use (historical report from patient management system)<br>Actual use during pilot (report from patient management system) | CBU                                                                                             | June<br>May<br>Oct                                | Completed<br>Completed                                        | Lynne Southon/CBU                                                       |                                   |
| Cost analysis                                                                                                                                                                                                      | BA analysis                                                                                     | May (pre-implementation), then June - October     | Cost questions listed for BA & IT, then analysis during pilot | Karen Day or volunteer, and WCDHB BA and IT                             |                                   |
| Patient & companion experience                                                                                                                                                                                     | After each tele-appt                                                                            | June – Sept                                       | Questionnaire                                                 | Lynne Southon                                                           |                                   |
| Clinician experience                                                                                                                                                                                               | Invitations to participate from Wayne Champion, Hecta Williams and Jane O'Malley.<br>Interviews | June<br>Aug (formative), early Oct (summative)    | Interviews, observations                                      | Karen Day or volunteer                                                  |                                   |
| Technical assessment                                                                                                                                                                                               | Via CIO & IT Manager                                                                            | Projection – June, halfway – Aug, summative – Oct | Discussions                                                   | Karen Day or volunteer, Pat Kerr (Project Manager), Miles Roper (WCDHB) |                                   |
| Assess expansion of service to acute services, i.e. ED                                                                                                                                                             |                                                                                                 | June – Oct                                        | Using Outpatients Clinics project as baseline                 | Joc Wallace ED Nurse Leader, Buller Health, et al                       |                                   |

A large repository of data was collected and analysed to form the basis of the final report.

## 2.7 Analysing the data

Since the data came from different sources and was presented in different formats, the analysis was conducted on each definitive set of data, and comparisons and linkages were made between the sets of data.

**Interviews** Due to time and resource constraints the interviews were conducted as follows:

- Interviewee contacted by phone or email to set up time for phone interview

- Early interviews were longer than subsequent interviews, with a view to disrupting participant clinician's workflow as little as possible
- Notes were taken, a journal description of the interview was compiled immediately afterwards and used for analysis

**Outpatient clinic utilisation** Data were collected in a tabulated format, manually by the clinic co-ordinator. There were analysed for patterns. A much larger data set could have been used for this evaluation and may have rendered useful opportunities for statistical analysis. These were linked to the interview findings and the Buller and Greymouth OPD clinic reports.

**Ad hoc data** were collected from a variety of sources, including:

- technology and associated context and infrastructure and costs
- rooms used for the clinics
- booking processes
- issues and risks associated with the project
- changes from expected activities
- meetings minutes
- discussions during onsite visits.

The analysis process involved reviewing all the documented data, sorting it by matching type of document and nature of content, exploring patterns and matching them to the evaluation criteria in Table 1 [8]. This is a standard way of thematically sorting any data in order for it to collectively inform an evaluator and/or researcher. The analysed data were considered in light of the literature and feedback from the WCDHB on the findings, and informed the final report.

## 2.8 Writing the report

We advise that a standard structure is used for reporting the findings of a health ICT evaluation [9]. This should contain the following components. How the components of the report are used is up to the authors, but all aspects should be covered for completeness.

- Introduction – this should provide the reader with context and the rationale/reasons/drivers for doing the evaluation. There may be an executive summary at the beginning of the report, depending on who the audience is and the purpose of the report.
- Evidence from those who have been before us - what others have written in the literature should match up with the nature and purpose of the evaluation at hand. This provides a platform for making decisions about data to be collected, its intensity, depth and extent.
- Actions – what was done to gather data and why it was done that way. At this stage data gathering rigour should be outlined as part of the methodological design of the evaluation.

- Results – what was found and how does it all connect up together to form an assessment in terms of evaluation. The results should be presented in such a way as to account for isolated events/exemplars of the evaluation, for unexpected outcomes, and provide links between different kinds of results that could be contradictory but require a logical explanation that brings them together. [10]
- Discussion of the results – this should provide robust reasoning behind the analysis that lends itself to draw the analyst to conclusions that stack up. The conclusions should be discussed in light of evidence in the literature.
- Conclusions are drawn from the discussion, and are accompanied by recommendations regarding what could be done differently if the evaluation is repeated in the same setting or another context. At this point transferability of the evaluation’s design and results can be discussed in terms of others wanting to use this evaluation framework.

## 2.9 Disseminating the results

There are several ways of making the results available to a wider audience. It is advised that a dissemination strategy is built into the early planning phase of any evaluation project. This should include:

- regular local notices to personnel in the service being evaluated to keep them up to date with events
- newsletter stories/reports in local newsletters to keep a wider audience informed, e.g. the whole DHB
- media reports as per the DHB media policies. At the very least, keep a ‘fact sheet’ of the project in order to be prepared when media people emerge
- availability of interim reports to those involved in the project, e.g. steering committee, funders, personnel participating in the project
- final, signed off report to be made available on [www.hive.org.nz](http://www.hive.org.nz)
- publication in research and evaluation journals.

**APPENDIX A:  
OUTLINE OF LESSONS  
LEARNED WORKSHOP**

## Outline of Lessons Learned Workshop

This workshop aimed to complete a summative review of how the technology has been used (in 2009) and what was learned. This learning was used to improve and expand future use in the next phase of the project. The questions that were asked to stimulate discussion included the following.

1. Introductory questions about clinical practice in rural settings. Prompts: how the equipment was set up, some stories about how it was used (to warm up the conversation)
2. What has worked well? Prompts: fit with expectations, technology, processes, training, clinical care, data flows, clinical decision making, sharing care.
3. What didn't work well? Prompts as for Q2.
4. Has this telecare project changed the way you work? If so, how? Prompts: Workflow, clinical processes, use of resources (clinical and other), care models, your clinical network, clinician-patient relationship.
5. Has this project changed the way your patients (those who participated) use healthcare services? If so, how? Prompts: Self care, access to care, hospitalisations (nature, frequency), care plan, confidence in services delivered, confidence in healthcare professionals' decision making, convenience and quality of accessing care, high-touch high-tech care.
6. What emerged as unintended or unpredictable consequences of the project? How can this be anticipated in the future planned telecare project?
7. How well does the use of the equipment fit into clinical care? Prompts: time consuming, propensity to use, easy to use, skills required to use, technical support, what worked well, suggestions for improvement.
8. Knowing what you know now, what would you do differently in this re-establishment project?

## Summary of Lessons Learned workshop and interviews conducted 6/7 May

### What worked well?

- Equipment is easy to use and gives good sense of personal presence
- Although unplanned, the implementation was successful (technology-wise)
- Optimism and creative outlook re future use
- Easy to see benefits re convenience, patient access to care, and quality of experience

### **What didn't work well?**

- Did not deliberately integrate the technology into clinical processes/activities
- Inappropriate room for housing the technology
- 'Wicked problem' created by desire/need for dual use of either equipment or room or both (the more you try to solve this problem the more problems it uncovers. Space is at a premium and best case solution involves dual use of room that houses the technology)
- Easy to use but hard to retain skill level due to infrequency of use
- Lots of opportunity to use but not able to take it up

### **Unintended consequences**

- Interrupted service due to damage to microwave link during a storm
- Intention of this equipment = clinician2clinician discussion + acute care. Unintended consequence = clinician2patient consultation + outpatient clinic
- Identified strong need to build trust between clinicians (nurses, GPs, RMOs and Consultants) for this project to succeed
- Knowing what we know now, what would you do differently for the next stage?
- 'have a proper project manager' which we have now
- Resolve the 'wicked problem' of best place to install the technology, and best conditions for dual use (acute vs outpatient)
- Protocols and guidelines to include process diagrams and 'filter points' to support clinician decision to use the technology instead of face to face.

**APPENDIX B:  
FINALISING THE  
EVALUATION CRITERIA**

## Finalising the evaluation criteria

A set of questions gleaned from the literature was presented to the group participating in the Lessons Learned workshop. They were asked for input on the emphasis of specific questions, key questions they want answered (bearing in mind the contractual requirements on the evaluation) and who should be asked the questions. The questions in Table 2, page 8 are the result of this exercise.

## Sample questions relating to the Balanced Score Card

Table 4 provides *sample questions* derived from the literature that can be used to measure aspects of the business of telehealth in its broader sense. In this table, the Balanced Score Card has been matched up with components of research theories on technology adoption in healthcare. Researchers criticise ehealth evaluations for not being comprehensive enough or covering ‘all the bases’[11]. In order to ensure that all appropriate aspects of telehealth are covered in an evaluation, the research questions were matched up with its five components.

