



Telehealth Strategy for South Island DHBs

**Version 7.4
August 2019**

Prepared by Keith Todd on behalf of the
South Island Telehealth Strategy Group for the South Island Alliance.
Approved by South Island Alliance Leadership Team August 2019

CONTENTS

Executive Summary 3

Introduction..... 4

South Island Telehealth Strategy..... 6

South Island Population and Geography 7

The Current State of Telehealth in the South Island and New Zealand 8

The Future of Telehealth in New Zealand 10

Telehealth Strategy Focus Areas 12

 1: Governance 12

 2: Technology and Infrastructure 13

 3: Staff Training and Change Management..... 15

 4: Funding..... 17

 5: Embedding Telehealth in Clinical Practice 19

 6: Monitoring and Evaluation..... 21

TELEHEALTH MODELS OF CARE 23

Conclusion 26

References 27

Appendix..... 28

EXECUTIVE SUMMARY

1. Governance: including the appointment of a Regional Telehealth Project Manager to assist the existing DHB coordinators in establishing telehealth. This appointment requires consideration regarding fte and length of term in the role. This new role will report to the IS SLA.

2. Technology and Infrastructure: Agree to a key set of technical principles to ensure a clinically suitable and cost effective telehealth solution that reliably interconnects with other health related VC networks in New Zealand. Interconnectivity between vendors has been a consistent issue that need resolving with some urgency. One key principle is that of endorsing the current number of platforms, that being Legacy/Vivid, Zoom, and Vidyo. Suppliers need to demonstrate that interoperability is assured A procurement review will be undertaken to select the preferred provider(s). The successful player(s) will adhere to the key principles described in our strategy.

3. Staff training and Change Management: including DHB, Public Health and Primary Care prioritising building staff capability and investing in resources to drive local strategies, as well as the development of guidelines and educational resources for using telehealth. Consistency, where required, across DHBs will be assured by the involvement of the Regional Telehealth Project Manager.

4. Funding for Telehealth: including considering expansion of funding streams for individual clinicians participating in telehealth consultations, and recognising telehealth activity delivered in DHBs and Primary Care health services. New funding will be required for the Regional Telehealth Project Manager. The source of this funding will have to be agreed but options include either by PBFF or SIAPO retained earnings.

5. Embedding Telehealth into Clinical Practice: includes considering the source of funding streams to embed telehealth into daily practice, the need to identify capital investment to sustain long term development and establishing a means of accounting for telehealth clinic activity delivered in DHBs and Primary Care health services. This strategy is about supporting community activity as well as (the more traditional) SMO led consultations and multi-disciplinary meetings (MDMs) from Secondary Care providers.

6. Monitoring and Evaluation: including improved data capture and the development of standardised region-wide metrics; and surveys to collect information on patient experience and overall assessment of the effectiveness of the model of care.

INTRODUCTION

Embedding sustainable telehealth services into our Regional health system will support delivery of patient-centred care in the right place and at the right time. Telehealth, as the delivery of health care at a distance, complements face-to-face consultation and offers significant benefits for patients, their carers, health care workers and the health system as a whole. Telehealth has been particularly important in rural and remote areas where it has had a positive impact on patients and clinicians, through reduced travel time and improved timely access to specialists and health advice. For clinicians, it will improve access to continuing education and professional development, for example expose to clinical advice via multi-disciplinary team meetings.

The development of telehealth has been going on for some years in most parts of the South Island. There has not been a coordinated approach to this until now. It has taken interested parties to develop, often independently, telehealth links with both patients and fellow clinicians from outside their area. This has led to variable uptake and levels of maturity across individual District Health Boards (DHBs).

Telehealth technology is constantly evolving, and will continue to evolve further, with a range of digital and consumer-focused health technologies used within our health system, such as remote telemonitoring of patients in their home and the use of personal devices such as mobile phones and tablets.

There is a direct link with this Strategy and that of new, currently draft, South Island Data and Digital Strategy developed by the Information Services Service Level Alliance (IS SLA). Within this strategy telehealth (now referred to as Virtual health) is seen as transforming service delivery with “the use of smart device technology and virtual communication is enabling healthcare providers to move care out of the clinic and provide on-demand, continuous care”. This strategy will help guide healthcare users of telehealth in the future to manage increasing demand with limited resources across the system.

The South Island Telehealth Strategy has been developed to outline actions and responsibilities in order to embed telehealth into core business in the South Island. The Strategy has identified a number of recommendations under six focus areas – governance, technology infrastructure, staff training/change management, funding, embedding into clinical practice and monitoring /evaluation. DHBs are asked to consider and approve these in order to fully implement telehealth in a coordinated and equitable approach across the whole region.

The Strategy reflects the significant opportunity that exists in the South Island at present to co-ordinate and co-operate around the provision of telehealth services. The Health Informatics ecosystem of HCS, HealthOne, and SI PICS sets the scene for realigning the delivery of care to the patient’s situation, and away from the service location.

Telehealth is already supporting the delivery of health care to patients throughout the South Island, and in particular those in rural and remote locations. It is used by a broad range of

services, in contexts ranging from pre-arranged, multisite, multi specialist MDMs, through to acute consultations to support retrieval and transfer services.

