"TELEHEALTH IN A BOX"

Final Report of the Telehealth Demonstration Project and Findings for Other Telehealth Users

April 2015

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1 INTRODUCTION

The Telehealth Demonstration Project was a multi-agency initiative that operated in the Bay of Plenty from March 2013 to February 2015. For the latter part of that period it also included Tairawhiti District.

The Project was designed to test the practical application of telehealth in a wide variety of settings, with a particular focus on uses of video connections running across the wider telecommunications network rather than just within or between DHB premises. It was designed as a learning exercise rather than a pilot, with a recognition that it is useful to learn not only what works in the New Zealand setting, but also what does not work and why.

This Report is both a summary of the experience of the Project, and a means to communicate its findings to other parties across the health sector who have a stake in telehealth. It sets out the learnings of the Project about successful applications, especially the use of video communication as a means to get better, more cost-effective and more timely health services to patients in isolated areas. It also records initiatives that the Project took that were less successful or ahead of their time, such as video communications between Aged Residential Care facilities and their health providers, and for travelling health professionals in the community.

Finally the Report makes some observations about the bigger picture, specifically barriers that appear to be holding back fulsome adoption of telehealth applications in New Zealand. These include the challenges of making changes in this complex sector with interlocking protocols and remuneration structures; the need to treat telehealth as one of a number of strategic opportunities facing the sector that need to be looked at holistically; the sometimes confusing and ambiguous overlapping responsibilities of national, regional and district interests; and the difficulty in establishing where these opportunities are being pulled together to look at the shape of a 21st century health system. The future success of telehealth is based on the development of Models of Care across settings, using telehealth as an enabler. We have expanded on this point in section 6.2 of the Report.

2 WHAT IS TELEHEALTH

Telehealth in its widest form encompasses any form of health service that utilises communication technology. By most definitions this includes any use of the telephone, fax machine or email.

In a practical sense such a broad definition is not always helpful and can be counter-productive to understanding. The term "telehealth" is a derivative of "telephone" which is in itself becoming an outdated word. For one example of the potential for confusion, a search on the Ministry of Health Web site under "telehealth" directs visitors to a telephone-based service for consumers to get health information - a concept most people would better understand as a "call centre." Further, "telehealth" is occasionally used in a derisory way to describe services of unknown quality that use the telephone or Internet to offer health

advice to consumers, sometimes from overseas locations. So by using the term "telehealth" to capture the vast range of opportunities that video, the Internet and other communications technologies bring to the health system we risk confusion.

Nonetheless the Project had to accept that the term "telehealth" is embedded in the lexicon and is not about to change. But in describing externally the services established by the Project, we chose to use terms like "Video Doctor Service" or "Video Clinic" which we found to be instantly understood and accepted by consumers.

For the purpose of the Project our focus was on the use of video communications for clinical consultations, with or without the patient present. We also attempted to demonstrate the use of remote monitoring to support patients with long term conditions to live comfortably and safely in the community, but for a range of contractual reasons we were unsuccessful.

3 TYPES OF TELEHEALTH

There are numerous forms of usage for telehealth. The following are some that were used within or alongside the Project, using the descriptors that we found easiest to communicate to health consumers:

Video Doctor Service - where a patient can consult a clinician across a video link from the patient's home, or from a health facility where no doctor is available at the time, or where a patient can sit alongside a GP while they jointly consult with a specialist by video link.

Video Outreach Clinic - where a hospital-based service such as renal, diabetic or mental health operates clinics for clusters of patients, with the clinicians and the patients connected by video between different towns.

Video Clinical Education - where clinicians, often in hard-to-reach localities participate over video in professional development opportunities which without the video would have been difficult or impossible to reach.

Video Health Administration - where people working in health use video as a cheap and convenient way to attend a meeting or hold a discussion that otherwise would have required travel or would have been held over the less effective means of a telephone call.

Video Multi Disciplinary Meetings - where clinicians in different locations communicate by video to discuss and prioritise cases, often sharing complex pathology and radiography data over video as well as seeing each other, and patient records, on screen.

Video Emergency Support - where a health professional faced with an emergency situation and who has video capability at hand can consult with an emergency doctor or other health professional to decide a course of action.

This list is not necessarily complete nor definitive - some situations will fit more than one category, and new applications are constantly emerging.

4 ORIGIN OF THE PROJECT

The Project was initiated in the Ministry of Business, Innovation and Employment (MBIE) late in 2012. They were then joined by the National Health IT Board and the Bay of Plenty District Health Board. Tairawhiti District Health joined in 2014.

The three parties initially funding the Project had different but overlapping objectives. The Bay of Plenty DHB wanted to build on its pre-existing investment in telehealth – more than 90 cameras with licenses and associated infrastructure – so that the positive effect on health outcomes and quality of life could be delivered alongside economic gains, releasing clinicians' time to treat more patients. It also saw synergies with its Integrated Health Strategy leading to new and more flexible models of care. MBIE - as the agency responsible for promoting use of the government's major investment in Ultra Fast Broadband and Rural Broadband in which health is identified as one of five anchor tenants - sought to understand how the health sector would use faster connectivity. The National Health IT Board had included telehealth as a component of its National Health IT Plan and was keen to see a significant upsurge in its use.

There was already significant clinical evidence internationally of the positive effect of telehealth across a range of medical disciplines. Not every trial everywhere in the world had delivered positive economic benefits, but on balance it was generally agreed to be a key tool in dealing with the strategic challenges facing health care in the 21st century, such as shortage of clinical resources, the aging population, and an increase in long-term conditions. A few clinicians including some in Australia see telehealth as taking over a high [percentage of face to face consultations in coming years.

The Bay of Plenty was chosen for the project for several reasons. There was already significant telehealth being trialed across a range of clinical applications, thanks to some forward-looking clinicians and supportive IT managers. There were relevant, leading edge IT skills on tap. The demographics were ideal for such a project, with an aging population, hard-to-reach areas, deprivation, and a high population of Maori. Further, Tauranga was one of the most advanced cities for the installation of Ultra-Fast Broadband thanks to the work of the local fibre contractor, Ultra-Fast Fibre Ltd.

Early priority areas for the Project established by the Governance Group were identified as aged care, mental health services, palliative care, isolated communities, and remote monitoring in the community of patients with long term conditions. A preference was established to focus beyond the DHB sites and venture into primary care and allied health services. There were two reasons - (1) this would better meet MBIE's objective of understanding applications that would utilise Ultra-Fast Broadband and (2) there was no value in duplicating initiatives that the Bay of Plenty DHB had already taken or was likely to do anyway as a natural evolution of its pre-existing video footprint.

The project was designed to be clinician-led and IT-supported. It was not intended as a conventional pilot, but was designed to help define what telehealth applications would, or would not be appropriate in a New Zealand setting. The potential to cement in sustainable

long-term solutions that would improve health outcomes and quality of life for patients in the districts, as well as making better use of scarce clinical resources, was seen as a valuable by-product.

5 FINDINGS

One of the key objectives of the Project was to share learnings with a wide community of stakeholders. This has been done very comprehensively as the Project has gone along. As well as issuing regular Newsletters to interested parties, presentations have been made to numerous groups including the elected Boards of DHBs, specialist groups of clinicians, clinical "Grand Rounds," annual conferences of HINZ (Health Informatics NZ), annual conference of the Institute of IT Professionals, and the Rural General Practice Network. The Project Facilitator also attended a number of telehealth conferences in Australia and New Zealand during the life of the Project to ensure the work was informed by the experience of others.