The numbers in [ ] correspond with the research article from which the information was extracted. The numbers that correspond to the Balanced Score Card are as follows

1. = Expectations of the customers
2. = Learning and growth
3. = Improving processes
4. = Expectations of the community
5. = Financial.

### **Note**

Table 4 consists of a general list of questions that can be applied to the evaluation of any telehealth project. Questions should be selected that will *best suit* the needs of the WCDHB telehealth evaluation.

These questions were reviewed during the Lessons Learned activities and those highlighted in **bold** were deemed the most appropriate for the ***Buller Health telehealth evaluation*** project. The themes in the left column were derived from research literature and were adjusted in

Table 4 to match the domains specified for the *Buller Health telehealth evaluation*.

**Table 4 Depiction of relationship between evaluation domains, possible evaluation questions and the Balanced Score Card**

| Evaluation theme/domain   | Research questions/criteria                                                                                                                                                                                                                         | Corresponds to Balanced Score Card |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Users                     | <b>What are the users' attitudes and behaviours re the technology in use? Have they had enough training to use the technology appropriately?[9]</b>                                                                                                 | 1, 3, 4, 5                         |
|                           | User satisfaction [12]                                                                                                                                                                                                                              | 1, 3, 4, 5                         |
|                           | Performance of the user [12]                                                                                                                                                                                                                        | 1, 2, 3, 4, 5                      |
|                           | <b>The influence of patient preferences, and user requirements and involvement [13] [14]</b>                                                                                                                                                        | 1, 5                               |
|                           | Assumptions about usability, content, style of presentation [14]                                                                                                                                                                                    | 1, 4, 5                            |
|                           | <b>Why do people use the technology? [14]</b>                                                                                                                                                                                                       | 1, 2, 3, 4, 5                      |
| Process                   | <b>How does the technology affect processes and work practices? (clinical and administrative) [9]</b>                                                                                                                                               | 1, 3, 4, 5                         |
|                           | Care processes, supporting processes and auxiliary processes. The authors view the care process in terms of diagnostics, treatment/therapy and nursing. [12]                                                                                        | 1, 3, 4, 5                         |
|                           | <b>Workflow and routines [14]</b>                                                                                                                                                                                                                   | 3, 4                               |
| Clinical                  | What are the effects of the technology on the quality of patient care? [9]                                                                                                                                                                          | 1, 2, 3, 4, 5                      |
|                           | <b>Patient satisfaction[12]</b>                                                                                                                                                                                                                     | 1, 5                               |
|                           | Patient outcome [12]                                                                                                                                                                                                                                | 1, 3, 4, 5                         |
|                           | <b>Clinical patient encounter and consultation patterns [14]</b>                                                                                                                                                                                    | 1, 3, 4, 5                         |
|                           | How did the technology improve the care? [14]                                                                                                                                                                                                       | 1, 5                               |
| Organisational and social | <b>What are the social and organisational consequences of the implementation/project?[9]</b>                                                                                                                                                        | 1, 2, 3, 4, 5                      |
|                           | <b>How is the work environment changed/affected by the project/implementation? [9]</b>                                                                                                                                                              | 1, 2, 3, 4, 5                      |
|                           | Job satisfaction [12]                                                                                                                                                                                                                               | 3                                  |
|                           | Organisational culture and structures [14]                                                                                                                                                                                                          | 3                                  |
|                           | <b>How does the telehealth intervention change equity, equality, empowerment, trust among clinicians, monitoring of patients in their home, effect of surveillance, therapeutic or dehumanising effect, different meanings of information? [14]</b> | 1, 2, 3, 4, 5                      |
| Technology                | <b>Is the technology usable in the intended environment and is it used as intended?[9]</b>                                                                                                                                                          | 1, 2, 3, 4, 5                      |
|                           | <b>What problem areas are there regarding daily use of the technology? Any pitfalls, and solutions?[9]</b>                                                                                                                                          | 4                                  |

| Evaluation theme/domain         | Research questions/criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Corresponds to Balanced Score Card |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                                 | <b>Performance of the technology [12]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1, 2, 3, 4                         |
|                                 | <b>The technology as part of care activities [14]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1, 2, 3, 4                         |
| Project                         | To what extent does the information system meet the project's requirements as well as objectives?[9]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1, 2, 3, 4, 5                      |
| Cost                            | <b>What are the investment, operational costs, cost benefits, and return on investment?[9]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                                  |
|                                 | <b>Cost analysis[12]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                                  |
|                                 | <b>Time (to complete the process &amp;/or activities associated with the technology) [12]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1, 3, 4                            |
| Other                           | <b>Why did the outcomes happen the way they did? [14]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4                                  |
|                                 | <b>What can be generalised/transferred to another study/setting?[14]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1, 2, 3, 4, 5                      |
|                                 | <b>What influences whether videoteleconference equipment will have the effect we desire? Who desires which outcomes?[14]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1, 2, 3, 4, 5                      |
| Possible theoretical frameworks | <p>Technology Acceptance Model focuses on perceived usefulness of technology to those using it, e.g. if people perceive technology to be useful they will use it, even if it's hard to use.</p> <p>Actor Network Theory is a socio-technical approach that assumes that all actors involved in an ICT project re networked. The technology is subsumed into the network and isn't viewed as something separate. This could be helpful in our post implementation review – we could be looking for signs that the technology has been adopted as an integral part of a person's daily activities.</p> <p>Complexity theory assumes that healthcare is a complex adaptive system and that we should look for emergence of new ways of working/doing things, esp unintended consequences.</p> |                                    |

Additional sources for questions in this table include [2, 14-18].

## Identifying stakeholders for evaluation input

In addition to selecting appropriate evaluation criteria and domains from Table 4, the Lessons Learned workshop participants were asked to review the questions in Table 5 and identify who should provide input [19].

These questions relate to perceptions about usefulness of the technology, based on protocol by Rahimipour et al of 2008, and added to by considerations suggested by Kaplan & Shaw [14] and van der Loo et al [12]). For the WCDHB evaluation the questions were selected as described in Appendix B. The table below suggests who should be asked these questions. The evaluation criteria in Table 5 were derived from these two tables (Table 4 and Table 5), and informed the design of the evaluation instruments (questionnaires, interviews, clinic utilisation reviews and reports, and cost benefits questions list) in the ethics application (see Appendix C).

**Table 5 Linking stakeholders to questions about perceived usefulness of telehealth**

| Research questions                                                                                                                                                                                                 | Who to ask                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Their overall attitude toward the technology – do they like it and what do they like?                                                                                                                              | Patients, family, clinicians                   |
| Perceptions about how easy/difficult it is to use the technology, and what they feel are advantages/disadvantages to using it. What their preferences are regarding using the technology.                          | Clinicians, administrator, IT support          |
| Their confidence in using the technology and any possible barriers to building confidence. Any abilities they consider essential for using the technology? What would make them not be able to use the technology? | Clinicians, administrator, IT support          |
| How they perceive the technology could help them manage their health.                                                                                                                                              | Not included in the evaluation                 |
| How they feel the technology would help them gain more knowledge about their health.                                                                                                                               | Not included in the evaluation                 |
| Perceptions about their clinicians' use of the technology and the resulting information about them.                                                                                                                | Patients and family                            |
| Sense of distance of clinicians now that they don't see the doctor face to face. How do they feel about the reduction in face-to-face communication with their clinicians?                                         | Patients and family                            |
| Concerns about privacy and/or confidentiality.                                                                                                                                                                     | All                                            |
| Their training experience and how they felt it could be improved.                                                                                                                                                  | Clinicians and administrators, IT support      |
| Their perception on how this technology may change or has changed their hospitalisations and/or use of emergency care centre.                                                                                      | Patients and family                            |
| Sense of impact on costs to themselves and/or the healthcare services they use.                                                                                                                                    | Patients and family                            |
| Perception of impact of the technology on their time                                                                                                                                                               | Clinicians, administrator, patients and family |

| Research questions                                                                                                            | Who to ask                      |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Sense of how the technology impacts on their family, Whanau, friendships and work relationships (for those who are employed). | Patients and family             |
| Unintended consequences, unexpected experiences, e.g. performance of the technology.                                          | All                             |
| Perception of satisfaction with the technology and associated care processes.                                                 | Clinicians, patients and family |
| Knowing what they know now, why would they use the technology again?                                                          | All                             |

**APPENDIX C:  
ETHICS APPLICATION AND  
DATA GATHERING  
INSTRUMENTS**

## Ethics application and data gathering instruments

This appendix provides the detailed ethics application documents submitted to the Upper South A Ethics Committee in June 2010. The application was made as a standard procedure for evaluation activities. The following documents were submitted. They are part of Appendix B in the order of the list below.