Coverage is broad, with access to some form of videoconferencing being widespread, including the Chatham Islands. This videoconference capacity evolved as a hardware based network, with a subscription based funding model. The service is expensive for DHBs to provide, and limited when it comes to being able to offer care to patients at home.

In this Strategy we provide rationale and recommendations to improve and expand telehealth services across the South Island. We have not got distracted by whether this should be done (as it should), but rather focus on how it should be done well.

Membership of the South Island Telehealth Strategy Working Group

Members of the group were nominated by the General Managers, Planning and Funding, from each of the five South Island District Health Boards (DHBs). The group has membership from all DHBs with a bias towards clinicians.

The members:

Dr John Garrett (Chair)	Paediatrician	CDHB
Dr Bev Nicolls	General Practitioner	NMDHB
Andrea Reilly	Cancer Nurse Coordinator	WCDHB
Emma Lacey-Williams	Project Specialist	WCDHB
Andrew Meier	Senior Management Accountant	CDHB
Christine Kerr	Cancer Nurse Coordinator	SCDHB
Dr Ben Wheeler	Paediatrician	Southern DHB
Kyle Forde	IT Specialist	WellSouth
Keith Todd	Regional Programme Director	SIAPO

This South Island Telehealth Strategy has had final sign off by the South Island Alliance Leadership Team at their 12 August 2019 meeting. Miles Roper, CIO West Coast DHB, had significant input towards the end of the sign off process.

SOUTH ISLAND TELEHEALTH STRATEGY

Definition

The New Zealand Telehealth Forum defines telehealth as the collective term for:

The use of information and communication technologies to deliver healthcare when patients and care providers are not in the same physical location.

Scope

In Scope

The implementation of the following telehealth services:

- Telemedicine including videoconferencing for clinical consultations, education, research and evaluation.
- Management of patient care from multiple sites through a defined Multi-Disciplinary Team Meeting allowing for clinical decision making, peer review, clinical supervision and audit of care.
- Telemonitoring where patients use monitoring devices in their domestic setting to inform their care provider about their condition
- The inclusion of all videoconferencing endpoints across the region in the Videoconferencing National Directory.

Out of scope

- Health information dissemination and mHealth (mobile health) applications. These are important aspects of telehealth but are not directly covered by this strategy.

Objectives

The primary objective of the Strategy is to increase the availability and use of telehealth to the point where it is offered to all patients who would benefit from it. Achieving this goal will:

- Uphold the right of patients to timely access to health care as close to home as possible.
- Ensure health care is delivered with a focus on the needs of the whanau.
- Reduce professional isolation.
- Provide education opportunities for staff.
- Increase the value of delivered health care.
- Ensure telehealth approaches align with current best practice.
- Improve the quality and effectiveness of telehealth services through review, audit and analysis.
- Ensure a telehealth funding system is in place that is transparent, cost neutral, and sustainable.

SOUTH ISLAND POPULATION AND GEOGRAPHY

The South Island of New Zealand covers an area of 151,200 square kilometres. The population of 1.1 million people is spread throughout the island but concentrated in 3 main cities of Christchurch, Dunedin, and Nelson. The terrain, weather, distances and condition of the roads and other transport networks can make travel challenging. Flights between main health centres are costly for patients and carers and subject to cancellation, especially during winter, due to adverse weather conditions. For the residents of Kaikoura, travelling to Christchurch for a specialist appointment is now even more of an undertaking than it was before their earthquakes.

No individual is any less deserving of healthcare than any other, but by way of the factors mentioned above, or their own health, social, or financial circumstances, some patients can find themselves with inequitable access to the care they need. One of the ways this can be addressed is by utilising telehealth.

South Island of New Zealand



THE CURRENT STATE OF TELEHEALTH IN THE SOUTH ISLAND AND NEW ZEALAND

Over the past decade the provision of telehealth services has developed in a relatively ad hoc fashion across the South Island, which has resulted in a slow but steady increase in the number of patients seen, and the number of services involved (Appendix A). There is currently no monitoring system in place to accurately measure the totality of telehealth activity occurring in the South Island.

Most of the care provided by telehealth is in the form of video consultations, with little telemonitoring occurring. Initially all the video consultations took place over one network provided by Vivid Solutions, and utilized hardware based VC units in fixed locations. Over time there has been the addition of software based VC endpoints, including on mobile devices, and new vendors have come in to the market.

The Wellsouth and Rural Canterbury PHOs have developed a service based on Vidyo software, the Southern Cancer Network MDMs had been provided by Spark, and have recently transitioned to Vivid, Southern DHB have made a decision to shift away from Vivid Solutions and have adopted Vidyo as their core VC platform, and WCDHB have moved onto the Vidyo platform leveraging the Wellsouth instance. Each DHB has their own contract with their chosen vendor. Individual clinicians or services are also at times using non-contracted VC solutions to provide patient care.