This final report completes the communication by recording the key findings in a single place for ongoing reference.

5.1 Primary Care in Isolated Locations

The Project successfully implemented primary care support services by video in several localities, making this arguably its biggest success. This is unsurprising. Video is a solution to the problem of isolation, so it is clear that its greatest utility is where such a problem exists.

Isolation in this context means more than just distances on a map. People can feel a sense of isolation in a wide range of situations. If they live close to a large town, but have no car, no public transport and no money, they are effectively isolated. Or if they lack the confidence to deal with the process of going to a doctor, then they feel isolated even if the doctor is next door.

The isolated areas where the Project was successful, however, were characterised by geographic isolation which was compounded by deprivation. One was a group of 8 health clinics around both sides of East Cape run by Ngati Porou Hauora, the Bay of Plenty District Health Board, and Tairawhiti District health. Another was Matakana Island, a community of 300 people in Tauranga harbour which is accessible only by a ferry from Omokoroa three times a day. A third was the "Opotiki Telehealth Community" - a cluster of primary practices, community health centre, and aged residential care facilities in this town with a population of 9000 which is 40 minutes by car east of Whakatane. It is expanded on elsewhere in this Report.

Introducing video as a consultation tool in such sites requires getting many different groups in alignment. It is important to get buy-in from all as the absence of any one group can threaten the process. Groups involved can include clinicians (nurses as well as doctors) both in the remote site and the one that will support it, the Primary Health Organisation's management and IT team, DHB management (Planning and Funding, IT department, the

Chief Operating Officer,) administration and reception staff, and any external specialists or allied health services who are expected to be involved.

Although the installation of video is a relatively simple process, it is dependent on the availability of good quality PCs or laptops at both ends of the connection. Many health facilities eke out the life of their IT equipment for longer than is normal in the wider corporate world, meaning that they may not have the spare memory or processing space to cope with the video while simultaneously running patient information, radiology and other memory-hungry programmes.

Choice of an appropriate room to locate the video is important. Some rooms are set up for nurse-only clinics where the nurse, or nurse and patient together, will review the case with a GP. In these, the main requirement is to have enough space for the two (or more if whanau or a support person is involved) to sit comfortably. It is also desirable to have the camera set up so that it can be moved around the room if the far-end clinician wants to look closely at a part of the patient's body, requiring some form of stand and clamp as well as a longer lead than normal for the camera.

However, in other settings the patient may be occupying the room .on their own while connected by video to a clinician. In those cases the key issues are room hygiene, security, and supervision. Obviously patient records or other confidential material cannot be left in the room. Some form of room management is required to ensure the room is clean and tidy before arrival, the patient is managed into and out of the room, someone is on hand if there is a crisis, and security of equipment is maintained.

Regardless of settings, there are some key rules about room setup that if followed correctly make a huge difference to the quality of video consultations. The purpose of the video is to create a sense of being in the same room as the other party. This means the camera and monitor should be as close as possible to eye level at each end. Lighting is crucial so that body language and facial expressions are captured, so cameras and monitors need to be placed accordingly - use of privacy curtains and window blinds can be helpful but remember the natural lighting can change dramatically depending on the time of day and season.

Last but not least is a mechanism for collecting the co-payment fee from the patient if one applies. The Project heard several debates about whether such fees should be more, or less than for a physical consultation - it was not our decision but we were interested observers of the thought process. Some argued that the co-payment should be less than for a face-to-face consult on the grounds that video has inherent limitations and some procedures and diagnoses cannot be done effectively. Others argued it should be more because there is slightly higher downtime for the clinician in setting up equipment and establishing a connection, more capital equipment and bandwidth, and the patient often saves money through not having to travel. All these arguments have merit. Perhaps the line of least resistance is to stick to the standard fee regardless of whether the consult is in person or by video. However, there still needs to be an understanding what happens if it proves av video consult is unable to complete the necessary diagnosis or treatment and the patient has to attend in person - do they get charged for both attendances?

Another issue around money is the scenario where a patient sees two tiers of clinician at once. For example, a patient may be with a nurse in a clinic but also have a doctor on the video, or a general practitioner with a patient in the room may video connect with a specialist so there is better communication about the patient as well as knowledge transfer between the clinicians. Both clinicians need to be remunerated, yet the system generally presumes that a patient will see different levels of clinician sequentially, not concurrently.

5.2 Specialist Support for Rural Health Practitioners

Early in the Project general practitioners at Opotiki expressed interest in using video as a means to reduce their sense of isolation by creating a formal association between a rural GP and a handful of key urban specialists. This approach was pioneered in Canterbury using the term "RUFUS," an acronym for Rurally Focused Urban Specialist. General practitioners in remote parts of Westland have established contacts with specialists in Christchurch with whom they can periodically converse by video about specific patients. The "RUFUS" occasionally visits Westland, spends time with the GP and possibly meets some of the patients, and generally offers collegial support.

The concept is seen as having considerable potential. The difficulty is in implementation. Clearly it is easier to implement with specialists who are salaried employees of the DHB rather than in private practice.

Efforts by the Project to establish this in Opotiki did not succeed. As with some other initiatives we tried, the complex nature of the health sector, the funding models, and the number of "gatekeepers" to get past simply made this overwhelming.

The model of the future however, probably includes something along "RUFUS" lines. To reach this potential requires a much broader shift in thinking than can be driven through telehealth. It needs all influential leaders in the sector to converge on the view that telehealth provides a once-in-a-generation opportunity to re-design the way the sector offers services around the available technology. Currently there is no evidence of such a conversation taking place, nor of the existence of an institution or forum with the combination of mandate, vision and capability to bring this onto the agenda.

5.3 Mental Health

Use of video for mental health services in the Bay of Plenty DHB pre-dated the Project, and was one of many reasons the BoPDHB was selected as the site for the Project.

Historically the Bay of Plenty has struggled to attract the services of a child and adolescent psychiatrist. Consequently for some time a Christchurch-based specialist flew to Tauranga regularly to consult with a number of patients. At the instigation of the BoPDHB Mental Health Department early in 2013 some of these consultations were replaced by video, with the clinician being located in his Christchurch premises and the patients in the Child and Adolescent Mental Health Unit in Tauranga Hospital.

Initially these consultations used the same Cisco Jabber software platform and basic Jabber camera as those deployed throughout the Project. However, at an early stage it became apparent that the specific requirements of child mental health required a higher level of sophistication due to the need for a close view of the patient's face and the inclination of young people with mental disturbances to move around the seat or the room rather than sit still. In consequence with support from the Project the video unit at the Tauranga hospital was replaced with a Cisco SX20 unit offering far end camera control (FECC.) Although a hundredfold more expensive, this camera proved much more effective and enabled the safe and successful growth of the video services

It is important to note the distinction between the "clinician's end" and the "patient's end" of such consultations in relation to equipment requirements. The needs are not symmetrical. For example the clinician, depending on the specific application, may need to look closely at the patient's facial expression and demeanour (mental health), at a wound or rash (general practice) or at a limb injury (in an emergency situation) - this requires a suitable quality camera at the patient's end and monitor at the clinician's end. However the patient, regardless of application, is using video only to see the clinician's face, so the patient's monitor and clinician's camera do not demand the same sophistication.