**Expedited ethics application form** to the Upper South A Ethics Committee. This interactive form in Word is attached separately to the report.

**Clinicians** will be conducting outpatients clinics using the telehealth equipment and, under certain circumstances will discuss the acute care of a patient with one another to come to a shared decision regarding that patient's care. The term 'clinicians' in this evaluation framework refers to GPs, specialists, nurses, and allied healthcare workers. The following documents were developed for clinician input into the evaluation:

- Clinician Participant Information Sheet (PIS) for Greymouth, and Buller (separate documents reflecting their different perspectives)
- Consent form for clinicians in Greymouth, and Buller (separate documents to keep track of where the clinician's are based)
- Interviews for clinicians in Buller and Greymouth (separate documents reflecting their different perspectives)
- Invitation letter. The two sponsors for the project emailed an invitation to clinicians who will use the Greymouth outpatients clinic facilities and telehealth equipment for appointments with patients who live in and around Buller.

**Clinic co-ordinators** include people who organise the outpatients clinics, manage waiting lists, book clinics and correspond with patients about their bookings. Separate documents were developed because of the different perspectives represented by Buller (remote site) and Grey (central site).

- Co-ordinator PIS for Greymouth, and Buller
- Co-ordinator Consent form for Greymouth and Buller
- Clinic utilisation form Greymouth, and Buller
- Interview schedule for co-ordinators Buller and Greymouth

**Patients** included in this evaluation are only those who were confirmed by their clinician as candidates for a telehealth outpatients clinic consultation, i.e. those who live close to Buller and attend their outpatient appointment in Buller Health while their clinician conducts the appointment from Greymouth. Therefore only patients from Buller will participate in the evaluation.

- Patient PIS
- Patient consent form
- Patient questionnaire

**Patient companions** (those who accompany patients to their outpatient clinic appointment) will also be invited to contribute to the evaluation because they are affected by telehealth, e.g. they would have accompanied the patient to Greymouth. Only those who accompany Buller patients will be included.

- Companion PIS
- Patient companion consent form
- Patient companion questionnaire

An integral part of evaluation is to consider **cost benefits**. A list of questions was derived for this analysis and will be given to the project sponsor to delegate responsibility for answering these questions in the form of a written report.

## C.1 – Clinician Forms

### Participant Information Sheet – Clinicians (Grey)\*

|                                                                                                                |                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Principal Investigator</b></p> <p>Dr Karen Day,<br/>National Institute<br/>for Health<br/>Innovation</p> | <p><b>Contact person</b></p> <p>Lynne Southon,<br/>OPD/MR/MSS Co-ordinator,<br/>Buller Health (Hospital),<br/>Cobden Street, Westport. Ph<br/>03 788 9030</p> |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

#### Introduction

This project aims to find out if clinic appointments via videoconferencing equipment works well and is better, easier and more convenient than face to face for Buller patients and clinicians. We are also evaluating the use of this equipment for clinician to clinician discussions about patients who present for acute care after hours at Buller Health. Dr Karen Day is in charge of the evaluation part of the pilot project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because you have patients in Westport. We would like to know within a week of you receiving this information sheet if you would like to participate in this research.

#### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this evaluation. If you choose not to take part, your choice will not affect your work or future care for your patients.

If you do agree to take part in the evaluation, you are free to withdraw from it at any time, without

\* All the data gathering documents have been submitted with the WCDHB letterhead which has been omitted here in the interest of continuity of the Appendix.

giving a reason. This will not affect your work or your patients' healthcare or continuing care. However, we will not be able to remove evidence of your participation as your contribution is closely linked to the usual care that your patients receive.

#### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller. It also includes the use of the equipment for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or you having to travel to Buller.

Your patients will continue to receive the healthcare they usually get – the difference is that you will talk to them by videoconference. The videoconference equipment also has biometric equipment, i.e. an electronic stethoscope, pulsometer, blood pressure measuring device, otoscope and ophthalmoscope. You will be able to hear your patient's heart or lung sounds via the microphone in the stethoscope, and see the blood pressure measurement on a screen next to the video screen you're using to see your patient. The equipment does not make recordings of pictures or of the video of your patient and you talking.

If you consent to participating in this evaluation, you will be asked to identify appropriate patients from Buller who will be booked into your clinic as telehealth appointments. Your contribution to our evaluation will happen in Grey Hospital.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

What is involved once you consent to participate in this research?

- Outpatient Clinic appointments.
  - When you discharge a Buller patient from Grey Hospital, please indicate if this patient is suitable for a telehealth follow-up appointment. The patient will attend their appointment in Buller while you're conducting your clinic in Grey.
  - You will conduct your telehealth appointments in Room 4 where the equipment has been installed.
  - After the appointment, your patient and their companion will be asked to complete a questionnaire about their experience of the 'telehealth appointment'.
  - In August you will be interviewed about your experiences and what you've learned about the use of this equipment in supporting your role. These lessons learned will be analysed and applied for the balance of the evaluation period (September to end October).
  - In October you will be interviewed again for further input in the evaluation.
- After hours care at A&E at Buller Health
  - At a later stage in the project we may be able to extend the evaluation project to the use of telehealth in acute care. This will involve after hours care at Buller A&E, when the clinicians on duty may need to discuss patients with you when you're on call.
  - If the need arises while you're on call in Grey, you will need to go to Room 4 to discuss the care of a patient who is in A&E in Buller. You will be able to use the biometric equipment that's available in Buller to examine the patient.
  - After the telehealth consultation the patient will be asked to complete a questionnaire, depending on whether they are clinically able.

You are invited to participate in the development of protocols and guidelines for appropriate use of the telehealth equipment. This will involve providing input, reviewing content and advising on how best to use these protocols and guidelines.

We will take photos during some of your telehealth appointments to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

### Benefits, risks and safety

This study aims to find out if and how telehealth using videoconferencing with biometric equipment is safe, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits. Telehealth is about how care is delivered to people at a distance. It is not a treatment. The care you usually provide will be the same as it would be if you were not participating in this evaluation. Your patients may experience some of these benefits.

You may feel inconvenienced by having to spend time selecting patients, accommodating telehealth patients in your usual clinics, participating in interviews and the design of protocols and guidelines. We will do what we can to keep this inconvenience at a minimum.

### General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Your patients will continue approach you and their GP as usual with their questions about their healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you or do all the things we ask you to do. If you want to stop participating in the evaluation, please let us know and we will stop including you.

### Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However,

people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that you and your patient can see one another. This camera does not record anything.

The interviews with you will be recorded by digital voice recorder so that we don't miss anything you say. They will be transcribed by a transcriber who will sign a confidentiality agreement. The e-copies of the transcriptions will be kept in The University of Auckland computer network, and will only be accessed by those authorised to do so. Other information about you that will be used is the usual information needed for booking clinic appointments and providing healthcare – only people with authorised access will be using it.

## Compensation

There is no compensation for your activities in taking part in this research. If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

## Statement of approval

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Participant Information Sheet – Clinicians (Buller)

|                                                                                                    |                                                                                                                                               |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Principal Investigator</b></p> <p>Dr Karen Day, National Institute for Health Innovation</p> | <p><b>Contact person</b></p> <p>Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030</p> |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|

## Buller Health telehealth evaluation

### Introduction

This project aims to find out if clinic appointments via videoconferencing equipment works well and is better, easier and more convenient than face to face for Buller patients and clinicians. We are also evaluating the use of this equipment for clinician to clinician discussions about patients who present for acute care after hours at Buller Health. Dr Karen Day is in charge of the evaluation part of the pilot project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because your patients access services in Greymouth. We would like to know within a week of you receiving this information sheet if you would like to participate in this research.

### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this evaluation. If you choose not to take part, your choice will not affect your work or future care for your patients.