The arrival of a multivendor environment has created problems with interconnectivity, so that the ability to have a video consultation is determined not only by the availability of equipment, but also by whether both endpoints are on the same network. Such a situation is frustrating to patients and clinicians, but unfortunately attempts to address this issue with vendors have been unsuccessful. The vendor interoperability issue is New Zealand wide, and the MOH has developed a National Directory of VC endpoints as the first step in creating seamless (for the end user perspective) interconnectivity across all networks. There is also a firm commitment to health operability by the MoH. The MoH state that “The Commitment to Interoperability will underpin, and be operationalised through, existing sector processes and structures. The Ministry of Health will provide leadership in collaboration with sector and industry partners”.

The development of telehealth capability has been asynchronous across the South Island DHBs. Some DHBs have in place telehealth co-ordinators, policies and procedures, documentation, and monitoring systems, with others having relatively limited capacity. Despite this variation it would be fair to say that in the last 12 months there has been a sharp rise in interest in telehealth across all 5 DHBs, including in the potential for consultations to occur between primary and secondary care, and into patient’s homes.

Similar changes have been occurring in other parts of New Zealand. The Midlands region has developed a Telehealth Strategy, and runs their own network of VC endpoints. HealthAlliance have gone to market for a regional VC solution for the four northern DHBs and have contracted with Zoom as their vendor. Waikato DHB have made an attempt to develop a virtual healthcare capacity.

The term virtual healthcare refers to a solution that brings together components such as video, messaging, clinical information systems, patient management and booking systems, health information dissemination, and patient portals. In the central region there is an established Telestroke Service, which has provided the blueprint from which to develop a South Island Telestroke Service.

The New Zealand Telehealth Forum undertook a national stocktake of telehealth for all DHBs in 2014. Another one has been conducted nationally in 2018 into early 2019. DHBs are still awaiting the results of this stocktake which can be used as a baseline for measuring change.

THE FUTURE OF TELEHEALTH IN NEW ZEALAND

Telehealth offers benefits for patients, carers, health care workers and the health system as a whole through improved access, availability, and efficiency of quality health care. Patient-centred, clinician-led telehealth provides an efficient and effective model of care that complements in person consultation. Telehealth technology is constantly evolving, with a wide range of digital and web-based health technologies currently available to patients within, including remote telemonitoring of patients in their home and the use of secure applications on personal devices such as mobile phones and tablets. Over the past four decades, telehealth has become an increasingly cost-effective alternative to in person care and has evolved into an integrated technology used in hospitals, physicians' offices, patients' homes, and many other settings (Kvedar, Coye & Everett, 2014).

Patient focused digital technologies provide options for managing the rising demand for health services within constrained resources, while achieving a high quality of care. Connecting the electronic clinical record to in-home monitoring devices; use of wearable technologies such as scannable patient wristbands to improve continuity of care in the hospital setting; and electronic referrals and online appointment scheduling are examples of the opportunities telehealth offers to patients, their carers, clinicians and the health system. Overseas, telehealth has been particularly important in rural and remote areas, where it has had a positive impact on patients and clinicians, through reduced travel time and improved access to specialists and advice in a timely manner (Queensland Health 2017).

For clinicians, it may improve access to continuing education and professional development, and multi-disciplinary meetings can support clinical case exploration. While telehealth is often thought to be primarily used in regional, rural and remote areas, there is now an opportunity for a much broader uptake of telehealth models of care. Telehealth is also used in high density, city areas for a range of purposes, including supporting hospital avoidance initiatives, providing services to patients with disability who may have trouble travelling to consultations, and offering interpreting services remotely where patients and clinicians do not share a common language. In Australia, telehealth is also utilised for prevention strategies, such as the Text Me program, which helps to improve the health of heart attack survivors. Research has shown that rural Australians have benefited from telehealth. The reported improved access and quality of clinical care available to rural Australians through telemedicine and telehealth may contribute to decreasing the urban–rural health disparities (Moffatt & Eley, 2010).

Telehealth makes it possible for some patients and carers to attend appointments without presenting in person, freeing up space, be that clinical, non-clinical or car parking space, for others to attend. Telehealth is seen as a way forward in reducing transport related emissions by reducing the need for travel. As WHO stated in 2010, *“well-designed telehealth schemes can*

...reduce the travel-related carbon footprint of health care, while improving access and outcomes for vulnerable groups”.

There are international studies which provide an evidence base for telehealth at a broader system level. It is an opportune time to identify actions our regional health system can undertake to measure the benefits of telehealth, increase its uptake and embed this technology into our core business.

The future of telehealth will be consumer driven nationally and internationally. Patients will consume clinical services as they see fit and will leverage global services based on convenience and ease of use.

Standards adoption and governance will be required to ensure a consistent health record is maintained within New Zealand, and to set the expectations of global service providers. There will need to be a way for patients, who may be accessing healthcare from a range of locations and providers, through varied methods, to maintain a chronological and accurate record of their health care.

The New Zealand Telehealth Forum is currently undergoing enhancement of the National Telehealth Leadership Group, which will have a stronger mandate, and greater support from the MOH, to set standards and guidelines for the development and use of telehealth in New Zealand. This should provide more clarity and direction on a national level, just as this strategy is attempting to do for the South Island regionally.