As the Project progressed more mental health applications emerged. Tairawhiti District Health commenced using video regularly between clinicians at Gisborne Hospital and Ngati Porou Hauora patients in Te Puia Springs and beyond. Tairawhiti noted by the end of the Project that already the more regular contact this had enabled with the patients had allowed them to discharge several who would still be under treatment had the frequency of contact been limited by the need to drive for three hours to see them.

One issue that arose was a requirement within the Mental Health Act that assessments under the Act must be in person. As video becomes prolific this would appear to be an outdated concept. We would urge that attention be given to amending this at an early stage so that mental health clinicians who use video are not operating under unreasonable constraints, nor placing themselves at a legal risk.

Mental health is clearly a prime candidate for the advancement of telehealth because unlike most specialties the clinician generally does not require to touch the patient physically.

5.4 Palliative Care

At a very early stage in the Project there was considerable enthusiasm expressed by palliative care services to become involved and see how telehealth could add value to the servicing of palliative care patients living in the community. The hope was that video could first be established into the three hospices, then communication used to support palliative patients through their GPs and primary practice nurses, and finally in the patients' homes as connectivity became available.

In fact, connections to the hospices themselves proved to be problematic. Waipuna Hospice - a large facility just outside the boundary of Tauranga city - proved to have inadequate bandwidth and not to be within the boundaries of the Ultra Fast Broadband project. It was

necessary to run about 400m of fibre cable from the state highway, a process that took many months at a cost of around $30,000, which was eventually borne by several parties including the Project. Hospice Eastern Bay in Whakatane, despite being practically in the CBD, had unsatisfactory broadband also which resulted in further delays. Only Hospice Tairawhiti in the grounds of Gisborne Hospital could be set up with video immediately.

Clinicians in all three hospices have used it to a limited extent to connect with one another for clinical communications, and managers have used it to avoid unnecessary travel to meetings outside their regions. However, the vision of bringing video into daily use as part of "business as usual" in palliative care has not yet been achieved.

Perhaps the tipping point will come when high speed broadband is available at the vast majority of patients' homes. That will enable hospice nurses to take video equipment into each patient's home and connect back for support to the hospice base, palliative care specialist, or the patient's GP.

5.5 Long Term Conditions

With the incidence of long term conditions increasing dramatically in line with the aging population, the Project was focused especially on ways to use video to improve health outcomes for the patients concerned and increase the efficiency of service delivery. We were successful in establishing what we called "Video Outreach Clinics" for this purpose, based in Tauranga and Gisborne hospitals and providing virtual clinics to Whakatane, Opotiki, and all around East Cape.

The first of these was a series of regular diabetes clinics established between Tauranga hospital and Church Street Surgery in Opotiki. This rapidly became part of the regular routine with excellent feedback from clinicians and patients. At a later stage other services at Tauranga hospital were looking at or using video for similar purposes, including covering for periods of staff shortage.

Once the seven Ngati Porou Hauora sites were equipped with video, the Tairawhiti District Health long term conditions unit, Tui te Ora, implemented a similar service. As the Project drew to a close it appeared this would find a permanent place in the routines of the 7 Ngati Porou sites at Te Araroa, Tikitiki, Ruatoria, Te Puia Springs, Tokomaru Bay, Tolaga Bay and possibly Kaiti.

Meanwhile the renal department in Tauranga hospital started similar clinics for long term renal patients. By the time the Project ended about 6 of these had been run successfully, with renal specialists in Waikato hospital consulting with Whakatane patients by video instead of using charter flights as had become the established custom. Renal specialists are not the only Hamilton-based doctors flying to Whakatane regularly, so there is significant potential to analyse what other physical visits can be replaced by virtual ones with a very significant saving in time and cost. Obviously not everything can be accomplished by video - the doctor needs to establish a relationship with the patient first, and to have a sense of what their requirements will be at each specific clinic. However, it should be possible to

develop a protocol to determine which patients on which occasions can be safely and efficiently dealt with by video, and which require face to face attendances.

As the Project drew to a close, other video applications for long term conditions were being mooted. One example was for sleeping disorders, where Tairawhiti District Health regularly sends clusters of sleep apnoea patients to a specialist sleep observation clinic in Auckland. Others being discussed included dietary services, optometry, and podiatry within certain limits.

The maintenance of treatment for patients with long term conditions may well prove to be the "easy win" for telehealth over the next year or two. It is a field in which the Project has planted some very valuable seeds.

5.6 Addiction Services and Quit Smoking

During the later stages of the Project interest was expressed by clinicians in both Tairawhiti and Bay of Plenty in the use of telehealth for addiction consultations. In Tairawhiti the "quit smoking" coaches on their own initiative started using video to connect with clients, with the client coming into one Ngati Porou Hauora clinic to consult with a coach in another. It seems clear that video has a significant potential in addiction treatments, not only as an alternative to physical travel for regular scheduled clinics, but especially for situations where a patient is in need of support urgently and this might otherwise not be available due to the travel barrier.

For several reasons the Project ran out of time before this could be built up to scale, but it may be that we established enough momentum both in Tairawhiti and the Bay of Plenty for this to continue unassisted.

It should be noted that there was a difference in views between BoP and Tairawhiti about the level of sophistication of cameras needed for video addiction services. One school of thought was that like child and adolescent mental health (see under "Mental Health") addiction clinics require sophisticated cameras with far end camera control. The other view was that the basic Cisco Jabber camera was perfectly acceptable. Time and circumstance will dictate which proves right over time.

5.7 Aged Residential Care

Early in the life of the Project the use of video between Aged Residential Care (ARC) facilities and their health service providers was seen as a prime candidate for development. There was a widespread view among health administrators in the Bay of Plenty and beyond that it could be deployed to video-triage residents in ARC who became unwell after hours, cutting back on what was seen as an excessive number of ARC residents being taken directly to Emergency Departments at night or weekends. In addition it could be used during the working day to video-triage residents with the contracted general practice at times when the resident could not readily be transported and the GP was unable to make a visit.

Accordingly the Project identified about 10 ARC facilities in the Western Bay of Plenty whose managers shared this vision and were keen to trial it. These were equipped with video connectivity and cameras at the Project's cost. There were issues with the speed of bandwidth in a few cases, but in most there were other more challenging issues such as reliance on Wi-Fi in concrete buildings with thick walls, lack of staff computer skills, and aging PCs with inadequate memory space for proper video.

However, it takes two to make a video call. Unfortunately, despite early positive signals, some of the key general practices contracted to service these facilities, and the afterhours medical practices, did not share the vision of the facility managers.

Several objections were raised. One was that for an afterhours doctor to interrupt the flow of patients in reception to take a call by video from an ARC would be disruptive and time consuming. This may be true currently while video consultations are the exception rather than the rule. However if over time they become routine, the down time should become minimal. And there is a substantial cost saving to the ARC and/or patient (one outlying ARC quoted a figure in excess of $200 each time a resident was sent to the after-hours service and back by ambulance) so there is scope to compensate the after-hours facility from these savings. Further, there is considerable benefit to elderly and often frail residents who may find it much less disruptive to have a video consultation, than to be taken physically from the home for a traditional visit.

A second recurring objection was that unless the patient was supported at the ARC facility by not just any registered nurse, but one the doctor knew personally and had worked with previously, the doctor would be exposed to legal risk by relying on the nurse for support. This is difficult to understand. The underlying presumption is that a doctor is responsible for satisfying himself personally as to the competency of any health professional working with him and cannot rely on their professional qualification. If in fact a doctor cannot "trust" a professional qualification, this sets them apart from many other professions. For example, commercial airline flights are operated by a captain and first officer who often have never met until they arrived at the departure airport, yet the captain is not expected to make the first officer take the plane on a demonstration flight before the passengers board. This is an important issue that needs to be put to rest one way or other. If there is indeed a legal risk to clinicians who rely on the professional credentials of associates without testing these themselves, this impacts much more widely than in telehealth and needs to be addressed. If not, the objection needs to be rejected and buried.