If you do agree to take part in the evaluation, you are free to withdraw from it at any time, without giving a reason. This will not affect your work or your patients' healthcare or continuing care. However, we will not be able to remove evidence of your participation as your contribution is closely linked to the usual care that your patients receive.

### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller. It also includes the use of the equipment for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or clinicians having to travel to Buller.

Your patients will continue to receive the healthcare they usually get – the difference is that the clinician based in Grey will talk to them by videoconference. The videoconference equipment also has biometric equipment, i.e. an electronic stethoscope, pulsometer, blood pressure measuring device, otoscope and ophthalmoscope. The clinician accompanying them, e.g. nurse, can use the biometric equipment so that the clinician based in Grey will

be able to hear the patient's heart or lung sounds via the microphone in the stethoscope, and see the blood pressure measurement on a screen next to the video screen they're using to see the patient. The equipment does not make recordings of pictures or of the video of patient and clinician talking.

If you consent to participating in this evaluation, you will be asked to identify appropriate patients from Buller who will be booked into the outpatients' clinic as telehealth appointments. Your contribution to our evaluation will happen in Buller Health.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

What is involved once you consent to participate in this research?

- Outpatient Clinic appointments.
  - GPs who refer their patients to clinicians at Grey are asked to indicate if this is a potential telehealth appointment. Other clinicians who want to see their patients by telehealth appointment are asked to liaise with the contact person (indicated above) to book a clinic.
  - If you are the clinician accompanying the patient in Buller, e.g. nurse, you may be asked to use the biometric equipment and enter the results into the computer so that the clinician at Grey can see them.
  - After the appointment, your patient and their companion will be asked to complete a questionnaire about their experience of the 'telehealth appointment'.
  - In August you will be interviewed about your experiences and what you've learned about the use of this equipment in supporting your role. These lessons learned will be analysed and applied for the balance of the evaluation period (September to end October).
  - In October you will be interviewed again for further input in the evaluation.
- After hours care at A&E at Buller Health.
  - At a later stage in the project we may be able to extend the evaluation project to the use of telehealth in acute care. This will involve after hours care at Buller A&E, when the clinicians on duty may need to discuss patients with the clinician on call in Grey.
  - If the need arises, you will need to go to the telehealth room to discuss the care of a patient (and take the patient with you). You will be able to use the biometric equipment that's available in Buller to examine the patient.
  - After the telehealth consultation the patient will be asked to complete a questionnaire, depending on whether they are clinically able.

You are invited to participate in the development of protocols and guidelines for appropriate use of the telehealth equipment. This will involve providing input, reviewing content and advising on how best to use these protocols and guidelines.

We will take photos during some of your telehealth appointments to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

### **Benefits, risks and safety**

This study aims to find out if and how telehealth using videoconferencing with biometric equipment is safe, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits. Telehealth is about how care is delivered to people at a distance. It is not a treatment. The care you usually provide will be the same as it would be if you were not participating in this evaluation. Your patients may experience some of these benefits.

You may feel inconvenienced by having to spend time selecting patients, accommodating telehealth patients in your usual clinics, participating in interviews and the design of protocols and guidelines. We will do what we can to keep this inconvenience at a minimum.

## General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Your patients will continue approach you and their GP as usual with their questions about their healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you or do all the things we ask you to do. If you want to stop participating in the evaluation, please let us know and we will stop including you.

## Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However, people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that you and your patient can see one another. This camera does not record anything.

The interviews with you will be recorded by digital voice recorder so that we don't miss anything you say. They will be transcribed by a transcriber who will sign a confidentiality agreement. The e-copies of the transcriptions will be kept in The University of Auckland computer network, and will only be accessed by those authorised to do so. Other information about you that will be used is the usual information needed for booking clinic appointments and providing healthcare – only people with authorised access will be using it.

## Compensation

There is no compensation for your activities in taking part in this research. If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

## Statement of approval.

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

**Consent Form – Clinicians (Grey)**

|                                                                                         |                                                                                                                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-<br>ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

**Buller Health telehealth evaluation**

*This form will be held for a period of ten years.*

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my work or my patients' healthcare or continuing care.

I understand that information about me will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to participate in the interviews, participate in telehealth clinic appointments and use the telehealth equipment for shared clinical decision making with Buller clinicians for acute care patients when I am on call in Grey. Only the research project team members will have access to data gathered from me.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available.

YES/NO

Postal address

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Or email address \_\_\_\_\_

I \_\_\_\_\_ (full name) hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

**Consent Form – Clinicians (Buller)**

|                                                                                      |                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day, National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

**Buller Health telehealth evaluation**

*This form will be held for a period of ten years.*

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my work or my patients' healthcare or continuing care.

I understand that information about me will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to participate in the interviews, participate in telehealth clinic appointments and use the telehealth equipment for shared clinical decision making with Buller clinicians for acute care patients when I am on call in Grey. Only the research project team members will have access to data gathered from me.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available.

YES/NO

Postal address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Or email address \_\_\_\_\_

I \_\_\_\_\_ (full name) hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Interview schedule – Clinicians (Buller & Grey) for interviews mid/end of pilot

|                                                                                                 |                                                                                                                                            |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Principal Investigator</b> Dr Karen Day,<br/>National Institute for Health Innovation</p> | <p><b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport.<br/>Ph 03 788 9030</p> |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

We would like to ask clinicians questions about the following topics and themes. (Note: Health outcomes are out of scope for this project)

- Satisfaction with how the equipment works and its use in clinics. Prompts: fast, intuitive, robust, stable, trustworthy equipment, user interface, using biometric equipment
- Perceived usefulness of the equipment. Prompts: easy to use, adds value, travel, time-consuming, time saving
- Influence on trust among clinicians, change in interaction styles (clinician2clinician, clinician2patient). Prompts: shared decisions with other clinicians, interprofessional networks, decision boundedness, bias, preferences
- Perceptions of quality of care. Prompts: changes in quality, perceptions, clinician-patient relationship, continuous improvement
- Change implications to referral triage process. Prompts: policy, triage, referrals, preferences, travel, convenience, process, resources, benefits (for whom), workload
- Patient safety. Prompts: errors, 'first do no harm', choosing appropriate patients, clinical judgement, trust, bias, risk, privacy, information security
- Influence of patient/clinician preferences (teleconsult vs f2f). Prompts: location, travel, digital skills, training, convenience, expectations
- Clinical reasons/rationale for virtual consultations. Prompts: appropriate patients, clinical concerns, risks, issues
- Sense of distance between patient & clinician. Prompts: real, virtual
- Privacy and security. Prompts: information, clinic appointment setting, interoperability with other health information systems, data quality and integrity
- Continuity of care (patient seeing same consultant for chronic conditions). Prompts: same clinician over time, same service, different needs and different providers, geography
- Effects on referral rates. Prompts: referral process, change, waiting lists, clinic capacity, resources.
- Knowing what you know now, what would you do differently if you could participate in this project again?

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## **Clinician invitation letter (Grey, Buller and selected Christchurch clinicians)**

The evaluation project team request permission to use this email to invite clinicians to participate in the pilot project. Certain clinicians have been identified as potential participants and only they will be sent this invitation. Others who hear about the project and want to participate will be welcomed.

### **Buller Health telehealth evaluation**

Dear <name of clinician>,

This evaluation aims to find out if clinic appointments using videoconference equipment works well and is better, easier and more convenient than face to face appointments for Buller patients and you. We have contracted Simpl and the National Institute for Health Innovation to conduct a pilot project and evaluate telehealth between Greymouth and Westport.

You are invited to participate in this project. Your Buller patients travel to Greymouth for outpatient clinic appointments with you, or you travel to Buller to see them. Some of them could attend their appointment in Buller with you in Room 4 in Greymouth, while you use the videoconference equipment to conduct the appointment.

If you agree to participate in this evaluation, you will be asked to identify appropriate patients for telehealth clinic appointments. You will also be asked to participate in two interviews (in August and late October) to discuss your experience and identify benefits, issues, drivers and challenges for telehealth in the West Coast DHB.

Please contact Julie Lucas by email ([julie.lucas@westcoastdhb.health.nz](mailto:julie.lucas@westcoastdhb.health.nz) ) to let her know if you're willing to participate.

You will receive a Participant Information Sheet and Consent Form (as approved by the South A Ethics Committee) to complete and return to Julie. Once that has been done, someone from the Clinic Booking Unit will be in touch to discuss which patients on your next clinic list (and subsequent clinics) should be booked for telehealth appointments.