TELEHEALTH STRATEGY FOCUS AREAS

This strategy focuses on six key areas of telehealth development:

1: GOVERNANCE

The South Island Telehealth Strategy describes a pathway to the future state of regional telehealth. Implementation will be a logical progression through assessment of current capacity, definition of the regional requirements to support implementation of the strategy, acquisition of a regional telehealth solution, and integration of telehealth into ongoing service delivery. Support for the ongoing implementation of telehealth is required. This can be advocated via the South Island Information Services Service Level Alliance (ISSLA). The ISSLA membership will need to include membership that has specific telehealth knowledge.

In order to ensure progress in the implementation of telehealth, it is recommended that a full-time, fixed term, Regional Telehealth Project Manager be appointed. The role would be to assist interested parties in the roll-out of telehealth regionally. The role will include business change, driven primarily by clinicians. The Project Manager will have to engage with the business and supported by local clinical champions in order to gain momentum.

The support of clinical champions will be required to advise the Project Manager. The role will work closely with existing, local Telehealth Coordinators who located within DHBs. The Project Manager will report to the ISSLA.

Governance Recommendations

1. Support for ongoing implementation of telehealth is required. To be supported and governed by the South Island Information Services Service Level Alliance (ISSLA).
2. The appointment of a Regional Telehealth Project Manager to assist with the roll-out of telehealth across the South Island.
3. Clinical Champions will be identified from across the South Island in order to support and advise the Project Manager.

2: TECHNOLOGY AND INFRASTRUCTURE

Organisations that have been able to successfully integrate telehealth into their model of care tend to choose technology solutions that:

- Are easy to use
- Can be made widely available
- Are reliable with no interconnectivity issues
- Are able to be integrated with the organisations health informatics ecosystem
- Are scalable
- Are adaptable to different clinical circumstances
- Are cost effective
- Provide a meaningful means of measuring activity.

In addition to the above the solution needs to be secure and meet HISO and other relevant standards. No such system is currently widely available in the South Island.

A set of key principles should be defined to operate telehealth in the South Island. These should include:

- A technology agnostic approach
- Supports standards
- Extensive use of mobile first
- Integrates with national directory
- Move away from proprietary hardware to good quality consumer based devices.

Historically the South Island began with an externally managed hardware based videoconference network provided by a single vendor, Vivid Solutions, with whom each DHB had their own contract. Over time a multi-vendor environment has developed, which has created significant problems with interconnectivity across networks, even within the same DHB. These problems persist despite attempts at local and national levels to find a solution. There is more work needed in this area which will require architectural input, and network design to ensure quality across the region meets clinical needs.

Since the onset of telehealth in the South Island there have been advances in technology so that now most solutions are software or application based, available on any device, and able to be integrated with other systems such as scheduling, clinical information, messaging, and accounting systems.

The opportunity that exists for the South Island is to take a co-ordinated approach to updating telehealth capacity. Doing so is likely to result in a more up to date, better value for money telehealth solution that resolves the problem of interconnectivity across networks. Technical barriers to adoption need to be removed by creating an environment with the platforms from

existing vendors (Zoom/Vidyo/Vivid) which support interoperability. Suppliers must meet minimum standards as outlined in the HISO 10049.1:2014 Videoconferencing Interoperability Standard document as supported by the Ministry of Health.

In the short to medium term (6 - 12 months) resolving interoperability and reliability issues, as identified by our clinicians, will be a key action. Work with current vendors to get full interoperability between them will be an objective. These will need to be resolved to enable the expansion of telehealth services.

Its important learnings from both inside and outside the region is compiled into a technology toolbox for delivery of telehealth. This might be things such as hardware (Video/Audio) which meets clinical needs and works on modern operating systems that is compatible with the platforms used in the South Island.

Technology and Infrastructure Recommendations

1. Undertaken a programme of work to resolve the interoperability and reliability issues of telehealth between DHBs (Regional Telehealth Project Manager).
2. Consult clinicians and patients on what they require from a telehealth solution (Regional Telehealth Project Manager).
3. Agree on a set of technology principles for operating telehealth (IS SLA).
4. Assist and drive implementation of the set of principles (Regional Telehealth Project Manager)
5. Compile a toolbox of successful technology to provide TeleHealth (Regional Telehealth Project Manager)
6. Investigate the development of a virtual healthcare solution for the South Island that integrates with SI PICS and HCS (Regional Telehealth Project Manager).
7. ISSLA to advocate for ongoing resources dedicated to investigating new telehealth technology and innovations (ISSLA).

3: STAFF TRAINING AND CHANGE MANAGEMENT

Robust change management strategies are a key enabler for increased delivery of health services by telehealth. Using telehealth to deliver care will involve new processes and ways of working within an organisation and with other stakeholders. Change management approaches driven by clinical champions within our organisations can support a positive environment around change. Strategies may assist by overcoming personal and cultural barriers and addressing or removing obstacles that might prevent uptake of telehealth into business as usual.

Change management support

Change management strategies have already been implemented in a number of DHBs, including the identification of patients who are suitable for telehealth consultations and provision of this data to clinicians. This has been made possible by the support of an engaged management team and clinical leadership.

The Strategy should promote change management programmes incorporating Accelerating Implementation Methodology (AIM). This short programme grows capability of staff to manage change effectively by overcoming personal and cultural barriers. The program addresses or removes obstacles that might prevent the implementation of change projects, within scope and on budget.