Later in the Project the Bay of Plenty DHB asked that the Project deploy video in 5 ARC facilities in the Eastern Bay of Plenty, in support of a new after-hours service based in Whakatane hospital. This has so far not come about due to several quite different issues - one facility took several months to get connected to Ultra Fast Broadband despite the fibre cables being at its gate; in a second it emerged that staff who work at weekends are not computer literate and thus could not use the video; and others struggled to get approval from corporate head offices. All these can be addressed - but it takes time, and time was not on the Project's side.

This does not mean that video does not have a place in ARC - indeed the opposite is true. Even as the Project ended it was approached by a chain of ARC facilities outside the Project's districts, eager to initiate video consultations with after-hours services. It is clear that there is a substantial body of people in the sector who see the scale of this opportunity, albeit offset by some who take a view which could be construed as over-cautious. It may well be that health services across video links from ARC will come about through competitive pressure among ARC facilities and a wider view of the role of video in ARC beyond health services, rather than as a coordinated initiative by DHBs or the health sector.

Use of video in ARC is not confined to after-hours triage, however. Many hospital services could be delivered by video. Speech language therapy is but one - this was pioneered in Tauranga hospital before the advent of the Project and still continues but on a modest scale. Dietary services, advice from specialist geriatricians, and mental health services are clear candidates to use video to work with aging patients.

That the Project did not reach its potential in ARC is not seen as evidence that the concept is flawed. On the contrary it shows the need for some crucial issues of concern to clinicians to be addressed, and for the time to become right. Our sense is this is not far away.

5.8 Care in the Community

Early on in the Project the idea was floated of testing use of video by district nurses working in the community. The hope was that with the increased bandwidth coming on stream through the Rural Broadband Initiative (RBI), there would be cellular bandwidth at speeds capable of carrying video in most homes across the region.

Consequently laptops and cameras were supplied and configured so that one district nurse each in Tauranga and Whakatane could take a laptop on their daily rounds and use it when appropriate to connect back to the community nursing base.

Unfortunately this proved to be a concept ahead of its time, for several reasons.

First, the bandwidth was insufficient to support this application. We were told that the RBI had not materially increased speeds for connections between SIM cards and cell towers unless the site invested in a directional rooftop aerial pointed at the nearest cellular site. Such investment would probably be viable for a commercial user including a health clinic, but less likely to be attractive for the majority of residential users.

Second, we encountered some pushback from the district nurses who were understandably sensitive about the amount of equipment they were already expected to carry into each home they visit and reluctant to add a clumsy laptop and camera to their load. An alternative of a tablet was suggested, but this has practical limitations when used as both a camera and a monitor in a clinical situation - there is merit in having a camera that can be detached from the computer and positioned independent of the monitor.
Third, the participants were unconvinced that the number of situations in which video would add value, was sufficient to justify the effort involved, even in a trial setting. This is a fair criticism.

The Project is aware of work going on in other places including DHBs to develop this concept. Over time it will undoubtedly have considerable value and become a significant driver of telehealth, as the concept applies not only to district nurses but many other health and social workers with a similar need - palliative care nurses, midwives, addiction counsellors, social workers, occupational therapists, ACC case managers, and many more. And even as the Project drew to a close we became aware of more than one participating practice that was doing further trials at its own initiative.

When travelling professionals are all able to not only use video from the patient/client's home, but also log in to do all their reports and look up all the required data whist out in the field, numerous opportunities will be opened.

5.9 The Opotiki Telehealth Community

A key achievement of the Project in its first six months was the establishment of a "telehealth community" centered on the Eastern Bay of Plenty town of Opotiki. With the active support of several forward-looking clinicians we pursued this because it provided an opportunity to test the "network effect" - the theory that the usefulness of a network such as video increases exponentially as more participants are added.

High definition cameras were placed in every General Practitioner's surgery in the town, in the assessment room of the Community Health Centre, in an aged care facility, a health centre at Te Kaha, a satellite clinic at Waihau Bay, in the emergency department at Whakatane Hospital, and in the Eastern Bay of Plenty Hospice. Duty doctors were encouraged to take their cameras home so as to deal with after-hours emergencies.

The facility was put to good use from the outset, and although the number of uses was not great, the positive impact on patients and the more satisfactory environment for clinicians proved highly positive. Over time the use of video also became an element in a re-structured after-hours service for Opotiki, with patients in Opotiki being connected by video to an after-hours doctor in Whakatane Hospital.

It was notable that as changes in clinical personnel occurred, not all the new doctors immediately embraced telehealth in the way the pioneers had. It was necessary to meet with them and "sell" the concept over again, at which point they generally saw the benefits. Until telehealth becomes mainstream across the whole health service this is likely to be the reality.

6 SOME WIDER OBSERVATIONS

In the course of the Project a number of institutional constraints became apparent that appear to be limiting the development of telehealth across New Zealand at the present time. These are presented as observations rather than recommendations.

6.1 Telehealth Leadership Within District Health Boards

Traditionally in many DHBs the initiative in promoting and driving telehealth has come from the Information Technology Department. This is understandable from a historical perspective as it has been the IT personnel who first became aware of the arrival of reliable, high definition, cheap video services.

However, in the experience of the Project we have moved beyond the point where IT should take the lead. They will always have a key part to play in the process. However, to position them as the primary driver would seem to undersell telehealth as fundamentally an IT initiative. In reality to reach its full potential it needs a much more holistic approach which makes it an integral consideration in every discussion or decision around the service models for every element of health for the future – primary or secondary, public or private, allied health, and so on.

It follows that the people who can drive telehealth into the system most effectively are clinicians alongside Planning and Funding leaders. The role of clinicians is obvious and well-recognised - health is their business, they are the experts and users of the technology, and they know from experience at the coal face what works and what does not.

However, the crucial role of Planning and Funding has been less recognised. Their specific expertise is at the interface between primary and secondary care. They are confronted constantly by the pressure points in the system in terms of resources, patient experience, and clinical pathways. They can be very effective as initiators of ideas for new forms of service delivery.

So it is important that portfolio managers, along with staff of service providers at a range of levels, maintain awareness of what telehealth can do so that it becomes an option on the table whenever service delivery changes are under consideration.

6.2 Telehealth as Part of a Holistic Package of Opportunities

There is widespread awareness of the strategic challenges facing the health system. These include the aging patient population, aging clinical workforce, increase in long term conditions, obesity, addressing diversity, and the increasing range of very costly treatments due to advances in medical science.

Telehealth can become a major part of the solution to some of these challenges. However, it can do so only if it is deployed alongside other fundamental changes to the health service delivery system. These include such opportunities as devolution of tasks down the clinical chain, new forms of primary-secondary interface, primary-based community nurses, and the retention of the aging population in their own homes for longer to ease pressure on aged residential care.

A serious limitation of the Project was that we could only superimpose the new technology on a system that was designed for earlier times. We could not present or implement it as part of an integrated package of changes designed to modernise the fundamental structure of the services.