Yours sincerely

(signed by Hecta Williams, General Manager  
Community and Primary Health Services / Mental Health Services

And

Wayne Champion, General Manager (GM), Corporate Services and CIO)

## C.2 – Clinic Co-ordinator Forms

### Participant Information Sheet – Clinic Co-ordinators (Grey)

| <i>Principal Investigator</i>                                | <i>Contact person</i>                                                                                                 |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Dr Karen Day,<br>National Institute for<br>Health Innovation | Lynne Southon,<br>OPD/MR/MSS Co-ordinator,<br>Buller Health (Hospital),<br>Cobden Street, Westport. Ph<br>03 788 9030 |

### Buller Health telehealth evaluation

#### Introduction

This project aims to find out if clinic appointments via videoconferencing equipment works well and is better, easier and more convenient than face to face for Buller patients and clinicians. We are also evaluating the use of this equipment for clinician to clinician discussions about patients who present for acute care after hours at Buller Health. Dr Karen Day is in charge of the evaluation part of the pilot project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because you have responded to the invitation to participate. We would like to know within a week of you receiving this information sheet if you would like to participate in this research.

#### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this evaluation. If you choose not to take part, your choice will not affect your work or future care for your patients.

If you do agree to take part in the evaluation, you are free to withdraw from it at any time, without giving a reason. This will not affect your work or your patients' continuing care. However, we will not be able to remove evidence of your participation as your contribution is closely linked to the usual care that your patients receive.

#### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller, or for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or their clinician having to travel to Buller.

Patients will continue to receive the healthcare they usually get – the difference is that clinicians will talk to them by videoconference. The videoconference equipment also has biometric equipment, i.e. an electronic stethoscope, pulsometer, blood pressure measuring device, otoscope and ophthalmoscope. Clinicians will be able to hear their patient's heart or lung sounds via the microphone in the stethoscope, and see the blood pressure measurement on a screen next to the video screen they're using to see their patient. The equipment does not make recordings of pictures or of the video of them talking.

If you consent to participate in this evaluation, you will be asked to identify potential patients from Buller, confirm this with their clinicians and book the telehealth appointment. Your contribution to our evaluation will happen in your usual place of work.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

## What is involved once you consent to participate in this research?

1. Outpatient Clinic appointments.
2. When a Buller patient is discharged from Grey Hospital, their clinician will indicate if this patient is suitable for a telehealth follow-up appointment. You will be asked to book the patient into a telehealth appointment, in which the patient will attend their appointment in Buller with their clinician based in Room 4 in Grey.
3. You will book Room 4 for that appointment for the clinician to use the equipment.
4. After the appointment, the patient and their companion in Buller will be asked to complete a questionnaire.
5. In August you will be interviewed about your experiences and what you've learned about the use of this equipment in supporting your role. These lessons learned will be analysed and applied for the balance of the evaluation period (September to end October).
6. In October you will be interviewed again for further input in the evaluation.
7. After hours care at A&E at Buller Health
8. At a later stage in the project we may be able to extend the evaluation project to the use of telehealth in acute care. This will involve after hours care at Buller A&E, when the clinicians on duty may need to discuss patients with a clinician on call based at Grey.
9. If the need arises the clinician will be called to Room 4 to discuss the care of a patient who is in A&E in Buller.

You are invited to participate in the development of protocols and guidelines for appropriate use of the telehealth equipment. This will involve providing input, reviewing content and advising on how best to use these protocols and guidelines.

We will take photos during some of the telehealth appointments to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

## Benefits, risks and safety

This study aims to find out if and how telehealth using videoconferencing and biometric equipment is easier, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits. Patients may experience some of these benefits too.

You may feel inconvenienced by having to spend time selecting potential patients and getting the clinician to confirm them, booking telehealth patients into Room 4, participating in interviews and the design of protocols and guidelines. We will do what we can to keep this inconvenience at a minimum.

## General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Patients will continue approach their clinicians as usual with their questions about their healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you. Also, if you want to stop participating in the research, please let us know and we will stop.

## Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However, people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that clinicians and their patients can see one another. This camera does not record anything.

The interviews with you will be recorded by digital voice recorder so that we don't miss anything you say. They will be transcribed by a transcriber who

will sign a confidentiality agreement. The e-copies of the transcriptions will be kept in The University of Auckland computer network, and will only be accessed by those authorised to do so. Other information about you that will be used is the usual information needed for booking clinic appointments and providing healthcare – only people with authorised access will be using it.

### Compensation

There is no compensation for your activities in taking part in this research. If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

### Statement of approval.

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Participant Information Sheet – Clinic Co-ordinators (Buller)

|                                                              |                                                                                                                       |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b>                                | <b>Contact person</b>                                                                                                 |
| Dr Karen Day,<br>National Institute for<br>Health Innovation | Lynne Southon,<br>OPD/MR/MSS Co-ordinator,<br>Buller Health (Hospital),<br>Cobden Street, Westport. Ph<br>03 788 9030 |

### Buller Health telehealth evaluation

#### Introduction

This project aims to find out if clinic appointments via videoconferencing equipment works well and is better, easier and more convenient than face to face for Buller patients and clinicians. We are also evaluating the use of this equipment for clinician to clinician discussions about patients who present for acute care after hours at Buller Health. Dr Karen Day is in charge of the evaluation part of the pilot project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because you have responded to the invitation to participate. We would like to know within a week of you receiving this information sheet if you would like to participate in this research.

#### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this evaluation. If you choose not to take part, your choice will not affect your work or future care for your patients.

If you do agree to take part in the evaluation, you are free to withdraw from it at any time, without giving a reason. This will not affect your work or your patients' continuing care. However, we will not be able to remove evidence of your participation as your contribution is closely linked to the usual care that your patients receive.

#### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller, or for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or their clinician having to travel to Buller.

Patients will continue to receive the healthcare they usually get – the difference is that clinicians will talk to them by videoconference. The videoconference equipment also has biometric equipment, i.e. an electronic stethoscope, pulsometer, blood pressure measuring device, otoscope and ophthalmoscope. Clinicians will be able to hear their patient's heart or lung sounds via the microphone in the stethoscope, and see the blood pressure measurement on a screen next to the video screen they're using to see their patient. The equipment does not make recordings of pictures or of the video of them talking.

If you consent to participate in this evaluation, you will be asked to identify potential patients from Buller, confirm this with their clinicians and book the telehealth appointment. Your contribution to our evaluation will happen in your usual place of work.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

## What is involved once you consent to participate in this research?

- Outpatient Clinic appointments.
  - When a Buller patient is discharged from Grey Hospital, their clinician will indicate if this patient is suitable for a telehealth follow-up appointment. You will be asked to book the patient into a telehealth appointment, in which the patient will attend their appointment in Buller with their clinician based in Room 4 in Grey.
  - You will book Room 4 in Grey for that appointment for the clinician to use the equipment. You will also book the telehealth room in Outpatients Clinics at Buller for the patient to attend their appointment.
  - After the appointment, the patient and their companion in Buller (where you are) will be asked to complete a questionnaire. You may need to help them to complete the questionnaire.
  - In August you will be interviewed about your experiences and what you've learned about the use of this equipment in supporting your role. These lessons learned will be analysed and applied for the balance of the evaluation period (September to end October).
  - In October you will be interviewed again for further input in the evaluation.
- After hours care at A&E at Buller Health
  - At a later stage in the project we may be able to extend the evaluation project to the use of telehealth in acute care. This will involve after hours care at Buller A&E, when the clinicians on duty may need to discuss patients with a clinician on call based at Grey.
  - If the need arises the clinician on call in Grey will be called to Room 4 in Grey Hospital, to discuss the care of a patient who is in A&E in Buller.

You are invited to participate in the development of protocols and guidelines for appropriate use of the telehealth equipment. This will involve providing input, reviewing content and advising on how best to use these protocols and guidelines.

We will take photos during some of the telehealth appointments to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

## Benefits, risks and safety

This study aims to find out if and how telehealth using videoconferencing and biometric equipment is easier, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits. Patients may experience some of these benefits too.

You may feel inconvenienced by having to spend time selecting potential patients and getting the clinician to confirm them, booking telehealth patients into Room 4, participating in interviews and the design of protocols and guidelines. We will do what we can to keep this inconvenience at a minimum.