Staff Training

Increasing the use of telehealth across the South Island will require telehealth naïve staff to develop an understanding of the process and performance of a telehealth consultation or service. Changing the available telehealth solution will require current users to adapt to different technology. Both these will require training support which could be accomplished by a combination of background reading and support documentation, video tutorials on the practical aspects of using telehealth, support from telehealth coordinators, and super users. Working with the New Zealand Telehealth Resource Centre will make the most of resources that have already been developed elsewhere in the country.

Patient Resources

As with staff, patients will need support to participate in a telehealth consultation including written information about what to expect during a consultation, and a method to check whether their internet connection and device at home will support a video consultation.

Driving telehealth uptake in DHBs

DHBs such as NMDHB, WCDHB, CDHB and SDHB have staff in post, some on short-term contracts, others with dual roles, with responsibility for driving and facilitating the use of telehealth within the organisation. These individuals play a critical role in driving change and providing support and guidance across these organisations. Identifying existing staff, or potentially investing in new positions with responsibility for providing a bridge between technical and non-technical roles and helping to implement a strategic direction for telehealth in the organisation, is integral. Such a role is likely to encompass change management support and training for other staff.

Communication Strategy

It is likely increasing telehealth uptake will involve significant changes to the solutions which are available, a comprehensive communication plan will be required to inform and engage clinicians, support staff, and patients.

Staff Training and Change Management Recommendations

1. Develop robust and consistent change management strategies for any service or individual who want to implement telehealth (Regional Telehealth Project Manager/Clinical Champions).
2. Ensure each DHB has access to staff who have a role in promoting and supporting the uptake of telehealth (Regional Telehealth Project Manager/Clinical Champions).
3. Develop a range of training resources in conjunction with the NZ Telehealth Resource Centre (Regional Telehealth Project Manager).
4. Develop a Communications Strategy for significant changes to telehealth technology, infrastructure, and resources. This should include an online presence for telehealth in each DHB (ISSLA).

4: FUNDING

The question of funding is often one of the most constraining parts of an initiative such as this all DHB's acknowledge that they must manage within the funding available and reduce deficits where they currently exist. Achieving this goal can have the effect of putting up barriers to initiatives or changes that are aligned with the organisational goals of having health services directed at those areas that will ensure the highest benefits for our population and tackles inequalities of health.

A DHB's decision on the allocation of its funding (both capital and operational) will be driven by the requirement to find the most efficient and effective delivery of activity and the efficient assessment of patients to ensure health services are delivered in the correct location. Telehealth as a tool is ideally suited to the most effective and efficient delivery of healthcare at a time and place that is most convenient for the patient.

Investment in both staff and technology will be required if DHB's chose to pursue the delivery of telehealth services within existing funds. Each DHB would need to be co-ordinated in its decision to ensure integration of services across the region. With coordination in mind, it was recommended earlier that a Regional Telehealth Project Manager be appointed to further establish Telehealth into clinical practice. This full-time, fixed-term contract would be appointed to ensure consistency of telehealth policies and procedures across the Region. The length of contract will have to be investigated fully but a term of three years initially seems reasonable. The cost of this role will have to be scoped by People and Capability to identify the salary scale. Funds for the role could come from either PBFF across the South Island or allocated from SIAPO Retained Earnings.

The mechanisms for accounting for the delivery of telehealth services across secondary and tertiary sites within a region and across regions already exist or could be established relatively easily. These include the existing mechanics for scheduled Telehealth clinics at secondary sites via the inter-DHB Service Level Agreements, specialist consultations and MDM's between secondary and tertiary sites via the Inter-District Flow process and extended tertiary specialist support via the medium of telehealth with new inter-DHB contracts.

Expand the scope of the Telehealth Strategy to primary health providers and funding allocation mechanisms such as those used for GP subsidised procedures to support service delivery in general practice to bring services closer to patients in their community and reduce demand on specialist hospital services become relevant for the GP's.

Other options can be explored such as the ability in health pathways for a GP to refer a patient to another GP who has the telehealth facilities.

While the options to deliver telehealth within existing funds improve the efficient delivery of healthcare at a time and place that is most convenient for the patient, there will be costs. While there will be efficiencies within the system as a whole and savings in the cost of patient travel, the DHB's would need to be committed to the sustainable allocation of resources and future investment. The existing ISG technical team will have to keep pace with the increase use in telehealth. This not only means the number of users, and therefore increased number of "helpdesk calls" but the ever changing technical requirements that this technology is likely to introduce.

Funding Recommendations

1. Appointment of a Regional Telehealth Project Manager who is fixed-term in the role (approval by SI ALT).
2. Identify ongoing resource needed in each DHB to manage the delivery of telehealth assistance and technical solutions for that DHB. The existing technical team in each DHB requires the correct resourcing as growth in telehealth continues (ISSLA).

5: EMBEDDING TELEHEALTH IN CLINICAL PRACTICE

Telehealth must be driven by consumer and clinical need and be well-embedded into patient-centred clinical models of care. Most South Island DHBs, including NMDHB, WCDHB, CDHB and SDHB are promoting the delivery of care, albeit on a relatively small scale, by telehealth through local plans and investing in dedicated telehealth coordinators to facilitate these plans. The functions of staff with responsibility for telehealth could range from the development and strategic planning of telehealth-enabled models of care, to embedding these models into business as usual.