Health services have a complexity like few others, the consequences of botching any change are high, clinical caution is paramount, and there is always someone with an objection to change. For one primary health organization or DHB to act alone without national endorsement often feels too risky, and the potential traps too daunting. Telehealth will reach its full potential only when there is widespread consensus across many levels about the need to change and a will to be bold, so the system can be re-engineered to take advantage of all the potential opportunities including new communications technology.

6.3 National and Regional Coordination

On several occasions in the life of the Project issues emerged that required solution above the level of the DHB – either at regional or national level. Some of these fell between the cracks because of ambiguity about, or absence of, an escalation point. Examples included:

- The overarching need for a national telehealth strategy so as to add authenticity, coordination and support to Districts and Regions that are working in this field
- A serious and long standing issue around the lack of adequate interconnectivity among the several video conferencing platforms being used in the health sector (see elsewhere in this Report)
- The desire for video vendor accreditation
- The opportunity for a national directory of video-enabled health providers, with a common addressing standard.

Telehealth is too big, and has too much potential, to exist without active and appropriately-resourced national oversight. While the National Health IT Board has included it in the National Health IT Plan, and despite good work by the Telehealth Forum, it sits there among a daunting range of other IT challenges and relatively little resource has been applied to it. Further, for reasons expressed elsewhere in this Report telehealth needs to be elevated to a broader system-wide strategic level and not compartmentalised as “IT” if it is to reach its potential. This is not a reflection on the work the Board has done in this field, but its expertise is concentrated in the use of technology to enable telehealth and not in the integration of telehealth into overall service delivery. There needs to be a top level strategic plan setting out the role of telehealth across the whole NZ health system, using the experiences of the Project and other successful implementations to inform the policies.

6.4 The Support Role of DHB and PHO IT Departments

With many or most District Health Boards now using telehealth to at least some limited extent there is a need for users to have the comfort of knowing that a service desk facility is available if problems arise. Where video is used beyond the DHB the same observation applies to the PHO IT departments or IT service contractors who support them.

Video is simple in theory, but in practice can be complex. Our observation during the Project, confirmed in conversation with other people working in a similar field, was that the failure rate of telehealth calls within the New Zealand health sector generally remains too high, and this is detracting from the confidence of clinicians. As with many fields of

technology, if there are too many unsatisfactory experiences the failures become embedded in folklore and reduce confidence for months or years. Where peoples' health is at stake the impact of a failed call can be upsetting or even place a patient at risk, so it follows that the video technology has to be supported in a timely and competent way.

It is arguably time for all IT help desk people to have at least an elementary training and expertise in video trouble shooting. Only when video is seen by IT departments as core business will clinicians' confidence be gained.

6.5 Interoperability/Interconnection of Video Calls

A very significant issue we encountered constantly in promoting video is the absence of seamless interconnection at affordable prices among competing video service providers.

There is a wide range of service providers in the video market. Some specialise in health, while others specialise in other fields such as education but overflow into the health sector. The market appears immature with new entrants continuing to appear.

Unfortunately not all of them have the capability to enable users of their service to interconnect easily to users of other services. In other cases it is possible to interconnect but only with long notice periods, unaffordable prices, or an unduly high technical risk that the call will fail.
As noted elsewhere in this Report, it is all too common for video calls in the health sector at least, to fail. It is clear that the risk increases markedly when participants are using differing video service providers.

A classic, but not uncommon example of the impact is at Gisborne Hospital where different meeting rooms have been configured for video calls on different networks - yet despite this costly division of real estate and some very clear written instructions, failure of video calls is commonplace.

If this situation continues there is a real risk that as telehealth snowballs in New Zealand it will become a range of different islands of connectivity. A user in one region wanting to connect to a user in another will either not be able to do so, or will be forced to pay an excessive per-minute fee. Anecdotally the Project understands that health is not the only sector of public or private sector enterprise grappling with this issue.

One possible solution would appear to lie within the Telecommunications Act, which enables the Telecommunications Commissioner to set connectivity standards and regulate rates for what are known as "off-net" calls. Although this Act was established with telecommunications service providers in mind, the video providers are simply a new generation of these businesses. The Act has been very successful in delivering competition across other forms of telecommunications services. However, such a solution would need to be mindful of any risk that regulation could chill innovation.

Whatever the solution, the status quo is unsatisfactory. Too many video calls in the health system either present frustrating difficulties with the setup, require excessive payments

with no relevance to underlying costs, or simply fail to connect. Every time this happens the confidence that busy clinicians and vulnerable patients have in the technology is dented - each failure becomes a talking point. Dealing with this issue should be an urgent priority.

6.6 Consumer Reaction

Throughout the life of the Project the reported reaction of consumers was without exception, positive. People appreciated the added value of the video link where it was an alternative to telephone advice, or where it enabled consultations earlier than would otherwise been possible. In many cases the alternative to video is to get delayed treatment, or in some instances no treatment at all, so it is unsurprising that this more versatile form of communication has consumers' support.

A common theme was that in acute situations where patients are accompanied by support people, the whanau especially appreciated being involved, seeing the distant clinician on line, instead of listening to one side of a telephone consultation with a faceless doctor.

No formal survey of consumers was possible in the time allowed. However, this anecdotal feedback was overwhelmingly supportive.

7 TECHNICAL AND PREMISES ISSUES

7.1Video platforms

The Project generally made use of the Cisco Jabber cameras and software. This was in order to be consistent with the established telehealth hardware and software already in use at the Bay of Plenty DHB.

The Jabber cameras performed very well. Clinicians agreed the definition was excellent, with more than one adding that it was possible to diagnose a skin rash on a child as well as if the clinician had been in the same room. The cameras also performed well technically, with issues being experienced on only one of approximately 50 allocated to the Project.

The Jabber software, at the time the Project commenced, was available in two versions - a corporate version as used within some DHBs where a setup fee and annual license fee are payable, and a "free" version available to anyone on the Internet which was used for primary care and other non-DHB sites. Unfortunately during the final month of the Project Cisco announced that the free version would be withdrawn with 3 months notice, and that new connections had been discontinued immediately. A work-around is currently being put in place, but at some inconvenience and cost.

7.2 Computers and room setup

Nearly all of the rooms in which the Project established video capability were clinical surgeries, used by doctors and/or practice nurses on a daily basis. The PCs on which we downloaded the software were the ones we found in the rooms.

In a number of cases the PCs proved unsatisfactory for video and had to be replaced. This is because they were units nearing the end of their lives, with a large amount of software installed, and with insufficient capacity to accommodate the demands of video. Other practical issues arose with the monitor and computer being located too far apart (the Jabber camera has a 2 metre lead which in some situations was insufficient and required a 5 metre "active" extension lead to get around the issue.)

Setting up the rooms was simple but there were some important considerations. There must be adequate lighting on the face of the clinician's face and not too much behind - the reality of this can change during the day as the sun moves around or lights are turned on. Privacy curtains can often be used to ensure good lighting. Distracting or confidential items on the wall behind the clinician or patient should be avoided. In some circumstances it may be desirable to move the camera at the patient's end so that the remote clinician can focus on a body part, something that usually requires an extension lead and a clamp suitable to hold the camera. Some clinicians requested a double screen configuration so they could work with patients' records without interrupting the view of the patient which was easily accomplished.

A different set of considerations apply if a patient is likely to be in the room without a clinician or other staff member. In that setting consideration needs to be given to room hygiene, security of the room and equipment, and ensuring there are no confidential medical records or other extraneous items in the room while the patient is alone.