## General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Patients will continue approach their clinicians as usual with their questions about their healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you. Also, if you want to stop participating in the research, please let us know and we will stop.

## Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However, people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that clinicians and their patients can see one another. This camera does not record anything.

The interviews with you will be recorded by digital voice recorder so that we don't miss anything you say. They will be transcribed by a transcriber who

will sign a confidentiality agreement. The e-copies of the transcriptions will be kept in The University of Auckland computer network, and will only be accessed by those authorised to do so. Other information about you that will be used is the usual information needed for booking clinic appointments and providing healthcare – only people with authorised access will be using it.

### Compensation

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Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

### Statement of approval.

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Consent Form – Co-ordinators (Grey)

|                                                                                      |                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day, National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

This form will be held for a period of ten years.

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my work or our patients' healthcare or continuing care.

I understand that information about me will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to participate in the interviews, participate in setting up telehealth clinic appointments. Only the research project team members will have access to data gathered from me.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available. YES/NO

*Postal* \_\_\_\_\_ *address*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Or email address* \_\_\_\_\_

I \_\_\_\_\_ (*full name*) hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Consent Form – Co-ordinators (Buller)

**Principal Investigator** Dr Karen Day,  
National Institute for Health Innovation

**Contact person** Lynne Southon, OPD/MR/MSS Co-  
ordinator, Buller Health (Hospital), Cobden Street, Westport.  
Ph 03 788 9030

### Buller Health telehealth evaluation

*This form will be held for a period of ten years.*

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my work or our patients' healthcare or continuing care.

I understand that information about me will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to participate in the interviews, participate in setting up telehealth clinic appointments. Only the research project team members will have access to data gathered from me.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available.

YES/NO

Postal

address

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---

---

Or email address \_\_\_\_\_

I \_\_\_\_\_ (full name) hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Clinic Utilisation Form (Grey)

|                                                                                      |                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day, National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

This project aims to evaluate the usefulness and effectiveness of videoteleconferencing equipment in West Coast DHB's outpatients clinics based at Westport. To achieve this we need to know how strong the need is for this equipment. For a two week period (or longer if you're happy to continue collecting the data) please complete this form.

For each clinic

1. Write down the number of appointments booked, and how many people did not attend (DNA) that clinic.
2. Discuss with the consultant who ran that clinic how many of those appointments could have been done using the videoteleconferencing equipment.

Please collect this data in the same time period as it's collected in Grey so that comparison is easier.

|                           | Booked appointments at Greymouth | DNAs | Could be virtual clinic |
|---------------------------|----------------------------------|------|-------------------------|
| Date .....                |                                  |      |                         |
| Clinic name/type<br>..... |                                  |      |                         |
| Dr's name<br>.....        |                                  |      |                         |
| Date .....                |                                  |      |                         |
| Clinic name/type<br>..... |                                  |      |                         |
| Dr's name<br>.....        |                                  |      |                         |
| Date .....                |                                  |      |                         |
| Clinic name/type<br>..... |                                  |      |                         |
| Dr's name<br>.....        |                                  |      |                         |

|                                                         | Booked appointments at Greymouth | DNAs | Could be virtual clinic |
|---------------------------------------------------------|----------------------------------|------|-------------------------|
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |
| Date .....<br>Clinic name/type .....<br>Dr's name ..... |                                  |      |                         |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Clinic Utilisation Form (Buller)

|                                                                                      |                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day, National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

This project aims to evaluate the usefulness and effectiveness of videoteleconferencing equipment in West Coast DHB's outpatients clinics based at Westport. To achieve this we need to know how strong the need is for this equipment. For a two week period (or longer if you're happy to continue collecting the data) please complete this form.

For each clinic

1. Write down the number of appointments booked, and how many people did not attend (DNA) that clinic.
2. Discuss with the consultant who ran that clinic how many of those appointments could have been done using the videoteleconferencing equipment.

Please collect this data in the same time period as it's collected in Grey so that comparison is easier.

|                           | Booked appointments at Buller | DNAs | Could be virtual clinic |
|---------------------------|-------------------------------|------|-------------------------|
| Date .....                |                               |      |                         |
| Clinic name/type<br>..... |                               |      |                         |
| Dr's name<br>.....        |                               |      |                         |
| Date .....                |                               |      |                         |
| Clinic name/type<br>..... |                               |      |                         |
| Dr's name<br>.....        |                               |      |                         |
| Date .....                |                               |      |                         |
| Clinic name/type<br>..... |                               |      |                         |
| Dr's name<br>.....        |                               |      |                         |

|                                                               | Booked appointments at Buller | DNAs | Could be virtual clinic |
|---------------------------------------------------------------|-------------------------------|------|-------------------------|
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |
| Date .....<br>Clinic name/type<br>.....<br>Dr's name<br>..... |                               |      |                         |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Interview schedule – Co-ordinators (Buller & Grey)

|                                                                                         |                                                                                                                                    |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

We would like to ask co-ordinators questions about the following topics and themes.

- Satisfaction with how the equipment works and its use in clinics. Prompts: fast, intuitive, robust, stable, trustworthy equipment, user interface
- Perceived usefulness of the equipment. Prompts: easy to use, adds value
- Change implications to referral triage process. Prompts: policy, triage, referrals, preferences, travel, convenience, process, resources, benefits (for whom), workload
- Change implications to clinic booking process & activities. Prompts: workload, policy, activities, interaction with the people in Buller/Grey, preparing for clinics
- Patient safety. Prompts: suggesting appropriate patients, privacy, information security
- Influence of patient/clinician preferences (teleconsult vs f2f). Prompts: location, travel, digital skills, training, convenience, expectations
- Clinical reasons/rationale for virtual consultations. Prompts: appropriate patients, clinical concerns, risks, issues
- Sense of distance between patient & clinician. Prompts: real, virtual
- Privacy and security. Prompts: information, clinic appointment setting, interoperability with other health information systems, data quality and integrity
- Continuity of care (patient seeing same consultant for chronic conditions). Prompts: same clinician over time, same service, different needs and different providers, geography
- Effects on referral rates, waiting list. Prompts: referral process, change, waiting lists, clinic capacity, resources.
- Knowing what you know now, what would you do differently if you could participate in this project again?

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Appendix C.3 – Patient Forms

### Participant Information Sheet – Patients (Buller)

| <b>Principal Investigator</b>                                   | <b>Contact person</b>                                                                                              |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Dr Karen Day,<br>National Institute<br>for Health<br>Innovation | Lynne Southon, OPD/MR/MSS<br>Co-ordinator, Buller Health<br>(Hospital), Cobden Street,<br>Westport. Ph 03 788 9030 |

### Buller Health telehealth evaluation

#### Introduction

This project aims to find out if clinic appointments using videoconferencing is safe, better, easier and more convenient for you and your clinicians (nurses, doctors, specialists and other healthcare professionals). We are also evaluating the use of this equipment for clinician to clinician discussions about patients who come to Buller Health A&E for care after hours.

Dr Karen Day is in charge of the evaluation part of the project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because you fit the criteria for including people. We would like to know within a week of receiving this information sheet and your appointment date if you would like to participate in this research.

#### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this study. If you choose not to take part this will not affect any future care or treatment.

If you do agree to take part in the study, you are free to withdraw from the study at any time, without giving a reason. This will in no way affect your future healthcare or continuing care.

#### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller, or for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or their clinician having to travel to Buller.

You will continue to receive the healthcare you usually get – the difference is that clinicians will talk to you by videoconference. The videoconference equipment also has biometric equipment, e.g., an electronic blood pressure measuring device. Your clinician will be able to see the blood pressure measurement on a screen next to the video screen they're using to see you. The equipment does not make recordings of pictures or of the video of you talking.