The role may include:

- Engaging clinical, administrative, executive and management staff in telehealth project development and implementation
- Ensuring that relevant policies and procedures are in place and are adhered to
- Advising on innovation set up, leading to testing, trouble shooting and assessment
- Implementing strategies to ensure that telehealth programs are sustainable and can be appropriately evaluated. Then publish, audit and communicate
- Considering new innovations in telehealth.

While the role may vary between DHBs, depending on the maturity of telehealth facilities, size of DHB and the extent to which telehealth is a priority, the key responsibilities of staff in telehealth support/coordination roles are to create a bridge between the technical and clinical specialties, and to drive change management at all levels of the DHB. Staff who are able to assume these functions would be of benefit to all DHBs, and should be supported by telehealth champions, particularly clinical champions. Such a role is key to supporting change management and embedding telehealth into clinical practice. The Recommended Regional Project Manager will work closely with these local coordinators and clinical champions to ensure high quality implementation and support for local telehealth initiatives.

Clinicians should be encouraged to incorporate telehealth-enabled models of care into their practice where clinically appropriate. A range of methods could be in place to influence and support the use of telehealth as business as usual, including provision of reports to identify patients who are suitable for telehealth, and the engagement of local clinical champions. Senior management support is pivotal to driving strategic change throughout the organisation, while senior clinician support is integral to encouraging junior clinician use of telehealth. This partnership between junior and senior clinicians may also work the other way, with junior staff often more engaged with new technologies and encouraging their uptake by more senior colleagues. Clinical champions have a valuable role in promoting enthusiasm for using new technologies for patient consultations.

Consideration should be given to empowering patients as partners, an important factor in the growth of telehealth services and the likely introduction of home based technology. There is also a need to link with community health providers, such as PHOs and GPs, in order to ensure all round support and sustainability of telehealth. This strategy will also support community activity as well as SMO led consultations and multi-disciplinary meetings (MDMs) from Secondary Care providers.

DHBs and community health providers should consider making adaptations to staff position descriptions and contracts to make reference to the fact that their consultations and workload may be undertaken via a range of types of service delivery, including telehealth.

Robust policies and procedures need to be developed and circulated to those who take part in telehealth to ensure consistent approach ranging from connectable hardware/software to telehealth presenting etiquette – and everything in between. South Island telehealth clinical practice could be benchmarked against the International Code of Practice for Telehealth Services (2017). This Code provides a quality benchmark for telehealth service providers; addresses the way that services, related procedures and practices are organised; and the way that risks are addressed. It also points to some of the skills, knowledge and competencies that are required by service staff. The Code also addresses the way in which communication takes place with users and carers.

Embedding Telehealth into Clinical Practice Recommendations

1. Define resources required to fully implement telehealth in each DHB (Local coordinators/ Regional Telehealth Project Manager/local clinical champions).
2. Develop template telehealth policies and procedures that can be localised to a DHB or service (local coordinators/ Regional Telehealth Project Manager/local clinical champions).
3. Develop template patient information leaflets, with consumer input, and a consent form that can be localised to a DHB or service (local coordinators/ Regional Telehealth Project Manager/local clinical champions).
4. Benchmark policies, procedures and practices against International Code of Practice for Telehealth Services, 2017 (Regional Telehealth Project Manager).

6: MONITORING AND EVALUATION

Monitoring and evaluation of telehealth activity are integral to a range of activities including:

- Increasing the uptake of telehealth
- Determining reimbursement based on agreed funding models
- Ensuring that telehealth programs are safe, effective, user-friendly and accessible for patients and clinicians
- Adding to the evidence base for telehealth.

Monitoring

With no consistent system for counting telehealth activity across the South Island it is likely that any current estimates of telehealth activity are inaccurate. As such a stocktake of services currently using telehealth and how they monitor their activity would form a baseline for developing and promoting a monitoring strategy.

In the long term it is likely that SI PICS will be able to capture telehealth activity data, but in the medium term a plan for capturing this data in the current patient administration systems will need to be developed.

Tailored reporting tools should be developed in order provide meaningful interpretation of the activity data. This capability to extract data items valuable for monitoring telehealth activity will need to be created in all DHBs and be consistent so comparisons can be made and benchmarking carried out in order to evaluate performance.

Metrics to measure at a South Island wide level include:

- Savings made by the patient
- Savings made by the clinician
- Savings made by the organisation
- Costs for providing the service
- Acceptability by consumers
- Service uptake by health workers.

The sharing of activity and other data should be encouraged across DHBs.

The IS SLA will lead an annual review of implementation progress across the six priority areas – governance, technology and infrastructure, staff training/change management, funding for telehealth, embedding into clinical practice and monitoring and evaluation. It may be beneficial for individual DHBs to continue to undertake surveys of patient, carer and clinician experience, where resources or mechanisms are available. When more robust data on frequency and type of

telehealth consultations is available, Quality Departments may be requested to incorporate telehealth specific questions into their Patient Experience Surveys.