7.3 Bandwidth Availability and Constraints

For the most part the Project was fortunate that adequate bandwidth was already in place to sustain video. This was helped by the progressive rollout of Ultra Fast Broadband as the Project continued.

However, in places where it was an issue, it proved very complex to get the bandwidth upgraded. Examples included Waipuna Hospice in Te Puna which was just outside the boundary of the UFB area, and an aged residential care facility in Whakatane where despite the manager having seen the UFB cables buried outside the gate several months earlier, and the Chorus Web site showing it as available, it took the personal intervention of a senior manager of the telecommunications company to override the insistence of his local staff that UFB was unavailable in their street.

In the Ngati Porou sites, a microwave link through Gisborne.net was used. This is part of a contractual arrangement by the parent runanga, Ngati Porou. After a few teething problems were fixed by the provider, this link worked well.

7.4 Directory services

The absence of a directory of health video addresses, or even a list of video-equipped health sites, appears to be a disadvantage. Currently any such directories are fragmented - held by individual DHBs and video service vendors. Even within DHBs it is hard to find a "go to point" to establish who is connected by video, and to distinguish the kind of room in which it is set up - surgeries, kiosks suitable for patients alone, meeting rooms, specialist applications (such as multi disciplinary meetings), meeting rooms, or office desktops.

Such a directory could be really handy if for example, a doctor in a particular specialty wanted to locate professional colleagues who were available by video. Even if it did not contain video addresses (which some people might prefer because of a perceived risk of unsolicited calls) that would be useful in spreading information about who is involved. It would be a really useful facility if someone could be found who could put it together.

At a late stage in the Project we learned that work is under way on a national directory, a move that will be welcomed warmly.

7.5 Security and Privacy

Early in the life of the Project we were asked frequently about the risk to patient privacy and security arising from the use of video. We were fortunate to have the backing of the National Health IT Board who issued a statement clarifying their agreement that the way the Project used video was acceptable and did not constitute "overseas storage" of health data.

In theory it is possible for someone with enough determination and computer skills to hack into a video consultation. However, there is no greater risk than of their eavesdropping on a telephone call, or for that matter, leaving a recording device surreptitiously in a consultation room. While nothing is absolutely impossible, it is hard to see why anyone would go to the enormous amount of effort required.

Similarly we saw no material risk that patient privacy would be lessened materially by the use of video compared to the traditional alternatives.

The key to these issues is open communication with patients. They are the ones with most at stake. Most of them have used video communication tools such as Skype, and practically all use telephones. There is little to suggest that they place themselves at risk any more by engaging in a telehealth consultation than in using those everyday communication tools.

8 CONCLUSION - WHAT NOW?

The Project has delivered many useful learnings about the role of telehealth in the New Zealand health system. Some of its work has been parallel to other telehealth initiatives taking place elsewhere in the sector, while other parts have been more ground-breaking. It has added to the store of knowledge and will help to guide others working in this field, avoiding their going down unproductive paths.

Some, at least, of the initiatives are expected to live on and grow. In particular the initiatives around video doctors in isolated locations, video clinics for long term conditions, and use of video for mental health services have taken firm root. These all form parts of ongoing service studies and locality planning exercises and as such can be expected to become ingrained into the health service delivery model of the future in these two regions and beyond.

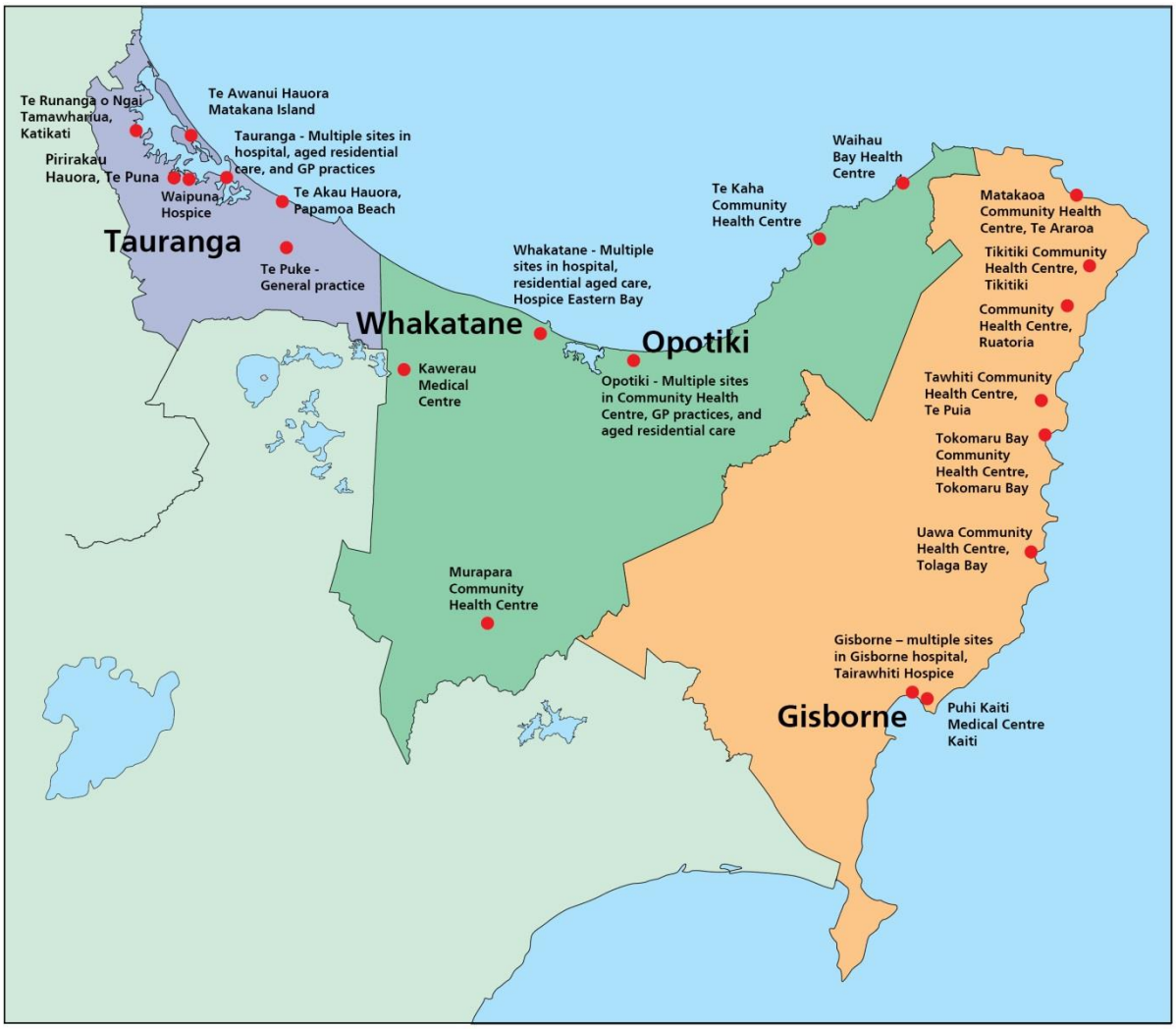
There is more work to do in both policy development and local implementation. We hope the observations made in section 6 of this Report can be considered by a group such as the National Health IT Board or its Telehealth Forum, and that this Report will assist to give a head start to District Health Boards, Primary Health Organisations and others involved in the development of this exciting technology which opens so many options for the future.

In publishing this Report the Project governance group records our appreciation to the numerous clinicians, health service administrators and others who willingly gave their time to conceive ideas, test applications, and provide feedback during the two year life of this demonstration project.