Participants will be selected by their clinician on the basis that your appointment (or visit to A&E) is appropriate for telehealth. Your contribution to our study will happen in the Buller Health Outpatients Clinic or A&E.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

## What is involved once you consent to participate in this research?

- Outpatient Clinic appointments.
  - When planning your next Outpatients Clinic appointment your clinician will decide if a telehealth appointment is appropriate. If it is, your appointment will be booked for you to attend in Buller while your clinician 'sees' you from Grey. You will be taken to your appointment in the telehealth room.
  - You are welcome to include in your appointment a family member, friend or colleague who accompanies you to the Outpatients Clinic.
  - After your Outpatients Clinic appointment you will be asked to complete a questionnaire about your experience. Please ask for help if you need it.
  - The family member, friend or colleague who's accompanied you at the time will also be asked to complete a questionnaire about their experience relating to your appointment.
- After hours care at A&E at Buller Health
  - If you come to A&E after hours between July and November 2010, the clinician who sees you may decide to discuss your health issue with a clinician in Grey, from the telehealth room. If this happens you may be taken to this room so that the clinician on call in Grey can see you and talk to you.
  - The clinician with you in Buller may use the measuring equipment to examine you on behalf of the clinician in Grey.
  - You are welcome to include in this discussion a family member, friend or colleague who has accompanied you to A&E.
  - After your A&E visit you will be asked to complete a questionnaire, if you are well enough to do so. Please ask for help if you need it.
  - The family member, friend or colleague who's accompanied you at the time will also be asked to complete a questionnaire about their experience relating to your A&E visit.

We may take photos during your telehealth appointment to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

## Benefits, risks and safety

This study aims to find out if and how telehealth using videoconferencing is safe, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits.

You may feel inconvenienced by having to spend time completing the questionnaire. We will do what we can to keep this inconvenience at a minimum.

## General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Please approach your usual clinicians as usual with questions about your healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you. Also, if you want to stop participating in the research, please let us know and we will stop.

## Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However, people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that clinicians and their patients can see one another. This camera does not record anything.

The questionnaires will be kept in a locked cupboard at Buller Health. We will keep these documents for 10 years when they will be shredded. Only people with authority to use the questionnaire data will be allowed access. Other information about you that will be used is the usual information needed for booking clinic appointments and

providing healthcare – only people with authorised access will be using it.

### **Compensation**

There is no compensation for your activities in taking part in this research. If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

### **Statement of approval.**

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Consent Form – Patients (Buller)

|                                                                                         |                                                                                                                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-<br>ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

*This form will be held for a period of ten years.*

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my future healthcare.

I agree to allow the evaluators to use my personal and health information for this project. I understand that this information will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to complete the questionnaire given to me. Only the research project team members will have access to my completed questionnaire.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I am feeling ill during this evaluation period.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available.

YES/NO

Postal

address

---

---

---

Or email address \_\_\_\_\_

I \_\_\_\_\_ (full name) hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Questionnaire - Patients

|                                                                                         |                                                                                                                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-<br>ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

This project aims to find out if clinic appointments using videoconferencing is safe, better, easier and more convenient for you and your clinicians (nurses, doctors, specialists and other healthcare professionals). We are also evaluating the use of this equipment for clinician to clinician discussions about patients who come to Buller Health A&E for care after hours.

As part of your participation in this project, please answer the following questions. Please write your response in the space provided or ring the answer provided.

1. Which clinic did you attend today? (Name of clinician or type of clinic)  
.....
2. When were you last in hospital? (Month and year).....
3. Did you come to the clinic to see the clinician who looked after you the last time you were in hospital?    Yes                      No
4. Where have you attended clinic to see this clinician in the past? (Please ring the answer)  
Buller      Grey                      Both
5. Where do you live? (name of town/suburb/mine).....  
  
**Or** how far did you travel to get to this clinic? .....
6. What sex are you?    Male                      Female
7. What is your age? .....years
8. Did someone come with you to this clinic appointment? (please ring the word that best describes the person who came with you)  
Relative                      Friend                      Colleague                      I came alone
9. It you've been to a clinic in Grey, did someone travel with you? (please ring the word that best describes the person who came with you)  
Relative                      Friend                      Colleague                      I went alone
10. What work do you do? .....

11. If you're not retired, did you take off enough time from work to attend this clinic?

Yes      No      Retired

**Or** did you have to take the whole day off for this clinic appointment?

Yes      No      Not applicable

12. Today you saw your clinician from Grey by using the telehealth equipment. Please answer the rest of the questions about your experience.

13. What did you like about the way this appointment was done?

.....  
.....  
.....

14. Do you think it would've been better if you'd seen your clinician face to face? (Please ring the most applicable answer)

Yes      No      It doesn't matter      Not sure

15. What didn't you like about this appointment?

.....  
.....  
.....

16. Is it more convenient for you to see your clinician for some of your appointments using the telehealth equipment?

Yes      No      It doesn't matter      Not sure

17. It's not always possible to keep an appointment. Would you be more likely to keep your clinic appointment if you and your clinician could do it using telehealth equipment?

Yes      No      Not sure

18. What is the reason for your answer?

.....  
.....  
.....

19. If we're able to use the telehealth equipment in the future for your clinic appointment, what can we do to improve your experience?

.....  
.....  
.....  
.....

Thank you for helping us in this project.

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## C.4 – Patient Companion Forms

### Participant Information Sheet – Patient Companions (Buller)

|                                                                                                             |                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Principal Investigator</b><br/>Dr Karen Day,<br/>National Institute<br/>for Health<br/>Innovation</p> | <p><b>Contact person</b><br/>Lynne Southon, OPD/MR/MSS<br/>Co-ordinator, Buller Health<br/>(Hospital), Cobden Street,<br/>Westport. Ph 03 788 9030</p> |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Buller Health telehealth evaluation

##### Introduction

This project aims to find out if clinic appointments using videoconferencing is safe, better, easier and more convenient for you and your clinicians (nurses, doctors, specialists and other healthcare professionals). We are also evaluating the use of this equipment for clinician to clinician discussions about patients who come to Buller Health A&E for care after hours.

Dr Karen Day is in charge of the evaluation part of the project. Karen is a Lecturer at the National Institute for Health Innovation at The University of Auckland. Her research portfolio focuses on patient centric healthcare and how people and health organisations adapt to using information technology in healthcare.

You are invited to take part in the Buller Health telehealth evaluation. You have been given this information sheet because you fit the criteria for including people. We would like to know within a week of receiving this information sheet and your appointment date if you would like to participate in this research.

##### Participating in this study

Your participation is entirely voluntary (your choice). You do not have to take part in this study. If you choose not to take part this will not affect any future care or treatment.

If you do agree to take part in the study, you are free to withdraw from the study at any time, without giving a reason. This will not affect your future

healthcare or the continuing care of the person you're accompanying.

##### About the study

This research is about telehealth. Telehealth involves caring for people at a distance, such as using videoconference equipment so that you can conduct Outpatients Clinic appointments from Greymouth with patients in Buller, or for clinicians to consult one another regarding acute care for patients presenting in Buller Health after hours. In this research we aim to (1) find the best way for Outpatient Clinic appointments to be done using telehealth, (2) develop a framework to evaluate future telehealth projects like this one, (3) establish if this form of telehealth is safe, effective and more convenient than face to face clinics that involve travel between Grey and Buller, and (4) establish if telehealth is appropriate for use in after hours care if people in and around Buller suddenly become ill and need to attend A&E.

The videoconferencing equipment has been installed in Grey Hospital and Buller Health so that people living in Buller can attend their Outpatients Clinic appointment without travelling to Grey, or their clinician having to travel to Buller.

The person you accompany will continue to receive the healthcare they usually get – the difference is that clinicians will talk to them and you by videoconference. The videoconference equipment also has biometric equipment, e.g., an electronic blood pressure measuring device. Your clinician will be able to see the blood pressure measurement on a screen next to the video screen they're using to see you. The equipment does not make recordings of pictures or of the video of you talking.

Participants will be selected by their clinician on the basis that their patient's appointment (or visit to A&E) is appropriate for telehealth. Your contribution to our study will happen in the Buller Health Outpatients Clinic or A&E.

This evaluation project starts in June 2010 and ends in November 2010. Your contribution will be during that period.

## What is involved once you consent to participate in this research?

- Outpatient Clinic appointments.
  - When planning Outpatients Clinic appointments clinicians will decide if a telehealth appointment is appropriate. If it is, an appointment will be booked for the person you're accompanying to attend in Buller while their clinician conducts the appointment from Grey. You and the person you accompany will be taken to the telehealth room for the appointment.
  - You may join this appointment if you are invited to by the person you're accompanying.
  - After your Outpatients Clinic appointment you will be asked to complete a questionnaire about your experience. Please ask for help if you need it.
  - The person you've accompanied will also be asked to complete a questionnaire about their experience relating to their appointment.
- After hours care at A&E at Buller Health
  - If you accompany someone to A&E after hours between July and November 2010, the clinician who sees them may decide to discuss their health issue with a clinician in Grey, from the telehealth room. If this happens the person you've accompanied may be taken to this room so that the clinician on call in Grey can see and talk to them. You may be invited to join them.
  - The clinician with you in Buller may use the measuring equipment to examine the person you've accompanied on behalf of the clinician in Grey.
  - After the A&E visit you will be asked to complete a questionnaire about your experience of the visit. Please ask for help if you need it.
  - The person you've accompanied will also be asked to complete a questionnaire about their experience relating to their A&E visit.