Evaluation

Any new telehealth service developed should be encouraged to proactively evaluate their service as it is implemented, including the patient, carer, and clinician experience. Tools to carry out this evaluation, including support for the conduction of formal research projects should be available.

Monitoring and Evaluation Recommendations

1. Collect baseline data on service level activity and monitoring strategies using SI PICS (IS SLA).
2. Ensure each DHB has a method of capturing telehealth activity in their current PAS and that they are using it (local coordinators/Regional Telehealth Project Manager).
3. Work with SI PICS to ensure this system will be able to capture telehealth data (Regional Telehealth Project Manager).
4. Define meaningful metrics that expand on the activity data and reflect the benefits and costs of providing a telehealth service (Regional Telehealth Project Manager).
5. Provide standardised tools for evaluation of any new telehealth service during the implementation phase (Regional Telehealth Project Manager).
6. Support any service or clinician wanting to formally evaluate their telehealth service (local coordinators/clinical champion/Regional Telehealth Project Manager).

TELEHEALTH MODELS OF CARE

A Model of Care broadly defines the way health services are delivered. It outlines best practice care and services for a person, population group or patient cohort as they progress through the stages or pathway of a condition, injury or event. Telehealth-based models of care can lead to a reduced demand for services and greater efficiencies in the care process. These telehealth-enabled care delivery models have the potential to reduce the costs of care, improve quality, be much more patient focused and mitigate provider shortages (Speedie, et al, 2008)

Telehealth is an efficient and effective way of delivering health services to patients. This is especially the case for patients who live in rural areas, who do not have access to transport, or whose medical condition makes it difficult for them to travel. It is widely recognised that the relationship between healthcare professional and the patient is best established with in person contact. Experience has shown that once a trusting relationship has been established, contact can continue via telehealth. It may be necessary for a health care professional to be present with the patient when intervention is required, but this doesn't necessarily need to be the treating clinician.

There are a number of models that can be employed to ensure high quality, relevant, patient centred care.

Replacement of the traditional hospital appointment

Potentially, the replacement of the hospital appointment is the telehealth model of care that will be most widely taken up by clinicians. This has great advantages for patients who live long distances from secondary or tertiary hospital (Ashwood, Mehrotra, Cowling, Uscher-Pines, 2013).

Patients who travel long distances for a repeat hospital appointment to find they have to wait beyond their appointment time and then only see the clinician for 10 – 15 minutes will become an experience of the past. Patients can attend a local health centre or GP practice in order to access a specialist health practitioner on a pre-arranged basis. Instead of the practitioner seeing the patient in person, there are many occasions when a telehealth appointment is more convenient for the patient and will not compromise the decision making around the patient's health needs.

Any part of the consultation that required direct patient contact may be able to be accomplished by a local clinician, and this also has the advantage of allowing them to be directly involved in, and contribute to, the consultation. For telehealth consultations all relevant clinical information must be readily available. The clinician may have this on a second screen within the clinical setting.

The emergency situation

Acutely unwell patients may attend smaller or more remote Emergency Departments that may be staffed by GPs or Rural Hospital Medicine Specialists. They will require at times support for to manage more complicated or rare conditions. Telehealth based within the Emergency Department has been shown to be a lifesaver (Dhama et al, 2013). This technology assists the local clinician by allowing combined decision making, timely transfer, and clinical teaching, all with the aim of improving patient outcomes. The recent worldwide introduction of Telestroke into hospitals has also been shown to speed up diagnosis, treatment and timely transfer for patients suffering a stroke (Kulscar et al, 2013). This model of care allows rural clinicians to have at hand tertiary hospital expertise for more accurate diagnostic and treatment advice as the specialist is able to see and, when possible, interview the patient directly.

Multi-disciplinary team clinical diagnosis and decision making

Specialists within a multi-disciplinary, multi-site setting will discuss a patient's case. Telehealth can bring together specialists from different sites across a region to analyse all tests and reports relating to a patient within a formal meeting.

These forums aim to ensure that all patients receive timely diagnosis and treatment, that patient management is evidence-based, and that there is continuity of care. The regular meetings facilitate information exchange and regular communication flow between all those involved in treatment of the patient. The team members can monitor adherence to evidence-based guidelines and can streamline the resources for improved management strategies, lower waiting times and enhancing cost effectiveness (Patkar et al 2011).

The best decisions are likely to be made in a setting where experts come together. Clinical services will formally meet regularly to discuss patients who require expert opinion. Requirements for this include fit-for-purpose rooms for the multi-site meetings. These rooms require high quality audio and video and the ability for high quality content sharing of radiology and pathology images and pro-forma templates for recording treatment decisions. Decisions will be recorded at the meeting and patients contacted with results, usually by a in person discussion with specialist. The current Regional Cancer Network MDM is an excellent example of a model of care that should be duplicated over all other regional clinical services.

Home based telehealth

Consultation with patients in their own home is a further step away from the traditional model of the patient having to travel to hospital for advice and consultation. As the population becomes more adept and confident at using technology consulting with a patient who is in their own home or place of residence has become more common. As with the hospital appointment model, for this model of care to be successful it requires an in person relationship

before moving into telehealth. Patients who have chronic conditions, who have multiple contact with a clinician, and who are confident with the technology, will benefit from home based telehealth. Telemonitoring of patients comes into this category. Some patients may require assistance via a reminder to take medications or just have contact with health services in order to establish they are safe and well.