APPENDICES

A Map of known video-equipped health services in Bay of Plenty and Tairawhiti
B Telehealth Policy - Bay of Plenty DHB
C Telehealth Policy - Tairawhiti District Health
D Governance and management of the Project

APPENDIX A - MAP OF KNOWN TELEHEALTH LOCATIONS IN BoP AND TAIRAWHITI



APPENDIX B - BAY OF PLENTY DHB DRAFT TELEHEALTH POLICY

Video Conferencing – Patient Treatment

PURPOSE:
This Protocol defines the responsibilities, procedures and restrictions for using video based telehealth technology to deliver clinical services to patients under BOPDHB care. This protocol is designed to minimize the potential risk to patients, clinicians and the DHB of unauthorised or inappropriate use of video technology and resources, by ensuring that:

- standards and practices exist for the use of such technology,
- appropriate processes are in place to ensure patients are fully informed and their consent for participating in a Telehealth intervention is obtained, and
- clinicians have appropriate levels of capability and support to deliver patient interventions via Telehealth.

This Protocol applies to video (including simultaneous verbal and visual communication) consultations between one or more clinicians and a patient.

EXCLUSIONS:
This Protocol is intended to cover use of video conferencing for ***patient specific*** and ***patient related*** purposes. Video conferencing for non-patient related activities are not covered by this Protocol.

STANDARDS TO BE MET

1 USE OF TELEHEALTH VIDEO CONFERENCING

1.1 Telehealth video conferencing may be used for the following *patient specific* interactions:

a) Patient interviews for:
- follow up after an initial consultation to review treatment;
- providing a second opinion;
- emergency assessments;
- gaining additional information.

b) Team/group meetings (including patient and their family/whanau/caregiver) for:
- discharge planning;
- family conferences;
- patient review;
- maintaining patient contact with their family/whanau/caregiver
- Multi-disciplinary case management meetings with other practitioners &/or community groups

1.2 Telehealth video conferencing may also be used for the following *patient related* activities:

a) Consultation/liaison between clinicians, managers, community groups and patients.

b) Education and supervision for:

- one to one supervision;
- group/peer supervision;
- distance learning for education programmes;
- maintaining up to date practice through information sharing.

1.3 Telehealth ***is not to be used*** for the Preliminary Assessment by Psychiatrist as per Section 9 of the Mental Health (Compulsory Assessment and Treatment) Act and Amendments (1992).

2 STAFF RESPONSIBILITIES

2.1 All Staff intending to use Telehealth equipment for video consultations may only do so after they have been trained in:

a) How to use the video equipment

b) Telehealth etiquette

c) Telehealth video conferencing booking systems

2.2 Clinical Staff intending to use video conferencing technology for interacting with patients are required to:

a) Ensure that treatment provided to a patient in another location should, so far as possible, meet the same standards of care as would be provided in a face to face consultation. This includes standards relating to patient selection, identification, cultural competence, assessment, diagnosis, consent and follow-up.

b) Ensure that if, because of the limits of technology, they are unable to provide a service to the patient of the same standard as a face to face consultation, they advise the patient of this.

c) Consider whether a physical examination would add critical information before providing treatment to a patient and, if so, not proceed until a physical examination can be arranged. In some circumstances it may be reasonable to ask another practitioner in the patient's location to conduct a physical examination on the clinician's behalf.

d) Ensure that the use of telehealth has been discussed with the patient and that informed consent for the use of telehealth has been obtained.

e) Ensure that all patient records necessary to support the patient intervention are available for use in the telehealth interaction.

f) Document the interaction and its outcome in the patient's clinical record in a manner that meets the DHB's standards.

2.3 Telehealth Administration Staff are responsible for:

a) Ensuring that rooms and equipment are available and booked at both ends
b) Ensuring all relevant staff at sending and receiving sites are notified of the time and arrangements for the Telehealth appointment
c) Supporting the clinician to implement informed consent procedures
d) Ensuring the clinician has access to the patient's records before and during the consultation
e) Maintenance and hygiene of equipment and rooms

3 RESOURCES & RESOURCE MANAGEMENT

3.1 Telehealth video based consultations require:

a) Video cameras, monitors and speakers at each end of the link
b) Patient information sheet and consent form
c) Signage to indicate the room is in use

3.2 All Telehealth equipment is to be booked via the designated Telehealth Administration staff member.

3.3 Users will ensure that a sign is placed outside the room to indicate that a Telehealth session is in progress. (Sign to simply indicate that the room is in use/engaged).

3.4 Any Telehealth equipment or system malfunction is to be reported to the administrator as soon after discovery as possible.

4 TELEHEALTH PROCESS & ETIQUETTE

4.1 The clinic appointment letter sent to the patient will indicate clearly that they have been booked into a telehealth clinic and where they need to go to attend the appointment. It will include the generic letter explaining the telehealth clinic.

4.2 The patient or their representative is to be informed of their right not to participate and their right to withdraw from the session at any time. If the patient indicates they do not want to be seen in the telehealth clinic they should be booked into the next appropriate face to face clinic.

4.3 Patients, and their family/whanau/caregiver (if involved) are to be provided with clear information on how the Telehealth equipment operates, who will be involved in the session and what, if any, alternatives are available.

4.4 If the patient has not experienced telehealth previously the Telehealth Administrator or clinician should briefly explain the equipment and process at the start of the consultation.

4.5 Telehealth consultations should take particular care to ensure the patient's ideas, concerns and expectations are considered and that a mutually agreed management plan is developed and documented to ensure the patient understands the decisions made.

4.6 Telehealth consultations are not to be recorded unless the patient has given prior written consent.

4.7 The patient is to be assured at the start of the session that nobody other than the clinician is present. It may be helpful to sweep the room with the camera to reinforce this.

4.8 The clinician should make eye contact with the patient wherever practicable – by looking at the camera rather than the screen.

4.9 Information entered into the patient administration system (PAS) should allow easy identification of which patients were seen in a telehealth clinic and by whom, for reporting purposes.

5 SUPPORT FOR THE PATIENT

5.1 Where practicable another clinician (medical, nursing, allied health) should be available adjacent to or alongside the patient in order to assist the clinician – for example to take the temperature, make additional observations, or provide the patient with reassurance.

5.2 In some circumstances this may not be practicable and the patient will be alone, or supported by a family member, social worker or other person.

5.3 The clinician is responsible for ensuring that any necessary support for the patient is available and if not, for taking steps to ensure the welfare and care of the patient is not put at risk.

6 NON-COMPLIANCE WITH PROTOCOL STANDARDS

Failure to comply with this Protocol may result in the suspension of all access privileges, disciplinary or legal action, and termination of employment or contract. Such action does not limit other remedies available under any existing contractual arrangement with the user.

REFERENCE DOCUMENTS / ASSOCIATED FORMS

BOPDHB Policy 2.6.1 Information Management
BOPDHB Policy 2.6.3 Software & Technology Management
BOPDHB Policy 2.6.4 Access Control

APPENDIX C - SAMPLE TELEHEALTH POLICY, TAIRAWHITI DISTRICT HEALTH AND PARTNERS

ORGANISATIONAL POLICY*:*

TELEHEALTH EQUIPMENT AND USE

AUTHORITATIVE SOURCE:

The National Health IT Board has endorsed the use of video conferencing via a secure network utilising public internet. This is further endorsed by the links below:

- HISO 10049.1 Videoconferencing Interoperability Standards - Health Information Standards Organisation, Ministry of Health, New Zealand. http://ithealthboard.health.nz/videoconferencing-interoperability-standard
- New Zealand Medical Council Statement on Telehealth- http://www.mcnz.org.nz/assets/News-and-Publications/Statement-on-telehealthv3.pdf

AUTHOR:

General Manager: Funding, Planning and Population Health

SCOPE: This policy applies to all health professionals (including but not limited to doctors, nurses and healthcare assistants) who use the telehealth facilities in TDH or NPH sites to conduct health services within their scope of practice.