We may take photos during your telehealth appointment to assess the equipment position and other influencing factors. Your identity will be covered if your photos are used in reports.

## Benefits, risks and safety

This study aims to find out if and how telehealth using videoconferencing is safe, better and more convenient for patients and healthcare professionals who would usually travel between Buller and Grey. While you are participating in this research you may experience aspects of these benefits.

You may feel inconvenienced by having to spend time completing the questionnaire. We will do what we can to keep this inconvenience at a minimum.

## General

While you are taking part in the evaluation, we will give you news about it that could be useful to you. If you have questions about the evaluation project, please ask the contact person whose name is at the beginning of this Information Sheet. Please approach your usual clinicians as usual with questions about your healthcare. We will be writing reports about the evaluation and a summary can be made available to you. We also plan to publish the results of this evaluation in journals so that other researchers can hear about it. If you want a copy of the summary report, please say so on the consent form.

You do not have to answer all the questions we ask you. Also, if you want to stop participating in the research, please let us know and we will stop.

## Confidentiality

No material that could personally identify you will be used in any reports on this evaluation. However, people who know you or where you work may be able to work out your identity. We will do what we can to protect your identity in our reports. The camera in the videoconference equipment is there for the video so that clinicians and their patients can see one another. This camera does not record anything.

The questionnaires will be kept in a locked cupboard at Buller Health. We will keep these documents for 10 years when they will be shredded. Only people with authority to use the questionnaire data will be allowed access. Other information about you that will be used is the usual information needed for booking clinic appointments and

providing healthcare – only people with authorised access will be using it.

### **Compensation**

There is no compensation for your activities in taking part in this research. If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: [advocacy@hdc.org.nz](mailto:advocacy@hdc.org.nz)

### **Statement of approval.**

This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Consent Form – Patient Companions (Buller)

|                                                                                         |                                                                                                                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-<br>ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

*This form will be held for a period of ten years.*

I have read and understand the information sheet for participating in this telecare project. I understand the nature of the evaluation and why I have been selected to participate.

I have had an opportunity to ask questions and am satisfied with the answers provided.

I have had time to consider whether to take part.

I have had the opportunity to use Whanau support or a friend or colleague to help me ask questions and understand the study.

I understand that taking part in this evaluation is voluntary (my choice). I may withdraw from the evaluation and it won't affect my future healthcare or that of the person I accompany.

I agree to allow the evaluators to use my personal and health information for this project. I understand that this information will be treated confidentially. I will not be identifiable in the reports and/or publications that come from this research.

I agree to complete the questionnaire given to me. Only the research project team members will have access to my completed questionnaire.

I agree to photos being taken of me. My identity will be covered if the photos are used in any reports.

Information I give to the researchers will not be given to any third parties.

I understand that there are no compensation provisions for this study.

I know who to contact if I have any questions about the evaluation or want to discuss any aspect of it.

I wish to receive a summary of the report. I realise that it may be a long time before they are available.

YES/NO

*Postal address*

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*Or email address* \_\_\_\_\_

I \_\_\_\_\_ *(full name)* hereby consent to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_

|                                     |  |
|-------------------------------------|--|
| Full names of evaluators            |  |
| Contact phone number for researcher |  |
| Project explained by                |  |
| Project role                        |  |
| Signature                           |  |
| Date                                |  |

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Questionnaire – Patient Companions

|                                                                                         |                                                                                                                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day,<br>National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-<br>ordinator, Buller Health (Hospital), Cobden Street, Westport.<br>Ph 03 788 9030 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

This project aims to find out if clinic appointments using videoconferencing is safe, better, easier and more convenient for you and your clinicians (nurses, doctors, specialists and other healthcare professionals). We are also evaluating the use of this equipment for clinician to clinician discussions about patients who come to Buller Health A&E for care after hours.

As part of your participation in this project, please answer the following questions. Please write your response in the space provided or ring the answer provided.

1. Which clinic did the person you accompanied attend today? (Name of clinician or type of clinic)  
.....
2. Where have you attended clinic to see this doctor in the past? (Please ring the answer)  
Buller      Grey      Both
3. Where do you live? (name of town/suburb/mine).....  
**Or** how far did you travel to get to this clinic? .....
4. What sex are you? Male      Female
5. What is your age? .....years
6. How do you know the person you accompanied today? (please ring the word that best describes the person who came with you)  
Relative      Friend      Colleague      I am their Care Giver
7. Have you accompanied someone to a clinic in Grey? (please ring the word that best describes the person who came with you)  
Yes      No
8. What work do you do? .....
9. If you're not retired, did you take off enough time from work to attend this clinic?  
Yes      No      Retired  
**Or** did you have to take the whole day off for this clinic appointment?  
Yes      No      Not applicable

Today you accompanied someone who saw their clinician from Grey by using the telehealth equipment. Please answer the rest of the questions about your experience.

10. What did you like about the way this appointment was done?

-----  
-----  
-----  
-----

11. Do you think it would've been better if they'd seen their clinician face to face? (Please ring the most applicable answer)

Yes      No      It doesn't matter      Not sure

12. What didn't you like about this appointment?

-----  
-----  
-----  
-----

13. Is it more convenient for you and the person you accompanied to see their clinician for some appointments using the telehealth equipment?

Yes      No      It doesn't matter      Not sure

14. It's not always possible to keep an appointment. Would you be more likely to accompany a person to keep their clinic appointment if they could do it using telehealth equipment?

Yes      No      Not sure

What is the reason for your answer?

-----  
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-----  
-----

15. If we're able to use the telehealth equipment in the future for clinic appointments, what can we do to improve your experience?

-----  
-----  
-----  
-----

Thank you for helping us in this project.

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

## Appendix C.5 – Cost benefit questions

|                                                                                      |                                                                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Investigator</b> Dr Karen Day, National Institute for Health Innovation | <b>Contact person</b> Lynne Southon, OPD/MR/MSS Co-ordinator, Buller Health (Hospital), Cobden Street, Westport. Ph 03 788 9030 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

### Buller Health telehealth evaluation

These questions are aimed at collecting data to assist in the cost benefit analysis of telehealth. They will be allocated to appropriate people in the West Coast DHB by Hecta Williams, General Manager of Community and Primary Care Services and/or Wayne Champion, General Manager of Corporate Services and CIO.

We need to know the following:

- About the patients attending the selected clinics (those with a mix of face to face and virtual appointments). This information will be collected via a report from the DHB's Patient Management System.
  - Comparison of costs between patients coming to see their doctor in Grey and doctors going to Westport to their patients.
  - Average number of visits to their specialist, e.g. is there usually a first consult plus follow up or is there usually a post hospitalisation visit plus one or more follow up?
  - Comparison of costs between the trial period of virtual clinics and the same time period last year.
- Comparison of costs of a day's clinic in Grey and Westport, assuming the specialist travels out to Westport for the day.
- How will a 'virtual consultation' be accounted for financially?
- Cost of the videoconference equipment – the gear itself (capital cost), line rental, maintenance, IT support service, troubleshooting costs, room rental (can this be done where you can provide a cost for the room in terms of rental?)
- Would you be able to provide opportunity cost where someone can't use the room the equipment is in because someone else is in it – costing the dual purposeness of the room.
- What is the ratio of nursing resource to outpatient clinics? How does this change if some consultations are 'virtual'? What differences are there between Grey and Westport?
- For the same period last year, compare the number of patients seen by the participating docs with those seen using virtual clinics. Is there a difference? (looking for increase in demand relating to increase in convenience for patients and increased ease of access for patients)

Please feel free to talk to the contact person if you have any questions about this study.

**Statement of approval.** This study has received ethical approval from the Upper South A Regional Ethics Committee, which reviews southern regional studies, ethics reference number <number>

**APPENDIX D:  
REFERENCES**

## Appendix D: References

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