Changes in health condition, response to medication and treatment, and adherence to care plan or chronic disease management routines, will increasingly be achieved by telehealth (Demiris 2008). Two distinct advantages over traditional practitioner-centred health care are offered by this approach. Firstly, the availability of a more complete set of information, with more variables and sampled at a more frequent rate than could be achieved if patient attendance was required, allows much better quality of decision making in the patient's care. Secondly, the patient is more fully engaged in the process of assuring delivery of their own care, and so likely to be much better informed and compliant with care planning.

For reporting and funding purposes it is vital that all telehealth contacts are recorded electronically on the DHBs patient management system. Reporting will allow for trending of activity and the allocation of funding both for now and into the future.

CONCLUSION

Despite a lack of co-ordination and co-operation across the South Island, there have been some great successes in using telehealth to deliver care. It is however unlikely that the scale of telehealth use will increase substantially without a plan.

This document, by identifying the six key components of a South Island Telehealth Strategy, is that plan. The Governance of a strategy is defined and prescribes a partnership between the current coordinator roles within DHBs, clinical champions and a Regional Telehealth Project Manager. The governance of these action orientated roles will be the IS SLA, a regional group of technical and clinical experts who will appoint of telehealth experts as an additional members.

REFERENCES

A Comprehensive Environmental Health Agenda for Hospitals and Health Systems around the World, 2011. www.greenhospitals.net

A national Telehealth and Telecare Delivery Plan for Scotland to 2015, www.scotland.gov.uk

Ashwood S, Mehrotra A, Cowling D, Uscher-Pines L. HEALTH AFFAIRS VOL. 36, NO. 3: DELIVERY SYSTEM INNOVATION. Direct-To-Consumer Telehealth May Increase Access To Care But Does Not Decrease Spending Dec 2013 <https://doi.org/10.1089/tmj.2013.0048>

Demiris G, Afrin LB, Speedie S, Courtney KL, Sondhi M, Vimarlund V et al. Patient-centred applications: use of information technology to promote disease management and wellness. *Journal of American Medical Information Association*. 2008; 15(8):121-126.

Dharmar M, Patrick S, Kuppermann N, Nesbitt T S, Cole S L, Andrada E R, Vance C, Harvey D, Marcin J P. Impact of Critical Care Telemedicine Consultations on Children in Rural Emergency Departments. *Critical Care Medicine*: October 2013 - Volume 41 - Issue 10 - p 2388–2395 doi: 10.1097/CCM.0b013e31828e9824

Health in the Green Economy: Co-Benefits to Health of Climate Change Mitigation. Health Facilities, World Health Organization, 2010.

International Code of Practice for Telehealth Services, 2017, Telehealth Quality Group, www.telehealth.global

Kulcsar M, Gilchrist S, George M G. Improving Stroke Outcomes in Rural Areas Through Telestroke Programs: An Examination of Barriers, Facilitators, and State Policies. *Telemedicine and e-Health* (2013) Vol. 20, No. 1

Kvedar, J., Coye, M. J., & Everett, W. (2014). Connected health: a review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Affairs*, 33(2), 194-199.

Midland Regional Telehealth Strategy, 2013.

Moffatt, J. J., & Eley, D. S. (2010). The reported benefits of telehealth for rural Australians. *Australian Health Review*, 34(3), 276-281.

NZ Telehealth Forum Stocktake – Phase 1 DHBs, August 2014.

NSW Health, Telehealth Framework & Implementation Strategy, 2016-2021, <https://www.health.nsw.gov.au>

Patkar V, Acosta D, Davidson T, Jones A, Fox J Keshtgar M. Cancer Multidisciplinary Team Meetings: Evidence, Challenges, and the Role of Clinical Decision Support Technology. *International Journal of Breast Cancer*. Volume 2011, Article ID 831605. <http://dx.doi.org/10.4061/2011/831605>

Queensland Health, Statewide Telehealth Services (viewed 2017), www.health.qld.gov.au/telehealth

Speedie SM, Furguson AS, Sanders J, Doarn CR, Telehealth: The Promise of New Delivery Models. *Telemed J E Health*. 2008 Nov;14(9):964-7. doi: 10.1089/tmj.2008.0114.

Sustaining Innovation in Telehealth and Telecare, WSD Action Network, 2010.

Telehealth Policies, Waikato DHB, Version 1, 2015.

Telehealth Procedures, Waikato DHB, Version 1, 2015.

The Development of a Telehealth Strategy for NHS Highland, 2007.

Waikato DHB Telehealth Strategy, Version 0.3, 2013.

APPENDIX

Services in the South Island currently offering telehealth as at 2018.

- Allied Health
- Cardiology
- Dermatology
- Diabetology
- Gastroenterology
- General Surgery
- Gynaecology
- Haematology
- Infectious Diseases
- Neonatology
- Older Persons Health
- Oncology (MDM)
- Orthopaedic Surgery
- Paediatric Medicine
- Plastic Surgery
- Renal Medicine
- Respiratory Medicine
- Retrieval Medicine
- Rheumatology
- Vascular (MDM)