DEFINITIONS: "Telehealth" in this context means the use of video as a day-to-day communications tool for clinical consultations.

POLICY STATEMENTS: Telehealth is a new service aimed at connecting patients and health professionals across both TDH and NPH sites. This policy should be read in conjunction with the telehealth user guide and the Cisco Jabber quick reference guide (see below) in order to maintain the smooth and safe operation of telehealth facilities across Tairawhiti. The Cisco Jabber Video Conferencing Software meets the standards required for telehealth video conferencing set out by the Health Information Standards Organisation in HISO 10049.1.

STANDARDS OF USE:

1 USE OF TELEHEALTH VIDEO CONFERENCING

1.1 Telehealth video conferencing may be used for the following patient specific interactions:

a) Patient interviews for:
- first or follow up consultations at the discretion of the responsible clinician
- providing a second opinion
- emergency assessments
- gaining additional information.

b) Team/group meetings (including patient and their support person(s)) for:
- discharge planning
- family conferences
- patient review
- maintaining patient contact with their family/whanau/caregiver

- multi-disciplinary case management meetings with other practitioners &/or community groups (Palliative Care, Cancer Society etc).

c) Clinician to Clinician consultations where the patient may not be present for:
- providing a second opinion
- treatment review and consultation
- one to one supervision
- group/peer supervision
- distance learning for education programmes
- maintaining up to date practice through information sharing.

2 STAFF RESPONSIBILITIES

2.1 All staff intending to use telehealth equipment for video consultations may only do so after they have been trained in:
- how to use the video equipment
- telehealth etiquette
- telehealth video conferencing booking systems

2.2 Clinical Staff intending to use video conferencing technology for interacting with patients are required to:
- Ensure that treatment provided to a patient in another location should, so far as possible, meet the same standards of care that would be provided in a face to face consultation. This includes standards relating to patient selection, identification, cultural competence, assessment, diagnosis, consent and follow-up.
- Ensure that if, because of the limits of technology, a service is unable to be provided to the patient at the same standard as a face to face consultation, the patient is advised of this.
- Consider whether a physical examination would add critical information before providing treatment to a patient and, if so, not proceed until a physical examination can be arranged. In some circumstances it may be reasonable to ask another practitioner in the patient's location to conduct a physical examination on the clinician's behalf.
- Ensure that the use of telehealth has been discussed with the patient and that informed consent for the use of these means has been obtained.
- Ensure that all patient records necessary to support the patient intervention are available for use during the consultation.
- The consultation is and its outcome is documented in the patient's clinical record in a manner that meets the DHB's standards.

2.3 Administration Staff are responsible for:
- ensuring that rooms and equipment are available and booked at both ends
- ensuring all relevant staff at sending and receiving sites are notified of the time and arrangements for the telehealth appointment
- supporting the clinician to obtain informed consent from the patient in regards to telehealth procedures
- ensuring the clinician has access to the patient's records before and during the consultation
- providing basic maintenance to telehealth equipment and rooms

3 RESOURCES & RESOURCE MANAGEMENT

Telehealth video based consultations require:

- video cameras, monitors and speakers (PC speakers may be sufficient depending on the set up of the room) at each end of the link
- Cisco Jabber Video for Telepresence software installed on all machines where the cameras are to be used
- patient information sheet and consent form
- signage to indicate the room is in use

4 TELEHEALTH PROCESS & ETIQUETTE

- The clinic appointment letter sent to the patient will indicate clearly that they have been booked into a telehealth clinic and where they need to go to attend the appointment.
- The patient or their representative is to be informed of their right not to participate and their right to withdraw from the session at any time. If the patient indicates they do not want to be seen in the telehealth clinic they should be booked into the next appropriate face to face clinic.
- Patients, and their family/whanau/caregiver (if involved) are to be provided with clear information on how the telehealth equipment operates, who will be involved in the session and what, if any, alternatives are available.
- If the patient has not experienced telehealth previously, the telehealth administrator or clinician should briefly explain the equipment and process at the start of the consultation.
- Telehealth consultations should take particular care to ensure the patient's ideas, concerns and expectations are considered and that a mutually agreed management plan is developed and documented to ensure the patient understands the decisions made.
- Telehealth consultations are not to be recorded unless the patient has given prior written consent.
- The patient is to be assured at the start of the session that nobody other than the clinician is present. It may be helpful to sweep the room with the camera to reinforce this.
- The clinician should make eye contact with the patient wherever practicable – by looking at the camera rather than the screen.
- Information entered into the patient management system must allow easy identification of which patients were seen in a telehealth clinic and by whom, for reporting purposes.

5 PATIENT SUPPORT

- Where practicable another person (kaiawhina/community health worker or health professional) should be available adjacent to or alongside the patient in order to assist the clinician – for example taking temperatures, making additional observations, or providing the patient with reassurance.
- In some circumstances this may not be practicable and the patient will be alone, or supported by a family member, social worker or other person.
- The clinician is responsible for ensuring that any necessary support for the patient is available and if not, for taking steps to ensure the welfare and care of the patient is not put at risk.

6 CONFIDENTIALITY

The same standards of confidentiality and protection of health information that govern traditional practice are applicable to telehealth practice.

7 RELATED STANDARDS AND PROCEDURES

- The telehealth user guide provides detailed operational guidelines on the use of telehealth equipment.
- NZ Medical Council statement on telehealth
- Scopes of practice for nursing (Nursing Council of New Zealand)
- HISO 10049.1 Videoconferencing Interoperability Standard (Health Information Standards Organisation, Ministry of Health, NZ)

8 EVALUATION METHOD The use of the telehealth facilities will be evaluated as part of the project using an outcomes based evaluation with the overall success dependant on the uptake of patient use of the facilities. Evaluations will take place in December 2014 as well as June 2015.

9 EXCLUSIONS:

This policy covers the use of video conferencing for patient specific and patient related purposes. Video conferencing for non-patient related activities is not covered by this policy.

Telehealth is **not to be used** for the Preliminary Assessment by Psychiatrist as per Section 9 of the Mental Health (Compulsory Assessment and Treatment) Act and Amendments (1992).

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Authorised By*:*

Date of Approval: May 2013

Next Review Date: December 2014

Embedded Documents

The following documents should be read in conjunction with this policy:

Document	Link
Telehealth User Guide	Telehealth User Guide.docx
Cisco Jabber quick reference guide	cisco_jabber_quick_reference_windows_p

APPENDIX D - GOVERNANCE AND MANAGEMENT OF THE PROJECT

The Project was governed by a group of senior officials from the sponsoring agencies which at various times included the following:

Ministry of Business, Innovation and Employment:

Paul Alexander, Chris Bishop, Nicola Treloar

National Health IT Board:

Graeme Osborne, Sadhana Maraj

Bay of Plenty District Health Board:

Simon Everitt, Owen Wallace, Mike Agnew,

Project Facilitator:

Ernie Newman